KING&WOOD MALLESONS

Second Amending Deed

NBL Tasmanian Team and Derwent Entertainment Redevelopment Project: Development Agreement

Dated 13 DECEMBER 2023

King & Wood Mallesons
Level 27
Collins Arch
447 Collins Street
Melbourne VIC 3000Australia
T +61 3 9643 4000
F +61 3 9643 5999
www.kwm.com
TPM: 603-0051652

Second Amending Deed
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Details

Parties	Crown, Developer and Guarantor	
Crown	Name	**The Crown in Right of Tasmania acting through the Honourable Jeremy Rockliff MP** (being and in his capacity as the Minister for State Development, Trade and the Antarctic)
	Address	4 Salamanca Place, Hobart TAS 7000
	Email	info@stategrowth.tas.gov.au
	Attention	Secretary, Department of State Growth
Developer	Name	**LK Development (Tas) Pty Ltd**
	ACN	642 876 211
	Address	Level 13, 10 Queens Road, Melbourne VIC 3004
	Email	[redacted]
	Attention	[redacted]
Guarantor	Name	**LK Property Group Holdings Pty Ltd** (ACN 130 992 282) in its personal capacity and as trustee for the Kestelman Family Trust (No. 5) (ABN 90 398 314 970)
	Address	Level 13, 10 Queens Road, Melbourne VIC 3004
	Attention	[redacted]
Date of Deed	See signing page	

1 Interpretation

1.1 Definitions

These meanings apply unless the contrary intention appears:

Effective Date means the date of this document.

Existing Development Agreement means the document entitled "NBL Tasmanian Team and Derwent Entertainment Redevelopment Project: Development Agreement" dated 8 November 2020, as amended on 7 June 2021, between the Crown and LK Development (Tas) Pty Ltd (ACN 642 876 211).

Existing Guarantee means the guarantee and indemnity executed by the Crown and LK Property Group in favour of the Crown dated 23 September 2020.

Lease means the document entitled "Lease – Derwent Entertainment Centre" between the Crown, the Lessee and the Guarantor originally dated 8 November 2020 and as amended on 7 June 2021.

LK Property Group means LK Property Group Holdings Pty Ltd (ACN 130 992 282) in its personal capacity and as trustee for the Kestelman Family Trust (No.5) (ABN 90 398 314 970).

Minister means the Minister for State Growth.

Transaction Documents means the following documents:

(a) the Existing Development Agreement; and

(b) the Lease.

2 Amendments

2.1 Existing Development Agreement

As from the Effective Date, the Existing Development Agreement is amended to read as set out in Annexure A.

2.2 Existing Guarantee

As from the Effective Date, the Existing Guarantee applies to the Existing Development Agreement as amended by this document.

3 Confirmation and acknowledgement

3.1 Confirmations

Each party confirms that:

(a) except as provided for in Clause 2 (*Amendments*), no other amendments are made to the Existing Development Agreement;

(b) any reference in a Transaction Document (except in this document) to the Existing Development Agreement is a reference to the Existing Development Agreement as amended by this document;

(c) any reference in the Existing Development Agreement to the "date of this Agreement" or the "date of this document", or equivalent, is a reference to the date of the Existing Development Agreement, being 8 November 2020; and

(d) each Transaction Document as amended by this document continues in full force and effect.

3.2 Transaction Documents

The parties acknowledge and agree that this document is a Transaction Document for the purposes of the Existing Development Agreement as amended by this document.

4 General

(a) Clauses 1.2 (*Interpretation*) to 1.4 (*No rule of construction applies to disadvantage party*) (inclusive), Clause 45 (*Notices*) and Clause 47 (*Miscellaneous*) of the Existing Development Agreement apply to this document as if they were fully set out in this document, and any reference in those clauses to the "Agreement" are taken to be a reference to this document.

(b) Terms used but not otherwise defined in this document have the meaning given in the Existing Development Agreement.

EXECUTED as a deed

Signing page

Execution by Crown

Executed as a deed by **The Honourable ~~Jeremy Rockliff~~ Michael Ferguson MP** in the presence of the witness named below:

Minister's signature: →

[redacted]

Witness' signature: →

[redacted]

*Witness print name and position: CAROL JONES
Manager - Premier and Ministerial Services

*Use BLOCK LETTERS

*Witness print address: Level 11
15 Murray St, Hobart

Execution by Developer

Executed as a deed by **LK Development (Tas) Pty Ltd** under section 127 of the *Corporations Act 2001* (Cwlth) by being signed by Larry Kestelman as Sole Director and Sole Company Secretary:

Signature: →

Execution by Guarantor

Executed as a deed by **LK Property Group Holdings Pty Ltd** in its personal capacity and as trustee for the Kestelman Family Trust (No. 5) under section 127 of the *Corporations Act 2001* (Cwlth) by being signed by Larry Kestelman as Sole Director and Sole Company Secretary:

Signature:
→ 

Annexure A: Amended Existing Development Agreement

NBL Tasmanian Team and Derwent Entertainment Redevelopment Project:

DEVELOPMENT AGREEMENT

The Crown in Right of Tasmania acting through the Honourable Michael Ferguson MP
(being and in his capacity as the Minister for State Growth)
(the **Crown**)

LK Development (Tas) Pty Ltd (ACN 642 876 211)
(the **Developer**)

THE CROWN SOLICITOR OF TASMANIA
Executive Building
15 Murray Street Hobart Tasmania 7000
GPO Box 825 Hobart Tasmania 7001
Telephone: (03) 6165 3630
Facsimile: (03) 6233 2874

KING & WOOD MALLESONS
Level 27, Collins Arch
447 Collins Street, Melbourne Victoria 3000
Telephone: (03) 9643 4000
Facsimile: (03) 9643 5999
Doc Ref: 58831682_3(TPM)

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NBL Tasmanian Team and Derwent Entertainment Redevelopment Project:
DEVELOPMENT AGREEMENT

Details and recitals

Date:

Parties:

Name	**The Crown in Right of Tasmania acting through the Honourable Michael Ferguson MP** (being and in his capacity as the Minister for State Growth)
Short form name	**Crown**
Notice details	C/- Department of State Growth 4 Salamanca Place, Hobart, Tasmania, 7000 Facsimile: Not used. Notices cannot be given by facsimile Email: info@stategrowth.tas.gov.au Attention: Secretary, Department of State Growth

Name	**LK Development (Tas) Pty Ltd**
ACN	642 876 211
Short form name	**Developer**
Notice details	Level 13, 10 Queens Road, Melbourne, Victoria 3004 Facsimile: Not used. Notices cannot be given by facsimile Email: [redacted] Attention: Boris Rozenvasser

Recitals:

A. The Crown owns the DEC Land. The DEC Land is Portfolio Land for the purposes of the *Crown Lands Act 1976* (Tas).

B. The DEC is constructed on the DEC Land.

C. The Crown and the Developer have agreed arrangements pursuant to which, among other things, and subject to the Crown completing the purchase of the DEC Land from the Council:

(1) the Crown will lease the DEC Land (or parts of the DEC Land which include the DEC) to the Tenant under the DEC Lease;

(2) the Developer will undertake works to upgrade the DEC in accordance with this Agreement:

(i) to facilitate the use of the DEC for playing NBL games by a Tasmanian based NBL team; and

(ii) to improve the DEC as an entertainment, community and sporting venue for use by Tasmanians,

(the "**Project**"); and

(3) the Crown will fund those works up to a maximum amount in accordance with this Agreement.

D. The parties have entered into this Agreement to record their respective Rights and obligations in relation to the delivery and completion of the Project, and for related matters.

Operative provisions

The parties agree as follows:

PART 1: PRELIMINARY

1 Definitions and interpretation

1.1 Definitions

In this Agreement, unless the context otherwise requires:

Act means the *Crown Lands Act 1976* (Tas).

Adjudicator means a person appointed pursuant to clause 42.

this Agreement means this development agreement for the carrying out of the Project, and includes all its annexures, appendices, attachments and schedules (if any).

Approval means any permit, licence, consent, grant, certificate, sealing or other approval required by any Law.

Asbestos includes 'asbestos', 'asbestos containing material (ACM)' and 'asbestos-contaminated dust or debris (ACD)', in each case, as defined in the *Work Health and Safety Regulations 2012* (Tas).

Australian Standard means any standard published by Standards Australia Limited.

Authorised Officer means:

(a) for the Crown, each of the Secretary of the Department, an Acting Secretary of that department, a Deputy Secretary of that department, and a nominee of any of them; or

(b) for any other party, a person authorised in writing by that party.

Bank Guarantee means an unconditional and irrevocable guarantee:

(a) given by a bank:

(i) as defined in the *Banking Act 1959* (Cth);

(ii) with a branch office in Hobart; and

(iii) having a Minimum Credit Rating;

(b) enforceable in Australia on presentation in Hobart; and

(c) in the form as the Crown (acting reasonably) agrees to in writing from time to time.

Blackout Period means each of the following periods:

(a) the period from 22 December to 5 January next occurring but if 5 January is not a Business Day, the next Business Day occurring after that date; and

(b) the period of seven days commencing on Good Friday.

Building Licence Area means the part of the DEC Land shown in Attachment 8.

Building Licence Term means the period commencing on the date on which the conditions precedent in clause 5.1 are satisfied or waived in accordance with this Agreement and ending on the first of the following dates:

(a) the date the lease under the DEC Lease commences; and

(b) the date upon which this Agreement is terminated.

Building Surveyor means the person appointed by the Developer under the *Building Act 2000* (Tas) for certification of the Project Works and the issue of building permits and Approvals for the Project Works.

Business Day means a day that is not a Saturday, a Sunday, Easter Tuesday or a statutory holiday (as defined in the *Statutory Holidays Act 2000* (Tas) or in the *Public Holidays Act 1993 (Vic)*) generally observed in Hobart or Melbourne.

Category 1 Project Works means the Project Works, other than the Category 2 Project Works.

Category 2 Project Works means the Project Works described in Attachment 9.

Claim means any allegation, debt, cause of action, liability, claim, proceeding, suit or demand of any nature however arising and whether present or future, fixed or unascertained, actual or contingent, and whether at law, in equity, under statute or otherwise.

Concept Design has the meaning in the DEC Design Development Agreement.

Conditions Precedent Date means the date on or by which all of the conditions precedent in clause 5.1 have been satisfied (except for any of those conditions precedent waived in accordance with clause 5.5).

Contract Material means all material brought, or required to be brought, into existence by the Developer, or any Developer's Agent, as part of, or for the purposes of, performing the Project Works, including documents, drawings, plans, specifications, information and data stored by any means but excluding the Developer's internal notes, records and other documents which are not required to be delivered to the Crown for the purposes of the Project Works.

Contract Sum has the meaning in clause 34.1.

Control of an entity includes the power to directly or indirectly.

(a) determine the management or policies of the entity;

(b) control the membership of the board or other governing body of the entity; or

(c) control the casting of more than one half of the maximum number of votes that may be cast at a general meeting of the entity,

regardless of whether the power is in writing or not, enforceable or unenforceable, expressed or implied, formal or informal or arises by means of trusts, agreements, arrangements, understandings, practices or otherwise, and **Controlled** has a corresponding meaning.

Crown's Agents means:

(a) each officer and employee of the Crown;

(b) each agent and contractor of the Crown engaged in any activity related to the Crown's obligations under this Agreement; and

(c) to the extent not included in the above, the Quantity Surveyor,

and **Crown's Agent** means any of them. For the avoidance of doubt, a Crown's Agent does not include the Developer or a Developer's Agent.

Council means the Glenorchy City Council.

Cure Plan has the meaning in clause 38.2.

Date for Project Practical Completion means the date by which the Developer must achieve Project Practical Completion, being the relevant date set out under the column 'Date for Stage 2B Practical Completion' for the last Stage 2B of the Project Works in the table in Attachment 13, and as extended in accordance with this Agreement including under clause 31. To avoid doubt, the Date for Project Practical Completion is not intended to be, and is not, the Date for Stage 3 Practical Completion.

Date for Stage 2B Practical Completion means, for a Stage 2B, the relevant date set out under the column 'Date for Stage 2B Practical Completion' in the table in Attachment 13, and as extended in accordance with this Agreement including under clause 31.

Date for Stage 3 Practical Completion means, for a Stage 3, the relevant date set out under the column 'Date for Stage 3 Practical Completion' in the table in Attachment 15, and as extended in accordance with this Agreement including under clause 31.

Date for Stage Practical Completion means:

(a) in respect of a Stage 2B, the relevant Date for Stage 2B Practical Completion; or

(b) in respect of a Stage 3, the relevant Date for Stage 3 Practical Completion.

Date of Project Practical Completion means the date that Project Practical Completion has occurred.

Date of Project Stage 3 Completion means the date that Project Stage 3 Completion has occurred.

Date of Stage Practical Completion means:

(a) in respect of a Stage 2B, the relevant Date of Stage 2B Practical Completion; or

(b) in respect of a Stage 3, the relevant Date of Stage 3 Practical Completion.

Date of Stage 2B Practical Completion means, for a Stage 2B, the date determined to be that date, as determined in accordance with clause 32.

Date of Stage 3 Practical Completion means, for a Stage 3, the date determined to be that date, as determined in accordance with clause 32.

DEC means the Derwent Entertainment Centre in Hobart.

DEC Design Development Agreement means the Design Development Agreement dated 28 September 2020 between the Crown (acting through the Department) and the Developer.

DEC Land means the land on which the DEC is situated, being the land comprised in Folio of the Register Volume 110871 Folio 1.

DEC Land Sale Agreement means the land sale agreement between the Council (as "Vendor") and the Crown (acting through the Minister administering the *Land Acquisition Act 1993* (Tas)) (as "Purchaser") in respect of the sale and purchase of the DEC Land.

DEC Lease means the lease between the Crown in Right of Tasmania (acting through the Portfolio Minister for the purposes of the *Crown Lands Act 1976* (Tas)) (as "Landlord") and the Tenant (as "Tenant") in respect of the DEC Land.

DEC Lease Area means the lease area under the DEC Lease.

DEC Memorabilia means the memorabilia (including artist posters and photographs) in the DEC which is the property of the Crown.

Default means a Major Default or Minor Default.

Default Notice means a Major Default Notice or Minor Default Notice.

Defects means any defect in or omission from the Project Works.

Defects Liability Period means:

(a) in relation to the Project Works for a Stage 2B, the period of 12 months commencing on the Date of Stage 2B Practical Completion for that Stage 2B;

(b) in relation to the Project Works for a Stage 3, the period of 12 months commencing on the Date of Stage 3 Practical Completion for that Stage 3; and

(c) in relation to rectification work carried out during the period referred to in paragraph (a) or (b), any further period determined under clause 33.2.

Defect Notice has the meaning given to that expression in clause 33.1.

Details means the details and recitals set out above.

Department means the Department of State Growth or any other department which substantially succeeds to its functions as they relate to the Project.

Developer's Agents means:

(a) each employee, consultant, contractor and agent of the Developer, including a Developer's Builder and each Developer's Design Consultant;

(b) each consultant engaged by the Developer or a Developer's Builder in relation to the Project Works;

(c) each employee, subcontractor and agent of any level of any of the above; and

(d) the employees and agents of any such subcontractor,

who are involved in any activity related to the Project Works or the Developer's obligations under this Agreement, and **Developer's Agent** means any of them. For the

avoidance of doubt, the Developer's Agents do not include any of the Crown or a Crown's Agent.

Developer's Builder means, as the context requires:

(a) any builder, from time to time, engaged by the Developer to carry out any Project Works, and approved in writing by the Crown and which must hold national prequalification for not less than $50 million; and

(b) [Not used].

It includes VOS in respect of the Project Stage 1, the Project Stage 2A and subject to the satisfaction of the conditions precedent in clause 5A.1B and 5B, the Project Stage 2B and Project Stage 3 respectively.

Developer's Builder's Deed of Covenant and Novation means a deed of covenant and novation made between the Crown, the Developer and a Developer's Builder for the purposes of satisfying the condition precedent in clause 5A or pursuant to clause 21.4.

Developer's Design Consultants means:

(a) the following consultants, engaged by Developer, on or before the date of this Agreement, in relation to the design and/or supervision of the Project and/or Project Works:

(i) PhilpLighton Architects;

(ii) JMG – Engineers and Planners;

(iii) JP Fire;

(iv) Gandy & Roberts Consulting Engineers; and

(v) Green Building Surveying; and

(b) any further consultants from time to time engaged by Developer in relation to the design and/or supervision of the Project or Project Works,

and **Developer's Design Consultant** means any of them.

Developer's Design Consultant's Side Deed means an Approved Consultant's Side Deed (as defined in the DEC Design Development Agreement).

Dispute means:

(a) a dispute or matter which is the subject of a Dispute Notice given, or taken to be given, in accordance with this Agreement;

(b) a dispute or matter which this Agreement states is taken to be a Dispute;

(c) a dispute or matter which this Agreement provides is to be determined by an Adjudicator; and

(d) a dispute or matter which the Crown and the Developer agree in writing is a Dispute.

Dispute Notice means a notice given, or taken to be given, by a party to another party specifying that a dispute exists in relation to a matter in respect of which this Agreement provides that the first party may give a Dispute Notice.

General Liability Cap has the meaning given in clause 43.1(a).

Good Design and Construction Practices means practices followed when work is undertaken:

(a) in a sound and workmanlike manner;

(b) with due care and skill applying nationally accepted engineering, construction and management practices, standards and procedures;

(c) with due expedition and without unnecessary or unreasonable delays;

(d) in a manner which allows the works to be efficiently and safely performed;

(e) in accordance with all applicable Laws and relevant Australian Standards (or, in the case of the National Construction Code, as overcome by a Performance Solution); and

(f) using new materials of merchantable quality which are fit for their intended purpose (except to the extent that the Crown has consented, in writing, to the use of recycled materials of merchantable quality which are fit for their intended purpose).

Government Body includes a body politic, a government (federal, state or local), a governmental, judicial or administrative body, a tribunal, a commission, a department or agency of any government, and a statutory authority or instrumentality.

GST means any goods and services tax or similar tax imposed by the Commonwealth of Australia (but excluding any penalty, fine, interest or similar payment).

GST Laws means applicable Laws relating to GST.

Guarantee means the guarantee and indemnity dated on or about the date of this Agreement granted by the Guarantor in favour of the Crown.

Guarantor means LK Property Group Holdings Pty Ltd in its personal capacity and as Trustee for Kestelman Family Trust (No 5).

Hazardous Substance includes:

(a) Asbestos;

(b) anything that contains Asbestos;

(c) any solid, liquid, gas, odour, heat, sound, vibration, radiation, material, substance or contamination, of any kind on, in or under land or water, which:

  (i) constitutes a pollutant or contaminant for the purposes of any Law;

  (ii) makes or is reasonably likely to make land or water unsafe, unfit or harmful for habitation, use or occupation by any person or animal;

  (iii) creates or is reasonably likely to be a risk to the health or safety of any person; or

  (iv) is such that any land or water does not satisfy any relevant criteria or standards published or adopted by the Environment Protection Authority (Tas) from time to time.

Historical Artefacts means artefacts or items on or within the Project Site that are of scientific, anthropological or archaelogical significance.

Hoardings means the temporary barriers, fences, enclosures, barricades, booms and other like structures on land, including fixed signage, constructed or to be constructed by the Developer within or around the Project Site in order to prevent public access.

Incidental Developer Design Consultant means a Developer's Design Consultant whose fees and charges for their work in the design and/or supervision of the Project or Project Works will not, or is not reasonably likely to, exceed $50,000.

Indemnified Persons means the Crown and each Crown's Agent, and **Indemnified Person** means any of them.

Latent Conditions has the meaning given in clause 7.2.

Latent Conditions Costs has the meaning given in clause 7.2.

Law means:

(a) principles of law or equity established by decisions of courts;

(b) legislation and subordinate legislation; and

(c) requirements, approvals (including conditions) and guidelines of any Government Body that have force of law.

LOI means the Letter of Intent between the Developer and VOS dated 8 February 2021, and extended on 30 March 2021 and 21 April 2021.

Loss means any loss, cost, expense, damage, liability, damages or exposure of any type and however arising incurred by a person including:

(a) consequential loss, liability to third parties, loss of revenue and loss of profit;

(b) loss or damage arising out of an injury, disease or death; and

(c) loss or damage as a result of any destruction of or damage to real or personal property.

Major Default means each of the following events:

(a) the Developer abandons or suspends the Project Works for a consecutive period exceeding more than six weeks (excluding recognised building industry shutdown periods) but disregarding any such period or periods to the extent that the Developer is entitled to an extension of time under clause 31;

(b) a Major Default under clause 25.2(d);

(c) once obtained in accordance with clause 5A, the Planning Permit is cancelled or found to be invalid; and

(d) any change in the Control of the Developer occurs (whether by a single transaction or event or a series of transactions or events), without the consent, in writing, of the Crown (which must not be unreasonably withheld where an associated entity acquires or is proposed to acquire Control).

Major Default Notice has the meaning in clause 38.1.

Material Event means, in relation to a Developer's Builder or a Developer's Design Consultant (each a 'Specified Person'), any of the following events:

(a) any refusal by the Specified Person to provide the services to be provided by it in a proper, professional and timely manner;

(b) the Specified Person repudiates:

(i) in the case of a Developer's Builder, any Developer's Builder's Deed of Covenant and Novation to which the Developer's Builder is a party or the agreement under which it is engaged by the Developer; or

(ii) in the case of a Developer's Design Consultant, any Developer's Design Consultant Side Deed or the agreement under which it is engaged by the Developer;

(c) any material breach by the Specified Person of any professional duties or responsibilities concerning the design, supervision or construction of the Project Works, being a breach known by the Developer;

(d) if the Specified Person is a natural person, the Specified Person:

(i) dies before the completion of their work;

(ii) is by reason of illness or accident incapable of providing services in relation to the Project Works in a timely, proper or professional manner; or

(iii) is, or becomes, an insolvent under administration (as defined in section 9 of the *Corporations Act 2001* (Cwlth)) before the completion of their work;

(e) if the Specified Person is a corporation, the Specified Person:

(i) becomes an externally administered body corporate (as defined in section 9 of the *Corporations Act 2001* (Cwlth)) before the completion of their work;

(ii) is unable to pay its debts as and when they fall due for payment or determines that it is insolvent or is likely to become insolvent at some future time, before the completion of their work; or

(iii) fails to comply with any statutory demand (within the meaning of section 459F of the *Corporations Act 2001* (Cwlth)) before the completion of their work.

Maximum Daily Amount means for a day of delay or disruption that affects:

(a) the Project Works for Project Stage 1 – $500 per day; or

(b) the Project Works for Project Stage 2A – the dollar amount per day agreed under the LOI; or

(ba) the Project Works for each of Stage 2B1, Stage 2B2 or Stage 2B3 – the dollar amount per day agreed under the building contract with the Developer's Builder for each Stage; or

(bb) the Project Works for each of Stage 3A or Stage 3B – the dollar amount per day agreed under the building contract with the Developer's Builder for each Stage; or

(c) the Project Works for Project Stage 1 and/or Project Stage 2A and/or Project Stage 2B and/or Project Stage 3 – the aggregate of the applicable amounts in subclauses (a) and/or (b) and/or (ba) and/or (bb) above per day (as applicable).

Maximum Milestone Payment means, for a Milestone, the amount shown in the row for that Milestone in the third column of the table in Attachment 10.

Milestone means each milestone set out in the first column of the table in Attachment 10.

Milestone Date means, for a Milestone, the date shown or to be subsequently inserted in the row for that Milestone in the second column of the table in Attachment 10 (despite any earlier date being specified in any other provision of the Project Documents), and as extended in accordance with this Agreement including under clause 31.

Minimum Credit Rating means a credit rating of at least A- or better from Standard & Poor's (Australia) Pty Ltd or A3 or better from Moody's Investor Services Inc and its subsidiaries or their successors.

Minister means the Minister for State Growth.

Minor Default means any breach of this Agreement or a Project Document (or a representation or warranty given by the Developer under this Agreement or any other Project Document being or becoming incorrect or misleading in any respect), other than a Major Default.

Minor Default Notice has the meaning in clause 38.4.

month means calendar month.

Notice of Stage Practical Completion means a notice under clause 32.1(a).

Performance Bond has the meaning in clause 41A.

Performance Bond Secured Amounts means all amounts from time to time payable by the Developer to the Crown under or in connection with this Agreement or any other Project Document including all amounts from time to time payable by the Developer to the Crown under any indemnity.

Performance Solution has the meaning given to that term in the *NCC 2016 Building Code of Australia*.

Planning Permit Application means the application for a planning permit lodged by or on behalf of the Developer with the planning authority, namely the Glenorchy City Council under the *Land Use Planning and Approvals Act 1993* (Tas) for the carrying out of the Project Stage 2A and the Project Stage 2B on the Project Land.

Planning Permit means:

(a) subject to the satisfaction of each of the conditions precedent to the commencement of the Project Works for the Project Stage 2A in clause 5A.1(d), the planning permit, if any, issued, or taken to be issued, by the Glenorchy City

Council as the planning authority in respect of the Planning Permit Application under the *Land Use Planning and Approvals Act 1993* (Tas);

(b) any amendment to that planning permit made in accordance with section 56 of the *Land Use Planning and Approvals Act 1993* (Tas), and agreed to in writing by the Crown (including under clause 5A.1BB); and

(c) any further planning permit in relation to the Project Land which both the Crown and the Developer have agreed, in writing, is to be a planning permit for the purposes of this Agreement.

Preliminary Project Design Documentation for the Project Stage 2A and the Project Stage 2B means the documents set out in Attachment 5.

Prevention Plan has the meaning in clause 38.3.

Project has the meaning in Recital C.

Project Budget means the budget for the Project Works and set out in Attachment 3.

Project Construction Plan means each of the following:

(a) [Not used]; and

(b) for the Project Stage 2A, the construction management plan, for the carrying out of the Project Works for the Project Stage 2A, which the Crown and the Developer agree, in writing, is to be the "construction plan" for the purpose of satisfying the condition precedent in clause 5A.1(b); and

(c) for the Project Stage 2B, in relation to each Stage 2B, the construction management plan, for the carrying out of the Project Works for the Project Stage 2B, which the Crown and the Developer agree, in writing, is to be the "construction plan" for the purpose of satisfying the condition precedent in clause 5A.1B(b); and

(d) for the Project Stage 3, in relation to each Stage 3, the construction management plan, for the carrying out of the Project Works for the Project Stage 3, which the Crown and the Developer agree, in writing, is to be the "construction plan" for the purpose of satisfying the condition precedent in clause 5A.1BB(a).

Project Construction Program means the program for the construction of the Project Works in Attachment 6, as updated and replaced by the conditions precedent in clauses 5A.1(c), 5A.1B(c) and 5A.1BB(b).

Project Co-ordination Group has the meaning in clause 11.1.

Project Design Documentation means each of the following:

(a) for the Project Stage 1, the documents (including plans and specifications) set out in Attachment 4;

(b) for the Project Stage 2A and the Project Stage 2B, the documents (including plans and specifications) which the Crown and the Developer agree, in writing, are to be the project design documentation for the purpose of satisfying the condition precedent in clause 5A.1B(a); and

(c) for the Project Stage 3, the documents (including plans and specifications) set out in Attachment 16,

in each case, as varied by a Variation made in accordance with this Agreement.

Project Documents means:

(a) this Agreement;

(b) the DEC Design Development Agreement;

(c) the Project Design Documentation;

(d) each Project Construction Plan;

(e) the Project Construction Program;

(f) the DEC Lease;

(g) the Guarantee;

(h) each Developer's Builder's Deed of Covenant and Novation; and

(i) each Developer's Design Consultants Side Deed.

Project Intellectual Property means all intellectual property created by the Developer or any Developer's Agent for the purposes of carrying out the Project, including Project Design Documentation and other plans, drawings and specifications for the Project.

Project Land means the DEC Lease Area.

Project Practical Completion means that stage when Stage 2B Practical Completion for each Stage 2B has occurred, as determined in accordance with clause 32. To avoid doubt, the Project Practical Completion is not intended to be, and is not, that stage when Stage 3 Practical Completion for Project Stage 3 has occurred.

Project Site means the DEC Lease Area.

Project Stage means, as the context requires, Project Stage 1, Project Stage 2A, Project Stage 2B or Project Stage 3.

Project Stage 1 means the light demolition and strip out of the existing DEC to all internal areas where new works and finishes will occur including the removal of a range of redundant services and fitting as illustrated on drawings provided in Attachment 4. No structural demolition or external works will occur as part of the Project Stage 1.

Project Stage 1 CP Sunset Date means the date which is 5 Business Days after the date of this Agreement, or such later date, if any, which the Crown and the Developer agree in writing is to be the Project Stage 1 CP Sunset Date.

Project Stage 2A means the Project Works undertaken by the Developer's Builder pursuant to the LOI, being such Project Works which are able to be completed by the Developer's Builder in accordance with the Project Construction Program during the period of four weeks (and extended by the parties on 5 March 2021 for a further period of three weeks) commencing on the date of the LOI (as extended from time to time with the prior written consent of the Crown).

Project Stage 2A CP Sunset Date means 30 April 2021, or such later date, if any, which the Crown and the Developer agree in writing is to be the Project Stage 2A CP Sunset Date.

Project Stage 2B means the Project Works, other than the Project Works comprised in the Project Stage 1, the Project Stage 2A or the Project Stage 3, and includes, but may not be limited to:

(a) the Project Stage 2B1;

(b) the Project Stage 2B2; and

(c) the Project Stage 2B3.

Project Stage 2B CP Sunset Date means 30 June 2021, or such later date, if any, which the Crown and the Developer agree in writing is to be the Project Stage 2B CP Sunset Date.

Project Stage 2B1 means the Project Works described under the heading "Project Stage 2B1" in Attachment 12.

Project Stage 2B1 Completion has the meaning set out in the second column of the table in Attachment 13.

Project Stage 2B2 means the Project Works described under the heading "Project Stage 2B2" in Attachment 12.

Project Stage 2B2 Completion has the meaning set out in the second column of the table in Attachment 13.

Project Stage 2B3 means the Project Works described under the heading "Project Stage 2B3" in Attachment 12.

Project Stage 2B3 Completion has the meaning set out in the second column of the table in Attachment 13.

Project Stage 3 means the Project Works comprised in:

(a) the Project Stage 3A; and

(b) the Project Stage 3B.

Project Stage 3 Completion means that stage when Stage 3 Practical Completion for each Stage 3 has occurred, as determined in accordance with clause 32.

Project Stage 3A means the Project Works described under the heading "Project Stage 3A" in Attachment 14.

Project Stage 3A Completion has the meaning set out in the second column of the table in Attachment 15.

Project Stage 3B means the Project Works described under the heading "Project Stage 3B" in Attachment 14.

Project Stage 3B Completion has the meaning set out in the second column of the table in Attachment 15.

Project Stage 3 Contract Sum has the meaning given in clause 34.3A.

Project Works means the whole of the work (including design) to be executed by or on behalf of Developer for the Project in accordance with this Agreement, including:

(a) all works required or contemplated by the Planning Permit;

(b) all works required or contemplated by the Project Design Documentation;

(c) all temporary works (including the erection of Hoardings) and remedial works to enable the completion of the Project; and

(d) all landscaping works.

For the avoidance of doubt, the Project Works do not include any work on the roof of the DEC, except as expressly set out in the Project Design Documentation for the Project Works for Project Stage 3A.

Quantity Surveyor means the quantity surveyor engaged by the Crown, being Quantity Surveying Services Tasmania Pty Ltd or such other quantity surveyor engaged by the Crown.

Required Insurance Policy has the meaning given in clause 43.1(b)(i)(A).

Right includes a right, a power, a remedy, a discretion or an authority.

Services includes electricity, gas, water, other utilities, telephone cabling, data cables, other communications infrastructure and equipment, drainage and sewerage.

Sponsorship Agreement means the Sponsorship Agreement between Tasmania Basketball Pty Ltd and the Crown in Right of Tasmania (acting through the Department of State Growth).

Stage means a Stage 2B or a Stage 3.

Stage 2B means each 'Stage' of Project Stage 2B as set out in Attachment 12, and includes Project Stage 2B1, Project Stage 2B2 and Project Stage 2B3.

Stage Practical Completion means each of:

(a) a Stage 2B Practical Completion; and

(b) a Stage 3 Practical Completion.

Stage 2B Practical Completion means each of:

(a) Project Stage 2B1 Completion;

(b) Project Stage 2B2 Completion; and

(c) Project Stage 2B3 Completion.

Stage 3 means each 'Stage' of Project Stage 3 as set out in Attachment 14, and includes Project Stage 3A and Project Stage 3B.

Stage 3 Practical Completion means each of:

(a) Project Stage 3A Completion; and

(b) Project Stage 3B Completion.

Step-in Right means the Crown's Right under clause 39.4 to step-into the Project.

Sunset Date means the date which is 12 months after the Date for Project Practical Completion.

Systems and Services means all systems and services for the Project including:

(a) mechanical services ductwork;

(b) mechanical services equipment;

(c) sprinkler heads and piping;

(d) lighting (including exterior lighting and emergency lighting);

(e) electrical distribution and supply points;

(f) fire detector layout and evacuation system;

(g) communications (including data and telephone cabling);

(h) security alarms; and

(i) major plant and equipment including lifts, ventilation plant and mechanical plant.

Tenant means LK Stadiums (TAS) Pty Ltd (ACN 643 599 740).

Termination Event has the meaning in clause 39.1.

Variation means any change or addition to, or omission from, any of the Project Works required by the Project Design Documentation. For the avoidance of doubt, the requirements to prepare the Project Design Documentation for the Project Stage 2A and the Project Stage 2B do not constitute a Variation.

VOS means VOS Construction and Joinery Pty Ltd (ACN 009 558 258).

1.2 Interpretation

In this Agreement, unless the context otherwise requires:

(a) the singular includes the plural and vice versa;

(b) words importing a gender include all genders;

(c) other parts of speech and grammatical forms of a word or phrase defined in this Agreement have a corresponding meaning;

(d) a reference to a thing (including property or an amount) is a reference to the whole and each part of that thing;

(e) a reference to a group of persons includes a reference to any one or more of those persons;

(f) a reference to an annexure, an appendix, an attachment, a schedule, a party, a clause or a part is a reference to an annexure, an appendix, an attachment, a schedule or a party to, or a clause or a part of, this Agreement;

(g) a reference to any legislation or legislative provision includes subordinate legislation made under it, and any amendment to, or replacement for, any of them;

(h) writing includes marks, figures, symbols, images or perforations having a meaning for persons qualified to interpret them;

(i) a reference to a document includes:

(i) anything on which there is writing;

(ii) any thing from which sounds, images or writings can be reproduced with or without the aid of any thing else;

(iii) an amendment or supplement to, or replacement or novation of, that document; or

(iv) a map, plan, drawing or photograph;

(j) a reference to an agreement includes an undertaking, deed, agreement or legally enforceable arrangement or understanding, whether or not in writing;

(k) a reference to a 'person' includes a natural person, a partnership, a body corporate, a corporation sole, an association, a Government Body, or any other entity;

(l) a reference to a party includes that party's executors, administrators, successors and permitted assigns and substitutes;

(m) a reference to a Minister includes, as applicable, that Minister's predecessors and successors in office;

(n) a reference to a Government Body or other body or organisation that has ceased to exist, or that has been renamed, reconstituted or replaced, or the powers or functions of which have been substantially transferred, is taken to refer respectively to the Government Body or other body or organisation as renamed or reconstituted, or established or formed in its place, or to which its powers or functions have been substantially transferred;

(o) a reference to an office in a Government Body or other body or organisation includes any person acting in that office, and if the office is vacant, the person who for the time being is substantially responsible for the exercise of the duties, functions or powers of that office;

(p) mentioning any thing after the words 'includes', 'included' or 'including' does not limit the meaning of any thing mentioned before those words;

(q) a reference to a day is to be interpreted as the period of time in Tasmania commencing at midnight and ending 24 hours later;

(r) reference to a time or date in connection with the performance of an obligation by a party is a reference to the time or date in Hobart, Tasmania, even if the obligation is to be performed elsewhere; and

(s) references to '$' and 'dollars' are to Australian dollars.

1.3 Headings

Headings are included for convenience only and do not affect the interpretation of this Agreement.

1.4 No rule of construction applies to disadvantage party

In relation to the interpretation of this Agreement, no rule of construction is to apply to the disadvantage of a party because that party was responsible for the preparation of this Agreement or any part of it.

1.5 Developer's Agents

(a) The Developer must procure that each Developer's Agent:

(i) where the context requires, complies with those of the Developer's obligations under this Agreement which are necessary to be complied with in order for the Developer to fulfil its obligations to the Crown; and

(ii) not act in a way which would result in the Developer being in breach of this Agreement or which, if the action was undertaken by the Developer, would result in the Developer being in breach of this Agreement.

(b) The performance by any Developer's Agent in whole or in part of the obligations of the Developer under this Agreement will not limit or affect the Developer's obligations or liabilities under this Agreement.

(c) An act or omission of any Developer's Agent in connection with any activity relating to the Project Works (including negligent acts and omissions) is taken to be an act or omission of the Developer for the purposes of this Agreement.

1.6 Subcontracting

The Developer is not relieved of any of its obligations under this Agreement as a result of subcontracting any part of the Project Works.

1.7 Discrepancies

(a) If the Developer becomes aware of any material ambiguity, error, omission, inconsistency, discrepancy or other fault in any Project Design Documentation, the Developer must promptly notify the Crown of the ambiguity, error, omission, inconsistency, discrepancy or fault.

(b) Where a discrepancy or inconsistency involves figured dimensions and scaled dimensions the figured dimensions shall take precedence over the scaled dimensions (unless the figured dimensions are obviously wrong). Plans (forming part of the Project Design Documentation) made to larger scales and those showing particular parts of the Project will take precedence over plans (forming part of the Project Design Documentation) made to smaller scales and those for more general purposes.

1.8 Inconsistency

(a) In this clause 1.8:

Relevant Project Documents means each of the following Project Documents:

(i) this Agreement;

(ii) the Project Design Documentation;

(iii) the Project Construction Plans;

(iv) the Project Construction Program; and

(v) the DEC Design Development Agreement.

Scope, Design or Methodology Matter means a matter (including a Right, obligation or requirement) related to or concerning the scope or design of the Project Works, or the methodology for carrying out the Project Works.

(b) If there is any inconsistency between any two or more Relevant Project Documents in relation to a Scope, Design or Methodology Matter, then except in the case of manifest error and subject to clause 1.7, the Relevant Project Document that has a higher priority will prevail, to the extent of the inconsistency, over the Relevant Project Document that has a lower priority.

(c) For the purposes of clause 1.8(b), the priority of the Relevant Project Documents is the order in which those documents are listed in the definition of Relevant Project Documents in clause 1.8(a).

(d) For the purposes of this clause 1.8, a Relevant Project Document is taken not to be inconsistent with another Relevant Project Document if they are both capable of being complied with.

1.9 Land

A reference to a piece or parcel of land includes all improvements and fixtures on that land.

1.10 Crown's delegation

(a) The Crown may delegate to any person, as an agent of the Crown, the exercise, on behalf of the Crown, of any Right, function or responsibility which the Crown has under this Agreement.

(b) Any such delegation may be:

(i) to a person or to the holder of a position;

(ii) revoked, changed or re-delegated; and

(iii) unlimited or may be subject to such conditions as the Crown determines from time to time.

(c) Where the Crown delegates any Right, function or responsibility under this Agreement to a person, the Crown must promptly (and in any event before the delegation is sought to be relied on) give notice of such delegation to the Developer, including the identity and address of any person to whom such Right, function or responsibility is delegated and any changes in the identity and address of such person.

(d) The Developer is entitled to request details of the delegation of any Right, function or responsibility under this Agreement where a person purports to be acting under such a delegation.

(e) Until further written notice from the Crown to the Developer, the holder for the time being of each of the following positions is taken to be a delegate of the Crown and able to exercise, on behalf of the Crown, all of the Rights, functions and responsibilities of the Crown under this Agreement except this power of delegation:

(i) the Secretary of the Department; and

(ii) an Acting Secretary of the Department.

(f) Any person to whom Rights, functions or responsibilities are delegated by the Crown has, subject to the extent of that delegation and compliance with the terms of such delegation, the full Right and authority to act for and on behalf of and to bind the Crown under this Agreement.

(g) Nothing in this clause 1.10 affects or limits:

(i) the operation of any delegation given by the Crown independently of this Agreement; or

(ii) any power of a person to act on behalf of the Crown or the Crown.

(h) Despite any thing else in this Agreement, the Crown may by notice in writing to the Developer ratify and confirm any thing done, or purported to be done, on behalf of the Crown, by any officer or employee (within the meaning of the *State Service Act 2000* (Tas)). The Crown's ratification may be retrospective to the date on which the thing was done, or purported to have been done, by the officer or the employee.

2 Operation of this Agreement

(a) Part 1 and Part 7 of this Agreement commence on the date of this Agreement.

(b) Part 2, Part 3, Part 4, Part 5 and Part 6 of this Agreement commence on the Conditions Precedent Date. No enforceable Rights or obligations exist between the parties in relation to those parts of this Agreement before the Conditions Precedent Date except where otherwise expressly specified.

3 Developer's warranties

3.1 Warranties

The Developer warrants to the Crown that:

(a) the copy of the Planning Permit Application given by the Developer to the Department is a true and complete copy of that application as lodged, or to be lodged, with the Glenorchy City Council;

(b) the Planning Permit is not required for the Project Works forming part of the Project Stage 1;

(c) the design of the Project Works, as set out in the Project Design Documentation:

(i) complies with (or when agreed will comply with):

(A) this Agreement and the DEC Design Development Agreement;

(B) all applicable Laws; and

(C) all applicable Australian Standards (and if there are no applicable Australian Standards, then applicable international standards) (or, in the case of the National Construction Code, as overcome by a Performance Solution);

(ii) is (or when agreed will be) fit for its intended purpose stated in or ascertainable from this Agreement, the DEC Design Development Agreement and/or the Concept Design;

(iii) does not (or when agreed will not) require the incorporation of any Hazardous Substance into the Project Works or the use of any Hazardous Substance on and from the applicable Stage Practical Completion, other than where incorporated or used with the Crown's prior written and express consent;

(iv) is consistent with (or when agreed will be consistent with):

(A) Good Design and Construction Practices;

(B) site conditions on the Project Land (including geo-technical and soil conditions, infrastructure availability, utility availability and foundation adequacy) known, or which ought to be known, to the Developer from the information set out in Attachment 7; and

(C) current good practice design in relation to all reasonably foreseeable environmental conditions including prevailing weather patterns and reasonably foreseeable climatic conditions of which the Developer could reasonably be expected to be aware;

(v) is consistent with (or when agreed will be consistent with) the Concept Design (as that Concept Design is modified by the Developer with the prior written consent of the Crown);

(vi) does not (or when agreed will not) infringe any intellectual property rights of any third person; and

(vii) describes (or when agreed will describe) works that can be performed without causing damage to the DEC (except to the extent that such damage is within the specific scope of the Project Works);

(d) the Developer has sufficient funds to carry out the Project Works in accordance with this Agreement (and having regard to the funding to be made available to the Developer in accordance with this Agreement);

(e) all Project Intellectual Property has vested or will vest in the Crown in accordance with the DEC Design Development Agreement or clause 10;

(f) the Developer has disclosed (or will disclose), in writing, to the Department:

(i) all amendments and further documents lodged with the Glenorchy City Council in relation to the Planning Permit Application; and

(ii) any geo-technical investigations carried out by the Developer in relation to the DEC Land before the date of this Agreement; and

(g) as at the date of this Agreement, it is Controlled by Larry Kestleman.

3.2 Reliance

The Crown may continue to rely on the warranties in clause 3.1 despite any review, investigation, agreement, or approval of, or in relation to, any matter or thing referred to in that clause.

3.3 Indemnity

The Developer must indemnify the Crown for any Loss incurred, paid or payable by the Crown in connection with any warranty in clause 3.1 being untrue or misleading, subject to clauses 37.2 and 37.3.

4 Consents, approval and reliance by Crown

4.1 No duty of care

The Crown does not owe any duty of care to the Developer or any Developer's Agent to review any Project Design Documentation, or any other document submitted to the Crown in connection with this Agreement or the Project Documents, for errors, omissions or compliance with applicable Laws or this Agreement.

4.2 No diminution of Developer's obligations etc.

The liabilities, obligations and responsibilities of the Developer under this Agreement are not diminished by:

(a) any permission to use, comment, review, acceptance, approval, consent to proceed, consent, request to vary, or refusal to give permission to use, given by the Crown in relation to the design of the Project Works; or

(b) any approval or monitoring of any Project Works by the Crown.

4.3 Reliance

In connection with the delivery of the Project, the Developer unconditionally acknowledges and agrees that the Crown is relying, and will at all material times be entitled to rely, on:

(a) the performance by the Developer of its obligations under this Agreement and other Project Documents to which it is a party; and

(b) the exercise by the Developer's Agents of proper standards of independent professional skill, care and judgement in relation to, as applicable to each such agent, the design and/or construction of the Project Works.

5 Conditions precedent to this Agreement

5.1 Conditions precedent

Part 2, Part 3, Part 4, Part 5 and Part 6 of this Agreement only take effect if all of the following conditions precedent are satisfied or, in accordance with clause 5.5, waived, on or before the Project Stage 1 CP Sunset Date:

(a) **DEC Land Sale Agreement:** the DEC Land Sale Agreement being entered into by all parties to it and "settlement" or "completion" (however defined) under the

DEC Land Sale Agreement occurring, such that the Crown is the registered proprietor of the DEC Land.

(b) **DEC Lease:** the DEC Lease being entered into by all parties to it and becoming unconditional on the Condition Precedent Date.

(c) **Guarantee:** the Guarantee being entered into by all parties to it.

(d) **Performance Bond:** subject to clause 41A(j), the Developer providing the Performance Bond to the Crown.

(e) **Project Building Contract for the Project Stage 1:**

(i) The Developer entering into a legally binding building contract for the carrying out of the Project Works for the Project Stage 1 and becoming unconditional on the Condition Precedent Date.

(ii) The Crown notifying the Developer, in writing, that the building contract so entered into by the Developer is on terms and conditions acceptable to the Crown (which consent must not be unreasonably withheld, delayed or conditioned).

(f) **Developer's Design Consultant's Side Deeds:** The Crown and each Developer's Design Consultant (other than Incidental Developer Design Consultants) having entered into a legally binding side deed in accordance with the DEC Design Development Agreement and each such side deed being in full force and effect.

(g) **Legal opinion:** A legal opinion in respect of this Agreement, the Guarantee and the DEC Lease.

5.2 Co-operation

The parties will work co-operatively in relation to the work required to achieve satisfaction of the conditions precedent in clause 5.1.

5.3 [Not used]

5.4 Benefit

Each of the conditions precedent in clause 5.1 is for the benefit of both the Crown and the Developer.

5.5 Waiver

A condition precedent in clause 5.1 may only be waived if both the Crown and the Developer agree in writing to the waiver of that condition precedent.

5.6 Right of termination

The Crown or the Developer may terminate this Agreement by notice, in writing, to the other if, by the Project Stage 1 CP Sunset Date, all conditions precedent in clause 5.1 have not been satisfied, or under clause 5.5, waived, and provided that the party giving notice has complied with clause 5.2, and further provided that such notice is given prior to the time that the conditions precedent subsequently become satisfied or waived.

5.7 Consequences of termination

If the Crown or the Developer terminates this Agreement under clause 5.6, then:

(a) no compensation may be claimed by either party from the other; and

(b) no party will be responsible for any Loss incurred by the other party in relation to the Project or this Agreement, or incurred in connection with or arising out of the termination of this Agreement; and

(c) no party will be entitled to bring any Claim against the other party in relation to the Project or this Agreement,

except as specified in any other Project Document.

5A Conditions precedent to commencement of the Project Works for the Project Stage 2A and Project Stage 2B and Project Stage 3

5A.1 Conditions precedent for Project Stage 2A

The Developer must not commence construction of the Project Works for the Project Stage 2A until all of the following conditions precedent are satisfied or, in accordance with clause 5A.5, waived, on or before the Project Stage 2A CP Sunset Date:

(a) **[Not used]**.

(b) **Project Construction Plan:** The Crown and the Developer agreeing, in writing, a preliminary construction management plan for the carrying out of the Project Works for the Project Stage 2A.

(c) **Project Construction Program:** The Crown and the Developer agreeing, in writing, an updated Project Construction Program to incorporate the program of the Developer's Builder for the Project Stage 2A.

(d) **Planning permit for Project:**

(i) Glenorchy City Council issuing a planning permit under the *Land Use Planning and Approvals Act 1993* (Tas) in respect of the Planning Permit Application.

(ii) The Planning Permit having taken effect.

(iii) For the purposes of paragraph (ii), the Planning Permit (obtained by the Developer) will be treated as having taken effect on the last of the following dates:

(A) the date on which the Planning Permit has taken effect for the purposes of section 53 of the *Land Use Planning and Approvals Act 1993* (Tas); and

(B) where the decision of the Glenorchy City Council to grant the planning permit is the subject of an appeal to the Resource Management and Planning Appeal Tribunal (the **Tribunal**):

I. if there is no appeal to the Supreme Court from the decision of the Tribunal within the time permitted by section 25 of the *Resource Management and Planning Appeal Tribunal Act* 1993 (Tas), the day after the date on

which the time for lodging an appeal to the Supreme Court against the decision of the Tribunal has expired; and

II. if there is such an appeal to the Supreme Court and the decision to grant the permit is not overturned by the Supreme Court, the date upon which the appeal to the Supreme Court is finally determined (other than on the question of costs), and cannot be the subject of any further appeal.

(iv) The Developer notifying the Crown, in writing, that the Planning Permit is on terms and conditions satisfactory to the Developer in its absolute discretion.

(v) The Crown notifying the Developer, in writing, that the Planning Permit is on terms and conditions satisfactory to the Crown in its absolute discretion.

(e) **Project Building Contract for the Project Stage 2A:**

(i) The Developer entering into a legally binding LOI for the carrying out of the Project Works for the Project Stage 2A.

(ii) The Crown notifying the Developer, in writing, that the LOI so entered into by the Developer is on terms and conditions acceptable to the Crown (which consent must not be unreasonably withheld, delayed or conditioned and which requires approval from the Parliamentary Standing Committee on Public Works).

(f) **[Not used]**.

The parties acknowledge and agree that the conditions precedent in this clause were satisfied on 8 February 2021.

5A.1A Conditions subsequent for Project Stage 2A

The parties acknowledge and agree that the Crown, the Developer, and the Developer's Builder for the Project Stage 2A entered into a Developer's Builder's Deed of Covenant and Novation on or about 17 May 2021.

5A.1B Conditions precedent for Project Stage 2B

The Developer must not commence construction of the Project Works for the Project Stage 2B until all of the following conditions precedent are satisfied or, in accordance with clause 5A.4, waived, on or before the Project Stage 2B CP Sunset Date:

(a) **Project Design Documentation:** The Crown and the Developer agreeing, in writing, the plans and specifications for the construction of the Project Stage 2A and the Project Stage 2B, as prepared by the Developer's Design Consultants on instructions from the Developer, in consultation with the Department, on the basis of the Project Budget. Such plans and specifications must be consistent with the Preliminary Project Design Documentation for the Project Stage 2A and the Project Stage 2B, unless approved by the Crown in writing. The Crown may

refuse to agree such plans and specifications if they do not meet the requirements set out in Attachment 11.

(b) **Project Construction Plan:** The Crown and the Developer agreeing, in writing, a construction management plan for the carrying out of the Project Works for the Project Stage 2B.

(c) **Project Construction Program:** The Crown and the Developer agreeing, in writing, an updated Project Construction Program to incorporate the program of the Developer's Builder for the Project Stage 2B.

(d) **Project Building Contract for the Project Stage 2B:**

(i) The Developer entering into a legally binding building contract for the carrying out of the Project Works for the Project Stage 2B (which may be a "construct only" contract, rather than a "design and contruct" contract).

(ii) The Crown notifying the Developer, in writing, that the building contract so entered into by the Developer is on terms and conditions acceptable to the Crown (which consent must not be unreasonably withheld, delayed or conditioned and which requires approval from the Parliamentary Standing Committee on Public Works). The building contract must separately identify that part of the Contract Sum applicable to the Category 2 Project Works, and the Developer must notify the Crown whether it is electing to proceed with the Category 2 Project Works.

(e) **Developer's Builder's Deed of Covenant and Novation:**

(i) The Crown, the Developer, and the Developer's Builder under the contract described in paragraph (d) entering into a legally binding deed of covenant and novation substantially in accordance with the deed included in Attachment 1, or any other form agreed in writing to by those parties.

(ii) The deed of covenant and novation described in paragraph (i) will only be required to the extent that the deed of covenant and novation described in clause 5A.1A does not apply to the building contract for the Project Stage 2B.

(f) [Not Used].

The parties acknowledge and agree that the conditions precedent in clause 5A.1B(b) and 5A.1B(c) were satisfied on 8 February 2021.

5A.1BB Conditions precedent for Project Stage 3

The Crown acknowledges that the Developer commenced construction of the Project Works for the Project Stage 3 in March 2022.

The Crown and Developer (as applicable) agree to use best endeavours to satisfy all of the following conditions as soon as practicable, unless they are, in accordance with clause 5A.4, waived by the Crown:

(a) **Project Construction Plan:** The Crown and the Developer agreeing, in writing, a construction management plan for the carrying out of the Project Works for the Project Stage 3.

(b) **Project Construction Program:** The Crown and the Developer agreeing, in writing, an updated Project Construction Program to incorporate the program of the Developer's Builder for the Project Stage 3.

(c) **Building permit for Project Stage 3**: The Developer providing to the Crown a copy of the building permit issued by the Glenorchy City Council authorising the Project Works for the Project Stage 3, and that permit is in a form and substance satisfactory to the Crown.

(d) **Project Building Contract for the Project Stage 3**: The Developer issuing a variation notice under the existing contract between the Developer and VOS for the Project Works to direct VOS to carry out of the Project Works for the Project Stage 3 in a form and substance satisfactory to the Crown. The variation notice must separately identify the 'contract sum' applicable to the Project Stage 3.

(Note: The parties acknowledge and agree that all conditions precedent in clause 5A.1BB have been satisfied.)

5A.1C Acknowledgements

Without limiting clause 4, the Developer acknowledges and agrees that the review, comment or approval by the Crown of any conditions precedent under clause 5 or this clause 5A does not diminish the liabilities, obligations and responsibilities of the Developer under this Agreement (including, without limitation, with respect to design).

5A.2 Co-operation

The parties will work co-operatively in relation to the work required to achieve satisfaction of the conditions precedent in clauses 5A.1, 5A.1B and 5A.1BB in accordance with the Project Construction Program. The parties must comply with the tender process set out in Attachment 2 to the extent applicable to the Project Works for Project Stage 2B.

5A.3 Benefit

Each of the conditions precedent in clauses 5A.1, 5A.1B and 5A.1BB is for the benefit of both the Crown and the Developer.

5A.4 Waiver

A condition precedent in either clause 5A.1, 5A.1B or 5A.1BB may only be waived if both the Crown and the Developer agree in writing to the waiver of that condition precedent.

5A.5 Right of termination

(a) The Crown or the Developer may terminate this Agreement by notice, in writing, to the other if, by the Project Stage 2A CP Sunset Date or the Project Stage 2B CP Sunset Date (as applicable), all conditions precedent in clause 5A.1 and 5A.1B (as applicable) have not been satisfied, or under clause 5A.4, waived, provided that the party giving notice has complied with clause 5A.2) and further provided that such notice is given prior to the time that the conditions precedent subsequently become satisfied or waived.

(b) The Crown or the Developer may terminate this Agreement insofar as it relates only to Project Stage 3 by notice, in writing, to the other if all conditions precedent in clause 5A.1BB have not been satisfied, or under clause 5A.4, waived, within a reasonable time, provided that the party giving notice has complied with clause 5A.2 and further provided that such notice is given prior to the time that the conditions precedent subsequently become satisfied or waived. If this clause applies, the parties will agree amendments to this Agreement to give effect to the termination of this Agreement insofar as it relates only to Project Stage 3.

(Note: The parties acknowledge and agree that all conditions precedent in clause 5A.1BB have been satisfied.)

5A.6 Consequences of termination

(a) If the Crown or the Developer terminates this Agreement under clause 5A.5(a), then:

(i) the amount payable by the Crown to the Developer, in respect of the termination of this Agreement, is limited to the lesser of:

(A) the Relevant Proportion of the Contract Sum *less* any payments in respect of the Contract Sum previously paid by the Crown. The **Relevant Proportion** is that amount which bears the same proportion to the Contract Sum as the proportion of the total Project Works completed, in accordance with this Agreement, up to the date of termination; and

(B) [Not used];

(ii) no other compensation may be claimed by a party from the other;

(iii) no party will be responsible for any Loss incurred by the other party in relation to the Project or this Agreement, or incurred in connection with or arising out of the termination of this Agreement; and

(iv) no party will be entitled to bring any Claim against the other party in relation to the Project or this Agreement,

except as specified in any other Project Document or for breach of this Agreement.

(b) If the Crown or the Developer terminates this Agreement insofar as it relates to Project Stage 3 under clause 5A.5(b), then:

(i) the amount payable by the Crown to the Developer, in respect of the termination of this Agreement (insofar as it relates to Project Stage 3), is limited to the lesser of:

(A) the Relevant Proportion of the Project Stage 3 Contract Sum *less* any payments in respect of the Project Stage 3 Contract Sum previously paid by the Crown. The **Relevant Proportion** is that amount which bears the same proportion to the Project Stage 3 Contract Sum as the proportion of the total Project Works for Project Stage 3 completed, in accordance with this Agreement, up to the date of termination; and

(B) [Not used];

(ii) no other compensation may be claimed by a party from the other in respect of Project Stage 3;

(iii) no party will be responsible for any Loss incurred by the other party in relation to Project Stage 3, or incurred in connection with or arising out of the termination of this Agreement insofar as it relates to the Project Works for Project Stage 3; and

(iv) no party will be entitled to bring any Claim against the other party in relation to Project Stage 3 or this Agreement insofar as it relates to Project Stage 3.

except as specified in any other Project Document or for breach of this Agreement.

6 Condition subsequent – DEC

6.1 Damage or destruction to DEC

(a) The Crown may terminate this Agreement by notice, in writing, to the Developer if, after the date of this Agreement and before the Conditions Precedent Date, the DEC is materially damaged or destroyed.

(b) For the purposes of clause 6.1(a), the DEC will be taken to be materially damaged if the DEC is damaged or destroyed and the estimated cost to the Crown of making good the damage or destruction is, in the opinion of the Crown (not including the damage or demolition contemplated in the Project Works), likely to exceed $2,000,000.00.

(c) The right to terminate in clause 6.1(a) must be exercised not later than 40 Business Days after the event which causes the damage or destruction.

6.2 Consequences of termination

If the Crown terminates this Agreement under clause 6.1, then:

(a) no compensation may be claimed by the Developer from the Crown;

(b) no party will be responsible for any Loss incurred by the other party in relation to the Project or this Agreement, or incurred, in each case in connection with or arising out of the termination of this Agreement under clause 6.1; and

(c) [Not Used].

6.3 Re-instatement obligation

If the DEC is materially damaged or destroyed before the Conditions Precedent Date, and the Crown elects not to terminate this Agreement in accordance with clause 6.1(a), then:

(a) the Crown must promptly make good any damage or destruction to the DEC to the extent necessary to enable the Developer to proceed with the Project Works; and

(b) the Crown and the Developer must, in good faith, use reasonable endeavours to agree a new Project Construction Program.

7 Project matters

7.1 Project risks – risks allocated to the Developer

(a) Except as otherwise set out in this Agreement, the Developer unconditionally accepts responsibility for all risks (including legal, financial, time and cost) in connection with the following:

(i) the design, construction and/or carrying out of the Project Works:

(ii) the Project Works exceeding the funding available to the Developer (including under this Agreement);

(iii) the condition of the Project Land and the DEC (except for risks assumed by the Crown pursuant to clause 7.2);

(iv) any requirement, pursuant to an applicable Law, to carry out any further works (not shown in the Project Design Documentation) to the DEC which arises in connection with any of the following:

(A) the Project; or

(B) the Project Works;

(v) loss or damage to the DEC caused by any activity related to the carrying out of the Project Works (except to the extent loss or damage is caused or contributed to by the Crown or the Crown's Agents);

(vi) Claims by third parties (other than the Crown's Agents) related to the carrying out of the Project Works;

(vii) the Developer's obligation to comply with applicable Laws in relation to the carrying out of the Project Works;

(viii) any act or omission of any person engaged in any activity related to the carrying out of the Project Works (other than the Crown or the Crown's Agents);

(ix) any rise or fall in the cost of the Project Works (other than for the Project Works for Project Stage 3);

(x) any risk or responsibility allocated to the Developer by operation of Law; and

(xi) complying with its obligations under this Agreement or any other Project Document.

(b) As between the Crown and the Developer, the Developer is responsible for, and must pay and discharge as and when they fall due for payment, all liabilities, fees, costs, charges or expenses resulting from bearing responsibility for the risks referred to in clause 7.1(a)(i).

(c) The Developer must not make or bring any Claim against the Crown in respect of any Loss to the extent incurred, paid or payable by the Developer as a result of any risk accepted by the Developer in clause 7.1(a)(i).

7.2 DEC – Latent Conditions

(a) For the purposes of this Agreement, "**Latent Conditions**" are:

(i) any Hazardous Substance on the Project Site and its near surrounds, except as introduced by or on behalf of the Developer; and

(ii) other physical conditions on the Project Site and its near surrounds, including artificial things but excluding weather conditions,

in each case, which differ materially from what should reasonably have been anticipated by a competent developer or Builder as at the date of this Agreement if the Developer had examined all written information made available to the Developer by the Crown and listed in Attachment 7.

(b) To the extent that the Developer incurs any actual costs in dealing with Latent Conditions which:

(i) fall outside and are additional to the initial "contract sums" (however defined) under the building contracts (including the LOI) with the Developer's Builders;

(ii) are necessary to be incurred so as to ensure that the Project Works comply with this Agreement including the direction of an Adjudicator; and

(iii) have been notified to the Crown in writing within a reasonable time prior to being incurred,

such actual costs will be "**Latent Condition Costs**" for the purposes of clauses 34.1 and 34.3A. The Developer must provide the Crown a copy of any statement or notice provided to it by a Developer's Builder in respect of a Latent Condition promptly following receipt.

7.3 DEC – Environmental Conditions

(a) For the purposes of this Agreement, "**Environmental Conditions**" means:

(i) Hazardous Substances on the DEC Land which are below the ground (which for the avoidance of doubt does not include within the structure of the DEC); or

(ii) Asbestos or anything that contains Asbestos within the structure of the DEC.

To avoid doubt, Hazardous Substances below the ground underneath the structure of the DEC are not considered to be within the structure of the DEC.

(b) To the extent that the Developer incurs any actual costs in dealing with Environmental Conditions which:

(i) fall outside and are additional to the initial "contract sums" (however defined) under the building contracts (including the LOI) with the Developer's Builders;

(ii) are necessary to be incurred so as to ensure that the Project Works comply with this Agreement including the direction of an Adjudicator; and

(iii) have been notified to the Crown in writing within a reasonable time prior to being incurred,

then:

(iv) in respect of an Environmental Condition under clause 7.3(a)(i) – all such actual costs; or

(v) in respect of an Environmental Condition under clause 7.3(a)(ii) – all such actual costs in excess of $15,000,

will be "**Environmental Condition Costs**" for the purposes of clauses 34.1 and 34.3A. The Developer must provide the Crown a copy of any statement or notice provided to it by a Developer's Builder in respect of an Environmental Condition promptly following receipt.

7.4 Headworks

(a) For the purposes of this Agreement, "**Headworks**" means headworks in respect of roads.

(b) To the extent that the Developer incurs any actual costs in dealing with Headworks which:

(i) fall outside and are additional to the initial "contract sums" (however defined) under the building contracts (including the LOI) with the Developer's Builders;

(ii) are necessary to be incurred so as to ensure that the Project Works comply with this Agreement and the Planning Permit, including the direction of an Adjudicator; and

(iii) have been notified to the Crown in writing within a reasonable time prior to being incurred,

such actual costs will be "**Headworks Costs**" for the purposes of clause 34.1.

7.5 Information

(a) The Crown does not give any warranty to the Developer as to accuracy or completeness of any information, material or data provided by the Crown to the Developer or any Developer's Agent in relation to the Project Land.

(b) [Not used].

7.6 Disclosure

(a) Upon being requested to do so in writing by a party (**Requesting Party**), each other party (**Other Party**) must promptly disclose to the Requesting Party any information or documents (including, in the case where the Developer is the Other Party, reports prepared by any Developer's Design Consultant) held by or on behalf of the Other Party relating to:

(i) any risks referred to in clause 7.1(a)(i); or

(ii) the design, construction, completion or cost of the Project or any Project Works.

(b) Nothing in this clause 7.6 requires a party to disclose any legal advice obtained by that party or any report obtained for the purposes of obtaining such legal advice.

8 Project liabilities and costs

8.1 General

Except for any liability, fee, cost or expense expressly payable by the Crown to the Developer under this Agreement or any other Project Document, the Developer is responsible for, and must pay and discharge as and when they fall due for payment, all liabilities, fees, costs and expenses (including third party fees, costs and expenses) incurred or payable by the Developer in connection with the Project, including in connection with:

(a) the performance by the Developer, and the discharge, of its obligations under this Agreement and the other Project Documents; or

(b) bearing responsibility for the risks referred to in clause 7.1 (subject to the qualifications and limitations therein).

9 Marketing and promotion

9.1 Promotion of the Project

(a) The Developer must include in all promotional or marketing material, an acknowledgement or representation that the Project is funded by the Tasmanian Government.

(b) The acknowledgement referred to in paragraph (a) must be in a form and substance approved in writing by the Crown and once approved, may be used by the Developer on all subsequent promotional or marketing material until the Crown expressly advises otherwise in writing.

9.2 Marketing and promotional materials

The parties agree to consult with each other before issuing, or authorising any other person to issue, any promotional or marketing material in connection with the Project. Nothing in this clause limits the Sponsorship Agreement.

9.3 [Not used]

9.4 Outdoor advertising

(a) The Developer must not, and must not allow any other person to, enter into agreements with third parties under which a third party is able to use any part of the Project Site for the purpose of advertising without the written consent of the Crown.

(b) The Developer must not, and must not allow any other person to, use any exterior part of the Project Site and any Hoardings around the Project Site for the

purposes of advertising without the written consent of the Crown (such consent not to be unreasonably withheld).

(c) The Developer may, with the prior written consent of the Crown (such consent not to be unreasonably withheld), erect a project 'Directory Board' on the Hoardings and may also provide signage for a Developer's Builder. The Directory Board must recognise the involvement of the Crown in the Project.

10 Intellectual Property

Clause 7 of the DEC Design Development Agreement applies to this Agreement as if it was set out in full and as if references to "Contract Material" therein include the Project Design Documentation, the Project Construction Plans, the Project Budget, the Project Construction Program and all other Project Intellectual Property.

11 Project Co-ordination Group

11.1 Project Co-ordination Group

The Developer must ensure that a group (**Project Co-ordination Group**) is established on the date of this Agreement. The Project Co-ordination Group will comprise:

(a) a representative of the Department;

(b) the Department's project manager (if any) in relation to the Project;

(c) two representatives of the Developer;

(d) any other person reasonably required by the Developer or the Crown; and

(e) a representative of each Developer's Builder until the date of project practical completion (however defined) under their relevant building contract with the Developer.

11.2 Project Co-ordination Group functions

The functions of the Project Co-ordination Group include:

(a) receiving information about the progress towards satisfying the conditions precedent in clauses 5.1, 5A.1 and 5A.1B; and

(b) after commencement of the Project Works:

(i) receiving information about:

(A) the progress of the Project Works (when measured against the Project Construction Program) including anticipated delays and remedial action;

(B) the quality of work and any remedial measures required; and

(C) any matter which is the subject of a report required by clause 22;

(ii) responding to enquiries from the Crown in relation to the Project; and

(iii) [Not used].

11.3 Status of Project Co-ordination Group

(a) The Project Co-ordination Group:

(i) has no legal responsibility;

(ii) has no legal status;

(iii) does not have any power:

(A) to enter into any obligation or accept any liability;

(B) to make any commitment on behalf of a party;

(C) to require any party to act, or refrain from acting, in any way; or

(D) to give any instructions or directions to any person.

(b) Information exchanged at a Project Co-ordination Group meeting does not constitute a Notice for the purposes of this Agreement.

11.4 Project Co-ordination Group meetings

(a) The Project Co-ordination Group must meet in Hobart (or by electronic means):

(i) from the date of this Agreement until the Date of Project Practical Completion, on a monthly basis and at any other agreed times; and

(ii) from the date following Project Practical Completion until the Date of Project Stage 3 Completion, on a bi-monthly basis (to avoid doubt, once every two months) and at any other agreed times.

(b) The Developer must meet all costs of its personnel and involvement in the Project Co-ordination Group.

(c) A representative of the Developer will convene and chair all meetings of the Project Co-ordination Group.

(d) The Developer must prepare draft minutes of the meetings and provide them to the Crown within three Business Days of the meeting occurring. A representative of the Crown will finalise the minutes of the meetings at the start of the next meeting and provide them to the parties.

11.5 Crown's obligations

The Crown must meet all costs of its involvement in the Project Co-ordination Group (including the costs of involvement of any personnel and any consultants engaged by the Crown).

12 [Not used]

13 [Not used]

14 [Not used]

15 Building Licence

15.1 Grant

The Crown grants to the Developer, and the Developer accepts from the Crown, a licence (the **Building Licence**) for the Developer and the Developer's Agents to access, use and occupy the Building Licence Area for the Building Licence Term. The Building Licence is granted subject to the terms and conditions specified in this Agreement.

The Developer acknowledges that:

(a) the Tenant will be entitled to occupy part of the Building Licence Area from the Date of Stage 2B Practical Completion for Project Stage 2B1; and

(b) the Developer will have no entitlement to any relief, compensation or other claim in relation to any act or omission of the Tenant in respect of the Tenant's occupation of the Building Licence Area prior to the end of the Building Licence Term.

15.2 Holding over

If the Developer, with the Crown's consent, continues to use the Building Licence Area after the Building Licence Term expires then the Developer will be taken to be using the Building Licence Area on a monthly licensee. This clause 15 continues to apply to a monthly licence, to the extent that the provisions of this clause 15 are capable of application to a monthly licence. The monthly licence may be terminated immediately by written notice by the Crown or the Developer to the other.

15.3 General financial obligations related to Building Licence

(a) **No licence fee:** No licence fee is payable by the Developer to the Crown in respect of the Building Licence.

(b) **Services:** The Developer must pay all consumption based charges for telephones, data lines, electricity, water, gas and other services supplied to or metered upon the Building Licence Area during the Building Licence Term and which are used by the Developer or any Developer's Agent.

15.4 Use of Building Licence Area

(a) The Developer must use, and must ensure that each Developer's Agent only uses, the Building Licence Area during the Building Licence Term for the purposes of carrying out the Project Works and the rectification of Defects on the Building Licence Area.

15.5 No use of Building Licence Area for sales or services

The Developer must not use the Building Licence Area:

(a) to sell or hire out, offer or hold for sale or hiring out any goods; or

(b) to provide, offer to provide or hold out as willing to provide, any service or facility for any monetary or other consideration.

15.6 No fires

The Developer must not light, and must ensure that no Developer's Agent lights, any fire on the Building Licence Area without the Crown's prior written consent.

15.7 No assignment

The Developer must not assign or sub-licence (except to a Developer's Agent), share, transfer, grant any mortgage or charge over, or create any other security interests in, or otherwise deal with, Developer's Rights in respect of the Building Licence Area, without the Crown's prior written consent.

16 [Not used]

17 [Not used]

18 [Not used]

PART 3: DELIVERY OF PROJECT WORKS

19 Development restriction

(a) The Developer must not carry out any development on the Project Site except in accordance with this Agreement and the Planning Permit.

(b) For the purposes of this clause 19, 'development' includes any thing or activity that is development for the purposes of the *Land Use Planning and Approvals Act 1993* (Tas).

20 Developer's Design Consultants

20.1 Appointment of Developer's Design Consultants

(a) The Developer must not engage any further person as a Developer's Design Consultant without the written approval of the Crown (such approval not to be unreasonably withheld).

(b) The Developer must not terminate the appointment of a Developer's Design Consultant without the prior written approval of the Crown (such approval not to be unreasonably withheld and must not be withheld if the continued appointment

of that Developer's Design Consultant will or is reasonably likely to cause the Developer to breach the DEC Design Development Agreement or this Agreement).

(c) If a Material Event or termination occurs in relation to any Developer's Design Consultant:

(i) the Developer and the Crown must consult as to whether the Developer's Design Consultant should be replaced; and

(ii) following the consultation under paragraph (i), the Developer must replace the Developer's Design Consultant with another person (who becomes a Developer's Design Consultant) if the Crown, acting reasonably, considers that the Crown's interests would be materially prejudiced if the Developer's Design Consultant were not replaced.

20.2 Developer to notify Crown of certain matters

The Developer must promptly inform, in writing, the Crown if:

(a) the Developer forms the view that the Developer's Design Consultant (other than an Incidental Developer Design Consultant) is not likely to ultimately execute a side deed with the Crown in accordance with clause 20.4; or

(b) a Material Event, known to the Developer, occurs in relation to any Developer's Design Consultant.

20.3 Responsibility for Developer's Design Consultants

As between the Developer and the Crown:

(a) the Developer is responsible to the Crown for the services provided by each Developer's Design Consultant in relation to the Project (whether before or after the date of this Agreement);

(b) the Developer is responsible for all fees and charges of each Developer's Design Consultant; and

(c) the engagement of a Developer's Design Consultant by the Developer does not reduce, limit or affect the liabilities, obligations and responsibilities of the Developer under this Agreement or any other Project Document, provided that if the Crown recovers an amount from an Approved Consultant pursuant to an Approved Consultant's Side Deed in respect of a liability of the Approved Consultant, the amount recoverable from the Developer in respect of the Developer's corresponding liability will be reduced by the amount so recovered from the Approved Consultant (and, if the Crown has already recovered an amount from the Developer, the parties must make payments between them to give effect to this clause).

20.4 Developer's Design Consultant's Side Deed

The Developer must procure each Developer's Design Consultant (other than an Incidental Developer Design Consultant) to enter into a side deed with the Crown in accordance with the DEC Design Development Agreement or another form required by the Crown (acting reasonably).

20.5 No instructions

The Crown must not directly give any instructions or directions to a Developer's Design Consultant in relation to the Project Works. This clause does not apply:

(a) in the case of an emergency;

(b) where the Developer is in breach of this Agreement by not giving an instruction to the Developer's Design Consultant, and such an instruction is given on a reasonable basis by the Crown to protect the interests of the Crown;

(c) to a notice or direction which the Crown is expressly permitted to give under the DEC Lease; or

(d) if and to the extent the Crown has stepped-into the Project, any instruction or direction contemplated by or necessary for the exercise of the Step-in Right.

20.6 General

The Developer must procure each Developer's Design Consultant:

(a) to comply with the Developer's obligations under this Agreement, and any other Project Documents, to the extent the Developer's Design Consultant is engaged to perform any such obligation;

(b) to act in good faith in relation to the Developer's Design Consultant's activities in relation to the Project; and

(c) to exercise the standards of care, skill and diligence expected of an independent professional.

21 Developer's Builders

21.1 Appointment of Developer's Builders

(a) The Developer must not engage any person as a Developer's Builder without the written approval of the Crown (such approval not to be unreasonably withheld, delayed or conditioned).

(b) The Developer must not terminate the appointment of a Developer's Builder without the prior written approval of the Crown (such approval not to be unreasonably withheld and must not be withheld if the continued appointment of that Developer's Builder will or is reasonably likely to cause the Developer to breach this Agreement).

(c) If a Material Event or termination occurs in relation to any Developer's Builder:

(i) the Developer and the Crown must consult as to whether that Developer's Builder should be replaced; and

(ii) following the consultation under paragraph (a), the Developer must replace that Developer's Builder with another person (who becomes a Developer's Builder) if the Crown, acting reasonably, considers that the Crown's interests would be materially prejudiced if that Developer's Builder were not replaced.

21.2 Developer to notify Crown of certain matters

The Developer must promptly inform, in writing, the Crown if:

(a) the Developer forms the view that the Developer's Builder in respect of the Project Works for Project Stage 2A or Project Stage 2B is not likely to ultimately execute a Developer's Builder's Deed of Covenant and Novation with the Developer and the Crown in accordance with clause 21.4; or

(b) a Material Event occurs in relation to any Developer's Builder.

21.3 Responsibility for Developer's Builders

As between the Developer and the Crown:

(a) the Developer is responsible to the Crown for the works carried out by each Developer's Builder in relation to the Project (whether before or after the date of this Agreement);

(b) the Developer is responsible for all amounts payable to each Developer's Builder; and

(c) the engagement of a Developer's Builder by the Developer does not reduce, limit or affect the liabilities, obligations and responsibilities of the Developer under this Agreement, provided that if the Crown recovers an amount from a Developer's Builder pursuant to a Developer's Builder's Deed of Covenant and Novation in respect of a liability of the Developer's Builder, the amount recoverable from the Developer in respect of the Developer's corresponding liability will be reduced by the amount so recovered from the Developer's Builder (and, if the Crown has already recovered an amount from the Developer, the parties must make payments between them to give effect to this clause).

21.4 Developer's Builder's Deed of Covenant and Novation

The Developer must procure each Developer's Builder in respect of the Project Works for Project Stage 2A and Project Stage 2B to enter into a deed of covenant and novation with the Developer and the Crown in the form contained in Attachment 1 or another form required by the Crown (acting reasonably).

21.5 No instructions

The Crown must not directly give any instructions to a Developer's Builder in relation to the Project Works. This clause does not apply:

(a) in the case of an emergency;

(b) where the Developer is in breach of this Agreement by not giving an instruction to the Developer's Builder, and such an instruction is given on a reasonable basis by the Crown to protect the interests of the Crown;

(c) to a notice or direction which the Crown is expressly permitted to give under the DEC Lease; or

(d) if and to the extent the Crown has stepped-into the Project, any instruction or direction contemplated by or necessary for to the exercise of the Step-in Right.

21.6 General

The Developer must procure each Developer's Builder:

(a) to comply with the Developer's obligations under this Agreement, and any other Project Documents, to the extent the Developer's Builder is engaged to perform any such obligation;

(b) to act in good faith in relation to that Developer's Builder's activities in relation to the Project; and

(c) to exercise the standards of care, skill and diligence expected of an independent professional builder carrying out works.

22 Developer's reporting and related obligations

22.1 Reporting before Project Co-ordination Group meetings

At least two Business Days prior to each proposed meeting of the Project Co-ordination Group, the Developer must provide a written report to the Crown, in a form approved by the Crown, setting out:

(a) the progress and status of the construction of the Project (including the anticipated date on or by which the Developer expects to achieve each Milestone, Stage Practical Completion and Project Practical Completion) and progress and status of the conditions precedent in clause 5A;

(b) details of any activities which are behind the progress anticipated in the Project Construction Program;

(c) any foreseen delays to future activities on the Project Construction Program;

(d) the likely effect on the Project Construction Program of any actual or foreseen delays;

(e) the status of all activities on which work is being undertaken (as measured against the Project Construction Program);

(f) details of all consultants currently employed or proposed to be employed by the Developer or otherwise in connection with the Project Works, and manpower allocation to achieve Project Practical Completion and Project Stage 3 Completion;

(g) as a percentage and as a dollar amount, the amount of the budget for the Project Works which has been expended as at that date;

(h) the estimate of cost to complete the Project Works;

(i) site safety status reports, including details of lost time from injuries;

(j) strategies implemented or proposed to overcome problems, including corrective action statements for catching up on delays or lost time or avoiding potential delays;

(k) the progress in obtaining any Approvals;

(l) industrial relations issues affecting or which are likely to affect the Project Works;

(m) the status of any material disputes that have arisen in connection with the Project Works; and

(n) any other matter required by the Crown (acting reasonably).

22.2 General reporting obligation

The Developer must provide to the Crown notice of the following matters as soon as practicable:

(a) any finds of Historical Artefacts;

(b) the presence or discovery of Latent Conditions, Environmental Conditions or Hazardous Substances;

(c) any industrial relations issues affecting the progress of the Project Works;

(d) the occurrence of a Minor Default, a Major Default or a Termination Event; or

(e) any major safety incidents affecting the progress of the Project Works.

If reasonably requested by the Crown, the Developer must provide a written report to the Crown in relation to a matter above or any other matter concerning the Project Works or the Project which the Crown reasonably requires.

22.3 Remedial action

The Developer must advise the Crown promptly (in writing, if the Crown requires) of suitable courses of action in relation to matters raised in Project Co-ordination Group meetings.

22.4 Notification of Default

The Developer must immediately notify the Crown in writing of any Default.

22.5 Records in relation to Project

The Developer must establish, maintain and make available to the Crown for inspection in Hobart or by electronic means all records and registers:

(a) which the Crown from time to time reasonably requires in connection with the Project; and

(b) concerning the Project which the Developer is required to establish and maintain at Law.

23 Crown's inspections and collection of memorabilia

(a) The Crown may at all reasonable times on Business Days and upon reasonable prior notice to the Developer, enter any part of the Project Site then occupied by the Developer or a Developer's Builder:

(i) to inspect the status of the Project Works;

(ii) to ascertain Developer's compliance with its obligations under this Agreement or any other Project Document;

(iii) to verify any matter contained in a report provided by the Developer to the Crown;

(iv) to ascertain any matter in respect of which the Developer is required to report to the Crown under this Agreement;

(v) for the purpose of collecting and/or returning the DEC Memorabilia;

(vi) for the purpose of carrying out investigations in respect of Asbestos; or

(vii) in the case of the car park area, for the MRA Toy Run.

(b) If the Crown exercises his or her right to enter the Project Site under clause 23(a), the following conditions apply:

(i) the Crown must give prior notice to the Developer of his or her intention to enter and inspect the Project Site;

(ii) other than in the case of urgency, the Developer must receive the notice at least two Business Days before the Crown enters and inspects the Project Site;

(iii) the Crown must be accompanied by the Developer or the Developer's nominated representative (if they are made available); and

(iv) the Crown must comply with the Developer's and a Developer's Builder's reasonable requirements in relation to site safety, risks and security and must not unreasonably and unnecessarily interfere with or disrupt the Developer's or a Developer's Builder's operations.

(c) The Crown's Rights under this clause 23 may be exercised by any employee or officer employed in the Department or any Crown's Agent.

(d) Nothing in this clause 23 limits the Crown's Rights under any Law, any other provision of this Agreement or any other Project Document.

(e) Without limiting this clause 23, the Quantity Surveyor may enter any part of the Project Site then occupied by the Developer or a Developer's Builder for the purposes of performing its functions under the Project Documents and provided that it complies with the Developer's and a Developer's Builder's reasonable requirements in relation to site safety, risks and security and must not unreasonably and unnecessarily interfere with or disrupt the Developer's or a Developer's Builder's operations.

24 Crown's consultants

24.1 General

(a) The Crown may, at its own cost, engage consultants to investigate and report to the Crown in relation to any matter referred to in clause 23(a).

(b) The Developer must fully cooperate, and must ensure that each Developer's Agent fully cooperates, with the reasonable requests of any such consultants engaged by the Crown.

24.2 Quantity Surveyor

(a) The parties acknowledge and agree that, without limitation to clause 24.1, the Crown has engaged (or will engage) the Quantity Surveyor.

(b) The Crown will ensure that the terms of the Quantity Surveyor's appointment require it to act promptly, honestly, impartially and in good faith in respect of the functions of the Quantity Surveyor under the Project Documents. Without limiting this, the Crown must ensure that the terms of the Quantity Surveyor's appointment require the Quantity Surveyor to provide a written statement in respect of the amount properly due and payable to the Developer in accordance with clauses 34.3 and 34.3A within 3 Business Days of the Quantity Surveyor attending the Project Site to review the relevant Project Works, provided that the Developer must ensure that such attendance is on a regular date in each month to allow the Quantity Surveyor to plan its resourcing.

(c) The parties acknowledge and agree that the Quantity Surveyor is a Crown's Agent for the purposes of this Agreement.

25 Project Works

25.1 General construction obligations

The Developer must procure the construction and completion of the Project Works:

(a) in accordance with:

(i) the Project Design Documentation;

(ii) the Project Construction Plans;

(iii) the Project Construction Program;

(iv) this Agreement; and

(b) in a manner that is consistent with the Project Design Documentation, each Project Construction Plan and the Project Construction Program; and

(c) in conformity, and so as to ensure compliance, with:

(i) all Approvals (and in the case of the Planning Permit, the Developer must comply with all conditions contained in the Planning Permit which are expressed to be imposed on 'the owner' or 'Developer' except where the obligations imposed on the owner may only be performed by the owner (but without limiting the obligations of the Tenant under the DEC Lease));

(ii) all applicable Laws, including Laws relating to:

(A) building;

(B) the environment;

(C) the treatment, removal and/or disposal of Hazardous Substances including contaminated soil; and

(D) workplace health and safety;

(iii) the requirements of any relevant Government Body (including all directions, notices and orders issued by any Government Body);

(iv) any reasonable directions given by the Crown within the scope of this Agreement; and

(v) relevant mandatory Australian Standards (or, in the case of the National Construction Code, as overcome by a Performance Solution);

(d) so as to ensure that the Project Works are fit for their intended purpose stated in or ascertainable from this Agreement, the DEC Design Development Agreement and/or the Concept Design;

(e) using materials specified in the Project Design Documentation, and in the absence of any specific description, then using materials of merchantable quality which are fit for their intended purpose;

(f) using Good Design and Construction Practices; and

(g) in such a manner so as to:

(i) ensure that no physical damage is caused to any property on, adjacent to, or in the vicinity of, the Project Land (including the DEC (except for damage which is within the scope of the Project Works));

(ii) without limiting clause 27, prevent nuisance and unreasonable disturbance to adjoining owners of land so far as practicable; and

(iii) ensure the security of the Leased Area.

25.2 Completion

(a) The Developer must:

(i) [Not Used];

(ii) reach the stage of Project Practical Completion on or before the Date for Project Practical Completion;

(iii) for each Stage 2B, reach the stage of Stage 2B Practical Completion for that Stage 2B on or before the relevant Date for Stage 2B Practical Completion; and

(iv) for Stage 3, use reasonable endeavours to reach the stage of Stage 3 Practical Completion for that Stage 3 on or before the relevant Date for Stage 3 Practical Completion.

(b) If the Developer fails to reach a Milestone on or before the applicable Milestone Date, or the stage of Stage Practical Completion for a Stage on or before the relevant Date for Stage Practical Completion for that Stage (as applicable), the Developer must within 10 Business Days submit a plan to the Crown which sets out (in reasonable detail):

(i) the reasons why the Developer has not reached the Milestone on or before the applicable Milestone Date, or the stage of Stage Practical Completion on or before the Date for Stage Practical Completion for that Stage, (as applicable);

(ii) the date that the Developer anticipates it will reach each Milestone and each Stage Practical Completion (as applicable);

(iii) the Developer's current program;

(iv) a narrative commentary of the key risks to maintaining that current program; and

(v) details of the steps which the Developer will take to diligently pursue reaching each Milestone and each Stage Practical Completion (as applicable).

(c) The Developer must provide any other information in connection with the plan as reasonably requested by the Crown.

(d) If, in the case of a Stage 2B or a Milestone (but, to avoid doubt, not in the case of any stage of Stage 3):

(i) the plan does not demonstrate that the Developer is diligently pursuing each missed Milestone and each missed Stage 2B Practical Completion; or

(ii) the Developer fails to diligently pursue a missed Milestone and each missed Stage 2B Practical Completion in accordance with its plan,

this will be a Major Default for the purposes of this Agreement.

(dd) In the case of a Stage 3, if the Developer does not reach a Stage 3 Practical Completion on the relevant Date for Stage 3 Practical Completion, the Developer must diligently pursue any missed Stage 3 Practical Completion in accordance with its plan.

(e) Nothing in this clause limits clause 38, clause 39 or clause 41.

25.2A Deliverables after Project Practical Completion

By no later than 20 Business Days of the Date of Project Practical Completion, the Developer must deliver to the Crown:

(a) a set of "as built" drawings for the Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B (both in hard copy and electronically);

(b) a copy of all operating manuals for the Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B (electronically); and

(c) a copy of all supplier warranties for the Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B (in hard copy or electronically).

25.2B Deliverables after Project Stage 3 Completion

By no later than 20 Business Days of the Date of Stage 3 Practical Completion, the Developer must deliver to the Crown:

(a) a set of "as built" drawings for the Project Works for Project Stage 3 (both in hard copy and electronically);

(b) a copy of all operating manuals for the Project Works for Project Stage 3 (electronically); and

(c) a copy of all supplier warranties for the Project Works for Project Stage 3 (in hard copy or electronically).

25.3 Rectification of Defects identified during construction

(a) The Developer must, at its cost and expense, and in a proper and workmanlike manner, promptly (and in any event within a reasonable time) rectify any Defects in the Project Works for a Stage which are notified before the relevant Date of Stage Practical Completion by the Crown to the Developer in writing. To avoid doubt, the Developer is not required to rectify such Defects before the relevant Date of Stage Practical Completion and may rectify such Defects after the relevant Date of Stage Practical Completion, and Stage Practical Completion may occur even if the Developer has not completed its obligations under this clause, provided that nothing in this clause limits the definition of "Stage Practical Completion".

(b) If there is a dispute between the Crown and the Developer in relation to the rectification of any Defects in the Project Works (including any dispute as to what constitutes a reasonable time to rectify a Defect), the Crown or the Developer may give to the other a Dispute Notice.

(c) If the Crown or the Developer gives a Dispute Notice and the matters in dispute are not resolved by agreement within the period of 10 Business Days after the giving of the Dispute Notice, the matters in dispute in relation to the rectification of any Defects will be determined by an Adjudicator.

25.4 Geo-technical warranty

(a) The Developer warrants to the Crown that, to the Developer's knowledge, the performance of the Project Works will have no material adverse impact on the existing subsurface conditions (excluding any impact on Hazardous Substances on the DEC Land which are below the ground), including the soil conditions, ground water hydrology and geology of the land on which the DEC is constructed or derives support.

(b) The Developer undertakes not to introduce Hazardous Substances in, on or under the DEC Land, subject to clause 3.1(c)(iii).

25.5 Dilapidation surveys

(a) Prior to the Developer commencing the Project Works for the Project Stage 2B, the Crown must undertake or procure, and provide to the Developer, dilapidation surveys of the DEC.

(b) The Crown must undertake or procure, and provide to the Developer, up-dated dilapidation surveys of the DEC upon completion of the Project Works.

(c) The dilapidation surveys required under this clause must be prepared in a manner and to a level of detail which:

(i) satisfies the requirements of section 132 of the *Building Act 2000* (Tas);

(ii) accurately records the condition of the DEC; and

(iii) enables a reliable view to be taken as to any damage which a building may suffer following the undertaking of the survey under clause 25.5(a).

25.6 Safety and preservation work to prevent deterioration

The Developer must do such things as may reasonably be required to:

(a) protect and secure the Project Works against trespassers;

(b) [Not used]; and

(c) make safe the Project Works and the DEC Lease Area.

25.7 No Asbestos

The Developer must ensure that none of the materials used in the Project Works contain Asbestos.

25.8 Hoardings

(a) The Developer must erect and maintain Hoardings around the Project Site in accordance with any requirements set out in the Project Construction Plans, as required for the Project Works for Project Stage 2A, Project Stage 2B and Project Stage 3.

(b) The Developer must:

(i) not use the Hoardings for advertising except to the extent authorised in writing by the Crown;

(ii) promptly remove all graffiti, unauthorised advertising, posters and bills from all Hoardings; and

(iii) otherwise maintain the Hoardings in a clean and tidy condition.

25.9 Obtaining Approvals

(a) The Developer must obtain and maintain all Approvals to lawfully carry out the Project Works.

(b) If the Developer makes an application in relation to the Project Works to any Government Body for an Approval, the Developer must simultaneously provide an identical copy of that application to the Crown.

25.10 [Not used]

25.11 Damage to DEC

The Developer must make good in accordance with any written directions issued by the Crown, any damage to the DEC caused by the carrying out of the Project Works, except for damage which is within the scope of the Project Works or damage to the extent caused by the Crown or a Crown's Agent. A direction given by the Crown under this clause prior to the Date of Project Practical Completion to make good damage must allow the Developer to make good such damage at any time prior to the Date for Project Practical Completion.

25.12 Archaeological matters

(a) The parties acknowledge that Historical Artefacts may be discovered in, on or under the Project Site.

(b) The ownership in any Historical Artefacts found by the Developer in the course of undertaking the Project Works remains at all times with the Crown.

(c) The Developer must:

(i) promptly inform the Crown in writing of any Historical Artefacts found by the Developer in, on or under the Project Site;

(ii) comply with any conditions contained in the Approvals in relation to Historical Artefacts; and

(iii) at the Crown's cost, comply with any instructions given by the Crown, in relation to the recovery, recording, protection, display or preservation of any Historical Artefacts found during the Project Works.

(d) The Crown may by notice in writing to the Developer disclaim ownership of any Historical Artefacts. Historical Artefacts that are disclaimed by the Crown become the property of the Developer.

25.13 Principal contractor clause

(a) For the avoidance of doubt, the parties agree that for the purposes of the *Work Health and Safety Act 2012* (Tas), as between the Crown and the Developer:

(i) the Crown is not a principal contractor for the purposes of that Act in relation to any work to be performed by the Developer under this Agreement; and

(ii) the Developer is the principal contractor for the purposes of that Act in relation to the work to be performed by the Developer under this Agreement except to the extent that the Developer agrees with a Developer's Builder that the Developer's Builder is the principal contractor for the purposes of that Act, in which case the Crown will appoint the Developer's Builder as the principal contractor for the purposes of that Act upon request.

(b) Nothing in clause 25.13(a) affects or limits the Developer's obligations to the Crown under this Agreement.

25.14 Category 2 Project Works

The Developer is not required to undertake, and the Crown may not require the Developer to undertake, any Category 2 Project Works, other than as a consequence of a Crown Requested Variation as agreed or adjudicated in accordance with clause 30. If the Developer elects to undertake any Category 2 Project Works, the Developer will undertake such Category 2 Project Works on the terms of this Agreement.

26 Testing of materials and work

26.1 Crown may order tests

(a) The Crown may at any time prior to the Date of Stage Practical Completion for a Stage direct that any materials or work forming part of the Project Works for that Stage must be tested.

(b) If the Crown gives such a direction, the Developer must promptly prepare and make available for testing the materials or work specified in the direction and give the Crown prompt notice that the same are so available.

(c) Tests will be conducted by a person nominated by the Crown (acting reasonably).

26.2 Notice of tests

Before conducting a test under this Agreement, the Crown must give reasonable notice in writing to the Developer of the time, date and place of the test. If the Developer does not attend, then the test may nevertheless proceed.

26.3 Results of tests

Results of any tests by the Crown must be promptly made available to the Developer.

26.4 Costs of testing

All reasonable costs of and incidental to testing (including any delay costs incurred by the Developer or a Developer's Agent as a result of the tests) must be paid by the Crown except where the testing shows that the material or work was not in accordance with this Agreement, in which case all such costs must be borne by the Developer.

27 [Not used]

28 Developer's Variations

28.1 Developer not to make Variations to Project Works

The Developer must not make any Variation in relation to the Project Works except in accordance with clauses 28, 29 or 30.

28.2 Developer's initiated Variations to Project Works

(a) [Not used].

(b) The Developer may initiate a request for the Crown approve a Variation to any Project Works. A request by the Developer for the Crown to approve a Variation to any Project Works must:

(i) be in writing;

(ii) be signed by or on behalf of the Developer;

(iii) contain a clear statement that it is a request for a Variation made pursuant to this clause 28.2 and be titled **'Developer Variation Request Notice'**;

(iv) be accompanied by relevant proposed drawings and specifications (if applicable and reasonably required) setting out the proposed Variation to the Project Works;

(v) be accompanied by a draft amended Project Construction Program showing the length of time required to complete the work associated with the proposed Variation and the effect of the proposed Variation on the resources of the Developer, the timing and sequence of activities and any

other relevant date or event shown in the Project Construction Program; and

(vi) be accompanied by a detailed statement:

(A) giving the reasons for the Variation to the Project Works; and

(B) setting out how the Crown will be compensated for any Loss as a result of the proposed Variation.

(c) The Crown must not unreasonably withhold its approval to a Variation requested by the Developer to:

(i) any Project Works where the Variation is reasonably necessary:

(A) to ensure that the Project complies with the Law;

(B) to ensure that the Project Works comply with this Agreement;

(C) to correct a design error or omission in the Project Design Documentation;

(D) because of the unavailability of materials specified in the Project Design Documentation (other than as a result of any act or omission of the Developer or a Developer's Agent); or

(E) because of site conditions encountered during construction and which were not foreseen; or

(ii) [Not used].

28.3 Approval or rejection by Crown of Variation to Project Works

(a) Not later than 10 Business Days after receiving a Developer Variation Request Notice, the Crown must notify the Developer in writing whether the Crown approves or rejects the Variation to the Project Works requested by the Developer in that notice.

(b) If the Crown neither approves nor rejects the Variation requested by the Developer in a Developer Variation Request Notice within that period of 10 Business Days, the Crown will be taken to have given a notice to the Developer rejecting the Variation requested by the Developer on the next Business Day after the expiry of that period. The Developer will be taken to have received that notice on that Business Day.

28.4 Approval of Variation to Project Works by Crown

(a) If the Crown approves the Variation requested by the Developer in accordance with clause 28.2, the Developer must implement the Variation in the execution of the Project Works.

(b) The Developer will not be entitled to any payment for the Variation approved by the Crown in accordance with clause 28.2 except where the Variation is reasonably necessary due to:

(i) a change in Law occurring after the date of this Agreement and only to the extent that the Developer is required to pay costs in respect of the change

in Law to a Developer's Builder or a Developer's Design Consultant (as applicable);

(ii) [Not used];

(iii) Latent Conditions or Environmental Conditions which entitle the Developer to additional costs under clauses 7.2 or 7.3; or

(iv) [Not used],

in which case the Developer will be entitled to its costs valued as if the request was a Crown Requested Variation.

28.5 Dispute resolution process

(a) This clause 28.5 applies if, pursuant to clause 28.3, the Crown gives, or is taken to have given, a notice (**Rejection Notice**) to the Developer rejecting a Variation to any Project Works requested by the Developer in accordance with clause 28.2.

(b) If not later than 10 Business Days after the date of the Developer's receipt (or deemed receipt) of the Rejection Notice, the Crown and the Developer agree in writing the form and content of the Variation to the Project Works, the Developer must carry out the Variation in accordance with that agreement.

(c) If the Crown and the Developer make no such agreement within the period of 10 Business Days after the date of the Developer's receipt (or deemed receipt) of the Rejection Notice, the Developer not later than 10 Business Days after receiving the Rejection Notice may give a Dispute Notice to the Crown but if, and only if, the Developer considers that the Crown has unreasonably refused to approve the Variation.

(d) Subject to clause 28.5(e), an Adjudicator appointed to determine the dispute in respect of the Dispute Notice given by the Developer under clause 28.5(c), may:

(i) approve the Variation requested by the Developer;

(ii) direct the Developer to carry out another Variation to the Project Works; or

(iii) confirm the Crown's decision to reject the Variation.

(e) An Adjudicator may only approve or direct a Variation if, and only if:

(i) in the opinion of the Adjudicator the Variation requested by the Developer, or the Variation directed by the Adjudicator, is necessary for a reason set out in clause 28.2(c)(i); and

(ii) [Not used].

(f) Except to the extent that a Variation to the Project Works is required for a reason set out in clause 28.2(c)(i), the Adjudicator has no power to approve or direct a Variation to the Project Works without the Crown's consent.

(g) Regardless of the decision of the Adjudicator, the Developer cannot make any Claim against the Crown on the grounds that the Crown unreasonably refused, or refused to give, his or her consent to a Variation requested by the Developer under this clause 28.2(c)(i).

28.6 Developer responsible for costs of Variation

The Developer will be solely responsible for the costs of any Variation to any Project Works made under this clause 28 except as specified in clause 28.4 or determined by the Adjudicator.

29 Crown's directed Variations to Project Works

29.1 Directed Variations related to compliance etc.

(a) The Crown may by notice in writing to the Developer direct the Developer to undertake a Variation to the Project Works:

(i) to ensure that the Project complies with the Law;

(ii) to ensure that the Project Works comply with this Agreement; or

(iii) to correct a design error or omission in the Project Design Documentation.

(b) A notice by the Crown pursuant to clause 29.1(a) must:

(i) be in writing;

(ii) be signed by or on behalf of the Crown;

(iii) contain a clear statement that it is a direction for a Variation made pursuant to clause 29.1 and be titled **'Crown's Variation Direction Notice'**; and

(iv) be accompanied by a detailed statement giving the reasons for the Variation to the Project Works.

29.2 Agreement or rejection by Developer of Variation to Project Works

(a) Not later than 10 Business Days after receiving a Crown's Variation Direction Notice, the Developer must notify, in writing, the Crown whether the Developer agrees to, or rejects, the Variation to the Project Works set out in the Crown's Variation Direction Notice. The acceptance may be of the Variation as notified by the Crown or by way of an alternative method or process that achieves the same outcome.

(b) If the Developer neither agrees to, nor rejects, the Variation directed in the Crown's Variation Direction Notice within that period of 10 Business Days, the Developer will be taken to have given a notice to the Crown rejecting the Variation directed by the Crown on the next Business Day after the expiry of that period. The Crown will be taken to have received that notice on that Business Day.

29.3 Agreement to carry out directed Variation

(a) If the Developer agrees to carry out the Variation in a Crown's Variation Direction Notice within 10 Business Days after receiving that notice, the Developer must implement the Variation in the execution of the Project Works.

(b) The Developer will not be entitled to any payment for the Variation in the Crown's Variation Direction Notice except where the Variation is reasonably necessary due to:

(i) a change in Law occurring after the date of this Agreement and only to the extent that the Developer is required to pay costs in respect of the change in Law to a Developer's Builder or a Developer's Design Consultant;

(ii) [Not used];

(iii) Latent Conditions or Environmental Conditions which entitle the Developer to additional costs under clauses 7.2 or 7.3; or

(iv) [Not used],

in which case the Developer will be entitled to its costs valued as if the request was a Crown Requested Variation.

29.4 Dispute resolution process

(a) This clause 29.4 applies if, pursuant to clause 29.3, the Developer gives, or is taken to have given, a notice (**Rejection Notice**) to the Crown rejecting a Variation to any Project Works directed by the Crown in accordance with clause 29.1.

(b) If not later than 10 Business Days after the date of the Crown's receipt (or deemed receipt) of the Rejection Notice, the Crown and the Developer agree in writing the form and content of the Variation to the Project Works, the Developer must carry out the Variation in accordance with that agreement.

(c) If the Crown and the Developer make no such agreement within the period of 10 Business Days after the date of the Crown's receipt (or deemed receipt) of the Rejection Notice, the Crown not later than 10 Business Days after receiving the Rejection Notice may give a Dispute Notice to the Developer but if, and only if, the Crown considers that the Variation is necessary for a reason set out in clause 29.1.

(d) Subject to clause 29.4(e), an Adjudicator appointed to determine the dispute in respect of the Dispute Notice given by the Crown under clause 29.4(c), may:

(i) direct the Developer to carry out the Variation to the Project Works or another Variation; or

(ii) confirm the Developer's decision to reject the Variation.

(e) An Adjudicator may only direct a Variation to the Project Works if, and only if:

(i) in the opinion of the Adjudicator the Variation directed by the Crown, or the Variation directed by the Adjudicator, is necessary for a reason set out in clause 29.1; and

(ii) [Not used].

(f) Except to the extent that a Variation to the Project Works is required for a reason set out in clause 29.1, the Adjudicator has no power to approve or direct a Variation to the Project Works.

29.5 Developer responsible for costs of Variation

The Developer will be solely responsible for the costs of any Variation to any Project Works made under this clause 29 except as specified in clause 29.3 or determined by the Adjudicator.

29.6 Continuation of Project Works

To avoid doubt, the Developer is not required to suspend the performance of or vary any Project Works, until such time that the parties agree to a Variation to the Project Works, or an Adjudicator approves or directs the Variation, under this clause 29 (and only to the extent such suspension or variation is required by such Variation).

30 Crown's requested Variation to Project Works

30.1 Interpretation

In this clause 30:

Cost and Time Estimate has the meaning in clause 30.3.

Instruction to Proceed Notice means a notice (marked 'Instruction to Proceed Notice') from the Crown to the Developer instructing the Developer to proceed with a Crown Requested Variation.

Crown Requested Variation has the meaning in clause 30.2.

30.2 Variations requested by Crown

(a) Subject to this clause 30, the Developer will consider any reasonable request by the Crown to vary the Project Works requested by the Crown prior to the Date of Project Stage 3 Completion (**Crown Requested Variation**).

(b) The Developer must not carry out or effect any Crown Requested Variation unless the Crown has:

(i) accepted in writing a Cost and Time Estimate in respect of that variation pursuant to clause 30.4; or

(ii) given to the Developer an Instruction to Proceed Notice.

(c) The Developer is not required to consider any request by the Crown where:

(i) the effect of the variation of the Project Works will be, or will likely be, to cause that the Date of Stage Practical Completion for Stage 2B1 will not be at least six (6) weeks prior to the first game of the 2021/22 NBL Season; or

(ii) the Developer will incur costs or charges from third parties (other than related entities) to consider the Crown Requested Variation and the Crown has not agreed to reimburse the Developer for those costs or charges.

(d) At the time that the Crown submits a Crown Requested Variation, the Crown will also submit a preliminary assessment from the Quantity Surveyor a Time and Cost Estimate for the Crown Requested Variation.

30.3 Developer to give cost and time estimate for proposed variations

Within 10 Business Days of receiving a request under clause 30.2, the Developer must submit in writing to the Crown the following (collectively a **Cost and Time Estimate**):

(a) a detailed fixed price for the proposed Crown Requested Variation (supported by evidence) showing:

(i) the sum of the costs of design, preliminaries (if applicable), materials, plant costs and labour for executing the Crown Requested Variation if accepted by the Crown (after giving credit for any cost savings to the Developer because of the Crown Requested Variation) (which may include an allowance for profit, overheads and preliminaries payable to the Developer's Agents); and

(ii) any extra costs or expenses which will be incurred by the Developer arising out of or in connection with the Crown Requested Variation delaying the progress of the Project Works.

(b) if the proposed Crown Requested Variation will affect the progress of the Project Works:

(i) (if required by the Crown) a draft amended Project Construction Program showing the length of time required to complete the work associated with the proposed Crown Requested Variation and the effect of the proposed Crown Requested Variation on the resources of the Developer, the timing and sequence of activities and any other relevant date or event shown in the Project Construction Program;

(ii) a statement describing the effect that the Crown Requested Variation will have on the completion of the Project; and

(iii) a statement setting out any extension of time required by the Developer to a Milestone Date, a Date for Stage Practical Completion or the Date for Project Practical Completion in connection with the Crown Requested Variation;

(c) if the Crown Requested Variation will impact on any of the Developer's obligations under this Agreement, a statement setting out the nature of the impact and whether those impacts can be avoided; and

(d) any other information that the Crown may reasonably require in connection with the proposed Crown Requested Variation.

30.4 Crown may accept or reject estimate

(a) Within 10 Business Days of receiving a Cost and Time Estimate the Crown must notify the Developer whether the Crown accepts or rejects the Cost and Time Estimate.

(b) If the Crown gives notice in writing to the Developer accepting a Cost and Time Estimate:

(i) the Project Design Documentation will be amended to incorporate the Crown Requested Variation; and

(ii) the Developer must carry out the Crown Requested Variation as part of the Project Works in accordance with the Cost and Time Estimate and otherwise on the terms of this Agreement.

(c) If the Crown rejects a Cost and Time Estimate, the Crown may still require the Crown Requested Variation to be completed by the Developer by giving an Instruction to Proceed Notice to the Developer. If the Crown and the Developer are unable to agree a price for the Crown Requested Variation detailed in the

Instruction to Proceed Notice and the basis upon which the Crown Requested Variation is to be executed (including any extension to a Milestone Date, a Date for Stage Practical Completion or the Date for Project Practical Completion), a Dispute will be taken to exist and matters in dispute in relation to the Crown Requested Variation will be determined by an Adjudicator.

(d) In determining the price payable by the Crown, an Adjudicator must make a proper allowance for:

(i) the sum of the costs of design, preliminaries (if applicable), materials, plant costs, and labour incurred by the Developer for executing the Crown Requested Variation (after giving credit for any cost savings to the Developer because of the Crown Requested Variation) (which may include an allowance for profit, overheads and preliminaries payable to the Developer's Agents); and

(ii) any extra costs or expenses which will be incurred by the Developer arising out of or in connection with the Crown Requested Variation delaying the progress of the Development.

30.5 Excluded variations

Nothing in this clause 30 requires the Developer to carry out any Crown Requested Variation which would:

(a) materially change the layout, area or configuration of the DEC;

(b) involve or require any significant structural works;

(c) involve or require any amendment or change to the Planning Permit; or

(d) materially delay the completion of the Project.

30.6 No variation work by Crown

The Crown is not permitted to engage separate contractors or suppliers to perform any variation work within the DEC Lease Area before the Date of Project Practical Completion.

30.7 Continuation of Project Works

To avoid doubt, the Developer is not required to suspend the performance of or vary any Project Works, until such time that the parties agree to a Variation to the Project Works, or an Adjudicator approves or directs the Variation, under this clause 30 (and only to the extent such suspension or variation is required by such Variation).

31 Delays and extensions of time affecting Project Works

31.1 Delays that entitle Developer to claim extension

The Developer may claim an extension to one or more Milestone Dates or Date for Stage Practical Completion if the completion of the Project Works or the completion of the Project Works in respect of the relevant Stage (as applicable) is or will be delayed by:

(a) (**war**): any war or act of war;

(b) (**strikes**): any lock-out, strike or industrial dispute (other than any reasonable strike action taken by a person because of conditions on the Project Site which are within the Developer's, or a Developer's Agent's, immediate control);

(c) (**no vacant possession**): a failure by the Crown or the Crown's Agents to provide the Developer with access to the Building Licence Area for the Building Licence Term in accordance with this Agreement, or the presence of the DEC Memorabilia within the Building Licence Area on the Conditions Precedent Date;

(d) (**fire and other risks**): any loss or damage to the Project Works by fire (not being a fire caused by malicious act or default of the Developer or a Developer's Agent), storm, tempest, flood or other Act of God;

(e) (**Approvals**): any delay of any Government Body in giving any necessary Approval provided that delay did not arise from a failure on the part of the Developer or a Developer's Agent;

(f) (**plant or materials**): any inability to obtain plant or materials required in connection with the Project, and the Developer and each Developer's Agent having expended all reasonable efforts to obtain the same;

(g) (**weather**): inclement weather or conditions resulting from inclement weather;

(h) (**variations**): a Variation to the Project Works made in accordance with this Agreement;

(i) **(Latent Conditions)**: the existence of Latent Conditions in respect of the Project Works;

(j) **(changes to Laws)**: a change in Laws with respect to the Works;

(k) **(Environmental Conditions)**: the existence of Environmental Conditions in respect of the Project Works;

(l) (**neighbours**): any proceedings being taken or threatened by or disputes with neighbouring owners and occupiers;

(m) (**testing**): testing ordered by the Crown under clause 26.1 and the costs of which the Crown is responsible for under clause 26.4;

(n) (**Blackout Period**): the Date of Stage Practical Completion for a Stage occurring on a date on which the Developer is not permitted by clause 32.1(b) to give a Notice of Stage Practical Completion;

(o) **(Building Surveyor)**: an act or omission of the Building Surveyor that is in connection with a failure of the Crown to pay the Building Surveyor or a dispute between the Crown and the Building Surveyor; or

(p) (**miscellaneous**): any other matter, cause or thing beyond the reasonable control of the Developer or any Developer's Agent (but not to the extent caused by a lack of financial, human or technical resources on the part of the Developer or the Developer's Agents).

31.2 Claims for extension to Milestone Dates and/or Date for Stage Practical Completion

As soon as it is practicable to do so in respect of a delay specified in clause 31.1, the Developer must give notice in writing to the Crown setting out the cause of the delay and stating a fair and reasonable period by which the Milestone Date or the Date for Stage Practical Completion (or both of them as applicable) should, in the opinion of the Developer, be extended in each instance. The Developer may update that notice from time to time as the extent of the delay becomes clearer. In respect of a Milestone that is described to be Stage Practical Completion or Project Practical Completion, the Developer is only required to give notice under this clause once in respect of Stage Practical Completion or Project Practical Completion (which notice will apply for both the Date for Stage Practical Completion or the Date for Project Practical Completion and the corresponding Milestone Date) (and vice versa).

31.3 Extension of Date for Milestone and/or Stage Practical Completion if no Dispute Notice given

Unless the Crown within 10 Business Days after the receipt of the Developer's claim for an extension of time gives a Dispute Notice in writing disputing the extension claimed by the Developer, the applicable Milestone Date or the Date for Stage Practical Completion will be extended by the period specified in the notice given by the Developer under clause 31.2.

31.4 Adjudicator to decide claim for extension if parties do not agree extension

If the Crown gives a Dispute Notice to the Developer within the time allowed by clause 31.3 and the Developer and the Crown are unable to agree the period by which the applicable Milestone Date or the Date for Stage Practical Completion should be extended within the period of 10 Business Days from and including the date of service of the Dispute Notice on the Developer, the dispute will be determined by an Adjudicator.

31.5 Unilateral extension

(a) The Crown may, at any time and from time to time, by notice to the Developer extend a Milestone Date or the Date for Stage Practical Completion, whether or not the Developer is entitled to make a claim under this clause 31.

(b) The parties acknowledge that:

(i) the Crown is not required to exercise the Crown's discretion under this clause for the benefit of the Developer or at all; and

(ii) the exercise or failure to exercise the Crown's discretion under this clause:

(A) is not capable of being the subject of a dispute or difference or otherwise subject to review; and

(B) does not affect the rights of any party to dispute a claim for an extension of time in accordance with this Agreement.

31.6 Delay or disruption costs

(a) Where the Developer has been granted an extension of time under clause 31.1 in respect of a Date for Stage Practical Completion for any delay caused by:

(i) the Crown or a Crown's Agent;

(ii) a Latent Condition;

(iii) an Environmental Condition;

(iv) a change in Law occurring after the date of this Agreement;

(v) a Crown Requested Variation;

(vi) a Historical Artefact; or

(vii) testing ordered by the Crown under clause 26.1 and the costs of which the Crown is responsible for under clause 26.4,

without double counting for costs agreed, directed or determined under clauses 28 or 29, the extra reasonable costs necessarily incurred by the Developer directly as a result of the delay will be payable by the Crown and added to the Contract Sum or the Project Stage 3 Contract Sum (as applicable), provided that the maximum amount payable for any day for which an extension of time is granted is the Maximum Daily Amount, and further provided that no extra costs are payable to the Developer for the reason set out in clause 31.6(a)(iv) unless the Developer is required to pay such costs to a Developer's Builder or a Developer's Design Consultant.

(b) Amounts payable by the Crown to the Developer under this clause will be determined by the Quantity Surveyor.

(c) The Developer must give to both the Crown and the Quantity Surveyor any details, information and other documents requested by the Crown or the Quantity Surveyor to verify the Developer's entitlement to a claim for costs under this clause.

(d) The Developer is not entitled to costs under this clause to the extent that the Developer could have reasonably avoided the costs. For the avoidance of doubt, the Developer may be entitled to be paid costs (in this clause, "**relevant costs**") which are incurred to avoid other costs, provided that those relevant costs have been incurred in respect of a reason set out in clause 31.6(a) and will be subject to clauses 31.6(b) and (c).

(e) Nothing in this clause 31.6 will:

(i) oblige the Crown to pay extra costs for delay or disruption which have already been included in the value of a Variation or any other payment under this Agreement; or

(ii) limit the Crown's liability for damages for breach of contract, provided that any costs under this clause will be the Developer's sole remedy in connection with the relevant delay (but not the circumstances giving rise to the delay).

31.7 Extension to Date for Project Practical Completion

To avoid doubt, an extension to the Date for Stage Practical Completion under this clause 31 in respect of the final Stage 2B of the Project Works will have the effect of extending the Date for Project Practical Completion by a commensurate duration.

31A Milestones

31A.1 Developer to give notice

(a) When the Developer is of the opinion that a Milestone has been reached, the Developer must give to the Crown a notice stating that in the opinion of the Developer the Milestone has been reached.

(b) A notice is not evidence that the Milestone has been reached or that the Project Works have been completed in accordance with this Agreement.

31A.2 Crown accepting or disputing notice

(a) If the Crown considers that a Milestone has been reached, the Crown, as soon as reasonably practicable and in any event not later than 10 Business Days after receiving the notice under clause 31A.1, is to give written notice to the Developer approving the notice (**Crown's Approval Notice**).

(b) If the Crown considers that the Milestone was not reached by the date on which the Developer gave the notice under clause 31A.1, the Crown may give to the Developer a Dispute Notice not later than 20 Business Days after the Crown received the notice.

(c) If the Crown does not give a Crown's Approval Notice in accordance with clause 31A.2(a), or a Dispute Notice in accordance with clause 31A.2(b), the Crown will be taken to have given a Dispute Notice to the Developer disputing that Milestone has been reached. The Dispute Notice will be taken to have been received by the Developer on the 20th Business Day after the Crown received the notice under clause 31A.1.

31A.3 Date of Milestone disputed by Crown and then agreed

If the Crown gives, or is taken to have given, a Dispute Notice under clause 31A.2, and within the period of 10 Business Days after the Crown gives, or is taken to have given, that notice, the Developer and the Crown agree in writing the date on which the Milestone was reached, the date so agreed will be the date on which the Milestone was reached.

31A.4 Determination by Adjudicator

(a) If the Crown gives, or is taken to have given, a Dispute Notice under clause 31A.2 and no agreement is reached in accordance with clause 31A.3, the date on which the Milestone was reached will be determined by an Adjudicator.

(b) If an Adjudicator decides that the Milestone had been reached at the time when the Developer gave the notice under clause 31A.1, the date the Milestone was reached will be taken to be the date on which the Developer gave the notice under clause 31A.1.

(c) If an Adjudicator decides that the Milestone had not been reached at the time when the Developer gave the notice under clause 31A.1 then the following provisions will apply:

(i) If an Adjudicator determines the Milestone was reached prior to the decision of the Adjudicator, the date the Milestone was reached will be the date determined by the Adjudicator.

(ii) If an Adjudicator determines that the Milestone has not been reached, the date the Milestone is reached will be the date on which the Adjudicator certifies it following the execution of such further works and things by the Developer as are necessary to reach the Milestone.

31A.5 Status of Notice of Milestone etc

A notice under clause 31A.1 and/or the determination of a Milestone being reached is not evidence that all or any of the Project Works have been performed, or performed in accordance with this Agreement. Accordingly, the issue of a notice or any determination does not operate as a waiver of the Crown's Rights under this Agreement to require the Project Works to be completed in accordance with this Agreement.

31A.6 Project Practical Completion Milestone

In respect of a Milestone that is described to be Project Practical Completion, clause 32 will apply instead of clauses 31A.1 to 31A.5 (inclusive).

32 Stage Practical Completion

32.1 Developer to give Notice of Stage Practical Completion

(a) When the Developer is of the opinion that the stage of Stage Practical Completion for a Stage has been reached, the Developer must give to the Crown a Notice of Stage Practical Completion stating that in the opinion of the Developer the stage of Stage Practical Completion has been reached.

(b) The Developer cannot give a Notice of Stage Practical Completion during a Blackout Period or the period of 10 Business Days preceding a Blackout Period.

(c) A Notice of Stage Practical Completion is not evidence that the Project Works for the relevant Stage have reached the stage of Stage Practical Completion or have been completed in accordance with this Agreement.

(d) Subject to this clause 32, the Date of Stage Practical Completion for a Stage is the date on which the Developer gives the Crown the Notice of Stage Practical Completion.

32.2 Crown accepting or disputing Notice of Stage Practical Completion

(a) If the Crown considers that the stage of Stage Practical Completion for a Stage has been reached, the Crown, as soon as reasonably practicable and in any event not later than 10 Business Days after receiving the Notice of Stage Practical Completion, is to give written notice to the Developer approving the Notice of Stage Practical Completion (**Crown's Approval Notice**).

(b) If the Crown considers that the stage of Stage Practical Completion was not reached by the date on which the Developer gave the Notice of Stage Practical Completion, the Crown may give to the Developer a Dispute Notice not later than 20 Business Days after the Crown received the Notice of Stage Practical Completion.

(c) If the Crown does not give a Crown's Approval Notice in accordance with clause 32.2(a), or a Dispute Notice in accordance with clause 32.2(b), the Crown will be taken to have given a Dispute Notice to the Developer disputing that the stage of

Stage Practical Completion has been reached. The Dispute Notice will be taken to have been received by the Developer on the 20th Business Day after the Crown received the Notice of Stage Practical Completion.

32.3 Date of Stage Practical Completion disputed by Crown and then agreed

If the Crown gives, or is taken to have given, a Dispute Notice under clause 32.2, and within the period of 10 Business Days after the Crown gives, or is taken to have given, that notice, the Developer and the Crown agree in writing the date on which the Project Works for the relevant Stage reached the stage of Stage Practical Completion, the date so agreed is the Date of Stage Practical Completion for that Stage.

32.4 Determination of Date of Stage Practical Completion by Adjudicator

(a) If the Crown gives, or is taken to have given, a Dispute Notice under clause 32.2 and no agreement is reached in accordance with clause 32.3, the Date of Stage Practical Completion for the relevant Stage will be determined by an Adjudicator.

(b) If an Adjudicator decides that the stage of Stage Practical Completion had been reached at the time when the Developer gave the Notice of Stage Practical Completion, the Date of Stage Practical Completion will be taken to be the date on which the Notice of Stage Practical Completion was given.

(c) If an Adjudicator decides that the stage of Stage Practical Completion had not been reached at the time when the Developer gave the Notice of Stage Practical Completion then the following provisions will apply:

(i) If an Adjudicator determines the stage of Stage Practical Completion was reached prior to the decision of the Adjudicator, the Date of Stage Practical Completion will be the date determined by the Adjudicator.

(ii) If an Adjudicator determines that the stage of Stage Practical Completion has not been reached, the Date of Stage Practical Completion will be the date on which the Adjudicator certifies that the stage of Stage Practical Completion has been reached following the execution of such further works and things by the Developer as are necessary to reach the stage of Stage Practical Completion.

32.5 Status of Notice of Stage Practical Completion etc

A Notice of Stage Practical Completion and/or the determination of the Date of Stage Practical Completion is not evidence that all of or the relevant part of the Project Works required to achieve Stage Practical Completion have been performed, or performed in accordance with this Agreement. Accordingly, the issue of a Notice of Stage Practical Completion does not operate as a waiver of the Crown's Rights under this Agreement to require the Project Works to be completed in accordance with this Agreement.

32.6 Notice of Practical Completion

To avoid doubt, a Notice of Stage Practical Completion in respect of the final Stage 2B of the Project Works for Stage 2B will have also have effect as notice of Project Practical Completion.

33 Defects

33.1 Rectification of Defects

(a) In respect of each Stage, the Developer must at its cost and expense and in a proper and workmanlike manner promptly rectify any Defects in the Project Works for that Stage and which are notified by the Crown to the Developer in writing after the relevant Date of Stage Practical Completion (**Defect Notice**) before the end of the Defects Liability Period within a reasonable time specified by the Crown.

(b) Any minor omission or Defect which exists on the Date of Stage Practical Completion for a Stage and of which the Developer is aware must be rectified by the Developer as soon as possible.

33.2 Extension of Defects Liability Period

The Crown may provide that in respect of the rectification work there will be a separate Defects Liability Period of a stated duration not exceeding 12 months. The separate Defects Liability Period will commence on the date the rectification work is completed. This clause 33 shall apply in respect of the rectification work and the Defects Liability Period for that rectification work.

33.3 Minimum disruption

(a) [Not used].

(b) The Developer must ensure that any work performed in connection with the rectification of any Defect after the Date of Stage Practical Completion or the Date of Project Practical Completion (as applicable) is done so as to cause as little disruption and inconvenience as is reasonably possible to the use and occupation of that part of the DEC that has reached Stage Practical Completion.

33.4 Crown may rectify Defects

If the Developer fails to rectify the Defects specified in a Defect Notice within a reasonable time after the giving of the Defect Notice, the Crown may arrange for the Defects to be rectified by a builder or other appropriate contractor selected by the Crown and recover the reasonable cost of doing so from the Developer.

33.5 Disputes in relation to rectification of Defects

(a) If there is a dispute between the parties in relation to the rectification of any Defects (including any dispute as to what constitutes a reasonable time to rectify a Defect) or otherwise in relation to the operation of this clause 33, a party may give to the other party a Dispute Notice.

(b) If a party gives a Dispute Notice and the matters in dispute are not resolved by agreement within the period of 10 Business Days after the giving of the Dispute Notice, the matters in dispute will be determined by an Adjudicator.

PART 4: CROWN'S PROJECT CONTRIBUTIONS

34 Crown's contributions to Project

34.1 Contract Sum

For the purposes of this Agreement, the Contract Sum is the ***lesser*** of:

(a) the amount of:

(i) $55,000,000 (Fifty five million); plus

(ii) the Developer's Latent Condition Costs and Environmental Condition Costs; plus

(iii) Headworks Costs; plus

(iv) delay and disruption costs in accordance with clause 31, and the costs of any Variation in accordance with clause 28, clause 29 or clause 30, which the Developer is entitled to under this Agreement; less

(v) the aggregate of the amounts of the "Contract Sum" (as defined in the DEC Design Development Agreement) paid by the Crown to the Developer under the DEC Design Development Agreement; less

(vi) the lower of: (A) the cost of the insurance policies effected by the Crown in accordance with clause 35; and (B) $200,000; and

(b) the amount of:

(i) the amount of the initial contract sum (excluding provisional sum and prime cost items) under the building contract with the Developer's Builder for the Project Stage 1, being $296,562; plus

(ii) the amount of the initial contract sum (excluding provisional sum and prime cost items) under the building contract with the Developer's Builder for the Project Stage 2A, as agreed under clause 5A.1(e); plus

(iii) the amount of the initial contract sum (excluding provisional sum and prime cost items) under the building contract with the Developer's Builder for the Project Stage 2B, as agreed under clause 5A.1B(d); plus

(iv) the actual costs payable by the Developer to the Developer's Builders under such building contracts in respect of provisional sum work and prime cost items to the extent that the Developer has provided reasonable evidence to the Crown in respect of such actual costs; plus

(v) the amounts payable to the Developer's Design Consultants for the Project Design Services (as defined in the DEC Design Development Agreement) in respect of the Project Stage 2A and the Project Stage 2B to the extent such amounts have not been paid under the DEC Design Development Agreement; plus

(vi) the Developer's reasonable travel costs in respect of the Project Works in respect of the Project Stage 2A and the Project Stage 2B, up to a maximum total amount of $20,000; plus

(vii) the Developer's reasonable external legal costs in respect of the Project Works in respect of activities with parties other than the Crown; plus

(viii) the Developer's Latent Condition Costs and Environmental Condition Costs; plus

(ix) Headworks Costs; plus

(x) delay and disruption costs in accordance with clause 31, and the costs of any Variation in accordance with clause 28, clause 29 or clause 30, which the Developer is entitled to under this Agreement; less

(xi) all of the Developer's costs and expenses in connection with the Category 2 Project Works which, but for the Category 2 Project Works, would not have been incurred (to the extent that any such costs are included in any of the above); less

(xii) the aggregate of the amounts paid by the Crown to the Developer under the DEC Design Development Agreement (to the extent included within any of the above); less

(xiii) any bonus payments to a Developer's Builder.

All amounts are exclusive of GST.

The maximum aggregate amount payable by the Crown to the Developer under this clause 34 is the Contract Sum.

Notwithstanding any other provision in this Agreement:

(a) this clause 34.1 does not apply with respect to the Project Works for Project Stage 3; and

(b) the incremental costs of the insurance policies effected by the Crown for Project Stage 3 will not be taken into account for the purposes of clause 34.1(a)(vi).

34.2 Escalation of Contract Sum

The Contract Sum is not to be escalated except as expressly contemplated in this Agreement (for example, as a consequence of a Variation).

34.3 Payment of Contract Sum

(a) **Invoices to be submitted at end of each month**: Not later than 10 Business Days after the end of each month, the Developer must submit to the Crown a tax invoice for the Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B completed by the Developer, in accordance with this Agreement, during that month. The invoice must be accompanied by:

(i) tax invoices from the Developer's Builders and the Developer's Design Consultants demonstrating the amounts paid or payable; and

(ii) a written statement from the Quantity Surveyor that the amount stated in the tax invoices from the Developer's Builders and the Developer's Design Consultants, for those Project Works, are properly due and payable by the Crown to the Developer in accordance with this Agreement and the aggregate amount of such invoices is equal to the amount specified in the tax invoice for the Project Works supplied by the Developer.

The Developer must provide copies of the tax invoices from the Developer's Builders and the Developer's Design Consultants to the Crown at the same time as such invoices are provided to the Quantity Surveyor to enable the Quantity Surveryor to provide the certification in paragraph (ii) above.

(b) **Amount to be invoiced for Contract Sum**: Subject to clause 34.3(ba), the amount the Developer can invoice to the Crown, for a month, must not exceed:

(i) the amount which bears the same proportion to the Contract Sum as the part of the Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B, completed to the end of the month in accordance with this Agreement, bears to all of the Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B,

less

(ii) the aggregate of all amounts previously paid by the Crown to the Developer for the Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B.

(ba) **Capped amounts**: For each Milestone:

(iii) the maximum aggregate amount of the Contract Sum which the Developer will be entitled to be paid prior to the achievement of a Milestone will be capped at the cumulative aggregate of the applicable Maximum Milestone Payments in respect of each Milestone which has been achieved prior to the due date for payment of the Contract Sum claimed by the Developer; and

(iv) for the avoidance of doubt, the Developer will not be entitled to be paid any amount of the Contract Sum which exceeds the applicable Maximum Milestone Payment unless and until the subsequent Milestones are achieved.

This paragraph (ba) does not apply to limit the Developer's entitlement to claim amounts on account of any of: (A) the Developer's Latent Condition Costs and Environmental Condition Costs; (B) Headworks Costs; (C) delay and disruption costs in accordance with clause 31, and the costs of any Variation in accordance with clause 28, clause 29 or clause 30; or (D) provisional sum and prime cost items, which the Developer is entitled to under this Agreement (together, the "**Excluded Amounts**"). The Excluded Amounts will be not be counted towards the Maximum Milestone Payments.

(c) **Qualifications to Crown's obligation to pay**: The Crown is not required to pay for any Project Works for Project Stage 1, Project Stage 2A and Project Stage 2B until:

(i) the Developer has supplied to the Crown a correctly rendered tax invoice for those Project Works;

(ii) the Crown has procured or received (as the case may be) a written statement from the Quantity Surveyor certifying to the Crown that the amount stated in the tax invoice, for those Project Works, is properly due and payable by the Crown to the Developer in accordance with this Agreement; and

(iii) the Developer has supplied all documents and information required to be provided to the Crown under this Agreement.

(d) **Exclusions**: The Developer is not entitled to any payment in relation to any Project Works performed for Project Stage 1, Project Stage 2A and Project Stage 2B:

(ia) for an amount above the Contract Sum except as expressly contemplated by this Agreement;

(i) for work or services performed outside the scope of the Project Works; or

(ii) for Category 2 Project Works; or

(iii) to rectify, make good or overcome the consequences of any Defect in the Project Works; or

(iv) for the incremental costs of rectifying, making good or overcoming an error or omission in any Project Design Documentation (provided that this will not preclude the Developer from being entitled to payment for the costs which would have been payable but for the error or omission).

34.3A Project Stage 3 Contract Sum

(a) For the purposes of this Agreement, the **Project Stage 3 Contract Sum** means:

(i) the actual costs payable by the Developer under the building contract with the Developer's Builder for the Project Stage 3 (including as varied under clause 5A.1BB(d)) to the Developer's Builder (including latent condition costs and environmental condition costs); plus

(ii) the amounts payable to the Developer's Design Consultants for the Project Design Services in respect of the Project Stage 3; plus

(iii) the Developer's reasonable travel costs in respect of the Project Stage 3, up to a maximum total amount of $10,000,

in each case:

(iv) in relation to the Project Works comprised within Project Stage 3 only;

(v) other than the amounts specified in subclause (iii), to the extent notified to the Crown in writing within a reasonable time prior to being incurred;

(vi) excluding delay costs or disruption costs (other than amounts payable in accordance with clause 31.6);

(vii) excluding amounts in the nature of bonuses (other than in relation to the craneage arrangements approved by the Crown in the building contract with the Developer's Builder for the Project Stage 3, including as varied under clause 5A.1BB(d)); and

(viii) excluding amounts which arise from a breach of a Project Document by the Developer.

For the avoidance of doubt, no amount is payable under clause 7.2 or clause 7.3 in respect of the Project Works comprised in the Project Stage 3.

34.3B Payment of the Project Stage 3 Contract Sum

(a) **Invoices to be submitted at end of each month**: Not later than 10 Business Days after the end of each month, the Developer must submit to the Crown a tax invoice for the Project Works for the Project Stage 3 completed by the Developer, in accordance with this Agreement, during that month. The invoice must be accompanied by:

(i) tax invoices from the Developer's Builders and the Developer's Design Consultants demonstrating the amounts paid or payable; and

(ii) a written statement from the Quantity Surveyor that the amount stated in the tax invoices from the Developer's Builders and the Developer's Design Consultants, for those Project Works, are properly due and payable by the Crown to the Developer in accordance with this Agreement and the aggregate amount of such invoices is equal to the amount specified in the tax invoice for the Project Works supplied by the Developer.

The Developer must provide copies of the tax invoices from the Developer's Builders and the Developer's Design Consultants to the Crown at the same time as such invoices are provided to the Quantity Surveyor to enable the Quantity Surveryor to provide the certification in paragraph (ii) above.

(b) **Qualifications to Crown's obligation to pay**: The Crown is not required to pay for any Project Works for Project Stage 3 until:

(i) the Developer has supplied to the Crown a correctly rendered tax invoice for those Project Works;

(ii) the Crown has procured or received (as the case may be) a written statement from the Quantity Surveyor certifying to the Crown that the amount stated in the tax invoice, for those Project Works, is properly due and payable by the Crown to the Developer in accordance with this Agreement; and

(iii) the Developer has supplied all documents and information required to be provided to the Crown under this Agreement.

(c) **Exclusions**: The Developer is not entitled to any payment:

(i) for work or services performed outside the scope of the Project Works for the Project Stage 3; or

(ii) to rectify, make good or overcome the consequences of any Defect in the Project Works for the Project Stage 3; or

(iii) for the incremental costs of rectifying, making good or overcoming an error or omission in any Project Design Documentation (provided that this will not preclude the Developer from being entitled to payment for the costs which would have been payable but for the error or omission).

34.4 Time for payment

The Crown must make payment to the Developer of the amount in the tax invoice under clause 34.3 or clause 34.3B within 14 days of the later of:

(a) receiving the written statement of the Quantity Surveyor certifying the amount properly due and payable to the Developer; and

(b) receiving a correctly rendered tax invoice from the Developer for the amount certified in the written statement of the Quantity Surveyor to be properly due and payable to the Developer.

34.5 [Not used]

34.6 Recoupment of amounts paid by mistake etc.

(a) If, for any reason (including due to a mistake, an administrative error, mathematical error or fraud), the Crown pays any amount (the **Specified Amount**) to the Developer to which the Developer was not legally entitled to be paid in accordance with this Agreement, the Crown may demand by notice, in writing, to the Developer that the Developer repays the Specified Amount to the Crown:

(i) in the case where the Specified Amount was paid by the Crown as a result of the Developer's fraud, the next Business Day after the date of the notice; and

(ii) in any other case within 20 Business Days of that demand.

(b) The Developer must comply with any such demand.

34.7 Underpayment

If for any reason (including due to a mistake, an administrative error, or mathematical error), the Crown fails to pay any amount to the Developer, to which the Developer was legally entitled, the Crown must pay that amount to the Developer as soon as practicable after the Crown becomes aware of the circumstances.

PART 5: INSURANCE AND INDEMNITIES

35 Insurance

35.1 Obligation to insure Project Works

(a) Before commencing:

(i) the Project Works for the Project Stage 1, the Crown is to arrange a contract works insurance policy in respect of those Project Works;

(ii) the Project Works for the Project Stage 2A, the Crown is to arrange a contract works insurance policy in respect of the Project Works for the Project Stage 2A and the Project Stage 2B; and

(iii) the Project Works for the Project Stage 3, the Crown is to arrange a contract works insurance policy in respect of those Project Works.

(b) Each policy must:

(i) be in the joint names of the Crown, the Developer and the relevant Developer's Builder and all sub-contractors (together 'the **Insured**') for their respective rights and interests;

(A) cover liabilities (including each Insured's respective liability to the other Insured) in respect of loss, destruction or damage to the Project Works for the Project Stage 1 or the Project Stage 2A or the Project Stage 2B or the Project Stage 3 (as applicable) for the full reinstatement and replacement cost;

(ii) include cover in respect of the following:

(A) claim contingencies covering removal of debris/demolition costs, professional fees and expediting expenses;

(B) materials associated with the Project Works whilst in storage off-site and in transit to the Project Site; and

(C) damage to existing property and improvements;

(iii) be with an insurer, and otherwise on terms and conditions, approved in writing by the Crown; and

(iv) be maintained for the duration of the Project Works for the Project Stage 1 or the Project Stage 2A or the Project Stage 2B or the Project Stage 3 (as applicable).

35.2 Obligation to insure for public liability related to Project Works

(a) Before commencing:

(i) the Project Works for the Project Stage 1, the Crown is to effect and maintain a public liability policy in relation to those Project Works;

(ii) the Project Works for the Project Stage 2A or the Project Stage 2B, the Crown is to effect and maintain a public liability policy in relation to those Project Works; and

(iii) the Project Works for the Project Stage 3, the Crown is to effect and maintain a public liability policy in relation to those Project Works.

(b) Each policy must:

(i) be in the joint names of the Crown, the Developer and the relevant Developer's Builder and all sub-contractors (together 'the **Insured**') for their respective rights and interests;

(ii) cover liabilities (including each Insured's respective liability to the other Insured) in respect of:

(A) personal injury to, or the death of, any person (excluding a person who at the time of the injury or death is defined as a worker of the Insured under any statute relating to workers' or accident compensation insurance); and

(B) in the case of the policy for the Project Works Stage 2A and the Project Works Stage 2B and the Project Works Stage 3, loss, destruction or damage to any property (other than the Project Works),

arising out of or caused by the execution of the Project Works for the Project Stage 1 or the Project Stage 2A or the Project Stage 2B or the Project Stage 3 (as applicable);

(iii) provide insurance cover for an amount in respect of any one occurrence of not less the amount reasonably determined by the Crown;

(iv) include liability arising from the use of registered vehicles when being used as a tool of trade;

(v) be with an insurer, and otherwise on terms and conditions, approved in writing by the Crown; and

(vi) be maintained for the duration of the Project Works for the Project Stage 1 or the Project Stage 2A or the Project Stage 2B or the Project Stage 3 (as applicable).

35.2A Proof of Insurance

Within a reasonable period of time following a request in writing by the Developer, the Crown shall produce certificates of currency and policies of insurance as evidence of insurance being effected and maintained under clauses 35.1 and 35.2.

35.2D Notices of Potential Claims

The Crown shall, as soon as practicable, inform the Developer in writing of any occurrence that may give rise to a claim relating to the Project Works under a policy of insurance required by clauses 35.1 and 35.2 and shall keep the Developer informed of subsequent developments concerning the claim. The Crown shall ensure that subcontractors in respect of their operations similarly inform the Developer.

35.3 Obligation to insure for workers' compensation

(a) Before commencing the Project Works, the Developer must effect and maintain (either through itself or the Developer's Builders) workers' compensation insurance covering:

(i) any liability, loss, claim or proceeding whatsoever, whether arising by virtue of any statute relating to workers' compensation insurance, accident compensation legislation, employer's liability, or at common law, by any person employed for the purpose of executing the Project Works; and

(ii) unless otherwise limited by statute, the liability provided by this insurance must be for an unlimited amount.

(b) The policy or policies must be maintained for the duration of the Project Works.

(c) The Developer must ensure that all subcontractors involved in the Project Works have similar insurance.

35.4 Professional indemnity insurance

Clause 9.3 to clause 9.8 (inclusive) of the DEC Design Development Agreement apply to this Agreement as if set out in full, and as if clause 9.4 to clause 9.8 therein (inclusive) apply to:

(a) the professional indemnity insurance which is the subject of clause 9.3 therein; and

(b) the workers' compensation insurance under clause 35.3.

35.5 Cross liability

(a) Where insurance is effected in joint names, the policy must provide that all conditions, agreements and endorsements (with the exception of limits of liability or indemnity) operate as if there was a separate policy of insurance, covering each of the insured.

(b) Each policy must provide that:

(i) the insurer waives all Rights, remedies or relief to which it might become entitled by way of subrogation against any of the parties comprising the insured; and

(ii) failure by any insured to observe and fulfil the terms of the policy will not prejudice the insurance in regard to any other insured.

35.6 Developer's obligations are not limited

The Developer's obligations and liabilities under this Agreement are not limited because of any thing in this clause 35.

35.7 [Not used]

36 [Not used]

37 Indemnity

37.1 Developer indemnity

The Developer indemnifies each Indemnified Person against, and must pay to an Indemnified Person on demand by that Indemnified Person, the amount of all Loss incurred, paid or payable by the Indemnified Person in connection with or arising out of any, or any combination, of the following:

(a) the carrying out of the Project Works other than in accordance with this Agreement;

(b) any breach of a Project Document by the Developer or the breach of a warranty given by the Developer in a Project Document;

(c) any:

(i) loss, destruction or damage to the DEC (other than the Project Works);

(ii) loss, destruction or damage to real or personal tangible property of any person (including, as applicable, real or personal tangible property of an Indemnified Person) (other than the Project Works);

(iii) any injury to, or disease or death of any person; or

(iv) [Not used],

in each case, to the extent caused by or arising out of:

(A) the design of the Project Works;

(B) the carrying out of the Project Works;

(C) any Defects in the Project Works;

(D) the rectification of any Defects in the Project Works;

(E) any act or omission by the Developer or any Developer's Agent in connection with carrying out the Project Works;

(F) any act or omission by the Developer or any Developer's Agent in connection with carrying out the rectification of any Defect; or

(G) the use or occupation of the Project Site by the Developer or any Developer's Agent; or

(d) the overflow or escape of anything from the Project Site attributable to the carrying out of the Project Works and/or the rectification of any Defect.

37.2 Indemnity reduction

The liability of the Developer under the indemnity to an Indemnified Person is to be reduced proportionately in respect of any Loss in connection with or arising out of any, or any combination, of the following:

(a) damage which is within the scope or contemplation of the Project Works in accordance with this Agreement;

(b) any Hazardous Substance on the Project Site and its near surrounds for which the Developer is entitled to Latent Conditions Costs (and other than which has been introduced by the Developer or any Developer's Agent);

(c) a breach of this Agreement or Law by any Indemnified Person; or

(d) any negligent, fraudulent or reckless, deliberately wrongful, act or omission of that Indemnified Person.

37.3 Indemnity limitations

The indemnity:

(a) is a continuing obligation, separate and independent from the other obligations of the Developer;

(b) survives the termination of this Agreement;

(c) extends to any Loss; and

(d) does not apply in relation to any Loss related to use of a registered motor vehicle where the owner would otherwise be entitled to indemnity under any compulsory insurance relating to the use of motor vehicles.

37.4 Benefit

(a) In respect of an Indemnified Person who is not a party to this Agreement, the Crown holds the benefit of an indemnity given by the Developer in favour of that Indemnified Person on trust for the benefit of that Indemnified Person.

(b) The general law principles of mitigation of loss apply to any claim made under this clause 37.

37.5 Interpretation

(a) Nothing in clause 37.1 limits any other indemnity given in that clause.

PART 6: TERMINATION, REMEDIES AND DISPUTE RESOLUTION

38 Default

38.1 Major Default Notice

Without prejudice to any other right which the Crown may have, under this Agreement, another Project Document or at Law, if a Major Default occurs, the Crown may give the Developer a notice in writing (**Major Default Notice**) stating:

(a) that a Major Default has occurred; and

(b) facts, matters or circumstances which constitute the Major Default.

38.2 Major Default capable of cure

(a) Where the Major Default is capable of cure, upon receipt of a Major Default Notice, the Developer must:

(i) upon receipt of a Major Default Notice, commence, and continue, to diligently pursue the cure of the Major Default; and

(ii) within 5 Business Days of receipt of a Major Default Notice submit to the Crown a sufficiently detailed plan which specifies:

(A) the time frame within which the Major Default will be cured;

(B) how the Major Default will be cured; and

(C) the tasks which will be undertaken to cure the Major Default,

(**Draft Cure Plan**).

(b) Within 10 Business Days of receipt of the Draft Cure Plan, the Crown and the Developer must meet with a view to agree (acting reasonably) the Draft Cure Plan (including the time frame in which the Major Default must be cured (**Applicable Cure Period**)). Once agreed by the Crown and the Developer, the Draft Cure Plan will become the agreed cure plan in respect of a Major Default (**Cure Plan**).

(c) The Developer must:

(i) if applicable, comply with and diligently pursue the cure of the Major Default in accordance with the Cure Plan; and

(ii) cure the Major Default within the Applicable Cure Period.

(d) If:

(i) the Developer does not submit a Draft Cure Plan in accordance with clause 38.2(a); or

(ii) the Crown and the Developer cannot agree the Draft Cure Plan within 20 Business Days of receipt of the Draft Cure Plan,

the Crown must specify:

(iii) the Crown's reasonable requirements in respect of the Developer to cure the Major Default; and

(iv) a reasonable timeframe within which the Major Default must be cured.

(e) If the Developer does not comply with the Crown's requirements in clause 38.2(d), the Crown may terminate this Agreement.

38.3 Major Default not capable of cure

(a) Where the Major Default is not capable of cure, upon receipt of a Major Default Notice, the Developer must provide the Crown with a plan which sets out:

(i) the reasons why the Major Default is not capable of cure;

(ii) the steps being taken or to be taken by the Developer which will overcome the consequences of, or compensate the Crown for, the Major Default;

(iii) how the Developer intends to address the underlying issue that gave rise to the Major Default; and

(iv) a time frame within which the Developer will overcome the consequences of, or compensate the Crown for, the Major Default,

(**Prevention Plan**).

(b) If the Crown agrees to the Prevention Plan, the Developer must:

(i) comply with and diligently pursue the Prevention Plan; and

(ii) comply with the time frames specified in the Prevention Plan for the Developer to overcome the consequences of, or compensate the Crown for, the Major Default.

(c) If the Crown does not agree to the Prevention Plan (acting reasonably), the Crown must specify:

(i) the Crown's reasonable requirements in respect of the Developer to overcome the consequences of, or compensate the Crown for, the Major Default; and

(ii) a reasonable timeframe within which the consequences of Major Default are to be overcome or the compensation paid.

(d) If the Developer does not comply with the Crown's requirements in clause 38.3(c), the Crown may terminate this Agreement.

38.4 Notice of Minor Default by the State

(a) Without prejudice to any other right which the Crown may have under this Agreement, another Project Document or at Law, if a Minor Default occurs the Crown may give notice in writing stating that a Minor Default has occurred and requiring the Developer to cure or overcome the Minor Default within 10 Business Days of the Developer receiving that notice (**Minor Default Notice**).

(b) Where the Developer does not remedy or overcome or pay reasonable compensation for the Minor Default within 10 Business Days, the Minor Default will become a Major Default and clauses 38.1 to 38.3 will apply.

39 Termination and step in

39.1 Termination

The Crown may terminate this Agreement by notice, in writing, to the Developer to that effect:

(a) (**Major Default**) if there is a Major Default:

(i) which is not cured in accordance with clause 38.2(c) or 38.2(d); or

(ii) in respect of which the Developer does not overcome the consequences or compensate the Crown, in accordance with clause 38.3(b) or 38.3(c);

(b) (**multiple breaches**): if the Developer commits more than four unrelated breaches of this Agreement in any rolling period of 60 Business Days or less (irrespective of whether the breaches have been remedied or are capable of being remedied but provided that the Crown provided notice of such breaches to the

Developer within a reasonable period of time after becoming aware of such breaches), provided that a Defect will not constitute a breach of this Agreement for the purposes of this clause 39.1(b);

(c) (**Project Practical Completion**) if the Developer fails to reach the stage of Project Practical Completion on or before the Sunset Date;

(d) (**repudiation**): if the Developer repudiates this Agreement;

(e) (**corporate events**): if:

(i) there is passed a resolution for the winding up or dissolution of the Developer or the Guarantor other than for the purposes of a solvent reconstruction or amalgamation previously approved in writing by the Crown (acting reasonably);

(ii) an order is made in any court for the winding up or dissolution of the Developer or the Guarantor and is not dismissed or stayed within 10 Business Days, other than for the purposes of a solvent reconstruction or amalgamation previously approved in writing by the Crown;

(iii) anything analogous or having a substantially similar effect to any of the events specified above occurs under any applicable Law of another jurisdiction; or

(iv) the Developer or the Guarantor fails to comply with a statutory demand within the meaning of section 459F of the Corporations Act;

(f) (**insolvency – general**): if the Developer or the Guarantor:

(i) is unable to pay its debts as and when they fall due for payment or determines that it is insolvent;

(ii) convenes a meeting of its creditors or proposes or enters into any scheme of arrangement with its creditors or any of them;

(iii) seeks protection from its creditors under any applicable Law; or

(iv) has an administrator or receiver appointed to it or any of its assets.

(g) (**invalidity**): if this Agreement, the DEC Design Development Agreement, the DEC Lease, a Developer's Builder's Deed of Covenant and Novation or the Guarantee is or becomes void, voidable, illegal, invalid, unenforceable, or of limited or reduced force or effect, or is claimed to be so by the Developer, the Tenant or Guarantor (except where due to the acts or omissions of the Crown or the Crown's Agents);

(h) (**distress/execution**): if any distress or execution for an amount exceeding $100,000, or its equivalent in another currency, is levied or enforced upon or against any assets of the Developer or the Guarantor and that distress or execution is not withdrawn, stayed or satisfied within 10 Business Days of its levy or issue;

(i) (**judgment**): if a final judgment in an amount exceeding $100,000, or its equivalent in another currency, is obtained against the Developer or the Guarantor and is not satisfied or stayed within 15 Business Days of it becoming final; or

(j) (**cease business**): if the Developer or the Guarantor ceases or threatens to cease carrying on business or is otherwise unable to pay its debts as and when they fall due for payment,

(each a "**Termination Event**").

39.2 Rights and liabilities of parties following termination by Crown

(a) If the Crown terminates this Agreement pursuant to clause 39.1:

(i) the rights of the parties will be as though the Crown had terminated this Agreement on the basis of repudiation by the Developer; and

(ii) the Crown may (in addition to any other Rights) do any or a combination of any of the following:

(A) terminate any other Project Document to which the Developer is party; and

(B) require the Developer to cease the Project Works immediately.

(b) [Not used]

39.3 [Not used]

39.4 Crown's step-in and step-out rights

(a) This clause 39.4 gives the Crown the right to step-in or step-out of the Project on one or more occasions during the course of the Project.

(b) If a Termination Event occurs, the Crown may, by notice to the Developer (**Step-in Notice**), step-in to the Project and do all, any or any combination, of the following things:

(i) enter into and take possession of the Project Site;

(ii) take control of any property of the Developer located at the Project Site;

(iii) perform all or any of the Project Works in accordance with this Agreement as if the Crown was the Developer;

(iv) make good any Defect in the Project Works which the Developer has refused to make good or rectify;

(v) remove any work which is not in conformity with this Agreement;

(vi) exercise any of the Developer's Rights under this Agreement or any other Project Document;

(vii) use any Project Intellectual Property;

(viii) perform any of the obligations of the Developer under this Agreement or any other Project Document;

(ix) give any consent, approval or permission on behalf of the Developer under this Agreement or any other Project Document;

(x) rectify any breach by the Developer of this Agreement or any other Project Document;

(xi) do any thing that the Developer could lawfully do to bring about completion of the Project in accordance with this Agreement;

(xii) do any thing incidental to any of the above.

(c) The Developer must upon demand reimburse to the Crown for all reasonable amounts, debts and monetary liabilities incurred, paid or payable by the Crown in connection with any thing done by the Crown, pursuant to clause 39.4(b), to the extent that it exceeds the amount that the Crown would have been required to pay the Developer to do such things.

(d) The Crown may elect to exercise his or her step-in and step-out rights in relation to a discrete part of the Project Works. The Crown's exercise of those rights is not fettered by any earlier exercise of those rights.

(e) Despite the service by the Crown of any Step-in Notice, the Developer remains bound by the provisions of this Agreement.

(f) Upon receipt of a Step-in Notice by the Developer and to the extent, and within the times, directed by the Crown (acting reasonably), the Developer:

(i) must to the extent required by the Crown (acting reasonably) to enable the Crown to carry out any Project Works, assign to the Crown all its Rights and benefits under the Project Documents and any other contracts with third parties relating to the Project Works;

(ii) must allow the Crown, a Crown's Agent or his or her nominee (while the Crown steps-in) to possess and use any or all of the Developer's materials, equipment, machinery and supplies that are intended to become a permanent part of the Project and that the Crown deems necessary to carry out any part of the Project Works or do any thing in accordance with clause 39.4(g); and

(iii) must do all things reasonably necessary to assist the Crown, a Crown's Agent or his or her nominee, in the exercise of the Crown's Rights under this clause 39.4.

(g) If the Crown gives the Developer a Step-in Notice:

(i) subject to clause 39.4(g)(ii), and only to the extent that the Crown steps-in and gives a direction to the Developer under clause 39.4(f)(i), the Crown must comply with all of the Developer's future obligations under the Project Documents and any other contracts with third parties relating to the Project Works which are duly assigned to the Crown;

(ii) the assignment of the Developer's Rights and the Crown's agreement to comply with the Developer's obligations under the Project Documents and contracts with third parties pursuant to clause 39.4(g)(i) only applies for the period of time that the Crown, a Crown's Agent or its or their nominee, steps-in under clause 39.4(b);

(iii) the Crown must indemnify the Developer against any Claim against the Developer directly caused or contributed to by (but only to the extent caused or contributed to by) the negligence, default, breach of Law or unreasonable action or omission of the Crown, a Crown's Agent or his or

her nominee during any period of time that the Crown, a Crown's Agent or its or their nominee steps-in under clause 39.4(b); and

(iv) the Developer must not do any thing that hinders or prevents the exercise by the Crown of the step-in rights.

(h) The Crown must give at least 10 Business Days prior written notice to the Developer of the date when he or she proposes to cease to continue to exercise any step-in rights under clause 39.4(b) (**Step-out Notice**).

(i) Following the service of a Step-out Notice:

(i) the Crown and the Developer must sign all documents and do all things necessary to assign to the Developer all rights and benefits under the Project Documents and any other contracts with third parties relating to the Project Works which were assigned to the Crown pursuant to clause 39.4(f)(i);

(ii) the Developer must recommence to fulfil its obligations with respect to the Project Works.

(j) The Developer acknowledges that the Crown, a Crown's Agent and its or their nominee:

(i) may enter and remain on relevant parts of the Project Site for the purposes of the Crown exercising its step-in rights under clause 39.4(b) (but only to the extent necessary to exercise those rights); and

(ii) are not under any obligation to remedy any breach of the Developer.

39.5 Failure to pay by the Crown

(a) If:

(i) the Crown fails to pay an amount to the Developer in accordance with clause 34.4; or

(ii) the Crown fails to pay an amount to the Developer which is agreed in writing by the Crown or determined to be payable to the Developer following a Dispute Notice or which is determined to be payable to the Developer by a Court; or

(iii) the Crown fails to take out insurance in accordance with its obligations under clause 35,

the Developer may give a notice to the Crown specifying the failure.

(b) If the Crown does not cure the failure:

(i) within 10 Business Days of the notice, the Developer may suspend the Project Works until the failure is cured; and

(ii) within 20 Business Days of the notice, the Developer may terminate this Agreement. Nothing in this clause limits the rights of the Developer under this Agreement or at Law in respect of the Crown's breach of this Agreement.

40 [Not used]

41 [Not used]

41A Performance Bond

(a) Prior to the Condition Precedent Date, the Developer must deliver to the Crown a Bank Guarantee for an amount of $2,000,000 as security for the payment or reimbursement by the Developer to the Crown of all Performance Bond Secured Amounts from time to time payable by the Developer to the Crown (the **Performance Bond**). The Crown acknowledges that the Performance Bond was delivered to the Crown on or around 8 February 2021.

(b) If, at the Date of Project Practical Completion, the undrawn balance of the Performance Bond is greater than $1,000,000 then:

(i) the Developer may request the Crown to reduce the amount of the Performance Bond to $1,000,000; and

(ii) for the purposes of facilitating that reduction, the Crown will surrender to the Developer the prior Bank Guarantee in exchange for a substitute Bank Guarantee for $1,000,000.

(c) The Crown may from time to time draw upon the Performance Bond to pay or reimburse to the Crown any Performance Bond Secured Amounts from time to time due and payable by the Developer to the Crown.

(d) [Not used]

(e) The Crown must return to the Developer any part of the Performance Bond which has not been drawn down upon by the Crown within 20 Business Days after the later of:

(i) the date on or by which the Developer has paid to the Crown all Performance Bond Secured Amounts; and

(ii) the date which is 12 months after the Date of Project Practical Completion.

(f) The presentation of, drawing down upon, or enforcement of, the Performance Bond, will not prevent the Crown from:

(i) exercising alternative or additional Rights; or

(ii) claiming from the Developer any Loss in excess of the amount received by the Minister on presentation of, drawing down upon, or enforcement of, the Performance Bond.

(g) The Bank Guarantee initially provided by the Developer to the Crown as the Performance Bond must have an expiry date no earlier than 5 years after the date of this Agreement (or such lesser period, if any, as the Crown agrees in writing).

(h) If the expiry date for the Bank Guarantee will occur before the date by which the Crown is required to return any part of the Performance Bond to the Developer in

accordance with paragraph (e), the Developer must not later than 20 Business Days prior to the expiry date:

(i) procure the extension of the expiry date under the Bank Guarantee by 12 months or such lesser period as the Crown determines; or

(ii) procure the issue to the Crown of a replacement Bank Guarantee which:

(A) is for a term at least 12 months or such lesser period as determined by the Crown;

(B) is for the amount of the Performance Bond which is then undrawn; and

(C) otherwise is in a form and on terms that satisfies the requirements of this Agreement for the Bank Guarantee that it replaces.

(i) If the Developer fails to procure the extension or replacement of the Bank Guarantee in accordance with paragraph (h) within 15 Business Days prior to the expiry date of the Bank Guarantee, the Crown may draw down the undrawn amount of the Bank Guarantee and hold that amount as the Performance Bond.

(j) The parties acknowledge and agree that:

(i) the Developer may provide a cash deposit to the Crown in lieu of the Bank Guarantee under this clause, provided that the amount of the cash deposit is equal to amount required for the Bank Guarantee at the relevant time;

(ii) the Developer may subsequently replace that cash deposit with a Bank Guarantee which meets the requirements of this clause;

(iii) any cash deposit will be held as if, and this clause will apply as if, the cash deposit was the Performance Bond;

(iv) the cash deposit must be held by the Crown on behalf of the Developer; and

(v) interest (if any) earned on the cash deposit will be for the Developer's account, but the Crown is entitled to retain the interest and deal with it as money paid by the Developer to the Crown to form part of the cash deposit.

42 Settlement of disputes

42.1 Application

This clause 42 applies to each dispute between the Developer and the Crown which this Agreement provides is to be decided by an Adjudicator or in respect of which a party, being entitled to give a Dispute Notice, gives a Dispute Notice, or is taken to have given a Dispute Notice.

42.2 Requirements of Dispute Notice

A Dispute Notice, when actually given, must:

(a) state that it is a Dispute Notice;

(b) specify the clause under which it is given; and

(c) specify or be accompanied by adequate particulars and any relevant written material which identifies the matters in dispute.

42.3 Negotiation

(a) Within 10 Business Days of a party receiving a Dispute Notice, the Crown and the Developer must meet and genuinely attempt to resolve the relevant dispute.

(b) If, within 10 Business Days of the first meeting under clause 42.3(a) (or such further time as may be agreed in writing by the parties), the relevant dispute has not been resolved, the parties must refer the dispute to their senior representatives duly empowered and authorised to resolve the dispute, being, at the date of this Agreement, Larry Kestelman or Boris Rozenvasser for the Developer.

(c) If, within 10 Business Days of the first meeting under clause 42.3(b) (or such further time as may be agreed in writing by the parties), the relevant dispute has not been resolved, the dispute will be decided by an Adjudicator.

42.4 Appointment of Adjudicator

(a) If the Developer and the Crown are able to agree on the person to be appointed as an Adjudicator, the Adjudicator will be appointed jointly by the Developer and the Crown.

(b) If the parties are unable to agree on the appointment of an Adjudicator within the period of 10 Business Days after the issue of a Dispute Notice, either party may after the end of that period request the President (or other senior officer) for the time being of the Law Society of Tasmania (or its successor body) or his nominee to appoint a person as an Adjudicator to decide the matters in dispute.

(c) If an Adjudicator is unavailable, refuses to act, dies before making a decision or is unable to decide the matters in dispute, either the Developer or the Crown may request the President (or other senior officer) for the time being of the Law Society of Tasmania (or its successor body) or his nominee to appoint another Adjudicator to decide the matters in dispute.

(d) In relation to disputes that concern structural work or engineering work, the Adjudicator must hold professional indemnity insurance in respect of his or her activities as Adjudicator. The level of cover provided by such insurance must be not less than $20,000,000.00. The insurance must be maintained for a period of at least three years after the determination by the Adjudicator of the matters in dispute. The Adjudicator is entitled to recover the costs of such insurance in accordance with clause 42.8. An allowance for the costs of such insurance may be recovered by the Adjudicator as part of his or her costs for the purposes of clause 42.8. Nothing in this clause 42.4(d) is to be taken as limiting the costs of an Adjudicator for the purposes of clause 42.8.

42.5 Dispute resolution procedures to be followed by Adjudicator

An Adjudicator must:

(a) decide the matters in dispute related to the Dispute that led to his or her appointment having regard to the requirements of this Agreement;

(b) give both the Developer and the Crown a reasonable opportunity to make submissions and to put before him or her any material which may be relevant to determining the matters in dispute; and

(c) give written reasons for his or her decisions.

42.6 Powers of Adjudicator

An Adjudicator has the power:

(a) subject to the matters specified in clause 42.5, to proceed to the resolution of a dispute or difference in such manner and subject to such rules as the Adjudicator and the parties agree or failing agreement as the Adjudicator in his or her absolute discretion determines is suitable for the nature of the dispute or difference; and

(b) to engage and consult with any advisers, legal or technical, as he or she may see fit.

42.7 Adjudicator to act as expert

In making his or her decision an Adjudicator acts as an expert and not as an arbitrator.

42.8 Adjudicator's costs

(a) Immediately following the appointment of an Adjudicator the parties must request an estimate of the fees, costs and expenses of the Adjudicator.

(b) Each party must pay to the trust account of a lawyer acting for an Adjudicator an amount equivalent to 50 per cent of the estimate. If the amount paid by a party exceeds that party's liability for the Adjudicator's costs or the Adjudicator decides that the other party is to pay all of the Adjudicator's costs, the first party will be entitled to a refund of the unused part or the whole (as the case may require) of the amount paid by the first party towards the estimate.

(c) If a party fails to pay an amount under clause 42.8(b) payable by that party and the Adjudicator will not proceed to determine the matter in dispute unless the estimate is prepaid, the other party may pay that amount (which amount will then be a debt, payable on demand, owed by the party failing to make that payment to the other party making the payment).

(d) The parties must pay an Adjudicator's costs (including the costs of engaging and consulting advisers pursuant to clause 42.6(b)) in the proportions decided by the Adjudicator. If an Adjudicator gives no decision as to the payment of costs, the party against whose favour the dispute was adjudicated must pay the whole of the Adjudicator's costs.

42.9 Decision of Adjudicator

The decision of an Adjudicator will be final and binding on the parties in respect of the matters to be decided by the Adjudicator.

43 Limitation of Developer liability

43.1 Liability cap

(a) Subject to paragraph (b), paragraph (aa) and clause 43.2, the Developer's maximum aggregate liability to the Indemnified Persons in respect of this Agreement (except in relation to Project Stage 3) (whether in contract, tort or otherwise, including breach of this Agreement or a claim under an indemnity in this Agreement) is limited to the sum of $2,000,000 (two million dollars) (**General Liability Cap**).

(aa) Subject to paragraph (b) and clause 43.2, the Developer's maximum aggregate liability to the Indemnified Persons in respect of this Agreement and in relation to Project Stage 3 (whether in contract, tort or otherwise, including breach of this Agreement or a claim under an indemnity in this Agreement) is limited to the sum of $50,000 (fifty thousand dollars) (**Stage 3 Liability Cap**).

(b) Each of the General Liability Cap and the Stage 3 Liability Cap does not apply (and will not be eroded):

(i) to the extent that insurance proceeds are paid or payable to the Developer, or would have been paid or payable but for:

(A) any failure by the Developer to take out or renew or procure any insurance policy it is expressly required to take out or procure under this Agreement or the DEC Design Development Agreement (**Required Insurance Policy**);

(B) any act or omission of the Developer, or any Developer's Agent, in relation to the formation of a Required Insurance Policy that invalidates the Required Insurance Policy or limits the coverage under the Required Insurance Policy under this Agreement or the DEC Design Development Agreement;

(C) any failure of the Developer to claim, or to take reasonable steps to enforce a claim, under and in accordance with: (1) any Required Insurance Policy under this Agreement or the DEC Design Development Agreement; or (2) any insurance policy taken out by the Crown under clause 35 for which the Developer is an insured party and upon which (and to the extent that) the Developer is able to claim or enforce a claim; or

(D) any Required Insurance Policy under this Agreement or the DEC Design Development Agreement (or any insurance policy taken out by the Crown under clause 35) not responding because of any act or omission by the Developer or a Developer's Agent, unless:

(1) the Crown has failed to provide copies of the policies of insurance in accordance with clause 35.2A; and

(2) due to such failure of the Crown, the Developer does not know (or could not reasonably have known) that such act or omission would cause the insurance policies to not respond);

(ii) to the extent that the Developer recovers against a Developer's Design Consultant, or would have recovered but for:

(A) any intentional act or omission of the Developer which materially prejudices the Developer's right to claim against the Developer's Design Consultant (including any waiver or release);

(B) any failure by the Developer to claim, or to take reasonable steps to enforce a claim, against the Developer's Design Consultant, unless, in each case, the Developer provides evidence to the Crown that independent legal advice has been received from legal counsel acceptable to the Crown (acting reasonably and, for this purpose, noting that Minter Ellison is acceptable to the Crown) that such claim has low prospects of success;

(iii) to the extent that the Developer recovers against a Developer's Builder, or would have recovered but for:

(A) any intentional act or omission of the Developer which materially prejudices the Developer's right to claim against the Developer's Builder (including any waiver or release) (For the avoidance, this does not include, of itself, the act of having entered into a "construct only" form of building contract rather than a "design and construct" form of building contract for the Works for the Project Stage 2B);

(B) any failure by the Developer to claim, or to take reasonable steps to enforce a claim, against the Developer's Builder, unless, in each case, the Developer provides evidence to the Crown that independent legal advice has been received from legal counsel acceptable to the Crown (acting reasonably and, for this purpose, noting that Minter Ellison is acceptable to the Crown) that such claim has low prospects of success;

(iv) to or by any amount in relation to a liability arising out of any fraudulent act or omission, wilful default, wilful misconduct or gross negligence on the part of the Developer or any of its employees;

(v) to or by any amount in relation to a liability arising out of any intentional breach by the Developer of the intellectual property rights of any other person;

(vi) to or by any amount in relation to a liability arising out of a breach by the Developer of clause 10;

(vii) to liability that arises out of any injury to, disease or death of a person; or

(viii) to liability that arises out of loss or damage to third party real or tangible property (to avoid doubt, not including loss or damage to the DEC or the DEC Land).

(c) For the purposes of clause 43.1(b)(iv):

(i) 'gross negligence' means where the Developer or any of its employees has acted, or failed to act, in a negligent manner and such act or omission has occurred in circumstances where the Developer or any of its employees has done so knowingly and with disregard of the risks arising from the relevant negligent act or omission; and

(ii) 'wilful default' means where the Developer or any of its employees has breached a term of this Agreement or the Law and the breach has occurred in circumstances where the Developer has done so knowingly with disregard of the risks arising from such breach.

43.2 Insolvency of Developer's Agent

If a Developer's Agent is unable to meet all Claims which the Developer makes against the Developer's Agent, then for the purposes of clause 43.1:

(a) any past, present or future amounts recovered by the Developer against the Developer's Agent in relation to the Project must be aggregated and applied proportionately against the total amount of all such Claims; and

(b) the parties must make such payments and adjustments as between themselves so as to give full effect to clause 43.2(a).

43.3 Consequential loss

Notwithstanding any other provision of this Agreement, neither party has any liability to the other party for any loss of profit or loss of revenue or income, loss of reputation, loss of business or loss of opportunity ("**Consequential Loss**").

PART 7: GENERAL PROVISIONS

44 GST

(a) Unless otherwise stated in this Agreement, all amounts payable by one party to another party are exclusive of GST.

(b) If GST is imposed or payable on any supply made by a party under this Agreement, the recipient of the supply must pay to the supplier, in addition to the GST exclusive consideration for that supply, an additional amount equal to the GST exclusive consideration multiplied by the prevailing GST rate. The additional amount is payable at the same time and in the same manner as the consideration for the supply.

(c) A party that makes a taxable supply under this Agreement must provide a valid tax invoice to the recipient of the supply.

(d) A party's right to payment under clause 44(b) is subject to a valid tax invoice being delivered to the party liable to pay for the taxable supply.

(e) If the consideration for a supply under this Agreement is a payment or reimbursement for, or contribution to, any expense or liability incurred by the supplier to a third party, the amount to be paid, reimbursed or contributed in respect of the expense or liability will be the amount of the expense or liability net of any input tax credit to which the supplier is entitled in respect of the expense or liability.

(f) Where any amount payable under this Agreement is paid by being set-off against another amount, each amount must be calculated in accordance with this clause 44 as if it were an actual payment made pursuant to this Agreement.

(g) Unless the context otherwise requires, expressions used in this clause 44 that are defined in the GST Laws have the meanings given to those expressions in the GST Laws.

45 Notices

45.1 Notice requirements

(a) A notice, certificate, consent, application, waiver or other communication (each a **Notice**) under this Agreement must be:

(i) in legible writing in the English language;

(ii) subject to clause 45.1(c), signed by or on behalf of the sender or by a lawyer for the sender;

(iii) marked for the attention of the person or position (if any) specified in the Details applicable to the intended recipient of the Notice or, if the intended recipient has notified otherwise, marked for attention in the way last notified; and

(iv) left or sent in accordance with clause 45.2.

(b) [Not used].

(c) A Notice sent by email is taken to have been signed by the sender.

(d) A Notice given orally is of no legal force or effect as a Notice under this Agreement.

45.2 Method and address for delivery

(a) Subject to clause 45.2(b), a Notice must be:

(i) left at the intended recipient's address set out in the Details;

(ii) sent by prepaid ordinary mail (or prepaid airmail, if from one country to another country) to the intended recipient's address set out in the Details;

(iii) [Not used]; or

(iv) sent by email to the intended recipient's email address (if any) set out in the Details.

(b) If the intended recipient of a Notice has notified the sender by Notice of another address or email address for the purposes of receiving Notices, then subsequent Notices to that intended recipient must be left at or sent to the address or email address (as applicable) last notified by that intended recipient.

45.3 Time of receipt

(a) Subject to clause 45.3(b), a Notice is taken to have been received by the intended recipient:

(i) if left at the intended recipient's address, at the time of delivery;

(ii) if sent by prepaid ordinary mail, on the sixth Business Day after the day of posting, or if sent by prepaid airmail from one country to another country, on the twentieth Business Day after the day of posting;

(iii) [Not used]; and

(iv) if sent by email, four hours after the time the email was sent (as recorded by the device from which the email was sent) provided that the sender has not received an automated message within 48 hours of sending that the email has not been delivered in full.

(b) If a Notice is taken to be received by a recipient on a day that is not a Business Day in the place of the recipient or after 4.00pm on a Business Day in the place of the recipient, the Notice is taken to be received at 9.00am on the next Business Day.

(c) A Notice is effective from the time it is taken to have been received in accordance with clauses 45.3(a) and 45.3(b) (unless a later time is specified in the Notice, in which case the notice takes effect from that time).

45.4 Other modes or places of service

Nothing in this Agreement limits or excludes any other mode or place of service required by an applicable Law.

46 [Not used]

47 Miscellaneous

47.1 Governing law

This Agreement is governed by the Laws applying in Tasmania.

47.2 Dispute jurisdiction

The parties submit to the non-exclusive jurisdiction of courts with jurisdiction in Tasmania, and any courts that may hear appeals from those courts, in respect of any proceedings in connection with this Agreement.

47.3 Entire agreement clause

This Agreement and the other Project Documents form the entire agreement of the parties in respect of its subject matter. The only enforceable obligations of the parties in relation to the subject matter of this Agreement are those that arise out of the provisions contained in this Agreement and the other Project Documents. All prior agreements in relation to the subject matter of this Agreement and the other Project Documents are merged in and superseded by this Agreement and the other Project Documents unless expressly incorporated in this Agreement or the other Project Documents as an annexure, an appendix, an attachment or by reference.

47.4 Liability

An obligation of, or a representation, a warranty or an indemnity by, two or more parties (including where two or more persons are included in the same defined term) under or in respect of this Agreement, binds them jointly and each of them severally.

47.5 Benefit

An obligation, a representation, a warranty or an indemnity in favour of two or more parties (including where two or more persons are included in the same defined term) is for the benefit of them jointly and each of them severally.

47.6 Compliance with obligations

(a) A party must ensure that its officers, employees, volunteers, authorised contractors, agents and advisers involved in the performance by that party of its obligations under this Agreement:

(i) comply with the provisions of this Agreement related to that performance; and

(ii) do not conduct themselves in a way that would result in the party being in breach of this Agreement or that, if the conduct was undertaken by the party, would result in the party being in breach of this Agreement.

(b) If a party is prohibited from doing anything under this Agreement, that party must not knowingly assist, authorise or allow any other person to do that thing.

47.7 Severance

If a provision of this Agreement is or at any time becomes illegal, prohibited, void or unenforceable for any reason, that provision is severed from this Agreement and the remaining provisions of this Agreement:

(a) continue to be enforceable; and

(b) are to be construed with such additions, deletions and modifications of language as are necessary to give effect to the remaining provisions of this Agreement.

47.8 Counterparts

(a) This Agreement may be entered into in any number of counterparts.

(b) A party may execute this Agreement by signing any counterpart.

(c) All counterparts, taken together, constitute one instrument.

47.9 Further assurance

The parties agree to do or cause to be done all such acts, matters and things (including, as applicable, passing resolutions and executing documents) as are necessary or reasonably required to give full force and effect to this Agreement.

47.10 Business Days

If the day on or by which an act, matter or thing is to be done under this Agreement is not a Business Day, that act, matter or thing must be done by no later than the next Business Day.

47.11 No partnership or agency

Unless stated to the contrary in this Agreement:

(a) nothing contained or implied in this Agreement will:

(i) constitute, or be taken to constitute, a party to be the partner, agent or legal representative of another party for any purpose;

(ii) create, or be taken to create, a partnership or joint venture; or

(iii) create, or be taken to create, an agency or trust; and

(b) a party must not represent or hold itself out to be a partner, joint venturer, agent or representative of another party.

47.12 Legal costs

Each party must bear their own costs in preparing and negotiating this Agreement.

47.13 Amendment

This Agreement may only be amended or supplemented in writing signed by the parties.

47.14 Waiver

(a) A failure or delay in exercising a Right does not operate as a waiver of that Right.

(b) A single or partial exercise of a Right does not preclude any other exercise of that Right or the exercise of any other Right.

(c) A Right may only be waived in writing, signed by the party to be bound by the waiver. Unless expressly stated otherwise, a waiver of a Right is effective only in the specific instance and for the specific purpose for which it was given.

47.15 Successors and assigns

This Agreement is binding on and benefits each party and, unless repugnant to the sense or context, their respective administrators, personal representatives, successors and permitted assigns.

47.16 Rights cumulative

Each Right provided for in this Agreement:

(a) operates independently of any other Right provided for in this Agreement; and

(b) is cumulative with, and does not exclude or limit, any other Right, whether at Law or pursuant to any other agreement, deed or document.

47.17 Set-off

The Crown may set-off against any moneys payable by the Crown to the Developer under this Agreement or the DEC Design Development Agreement any debt or other moneys from time to time due and owing by the Developer to the Crown ("**Moneys Owing**") or bona fide Claim for Moneys Owing. This right of set-off does not limit or affect any other right of set-off available to the Crown.

47.18 No assignment

A party must not assign any of its Rights and obligations under this Agreement except with the prior written consent of each other party. The Crown may not unreasonably withhold its consent to an assignment to an associated entity of the Developer.

47.19 Disclosure

(a) Despite any confidentiality or intellectual property right subsisting in this Agreement, a party may publish all or any part of this Agreement without reference to another party.

(b) Nothing in this clause derogates from a party's obligations under the *Personal Information Protection Act 2004* (Tas) or the *Privacy Act 1988* (Cwlth).

47.20 Determination

Where a party is required or entitled to form or hold an opinion or view under or in relation to this Agreement, that opinion or view may be formed or held by an Authorised Officer for that party. This clause does not limit any other way in which a party may otherwise form or hold an opinion or view under or in relation to this Agreement.

47.21 Consent and approvals

(a) This clause applies to any consent or approval which a party must obtain from another party in accordance with this Agreement. For the avoidance of doubt, this clause does not apply to any consent or approval to be given under any legislation.

(b) A request for consent or approval must be made in writing.

(c) A consent or approval for the purposes of this Agreement is not effective unless given in writing.

(d) A consent or approval may be given subject to reasonable conditions.

(e) A party receiving a consent or approval must comply with any conditions subject to which the consent or approval is given. To the extent that the party receiving the consent or approval fails to comply with the condition, that failure is taken to be a breach of this Agreement.

47.22 Doctrine of merger

The doctrine or principle of merger does not apply to this Agreement or to anything done under or in connection with this Agreement. Accordingly, no Right or obligation of a party is merged in any thing done pursuant to this Agreement.

47.23 *Civil Liability Act 2002* (Tas)

The parties agree that:

(a) Part 9A of the *Civil Liability Act 2002* (Tas) does not apply; and

(b) the Rights, obligations and liabilities (whether such Rights, obligations or liabilities are sought to be enforced as a claim in contract, in tort or otherwise) of the parties in connection with this Agreement are those that would exist if Part 9A of the *Civil Liability Act 2002* (Tas) did not apply.

47.24 Minister or State of Tasmania expressed to be party

(a) If a Minister of the Crown (acting in that capacity) is expressed to be a party to this Agreement, then unless an applicable Law provides otherwise:

(i) the Minister enters into this Agreement on behalf of the Crown;

(ii) the Rights, obligations and liabilities expressed to be those of the Minister are Rights, obligations and liabilities of the Crown; and

(iii) each reference in this Agreement to the Minister will be taken to include a reference to the Crown.

(b) For the avoidance of doubt, if the State of Tasmania is expressed to be a party to this Agreement, the Rights, obligations and liabilities of the State of Tasmania are Rights, obligations and liabilities of the Crown.

47.25 No interference with executive duties or powers

Nothing in this Agreement is intended to prevent, is to be taken to prevent, or prevents, the free exercise by the Governor, by any member of the Executive Council, or by any Minister of the Crown, of any duties or authorities of his or her office. Any provision of this Agreement that is inconsistent with this clause is of no legal effect to the extent of the inconsistency.

47.26 Surviving provisions and termination

(a) The termination of this Agreement does not affect or limit the operation or effect of clauses or parts of this Agreement:

(i) that are expressed to survive the termination of this Agreement;

(ii) that, at Law, survive the termination of this Agreement; or

(iii) that are necessary to survive the termination of this Agreement:

(A) to give full force and effect to the parties' respective Rights, obligations and liabilities on or after the termination of this Agreement;

(B) to enable a party to make, enforce or defend any claims related to this Agreement; or

(C) to give full force and effect to the operation of clause 47.26(b) or clause 47.26(c).

(b) The termination of this Agreement does not affect any claims related to, or any Rights, releases, obligations or liabilities accrued or incurred under, this Agreement before the date on which this Agreement is terminated.

(c) Nothing in this clause 47.26 affects or limits the operation of another provision of this Agreement which gives a party Rights, or imposes obligations on a party, on or after the termination of this Agreement.

Executed as a deed

Signing

[***EXECUTION BLOCKS NOT REPRODUCED***]

Attachment 1: Developer's Builder's Deed of Covenant and Novation

EXECUTION VERSION

NBL Tasmanian Team and Derwent Entertainment Redevelopment Project:

BUILDER'S DEED OF COVENANT AND NOVATON

The Crown in Right of Tasmania acting through the Honourable Michael Ferguson MP
(being and in his capacity as the Minister for State Growth)
(the **Crown**)

LK Development (Tas) Pty Ltd (ACN 642 876 211)
(the **Developer**)

and

[##]
(the **Builder**)

THE CROWN SOLICITOR OF TASMANIA
Executive Building
15 Murray Street Hobart Tasmania 7000
GPO Box 825 Hobart Tasmania 7001
Telephone: (03) 6165 3630
Facsimile: (03) 6233 2874

KING & WOOD MALLESONS
Level 27, Collins Arch
447 Collins Street, Melbourne Victoria 3000
Telephone: (03) 9643 4000
Facsimile: (03) 9643 5999
Doc Ref: 49215689_1 (TPM)

Contents

NBL Tasmanian Team and Derwent Entertainment Redevelopment Project:
BUILDER'S DEED OF COVENANT AND NOVATION

Details and recitals

Date:

Parties:

Name	**The Crown in Right of Tasmania** (represented by the Department of State Growth)
Short form name	**Crown**
Notice details	Department of State Growth Salamanca Building 4 Salamanca Place HOBART Tas 7000 Facsimile: Not used. Notices cannot be given by facsimile Email: info@stategrowth.tas.gov.au Attention: Secretary, Department of State Growth

Name	**LK Development (Tas) Pty Ltd**
ACN	642 876 211
Short form name	**Developer**
Notice details	Level 13, 10 Queens Road, Melbourne, Victoria 3004 Facsimile: Not used. Notices cannot be given by facsimile Email: [redacted] Attention: Boris Rozenvasser

Name	**[##]**
ABN	
Short form name	**Builder**
Notice details	[##] Email: [##] Attention: [##]

Recitals:

A. The Crown has entered into (or will enter into) the DEC Land Sale Agreement to purchase the DEC Land from the Council.

B. The DEC is constructed on the DEC Land.

C. The Crown and the Developer have agreed arrangements pursuant to which, among other things, and subject to the Crown completing the purchase of the DEC Land from the Council:

(1) the Crown will lease the DEC Land (or parts of the DEC Land which include the DEC) to the Tenant under the DEC Lease;

(2) the Developer will undertake works to upgrade the DEC:

(i) to facilitate the use of the DEC for playing NBL games by a Tasmanian based NBL team; and

(ii) to improve the DEC as an entertainment, community and sporting venue for use by Tasmanians.

D. The Crown and the Developer have entered into (or will enter into) the Development Agreement.

E. The Developer and the Builder have entered into (or will enter into) the Building Contract.

F. It is a requirement of the Development Agreement and the Building Contract that the Builder enter into this Deed with the Crown.

Operative provisions

The parties agree as follows:

1 Definitions and interpretation

1.1 Definitions

In this Deed, unless the context otherwise requires:

Australian Standards means any standard published by Standards Australia Limited.

Authorised Officer means:

(a) if a party is the Crown or a Minister of the Crown, each of the Secretary of the department responsible for the administration of this Deed, an Acting Secretary of that department, a Deputy Secretary of that department, and a nominee of any of them; or

(b) for any other party, a person authorised in writing by that party.

Building Contract means the building contract dated on or about the date of this Deed made between the Developer and the Builder titled [##].

Business Day means a day that is not a Saturday, a Sunday, Easter Tuesday or a statutory holiday (as defined in the *Statutory Holidays Act 2000* (Tas)) generally observed in Hobart.

Claim means any allegation, debt, cause of action, liability, claim, proceeding, suit or demand of any nature however arising and whether present or future, fixed or unascertained, actual or contingent, and whether at law, in equity, under statute or otherwise.

Council means the Glenorchy City Council.

DEC means the Derwent Entertainment Centre.

DEC Development Agreement means the Development Agreement dated on or about the date of this Deed between the Crown and the Developer for the Developer to undertake the construction works to upgrade the DEC.

DEC Design Development Agreement means the Design Development Agreement dated [***insert date***] between the Crown (acting through the Department) and the Developer.

DEC Land means the land comprised in Folio of the Register Volume 110871 Folio 1, and on which the DEC is constructed.

this Deed means this deed and includes all its annexures, appendices, attachments and schedules (if any).

Department means the Department of State Growth or any other department which substantially succeeds to its functions as they relate to the Project.

Details means the details and recitals set out above.

Developer means LK Development (Tas) Pty Ltd (ACN 642 876 211).

Government Body includes a body politic, a government (federal, state or local), a governmental, judicial or administrative body, a tribunal, a commission, a department or agency of any government, and a statutory authority or instrumentality.

GST means any goods and services tax or similar tax imposed by the Commonwealth of Australia (but excluding any penalty, fine, interest or similar payment).

GST Laws means applicable Laws relating to GST.

Law means:

(a) principles of law or equity established by decisions of courts;

(b) legislation and subordinate legislation; and

(c) requirements, approvals (including conditions) and guidelines of any Government Body that have force of law.

month means calendar month.

NBL means the National Basketball League operating in Australia and New Zealand.

Novation Date means:

(a) subject to paragraph (b), the date specified in a Novation Notice as the date on which a novation of Building Contract takes effect; or

(b) if no date is specified in the Novation Notice, the date determined in accordance with clause 5.1.

Novation Notice means a notice given by the Crown to the Developer and the Builder in accordance with clause 5.1.

Obligation means an obligation, duty or liability.

Right includes a right, a power, a remedy, a discretion or an authority.

Step-in Right means the Crown's Right to step-into the Project in accordance with clause [39.4] of the Development Agreement.

1.2 Incorporated definitions – Development Agreement

Expressions defined in the Development Agreement have the same meaning when used in this Deed unless:

(a) the expression is separately defined in this Deed; or

(b) the context otherwise requires.

1.3 Interpretation

In this Deed, unless the context otherwise requires:

(a) the singular includes the plural and vice versa;

(b) words importing a gender include all genders;

(c) other parts of speech and grammatical forms of a word or phrase defined in this Deed have a corresponding meaning;

(d) a reference to a thing (including property or an amount) is a reference to the whole and each part of that thing;

(e) a reference to a group of persons includes a reference to any one or more of those persons;

(f) a reference to an annexure, an appendix, an attachment, a schedule, a party, a clause or a part is a reference to an annexure, an appendix, an attachment, a schedule or a party to, or a clause or a part of, this Deed;

(g) a reference to any legislation or legislative provision includes subordinate legislation made under it and any amendment to, or replacement for, any of them;

(h) a reference to a document includes:

(i) any thing on which there is writing;

(ii) an amendment or supplement to, or replacement or novation of, that document; or

(iii) a map, plan, drawing or photograph;

(i) a reference to a 'person' includes a natural person, a partnership, a body corporate, a corporation sole, an association, a Government Body, or any other entity;

(j) a reference to a party includes that party's executors, administrators, successors and permitted assigns and substitutes;

(k) a reference to a Minister includes, as applicable, that Minister's predecessors and successors in office;

(l) a reference to a Government Body or other body or organisation that has ceased to exist, or that has been renamed, reconstituted or replaced, or the powers or functions of which have been substantially transferred, is taken to refer respectively to the Government Body or other body or organisation as renamed or reconstituted, or established or formed in its place, or to which its powers or functions have been substantially transferred;

(m) a reference to an office in a Government Body or other body or organisation includes any person acting in that office, and if the office is vacant, the person who for the time being is substantially responsible for the exercise of the duties, functions or powers of that office;

(n) mentioning any thing after the words 'includes', 'included' or 'including' does not limit the meaning of any thing mentioned before those words;

(o) a reference to a day is to be interpreted as the period of time in Tasmania commencing at midnight and ending 24 hours later;

(p) reference to a time or date in connection with the performance of an obligation by a party is a reference to the time or date in Hobart, Tasmania, even if the obligation is to be performed elsewhere; and

(q) references to '$' and 'dollars' are to Australian dollars.

1.4 Headings

Headings are included for convenience only and do not affect the interpretation of this Deed.

1.5 No rule of construction applies to disadvantage party

In relation to the interpretation of this Deed, no rule of construction is to apply to the disadvantage of a party because that party was responsible for the preparation of this Deed or any part of it.

1.6 Land

A reference to a piece or parcel of land includes all improvements and fixtures on that land.

2 Builder's and Developer's warranties

2.1 Warranties

Each of the Builder and the Developer unconditionally warrants to the Crown as follows:

(a) that the copy of the Building Contract delivered to the Crown by or on behalf of them, contemporaneously with the execution of this Deed, is a true and correct copy of the Building Contract; and

(b) that the Building Contract sets out the entire agreement between the Developer and the Builder in relation to the construction of the Project Works.

2.2 Reliance

Each of the Builder and the Developer acknowledges that the Crown is relying on the warranties in clause 2.1 given by the Builder and the Developer in connection with the Project. The Crown's reliance on any warranty given the Builder and the Developer in clause 2.1 is not affected by any investigations made by the Crown.

2.3 Construction

Each warranty in clause 2.1 is to be construed independently of the other warranties in that clause.

2.4 Notice

The Builder and the Developer must immediately notify the Crown in writing of any matter or thing that may result in breach any warranty in this clause 2.

3 Building Contract

3.1 No variation of Building Contract

(a) The Developer and the Builder must not, without the prior written consent of the Crown (such consent not to be unreasonably withheld), vary or waive a provision of the Building Contract.

(b) If, in breach of clause 3.1(a), the Developer or the Builder purport to vary or waive a provision of the Building Contract:

(i) the purported variation or waiver will be of no effect; and

(ii) the Building Contract is to continue to take effect as if the purported variation or waiver had not occurred.

3.2 Performance

(a) The Builder unconditionally and irrevocably undertakes, for the benefit of the Crown, that it will duly and punctually perform, in accordance with all applicable Laws, all of its obligations under the Building Contract related to or concerning the Project Works.

(b) The Crown may not make a Claim against the Builder for breach of clause 3.2(a) to the extent that the breach of the Building Contract is due to the failure of the Builder to complete the relevant Project Works within the time permitted under the Building Contract. Only the Developer may make a Claim against the Builder for lateness in respect of the completion of the Project Works.

(c) If and to the extent that any Loss suffered by the Crown has been satisfied by the Builder paying the amount of that Loss to the Developer, then and to that extent the Crown is not entitled to separately recover that Loss from the Builder. In this clause 'Loss' means Loss arising out of a breach of clause 3.2(a).

(d) The Builder will be entitled to defend any claim by the Crown for the breach of clause 3.2(a) to the same extent as the Builder would be entitled, by reason of a Specified Matter, to defend any corresponding claim by the Developer against the Builder for a breach of the Building Contract.

(e) For the avoidance of doubt, for the purposes of clause 3.2(c), the Builder cannot:

(i) set-off amounts owing by the Developer to the Builder against any amount payable by the Builder to the Crown for a breach of clause 3.2(a); or

(ii) defend any claim for breach of clause 3.2(a) on the basis of any act, event, matter or thing that would otherwise constitute breach of clause 3.1.

(f) Nothing in this clause 3.2 affects any Claim that the Crown may have against the Builder independently of this deed.

(g) In this clause, **Specified Matter** means any of the following:

(i) a provision of the Building Contract;

(ii) any instruction or direction given under the Building Contract, before the date of the breach, by the Developer or the superintendent under the Building Contract.

3.3 Notification of variation to Project Works

The Builder must notify, in writing, the Crown of any variation to the Project Works under the Building Contract.

3.4 Notice of default

The Builder must promptly give to the Crown written notice describing any breach of the Building Contract by the Developer, in respect of which the Builder intends to exercise any Right to:

(a) terminate or rescind the Building Contract; or

(b) suspend performance of the Builder's obligations under the Building Contract.

3.5 Limitation on exercise of Right to terminate

(a) The Builder must not exercise any Right referred to in clause 3.4 unless:

(i) a notice under that clause in respect of the breach has been given to the Crown; and

(ii) if the breach is:

(A) capable of remedy, the breach has not been remedied by the Developer or the Crown within 20 Business Days from the date that the notice is given to the Crown; or

(B) not capable of remedy, reasonable compensation for that breach has not been paid to the Builder by the Developer or the Crown within a reasonable time from the date that notice is given by the Builder to the Developer and the Crown that compensation is required.

(b) Nothing in this Deed imposes any obligation on the Crown to remedy any breach, or pay compensation in respect of any breach, of the Building Contract by the Developer.

4 Builder to disclose defects in Project Works

Until the Builder's engagement by the Developer is completed or terminated, the Builder must promptly disclose to the Crown in writing any defects or omissions in the Project Works of which the Builder is aware.

5 Novation

5.1 Crown's notice

(a) The Crown may give a Novation Notice to the Developer and the Builder if:

(i) the Development Agreement is terminated; or

(ii) the Crown exercises the Step-in Right.

(b) The Crown may, in the Novation Notice, nominate a date as the Novation Date. If the Crown does not nominate such a date the Novation Date will be the date 10 Business Days after the date of the notice.

5.2 Novation

With effect on and from the Novation Date, the parties agree that:

(a) as between the Developer and the Builder, the Building Contract is discharged with respect to the performance of any Obligation under the Building Contract that relates to any period on or after the Novation Date; and

(b) a new contract (the **New Contract**) will be taken to be made as between the Builder and the Crown on the same terms and conditions as the Building Contract except that:

(i) the Crown is substituted, in the New Contract, for the Developer;

(ii) each reference in the Building Contract to the Developer will be read, in the New Contract, as a reference to the Crown;

(iii) notices to the Crown under the New Contract must be provided to the Crown at the Crown's address specified above; and

(iv) the term of the New Contract will be the unexpired residue of the term of the Building Contract as at the Novation Date.

5.3 Rights and benefits

With effect on and from the Novation Date:

(a) the Builder and the Crown, are each bound by the New Contract created in accordance with clause 5.2(b);

(b) the Crown has the same Rights and Obligations under the New Contract which the Developer had under the Building Contract in respect of any period on or after the Novation Date;

(c) the Builder has same Rights and Obligations under the New Contract that it had under the Building Contract in respect of any period on or after the Novation Date; and

(d) the Developer has no Rights and Obligations under the New Contract.

5.4 Release from future performance

On and from the Novation Date, the Builder and the Developer release each other from any Obligations under the Building Contract that relate to any period on or after the Novation Date.

5.5 Accrued Rights unaffected

The novation and release do not prejudice any accrued Rights or Obligations arising under the Building Contract in connection with the performance of the Building Contract before the Novation Date.

5.6 Crown's immunity from liability

Nothing in this Deed imposes any obligation or liability on the Crown under this Deed in respect of:

(a) any failure by the Developer to fulfil any Obligation, under or in connection with the Building Contract, which it owed to the Builder prior to the Novation Date;

(b) any act, default or omission of Developer in connection with the Building Contract or the Project, irrespective of the date of that act, default or omission; or

(c) any Claim of the Builder where the act, default, omission or event which gives rise to the Claim occurred prior to the Novation Date.

6 Principal Contractor appointment

For the purposes of the *Work Health and Safety Act 2012* (Tas), as between the parties:

(a) the Crown is not a principal contractor for the purposes of that Act in relation to any work to be performed by the Developer under the Development Agreement and/or the Builder under the Building Contract; and

(b) the Crown appoints the Builder as principal contractor for the construction work contemplated by the Building Contract, and the Builder accepts such appointment.

7 GST

(a) Unless otherwise stated in this Deed, all amounts payable by one party to another party are exclusive of GST.

(b) If GST is imposed or payable on any supply made by a party under this Deed, the recipient of the supply must pay to the supplier, in addition to the GST exclusive consideration for that supply, an additional amount equal to the GST exclusive consideration multiplied by the prevailing GST rate. The additional amount is payable at the same time and in the same manner as the consideration for the supply.

(c) A party that makes a taxable supply under this Deed must provide a valid tax invoice to the recipient of the supply.

(d) A party's right to payment under clause 6(b) is subject to a valid tax invoice being delivered to the party liable to pay for the taxable supply.

(e) If the consideration for a supply under this Deed is a payment or reimbursement for, or contribution to, any expense or liability incurred by the supplier to a third party, the amount to be paid, reimbursed or contributed in respect of the expense or liability will be the amount of the expense or liability net of any input tax credit to which the supplier is entitled in respect of the expense or liability.

(f) Where any amount payable under this Deed is paid by being set-off against another amount, each amount must be calculated in accordance with this clause 6 as if it were an actual payment made pursuant to this Deed.

(g) Unless the context otherwise requires, expressions used in this clause 6 that are defined in the GST Laws have the meanings given to those expressions in the ST Laws.

8 Notices

8.1 Notice requirements

(a) A notice, certificate, consent, application, waiver or other communication (each a **Notice**) under this Deed must be:

(i) in legible writing in the English language;

(ii) subject to clauses 8.1(b) and 8.1(c), signed by or on behalf of the sender or by a lawyer for the sender;

(iii) marked for the attention of the person or position (if any) specified in the Details applicable to the intended recipient of the Notice or, if the

intended recipient has notified otherwise, marked for attention in the way last notified; and

(iv) left or sent in accordance with clause 8.2.

(b) A printed or copy signature is sufficient for the purposes of sending any Notice by facsimile.

(c) A Notice sent by email is taken to have been signed by the sender.

(d) A Notice must not be given orally.

8.2 Method and address for delivery

(a) Subject to clause 8.2(b), a Notice must be:

(i) left at the intended recipient's address set out in the Details;

(ii) sent by prepaid ordinary mail (or prepaid airmail, if from one country to another country) to the intended recipient's address set out in the Details;

(iii) sent by facsimile to the intended recipient's facsimile number (if any) set out in the Details; or

(iv) sent by email to the intended recipient's email address (if any) set out in the Details.

(b) If the intended recipient of a Notice has notified the sender of another address, facsimile number or email address for the purposes of receiving Notices, then subsequent Notices to that intended recipient must be left at or sent to the address, facsimile number or email address (as applicable) last notified by that intended recipient.

8.3 Time of receipt

(a) Subject to clause 8.3(b), a Notice is taken to have been received by the intended recipient:

(i) if left at the intended recipient's address, at the time of delivery;

(ii) if sent by prepaid ordinary mail, on the third Business Day after the day of posting, or if sent by prepaid airmail from one country to another country, on the tenth Business Day after the day of posting;

(iii) if sent by facsimile, at the time shown in the transmission report as the time when the whole Notice was sent; and

(iv) if sent by email, four hours after the time the email was sent (as recorded by the device from which the email was sent) provided that the sender has not received an automated message that the email has not been delivered.

(b) If a Notice is received by a recipient on a day that is not a Business Day or after 4.00pm on a Business Day, the Notice is taken to be received at 9.00am on the next Business Day.

(c) A Notice is effective from the time it is taken to have been received in accordance with clauses 8.3(a) and 8.3(b) (unless a later time is specified in the Notice, in which case the notice takes effect from that time).

8.4 Other modes or places of service

Nothing in this Deed limits or excludes any other mode or place of service required by an applicable Law.

9 Miscellaneous

9.1 Governing law

This Deed is governed by the Laws applying in Tasmania.

9.2 Dispute jurisdiction

The parties submit to the non-exclusive jurisdiction of courts with jurisdiction in Tasmania, and any courts that may hear appeals from those courts, in respect of any proceedings in connection with this Deed.

9.3 Entire agreement clause

This Deed forms the entire agreement of the parties in respect of its subject matter. The only enforceable obligations of the parties in relation to the subject matter of this Deed are those that arise out of the provisions contained in this Deed. All prior agreements in relation to the subject matter of this Deed are merged in and superseded by this Deed unless expressly incorporated in this Deed as an annexure, an appendix, an attachment or by reference.

9.4 Liability

An obligation of, or a representation, a warranty or an indemnity by, two or more parties (including where two or more persons are included in the same defined term) under or in respect of this Deed, binds them jointly and each of them severally.

9.5 Benefit

An obligation, a representation, a warranty or an indemnity in favour of two or more parties (including where two or more persons are included in the same defined term) is for the benefit of them jointly and each of them severally.

9.6 Compliance with obligations

(a) A party must ensure that its officers, employees, volunteers, authorised contractors, agents and advisers involved in the performance by that party of its obligations under this Deed:

(i) comply with the provisions of this Deed related to that performance; and

(ii) do not conduct themselves in a way that would result in the party being in breach of this Deed or that, if the conduct was undertaken by the party, would result in the party being in breach of this Deed.

(b) If a party is prohibited from doing anything under this Deed, that party must not knowingly assist, authorise or allow any other person to do that thing.

9.7 Severance

If a provision of this Deed is or at any time becomes illegal, prohibited, void or unenforceable for any reason, that provision is severed from this Deed and the remaining provisions of this Deed:

(a) continue to be enforceable; and

(b) are to be construed with such additions, deletions and modifications of language as are necessary to give effect to the remaining provisions of this Deed.

9.8 Counterparts

(a) This Deed may be entered into in any number of counterparts.

(b) A party may execute this Deed by signing any counterpart.

(c) All counterparts, taken together, constitute one instrument.

9.9 Further assurance

The parties agree to do or cause to be done all such acts, matters and things (including, as applicable, passing resolutions and executing documents) as are necessary or reasonably required to give full force and effect to this Deed.

9.10 Business Days

If the day on or by which an act, matter or thing is to be done under this Deed is not a Business Day, that act, matter or thing must be done by no later than the next Business Day.

9.11 Legal costs

Each party must bear their own costs in preparing and negotiating this Deed.

9.12 Amendment

This Deed may only be amended or supplemented in writing signed by the parties.

9.13 Waiver

(a) A failure or delay in exercising a Right does not operate as a waiver of that Right.

(b) A single or partial exercise of a Right does not preclude any other exercise of that Right or the exercise of any other Right.

(c) A Right may only be waived in writing, signed by the party to be bound by the waiver. Unless expressly stated otherwise, a waiver of a Right is effective only in the specific instance and for the specific purpose for which it was given.

9.14 Successors and assigns

This Deed is binding on and benefits each party and, unless repugnant to the sense or context, their respective administrators, personal representatives, successors and permitted assigns.

9.15 Rights cumulative

Each Right provided for in this Deed:

(a) operates independently of any other Right provided for in this Deed; and

(b) is cumulative with, and does not exclude or limit, any other Right, whether at Law or pursuant to any other agreement, deed or document.

9.16 No assignment

A party must not assign any of its Rights and obligations under this Deed except with the prior written consent of each other party.

9.17 Disclosure

(a) Despite any confidentiality or intellectual property right subsisting in this Deed, a party may publish all or any part of this Deed without reference to another party.

(b) Nothing in this clause derogates from a party's obligations under the *Personal Information Protection Act 2004* (Tas) or the *Privacy Act 1988* (Cwlth).

9.18 Determination

Where a party is required or entitled to form or hold an opinion or view under or in relation to this Deed, that opinion or view may be formed or held by an Authorised Officer for that party. This clause does not limit any other way in which a party may otherwise form or hold an opinion or view under or in relation to this Deed.

9.19 *Civil Liability Act 2002* (Tas)

The parties agree that:

(a) Part 9A of the *Civil Liability Act 2002* (Tas) does not apply; and

(b) the Rights, obligations and liabilities (whether such Rights, obligations or liabilities are sought to be enforced as a claim in contract, in tort or otherwise) of the parties in connection with this Deed are those that would exist if Part 9A of the *Civil Liability Act 2002* (Tas) did not apply.

9.20 Minister or State of Tasmania expressed to be party

(a) If a Minister of the Crown (acting in that capacity) is expressed to be a party to this Deed, then unless an applicable Law provides otherwise:

(i) the Minister enters into this Deed on behalf of the Crown;

(ii) the Rights, obligations and liabilities expressed to be those of the Minister are Rights, obligations and liabilities of the Crown; and

(iii) each reference in this Deed to the Minister will be taken to include a reference to the Crown.

(b) For the avoidance of doubt, if the State of Tasmania is expressed to be a party to this Deed, the Rights, obligations and liabilities of the State of Tasmania are Rights, obligations and liabilities of the Crown.

9.21 No interference with executive duties or powers

Nothing in this Deed is intended to prevent, is to be taken to prevent, or prevents, the free exercise by the Governor, by any member of the Executive Council, or by any Minister of the Crown, of any duties or authorities of his or her office. Any provision of this Deed that is inconsistent with this clause is of no legal effect to the extent of the inconsistency.

9.22 Surviving provisions and termination

(a) The termination of this Deed does not affect or limit the operation or effect of clauses or parts of this Deed:

(i) that are expressed to survive the termination of this Deed;

(ii) that, at Law, survive the termination of this Deed; or

(iii) that are necessary to survive the termination of this Deed:

(A) to give full force and effect to the parties' respective Rights, obligations and liabilities on or after the termination of this Deed;

(B) to enable a party to make, enforce or defend any claims related to this Deed; or

(C) to give full force and effect to the operation of clause 9.22(b) or clause 9.22(c).

(b) The termination of this Deed does not affect any claims related to, or any Rights, releases, obligations or liabilities accrued or incurred under, this Deed before the date on which this Deed is terminated.

(c) Nothing in this clause 9.22 affects or limits the operation of another provision of this Deed which gives a party Rights, or imposes obligations on a party, on or after the termination of this Deed.

Executed as a deed

Signing

Execution by the Crown

Executed as an agreement on behalf of the Crown in Right of Tasmania by the person named below in the presence of the witness named below:

Signature: →			
	Being a person who has authority to sign this Deed on behalf of [short form name]		
*Print name and position:		Witness' signature: →	
		*Witness print name and position:	
*Use BLOCK LETTERS		*Witness print address:	

Signing by Builder

Executed as a deed by ## in accordance with section 127(1) of the *Corporations Act 2001* (Cwlth):

Signature: →		Signature: →	
*Print name and office held:		*Print name and office held:	

*Use BLOCK LETTERS

Note: In the case of a company that has only one director and one secretary, show the office held as 'SOLE DIRECTOR AND SOLE COMPANY SECRETARY'

Attachment 2: Tender process

Schedule 2 Tender Process

1. Definitions

In this Schedule:

Advisor means any firm, company or an individual who directly or indirectly provides advice.

Developer's Builder Schedule or **DBS** means the schedule of potential Developer's Builder agreed between the Parties and attached as Attachment 1 to this Schedule.

Construction Supplier Register or **CSR** is the Tasmanian Government's pre-qualification scheme for building and construction industry consultants and contractors.

Crown Probity Advisor means any probity advisor of the Crown designated as such and as advised to the Developer from time to time.

Evaluation Documents has the meaning given in section 3.5(c).

Evaluation Report has the meaning given in section 3.5(f)(iii).

Express Purpose means participation in the Tender Process only.

Procurement Team means all natural persons nominated by the Developer to participate in the evaluation of the Tender Process, including external Advisors and subject matter experts but excluding Crown representatives.

Project Program means the program for the construction of the Project Works in Attachment [11] of this Agreement,

Proposal means a tender, bid or proposal submitted as part of the Tender Process.

Proposed Evaluation Documents has the meaning given in section 3.5(b).

Request for Proposal or RFP Documentation means any material that is to be released or provided to any Tenderer by the Crown, the Developer or any of their Associates for the preparation of the Tenderer's Proposal.

Review Period means in respect of the Evaluation Documents, the review period allowed within the Project Program.

Invited Contractors has the meaning given in section 3.4.

Tenderer Information means all information of whatever nature which is obtained by or on behalf of the Developer or a Procurement Team member or their Associates from a Tenderer or any of its Associates relating to the Tender Process including:

(a) the Proposals;

(b) all information disclosed in presentation by or on behalf of Tenderers; and

(c) all discussions and negotiations between the Developer or Procurement Team members and Tenderers and their Associates relating to the Tender Process.

Treasury and Finance Prequalification List means the register maintained by the Department of Treasury and Finance of prequalified consultants where consultants are classified according to their expertise and capacity in specific work categories and financial ranges.

2. Tender Process objectives

The objectives of the Tender Process are:

(a) to ensure the Tender Process is completed on a competitive, arm's length basis;

(b) to obtain value for money;

(c) to ensure the selection of the preferred Tenderer is based on competent and fully detailed analysis of the Proposals;

(d) to manage conflicts of interest;

(e) to eliminate bias or the perception of bias;

(f) to uphold the confidentiality at all stages of the Tender Process and to be fair and to be seen to be fair to all Tenderers;

(g) to document the key decisions such that the results are transparent and auditable; and

(h) to ensure all relevant procurement milestones agreed with the Crown are achieved.

3. Tender Process

3.1 Role of the Developer

The Developer is responsible for undertaking the Tender Process and procuring the building contract with the Developer's Builder for the Project Stage 2.

3.2 Role of the Crown generally

(a) Without limitation, the Crown's specific rights and roles in the Tender Process will include:

(i) reviewing and approving the RFP Documentation before release to Tenderers;

(ii) a right to attend Tender workshops and review Proposals;

(iii) oversight and attendance at evaluation and negotiations;

(iv) approving the terms of the final contract; and

(v) a right of final refusal of the preferred Developer's Builder.

3.3 Crown Rights

(a) The Crown:

(i) will have full visibility of the Tender Process, including having access to all Tenderer Information and material and written communications produced by the Developer and the Procurement Team in relation to the Tender Process;

(ii) may attend all Tender Process negotiations with Tenderers;

(iii) may require one of its representatives to undertake a review of the Proposal details including pricing. The outcome of this review will be shared with both the Developer and the Crown;

(iv) must have, and the Developer must ensure that the Crown has, full access to all documentation and pricing information relating to the Tender Process;

(v) must, at its request, be able to meet with the Developer on a periodic basis as reasonably required by the Crown; and

(vi) after the Developer has taken into account any comments on or reasons for rejection of the Proposed Evaluation Documents, must approve the Evaluation Documents.

3.4 Invited Contractors

(a) The Developer will undertake the following one stage procurement process for the procurement of the Developer's Builder.

(b) The Developer must invite at least [five] contractors on the Developer's Builder Schedule or otherwise agreed between the parties having regard to the Construction Supplier Register (**Invited Contractors**) to participate in the Tender Process for the Developer's Builder. If the Invited Contractors are not already on the Treasury and Finance Prequalification List, the Invited Contractor must complete their registration prior to the release of the RFP documents. Prequalification application form and supporting documents including insurance cover levels visit: www.purchasing.treasury.tas.gov.au.

(c) The Developer must issue a copy of the RFP Documentation to the Crown for review and approval prior to issuing the RFP Documentation to the Invited Contractors in accordance with the Project Program.

(d) The Crown may give the Developer written notice of any concerns the Crown has with the RFP Documentation and the Developer must have regard to the Crown's concerns in preparing the RFP Documentation issued to the Invited Contractors.

(e) The Developer must ensure the RFP Documentation requires the Invited Contractors to include the following in each of their proposals:

(i) a description of its capability, experience and financial viability;

(ii) a detailed methodology for delivering the relevant works or services;

(iii) the key people and subcontractors it proposes to use in connection with the works or services;

(iv) its price (including all preliminaries and margin) for delivering the works or services in accordance with the relevant contract;

(v) a COVID-19 Safety Plan, in line with Worksafe Workplace Guidelines by WorkSafe Tasmania, describing how the works will be delivered in accordance with Tasmanian Health Department requirements;

(vi) Compliance with the:

(A) Buy Local Policy, noting the amendments in weighting as of July 2020 to 25% in the assessment of tenders;

(B) Building and Construction Training Policy requiring the use of apprentices for a minimum of 20% of the labour required for work undertaken on government-funded building and construction contracts and;

(C) Wood Encouragement Policy, to encourage the use of sustainably sourced forest and wood products within Government building and construction projects.

(vii) its program for delivery of the Project Works.

(f) Without limitation, as part of the RFP Documentation, the Developer must include the following matters:

(i) provisions that communicate the probity and confidentiality arrangements that have been put in place to provide assurance to potential Tenderers;

(ii) the Crown's requirement that Tenderers be reputable;

(iii) all provisions required by Crown Policies;

(iv) for the Developer's Builder a contract that is back-to-back with, the Development Agreement as applicable; and

(v) provisions in the draft contract which comply with the subcontracting requirements in the Development Agreement as if the contractor were a "Developer's Builder" (as that term is defined under the Development Agreement as applicable), including in respect of the obligation to enter into a Deed of Covenant and Novation.

3.5 Tender Evaluation

(a) The Developer will be primarily responsible for evaluation of Proposals received in response to the RFP Documentation and the Crown will have an oversight role in respect of the Tender Process.

(b) Unless otherwise agreed with the Crown, the Developer must prepare a tender strategy, evaluation approach, assessment criteria and scoring matrix to be applied by the Procurement Team for review and approval by the Crown before the date for release of the RFP documents (**Proposed Evaluation Documents**).

(c) The Crown may provide "comments" in respect of, "approve" or "reject", the Proposed Evaluation Documents within the relevant Review Period and the Developer must not release any RFP documents until the Proposed Evaluation Documents have been approved by the Crown (such approval not to be unreasonably withheld, delayed or conditioned) (**Evaluation Documents**).

(d) If the Crown comments on or rejects the Proposed Evaluation Documents in accordance with section 3.5(c), the Developer must:

(i) amend the Proposed Evaluation Documents in accordance with the comments of the Crown to the extent necessary to ensure that the Proposed Evaluation Documents meet the requirements of this Agreement and otherwise address the comments of the Crown; and

(ii) resubmit the revised Proposed Evaluation Documents to the Crown,

and the provisions of sections 3.5(c) to 3.5(d) will reapply to the amended Proposed Evaluation Documents until such time as the Crown approves the Proposed Evaluation Documents in accordance with section 3.5(c).

(e) Unless otherwise agreed with the Crown, the Developer must:

(i) enable the Crown to be present at the opening of any Proposals;

(ii) invite any representatives nominated by the Crown to participate in, and comment on, Proposal evaluations;

(iii) invite any representatives nominated by the Crown with at least 2 Business Days' notice to attend meetings, workshops and clarification sessions involving Tenderers and keep relevant records including meeting minutes; and

(iv) fully detail any adjustments with respect to Tenderer pricing (the 'normalisation' process) including how departures, qualifications and exclusions are estimated and provide this information to the Crown for consideration.

(f) Without limiting section 3.5(e):

(i) after the date for submission of Proposals and in sufficient time to allow the Crown to advise any concerns pursuant to section 3.5(f)(ii) below without delaying the program, the Developer must provide the Crown a copy of all Proposals in electronic format;

(ii) the Crown may, in accordance with the Project Program, excluding during the Blackout Period, after receiving the Proposals from the Developer under section 3.5(f)(i), give the Developer written notice of any concerns the Crown has with the Proposals; and

(iii) the Developer assessment teams must invite the relevant Crown representatives to be present when they prepare reports in respect of the Tender Process (**Evaluation Report**) and in preparing their Evaluation Report must have regard to the Crown's concerns which (if any) must be provided in accordance with section 3.5(f)(ii).

(g) The Developer must, in accordance with the Evaluation Documents, select and inform the Crown of the construction contractor the Developer intends to select as the preferred contractor in writing, attaching a copy of the Evaluation Report (**Preferred Contractor**).

(h) The Crown may reject the Preferred Contractor if the Crown is of the view (acting reasonably) that:

(i) the Preferred Contractor's proposal does not represent value-for money;

(ii) any evaluation criteria has not been complied with; or

(iii) the Preferred Contractor is not sufficiently reputable or otherwise does not satisfy any probity requirements identified by the Crown in the RFP Documentation.

(i) If the Crown accepts the Developer's recommended Preferred Contractor, or the Crown and the Developer agree to the appointment of an alternative Preferred Contractor as contemplated in section 3.5(j)(i), the Developer will use its best endeavours to finalise negotiations with that Preferred Contractor.

(j) If the Crown rejects the Developer's recommended Preferred Contractor in accordance with section 3.5(h), the Crown may:

(i) negotiate with the Developer and agree to the appointment of an alternative Preferred Contractor for the construction of Project Works.

3.6 Probity

(a) The Developer acknowledges that the Crown Probity Advisor will oversee the Process and Tender Process.

(b) The Developer must:

(i) enable the Crown Probity Advisor to have full visibility of the Tender Process, including having the ability to access to all Tenderer Information and material and communications produced by the Developer and the Procurement Team in relation to the Tender Process;

(ii) allow the Crown Probity Advisor to attend any Proposal evaluations or meetings, workshops and clarification sessions involving Tenderers;

(iii) comply with all reasonable directions of the Crown Probity Advisor in connection with the probity of the Tender Process;

(iv) notwithstanding the terms of the deed, otherwise comply with the Crown Probity requirements, as advised by the Crown or the Crown Probity Advisor from time to time unless otherwise agreed with the Crown; and

(v) promptly notify the Crown of any particular instance where (in relation to the requirements of this section 3.6):

A. it does not consider that it can comply;

B. it considers that the requirements are inappropriate, or

C. a non-compliance would not impact the integrity of the process.

(c) The Crown will be responsible for the cost of the Crown Probity Advisor and responsible for managing the Crown Probity Advisor's oversight of the Process and Tender Process including responsibility for forwarding invitations to the Crown Probity Advisor to attend the events described in clause 3.6(b)(ii) and forwarding all Tender Information and material and communications provided to the Crown by the Developer under clause 3.6(b)(i)).

(d) For the avoidance of doubt, the Crown Probity Advisor is a "Crown's Agent" for the purposes of this Agreement.

3.7 Management of Conflicts of Interest

The Developer will deal with conflicts of interest and potential conflicts of interest that may arise in relation to the Tender Process which include:

(a) requiring each person with any involvement in the Tender Process (including the Procurement Team and its Advisers) to sign a conflict of interest and confidentiality declaration and to regularly update the declaration, if required;

(b) requiring disclosure to the Crown Probity Advisor of any conflicts of interest or potential conflicts of interest that arise in relation to the Tender Process (including in respect of the Procurement Team, its Advisers and Tenderers); and

(c) entering into appropriate arrangements approved by the Crown Probity Advisor to manage any conflicts of interest or potential conflicts of interest that arise in relation to the Tender Process.

Attachment 1 Developer's Builder Schedule

The following contractors must be invited to participate in the Tender Process:

- Fairbrothers
- Hansen Yuncken
- Hutchinson Builders
- Rork Projects
- VOS Constructions

Attachment 3: Project Budget

Attachment 3: Project Budget

This Attachment is a budget only and does not affect the rights or obligations of the parties (including, without limitation, rights or obligations to receive or pay money) under this Agreement, except as expressly provided in clause 1 to clause 47 of this Agreement. For the avoidance of doubt, nothing in this Attachment limits clause 34 ("Contract Sum").

TOTAL FORECAST BUDGET (Stage 2A and Stage 2B)	
Building Works Stage 2A	$296,500
Building Works Stage 2B	$51,477,479
Professional Costs	$3,100,000
Building and Design Contingency	$0
Authority costs, Council Fees and Charges	$126,021
TOTAL	**$55,000,000**

Project Budget is based on the Preliminary Project Design Documentation for the Project Stage 2A and 2B as defined by the DA.
The project budget is based on the inclusions as they appear in cost estimates prepared and developed by WT Partnership.
Building Works Stage 2A based on actual costs incurred for completed Stage 2A works.
Building Works Stage 2B based on tender result for Stage 2B works and adjusted to reflect redesign and value management options accepted.
Building Works Stage 2B is inclusive of provisional sum expenditure.
Authority costs limited to gas, power and water headworks costs only.

Provisional sums included in Building Works Stage 2B budget include:

NO.		PROVISIONAL SUM DESCRIPTION	TOTAL
1		Kitchen Equipment	$1,200,000.00
2		Ticket Scanning Equipment	$100,000.00
3		Cube and AV	$3,030,000.00
4		Operable Seating	$1,500,000.00
5		Front Entry Canopy	$550,000.00
6		CCTV and Security	$250,000.00
7		New Basketball Court and Equipment	$400,000.00
8		Point of Sale and Active Equipment	$50,000.00
9		Loose FFE	$170,000.00
10		Signage and Wayfinding	$400,000.00
11		Adult Change Room	$180,000.00
12		Second Passenger Lift	$300,000.00
13		Opening, Chases and Penetration	$25,000.00
14		Structural Steel Elements to Support Fire Services	$50,000.00
15		Roof Plant Platform to support AHU	$30,000.00
16		Painting PC Sum	$600,000.00
17		Additional Steel Beams to support stairs	$30,000.00
18		Fire Extinguishers	$15,000.00
19		Landscaping for Front of Building and Corporate Area	$200,000.00
20		Storage Shed PC Sum	$50,000.00
		TOTAL PROVISIONAL SUMS	**$9,130,000.00**

These provisional sum items are subject to change at LK Property Group sole discretion.

Exclusions

- Latent conditions
- Any insurances beyond those provided by the building contractors
- Excavation in rock or additional foundations to suit poor ground conditions
- GST or Input tax credits
- Escalation beyond 1 year from date of estimate
- Works outside site boundary or to any area or aspect of the carpark, except to the extent contemplated by the DA submitted to GCC and the WT elemental cost breakdown
- Painting the internal stadium hall
- Remedial works to existing building structure and finishes

Refer to WT Partnership elemental cost breakdown summaries titled Compliance Works, Option 1 Works and Option 2 Works, which combined reflect the base building budget allowances for the project. The preliminary design has been further developed based on these initial project budgets but provide a baseline of the minimum design and construction obligations.

ESTIMATE SUMMARY

WT PARTNERSHIP

Project: T19-095 Dec Upgrade Works
Building: Compliance Works
Details: Estimate of Likely Cost
Version T19-095B2 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	COMPLIANCE WORKS				
1	Adequate exit width (Lower Ground Exit Egress Works)				275,000
2	Alignment of Exit Doors (Currently out of Alignment)				114,000
3	Tactile Indicators to all level changes in Concourse, Ramps & Stairs internal & external (lineal measure perpendicular to direction of travel 94lm)				33,000
4	Install 1 hydraulic lift nom 16 person capacity, travel 3m vertical, cut out floor,new finishes and bar				263,000
5	Direct Access to arena seating - Upper Ground Cross Aisle Alteration/Stair Reconfiguration				399,000
6	Illuminated stair nosings throughout all isle-ways in stadium bowl (280lm)				45,000
7	Public Toilet Upgrade to current BCA	259	m2	4,131	1,070,000
8	Automatic Fire Sprinkler System installed throughout entire complex				893,000
9	Glass & Stainless balustrade within Bowel 150lm				190,000
10	Building service non compliance EWIS , Backup Power and health & safety Food Premises				87,000
11	Asbestos Removal Provisional Sum				15,000
12	Access Path Upgrade Works				46,000
13	New Fire Truck Access Road				114,000
14	Removable Timber Ramp/Wheel Chair Parking				82,000
15	New External Water Supply and Fire Ring Main				255,000
16	Smoke Exhaust				168,000
17	New Site Main Switchboard				210,000
18	Alterations & Additions to Tas Networks LV Connection Point within Submains				21,000
19	Preliminaries, Escalation, Fees, Contingencies etc - now applied at end of Option 2 Estimate for entire scheme				Excl
	COMPLIANCE WORKS TOTAL (Excl GST)				**4,280,000**
	Exclusions				
	Property Purchase and associated costs				
	Finance, holding charges , cost of money provisions and legal fees				

Project: T19-095 Dec Upgrade Works
Building: Compliance Works
Details: Estimate of Likely Cost
Version T19-095B2 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	Escalation beyond 1 year from date of estimate				
	GST or Input tax credits				
	Loose furniture and equipment, curtains and blinds				
	Whitegoods, kitchen equipment and other 'plug in' electrical goods				
	AV equipment , POS or networking active equipment				
	Excavation in rock				
	On costs due to accelerated programme or staging				
	Works outside site boundary , Authorities fees or headworks charges, infrastructure upgrade works				
	Option 1/ 2upgrade works				
	Works to car-parking				
	Remedial works to existing building structure and finishes				
	Removal of asbestos in excess of provisional sum allowance or other hazardous/contaminated materials				
	CCTV and security systems				
	Adult change rooms				
	Estimate Basis				
	This estimate is based on the following documentation provided by separate consultants without the benefit of full specification for materials and workmanship,bore logs, finished levels, structural drawings and construction details.				
	Philp Lighton drawings 20.318 /A0200D/ A0201E/ A202E/ A203D/A500J/ A501H/ A502E/ A300C/ SK408B dated 01/09/20				
	Engineering services amounts per JMG J195080SH - electrical services , mechanical services and sprinklers dated 04/09/20				
	The advised indication of cost is an estimate based on available information and as such is our opinion of likely cost for scope as described on the documents.				
	The costs indicated should only be used as target budgets during the design development as an aid to cost planning of this project.				
	Disclaimers				

Project: T19-095 Dec Upgrade Works
Building: Compliance Works
Details: Estimate of Likely Cost
Version T19-095B2 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	The contents of this estimate should only be treated as advice on quantity surveying and like matters and not architectural, building surveying or engineering advice. We recommend that Clients consult with their respective advisor before relying upon it. This estimate is intended for use only by the client noted. WT Partnership does not accept any liability which may result of any other person acting upon or using the information contained in this report. Estimates and other data advised by third parties has been included on face value and has not been independently verified. Quantities are approximate and are not suitable for use in tendering documentation, marketing or lease purposes.				

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
Building: Compliance Works
Details: Estimate of Likely Cost
Version T19-095B2 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
1	**Adequate exit width (Lower Ground Exit Egress Works)**				
	Demolition				
1.A	Demolish existing doors and windows	40	m2	40	1,600
1.B	Form opening in pre-cast external wall and make good	1	Item	2,500	2,500
1.C	Form opening in internal rear stage structural wall and make good	1	Item	2,500	2,500
1.D	Demolish internal walls/doors	200	m2	30	6,000
1.E	Demolish joinery	1	Item	250	250
1.F	Demolish hydraulic services	1	Item	500	500
1.G	Demolish engineering services	1	Item	5,000	5,000
	External Windows and Doors				
1.H	Aluminium framed single glazed commercial spec glazing - allowed 3,500 high	98	m2	850	83,300
1.I	Eo for double leaf doors with push panic bars	5	no	3,000	15,000
	Internal Walls				
1.J	Internal Walls	185	m2	200	37,000
	Internal Doors				
1.K	Double leaf exit passage doors - solid core fire rated doors	9	no	3,203	28,827
1.L	Double leaf door to seminar room where wall replaced	1	no	2,500	2,500
	Finishes				
1.M	Paint finish to new walls	370	m2	20	7,400
1.N	Make good finishes generally following demolition works	1	Item	2,000	2,000
1.O	Floor finishes	178	m2	100	17,800
1.P	Entrance matt alterations - excluded		Note		Excl
	Fitments				
1.Q	Statutory signage	1	Item	3,000	3,000
	Seating				
1.R	Uplift in seating cost to make units of seating re-locatable to allow for exit path route - based on costing provided by Starena Group (assumed 1 unit can be relocated and used on each of the seating modules which are relocatable)	1	Item	50,000	50,000

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
1	**Adequate exit width (Lower Ground Exit Egress Works)**				*(Continued)*
	Engineering Services				
1.S	Extend power to auto doors and link back to FIP etc	1	Item	10,000	10,000
	Rounding				
1.T	Rounding	1	Item	-177	-177
	Adequate exit width (Lower Ground Exit Egress Works)				**275,000**
2	**Alignment of Exit Doors (Currently out of Alignment)**				
	Demolition				
2.A	Demolish existing doors and windows on airlock front façade - allowed 3,500 high	64	m2	40	2,560
	External Windows and Doors				
2.B	Aluminium framed single glazed commercial spec glazing - allowed 3,500 high	64	m2	750	48,000
2.C	Eo for double leaf doors (per previous quantity currently not shown)	4	no	3,000	12,000
2.D	Eo for automatic hinged double leaf	4	no	10,000	40,000
	Finishes				
2.E	Make good existing wall and floor finishes following works	1	Item	1,000	1,000
2.F	Floor finishes - excluded		Note		Excl
2.G	Entrance matt alterations - excluded		Note		Excl
	Engineering Services				
2.H	Extend power to auto doors and link back to FIP etc	1	Item	10,000	10,000
	Rounding				
2.I	Rounding	1	Item	440	440
	Alignment of Exit Doors (Currently out of Alignment)				**114,000**
3	**Tactile Indicators to all level changes in Concourse, Ramps & Stairs internal & external (lineal measure perpendicular to direction of travel 94lm)**				
3.A	Tactile indicators - 94lm - assumed 400 wide	38	m2	850	32,300

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
3	**Tactile Indicators to all level changes in Concourse, Ramps & Stairs internal & external (lineal measure perpendicular to direction of travel 94lm)**				*(Continued)*
3.B	Remedial works to substrates or finishes to receive tactiles - excluded		Note		Excl
	Rounding				
3.C	Rounding	1	Item	700	700
	Tactile Indicators to all level changes in Concourse, Ramps & Stairs internal & external (lineal measure perpendicular to direction of travel 94lm)				**33,000**
4	**Install 1 hydraulic lift nom 16 person capacity, travel 3m vertical, cut out floor,new finishes and bar**				
	Demolition				
4.A	Form openings in walls, demolish finishes etc	1	no	5,000	5,000
4.B	Demolish joinery and finishes	1	Item	3,000.00	3,000
	Substructure				
4.C	Lift pit including to form penetration	1	no	12,000	12,000
	Internal Walls				
4.D	Block lift walls including finishes	77	m2	350	26,950
4.E	Concrete roof over lift plant and screening to conceal plant	1	no	10,000	10,000
4.F	Internal wall and door alterations resulting from works	1	Item	4,000.00	4,000
	Lifts				
4.G	Lift - 2 stop entrance opposing sides	1	no	110,000	110,000
	Engineering Services				
4.H	Allowance to alter existing services to suit new lift	1	no	3,000	3,000
4.I	Extend power from MSB to lift locations (per discussions with JMG)	1	no	10,000	10,000
	Fitments				
4.J	Signage to building associated with lifts	1	Item	2,500	2,500
	Bar Alterations/Finishes				

ESTIMATE DETAILS

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
4	**Install 1 hydraulic lift nom 16 person capacity, travel 3m vertical, cut out floor,new finishes and bar**				*(Continued)*
4.K	New bar and back bar	14	n	2,500.00	35,000
4.L	Floor finish to bar area	38	m2	100.00	3,800
4.M	New ceiling to bar area	38	m2	140.00	5,320
4.N	Repaint walls to bar area	79	m2	20.00	1,580
4.O	Hydraulic services to bar area	1	Item	10,000.00	10,000
4.P	Allowance to cut back existing bars and repaint existing bar walls and ceilings	1	no	20,000.00	20,000
	Contingency				
4.Q	Rounding	1	Item	850	850
	Install 1 hydraulic lift nom 16 person capacity, travel 3m vertical, cut out floor,new finishes and bar				**263,000**
5	**Direct Access to arena seating - Upper Ground Cross Aisle Alteration/Stair Reconfiguration**				
	Demolition				
5.A	Demolish stairs	1	Item	3,500	3,500
5.B	Demolish step on concourse aisle	36	m	100	3,600
5.C	Demolish existing chairs and and make good slab and finish to allow for widening of inter seat isle	142	no	70	9,940
5.D	Demolish masonry wall by stair	91	m2	50	4,550
5.E	Demolish internal walls/doors	123	m2	30	3,690
5.F	Demolish joinery	1	Item	250	250
5.G	Demolish hydraulic services	1	Item	1,000	1,000
5.H	Demolish engineering services	1	Item	5,000	5,000
	Upper Floors				
5.I	New overlay slab to crossover isle (533mm built up on bondeck supported off shelf angle fixed to concrete up-stand and plat) - now applies to entire crossover isle per PLA advice	311	m2	450	139,932
5.J	Strengthening works to existing slab/footings or support columns - excluded per Gandy & Roberts advice		Note		Excl

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
5	**Direct Access to arena seating - Upper Ground Cross Aisle Alteration/Stair Reconfiguration**				*(Continued)*
	Staircases				
5.K	Widen existing concrete stairs between upper ground and cross over isle (3 sets of stairs)	25	m2	1,000	25,000
5.L	Additional concrete tread to cross over aisle stairs	14	m	300	4,200
5.M	Widen existing stairs to fixed seating areas	240	treads	200	48,000
5.N	2 step stairs on cross over slab change in levels	2	no	1,000	2,000
5.O	Balustrade to stairs (none allowed where widened between seats - assumed existing to remain on 1 side of isle	36	m	350	12,600
	Internal Walls/Doors				
5.P	Walls by widened stair	139	m2	150	20,850
5.Q	Single leaf door to merchandise store	1	no	1,000	1,000
5.R	Double leaf fire rated door to widened stairs	5	no	3,203	16,015
	Wall Finishes				
5.S	Paint/make good walls	50	m2	50	2,500
5.T	Paint to new walls by widened stair	277	m2	20	5,540
	Floor Finishes				
5.U	Floor finish - epoxy to new concrete cross over isle	311	m2	80	24,880
5.V	Floor finish to stairs where extended - epoxy (not allowed to steps between seats per PLA advice)	82	m2	100	8,200
5.W	Additional nosings/tactiles	1	Item	50,000	50,000
	Fitments				
5.X	Signage to building associated with changes	1	Item	2,000	2,000
5.Y	Merchant store fitments	1	Item	1,500	1,500
	Engineering Services				
5.Z	Allowance for engineering services alterations associated with widening of additional central stair - scope not known	1	Item	2,000.00	2,000
	Rounding				
5.AA	Rounding	1	Item	1,254	1,254

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
5	**Direct Access to arena seating - Upper Ground Cross Aisle Alteration/Stair Reconfiguration**				*(Continued)*
	Direct Access to arena seating - Upper Ground Cross Aisle Alteration/Stair Reconfiguration				**399,000**
6	**Illuminated stair nosings throughout all isle-ways in stadium bowl (280lm)**				
6.A	Remove existing nosings	280	m	10	2,800
6.B	Illuminated stair nosings - per advised quantity (rate allows for fluorescent illuminated nosings only)	280	m	150	42,000
6.C	Electrically powered nosings - excluded		Note		Excl
6.D	Adjust floor finishes to suit nosings - excluded		Note		Excl
	Rounding				
6.E	Rounding	1	Item	200	200
	Illuminated stair nosings throughout all isle-ways in stadium bowl (280lm)				**45,000**
7	**Public Toilet Upgrade to current BCA**				
	Scope				
7.A	New WCs in 5 locations (including new corporate)		Note		Scope
7.B	An additional 10 WCs and wash hand basins have been allowed in lieu of additional of DDA Wcs previously provided		Note		Scope
7.C	Adult change room on A0501 near grids G:10 - excluded per LK Group advice		Note		Excl
	Demolition				
7.D	Allowance for demolition to facilitate new works	1	Item	10,000.00	10,000
	Substructure				
7.E	New slabs	259	m2	200	51,800
7.F	Timber piling	259	m2	150	38,850
	Columns				
7.G	Columns to extensions	259	m2	60	15,540
	Roof				
7.H	Roof to extension	259	m2	400	103,600

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
7	**Public Toilet Upgrade to current BCA**				*(Continued)*
	External Walls				
7.I	Extension external walls - curved metal clad walls	120	m2	550.00	66,000
	Internal Walls				
7.J	Stud partition walls	389	m2	185	71,965
	Internal Screens and Borrowed Lights				
7.K	Laminate sheeted particleboard sheet toilet partition	27	cubicle	1,653	44,631
	Internal Doors				
7.L	Solid core doors and closer	16	no	1,300	20,800
	Wall Finishes				
7.M	Tiling to walls - allowed 2,400 high	717	m2	150	107,550
	Floor Finishes				
7.N	Tiling and waterproofing to floors	259	m2	175	45,325
	Ceiling Finishes				
7.O	New ceilings	259	m2	100	25,900
	Fitments				
7.P	Vanities	21	m	800	16,800
7.Q	Mirrors	42	m2	270	11,340
7.R	WC fixtures and fittings	1	Item	20,000	20,000
7.S	DDA grab rails etc	10	sets	1,500	15,000
7.T	Adult change joinery - excluded as advised		Note		Excl
	Sanitary Fixtures				
7.U	Wcs	26	no	1,000	26,000
7.V	Access WC	10	no	3,000	30,000
7.W	Wash hand basins	27	no	600	16,200
7.X	Stainless steel urinal	3	m	2,400	7,201

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
7	**Public Toilet Upgrade to current BCA**				*(Continued)*
	Sanitary Plumbing				
7.Y	UPVC soil waste and vent pipework [single storey]	65	fixt	832	54,067
	Water Supply				
7.Z	Sink Mixer[so $320]	27	no	500	13,500
7.AA	Cold and hot water reticulation	65	fixt	681	44,288
7.AB	Hot water supply	1	Item	15,000	15,000
	Engineering Services				
7.AC	Per JMG estimates dated 04/09/20		Note		Scope
7.AD	Extract to new WCs (2.1110 & 2.514 & 2.715)	1	Item	65,000	65,000
7.AE	Electric light and power to new (pro rata split based on area) (2.1102)	1	Item	40,000	40,000
7.AF	New distribution boards (2.1103)	1	Item	60,000	60,000
7.AG	Fire detection and EWIS (2.1104)	1	Item	20,000	20,000
7.AH	BWIC with services	5	%	185,000	9,250
	Rounding				
7.AI	Rounding	1	Item	4,393	4,393
	Public Toilet Upgrade to current BCA				**1,070,000**
8	**Automatic Fire Sprinkler System installed throughout entire complex**				
8.A	Sprinklers per JMG option 1 item 1.16	1	Item	850,000	850,000
8.B	BWIC with services	5	%	850,000	42,500
8.C	Rounding	1	Item	500	500
	Automatic Fire Sprinkler System installed throughout entire complex				**893,000**
9	**Glass & Stainless balustrade within Bowel 150lm**				
9.A	Demolish existing balustrades	150	m	30	4,500
9.B	Make good existing concrete up stand	1	Item	5,000	5,000
9.C	Glazed frameless balustrade with top rail - length as advised	150	m	1,200	180,000
	Rounding				
9.D	Rounding	1	Item	500	500

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
9	**Glass & Stainless balustrade within Bowel 150lm**				*(Continued)*
	Glass & Stainless balustrade within Bowel 150lm				**190,000**
10	**Building service non compliance EWIS , Backup Power and health & safety Food Premises**				
	EWIS Upgrades and Emergency Generator				
10.A	Per JMG electrical estimates dated 04/09/20 and mechanical dated 04/09/20				
10.B	Corporate (2.507)	1	Item	7,500	7,500
10.C	Players - excluded, part of extension works		Note		Excl
10.D	Sports bar - excluded, part of extension work		Note		Excl
10.E	Concessions (2.804)	1	Item	10,000	10,000
10.F	Ticketing/Access/Mech/First Aid/Office (2.906)	1	Item	2,500	2,500
10.G	Concourse (2.1104)	1	Item	20,000	20,000
10.H	Kitchen - excluded, part of extension work		Note		Excl
10.I	Stadia (2.1605)	1	Item	25,000	25,000
10.J	Back of house store (2.1504)	1	Item	2,500	2,500
10.K	Alterations & additional to site FIP panel and EWIS system (2.1705)	1	Item	15,000	15,000
10.L	Allowance for BWIC with services	5	%	82,500	4,125
	Health & Safety Food Upgrades				
10.M	Health and safety food upgrades - excluded per PLA advice		Note		Excl
	Rounding				
10.N	Rounding	1	Item	375	375
	Building service non compliance EWIS , Backup Power and health & safety Food Premises				**87,000**
11	**Asbestos Removal Provisional Sum**				
11.A	Provisional sum allowance for removal of asbestos per PLA advice	1	Item	15,000.00	15,000
	Asbestos Removal Provisional Sum				**15,000**
12	**Access Path Upgrade Works**				
12.A	Provisional allowance to provide compliant access ramps	180	m2	187	33,570
12.B	Flower beds in lieu of balustrades	120	m2	100	12,000
12.C	Rounding	1	Item	430	430
	Access Path Upgrade Works				**46,000**

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
13	**New Fire Truck Access Road**				
13.A	Demolition associated with forming roadway	1	Item	3,000.00	3,000
13.B	Road including hotmix kerbs and road formation	660	m2	100.00	66,002
13.C	Form cross over with existing roads	2	no	5,000	10,000
13.D	Sub-grade improvement works - excluded		Note		Excl
13.E	Line marking and signage	1	Item	2,000.00	2,000
13.F	Bollard	1	no	700.00	700
13.G	Chainmesh double leaf gate - automated	1	Item	8,000.00	8,000
13.H	Stormwater drainage - side entry pits	2	no	3,500.00	7,000
13.I	Stormwater pipework	98	m	150.00	14,700
13.J	Structural fill to stormwater drainage pipework	20	m3	130.00	2,600
13.K	Rounding	1	Item	-2	-2
	New Fire Truck Access Road				**114,000**
14	**Removable Timber Ramp/Wheel Chair Parking**				
14.A	Wheel chair ramps and stages at lower level (temporary timber structures assumed on castors or proprietary relocatable stage system)	151	m2	500.00	75,500
14.B	Steel kerb rails	81	m	70.00	5,670
14.C	Rounding	1	Item	830	830
	Removable Timber Ramp/Wheel Chair Parking				**82,000**
15	**New External Water Supply and Fire Ring Main**				
15.A	DN100 Class 16 water main in trench including for valves/bends/thrust blocks etc	335	m	180	60,300
15.B	DN150 Class 16 fire main in trench	589	m	200	117,800
15.C	Credit for shared trench	281	m	-40	-11,240
15.D	EO for trenching/make good works to hotmix paving areas	363	m	60	21,780
15.E	Structural fill	234	m3	110	25,740
15.F	Fire hydrants	5	no	1,500	7,500
15.G	Allownace for de-watering excavations	1	Item	10,000	10,000
15.H	Connect into existing tas water main	1	Item	3,000	3,000
15.I	New site water mater assembly	1	Item	15,000	15,000
15.J	Temporary works to allow for change over	1	Item	5,000	5,000
15.K	Rounding	1	Item	120	120
	New External Water Supply and Fire Ring Main				**255,000**

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
16	**Smoke Exhaust**				
	Per JMG mechanical costs dated 04/09/20				
16.A	Smoke exhaust system to auditorium	2	no	20,000	40,000
16.B	Smoke exhaust relief to auditorium	2	no	20,000	40,000
16.C	Smoke exhaust system to concourse	6	no	10,000	60,000
16.D	Smoke exhaust relief to concourse	1	no	20,000	20,000
16.E	BWIC with services	5	%	160,000	8,000
	Smoke Exhaust				**168,000**
17	**New Site Main Switchboard**				
	Per JMG Estimate dated 04/09/20				
17.A	Supply and install new site main switchboard (2.1701)	1	Item	200,000.00	200,000
17.B	BWIC with services	5	%	200,000.00	10,000
	New Site Main Switchboard				**210,000**
18	**Alterations & Additions to Tas Networks LV Connection Point within Submains**				
	Per JMG Estimate dated 04/09/20				
18.A	Supply and install new site main switchboard (2.1707)	1	Item	20,000.00	20,000
18.B	BWIC with services	5	%	20,000.00	1,000
	Alterations & Additions to Tas Networks LV Connection Point within Submains				**21,000**
19	**Preliminaries, Escalation, Fees, Contingencies etc - now applied at end of Option 2 Estimate for entire scheme**				
19.A	See end of option 2 estimate for Preliminaries, Escalation, Fees, Contingencies etc		Note		Incl
	Preliminaries, Escalation, Fees, Contingencies etc - now applied at end of Option 2 Estimate for entire scheme				**0**

ESTIMATE SUMMARY

WT PARTNERSHIP

Project: T19-095 Dec Upgrade Works
Building: Option 1 Works

Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	Compliance Works and Option 1 Works				
1	Compliance works (excluding fees and charges)				4,280,000
	OPTION 1 WORKS				
	Corporate Court side Seating and Hospitality				
2	New mobile 1:14 ramp up to mobile stage - excluded				Excl
3	Pop Up Bar	49	m2	693.88	34,000
4	High quality Mobile operable seating down to court (store backstage) bottom plat 300 above floor extending up to 2100 +-				252,000
5	Ribbon audio visual located adjacent & parallel to grid G (opposite side of court) in front of players & scorers				Incl
6	Rear wall decorative treatment				29,000
7	Soft upgrade to green room toilets (now includes dressing rooms 1&2, back of house office, AV room and walk of fame corridor)	276	m2	297.10	82,000
8	Fire Curtain (now to pop up bar)				89,000
9	TV Coverage from plant room over, allow access through block wall & services				30,000
10	Engineering Services - Electrical Corporate				NA
	Cube /Audio				
11	New cube hanging point – new support beams between trusses				Incl
12	New 6 tone electric winch / remote control				Incl
13	New 8m wide x 5m high 4 sided Cube complete with controls & mixing desk				Incl
14	Link to audio site controller				Incl
15	Mixing desk / content to be confirmed				Incl
16	New audio separate from EWIS				Incl
17	New speaker installation to whole of bowl				Incl
18	New speaker installation to concourse				Incl
	Lighting				
19	LED lighting to stadia bowl to TV coverage standard				594,000

Project: T19-095 Dec Upgrade Works
Building: Option 1 Works
Details: Estimate of Likely Cost
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
20	LED coloured / controlled lighting to link with audio / whole of bowl				420,000
21	New concourse of concession lighting throughout				95,000
	Heating and Ventilation				
22	Provide cooling and heating to stadia bowl				1,000,000
23	Complex Central Thermal Plant				294,000
24	Provide cooling and heating to concourse and concession spaces				311,000
25	Provide cooling and heating to corporate area				Incl
26	AHU to replace existing seminar room AC				59,000
27	AHU to replace admin heating & conference AC				Incl
28	Dressing Room				53,000
29	Automatic Control and BMS				210,000
30	Upgrade existing control rooms & media AC systems				32,000
31	Upgrade mechanical switchboards				126,000
	Corporate				
32	Provide direct access from corporate to court side				Incl
33	Provide premium hospitality 3 course sit down / quality drinks service	300	m2	866.67	260,000
34	Provide link to external entertainment / BBQ hospitality	558	m2	1,075.27	600,000
35	Corporate ticket / entry point from external entertainment				Incl
36	Provide corporate toilets				Incl
37	Provide corporate bar				290,000
38	Provide corporate premium parking				Excl
39	Corporate Engineering Services				310,000
40	Re-Purpose Area Between Corporate WC and Exit				NA
	Players				
41	Provide contemporary Unisex players change	375	m2	2,800.00	1,050,000
	Sports Bar				

Project: T19-095 Dec Upgrade Works
Building: Option 1 Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
42	New Sports Bar, Tote, Sky, Replay screens, fixed seating, Quality Bar, sit down meals and independent access & potentially independent operating times	546	m2	4,029.30	2,200,000
43	AV Audio feeds large screen display & Odds screens & write up /betting slopes				Incl
44	Servery Kitchen				Incl
45	New Ac to space Exhaust hood – make up air				Incl
46	Outside access to smoking area				100,000
	Concession Space				
47	Expand Food & Beverage Concession areas either side of main entry and to Nostalgia Bar Space	681	m2	2,716.59	1,850,000
48	Expand floor area to reduce congestion on concourse				Incl
49	Move service areas outbound to move patrons off concourse to stop queuing				Incl
50	Provide space for stand-up tables / chairs / bench perimeter table.				Incl
51	Provide food and drink options in separate service points				Incl
52	Provide view to outside				Incl
53	Provide architectural feature promoting the DEC experience				Excl
54	Contemporary colour scheme, colours and finishes				Incl
	Ticketing / Access/ Entry				
55	Inner Airlock Doors				114,000
56	Office off New Entrance				88,000
57	Provide Cover for Patrons purchasing tickets (Skylights to Main Airlock)				345,000
58	Ticket scanning by staff in option 1				Excl
59	New Plaza, raise ground levels, new pavements,demolish roundabout & access road,, new pedestrian ramp from access road level, new stairs from road, new DDA parking spots, motorcycle parking spots, bike racks				1,855,000
60	New 34 Temporary Carpark Spaces	848	m2	165.04	140,000
	Façade				

Project: T19-095 Dec Upgrade Works
Building: Option 1 Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
61	New metal façade & double glazing to food & beverage concessions, toilet expansion & Sports Bar for toilet expansion				Incl
	Concourse				
62	Concourse Redecorate internal walls and ceiling	1,272	m2	243.71	310,000
63	Concourse New carpet tiles	1,272	m2	112.42	143,000
64	Concourse Higher key finishes and colour to walls and ceilings				550,000
65	Concourse Incorporation of AV, PA and way finding elements				Incl
66	Concourse Office and conference space				Incl
67	Concourse Existing WC Refurbishment	243	m2	2,551.44	620,000
68	Concourse Evacuation Lighting, Power, Comms new A/V and Way finding				60,000
	Seating Stadia Bowl				
69	Painting of seats not practical				Excl
70	Provide slip over colour and padded seat - excluded				Excl
71	Free-standing seats 256 players, scorers, corporate				77,000
	Kitchen				
72	New kitchen main commercial kitchen	267	m2	3,933	1,050,000
73	Corporate area – cool room, freezers, painting, external access				Incl
74	Rubbish solution				48,000
75	Exhaust hood – make up air				Incl
76	Gas Cooking /Gas Supply to Site				200,000
	Kitchen Equipment Provisional Sum				
77	Provisional sum for Kitchen Equipment				600,000
	Stadia Electrical/Sundry Works				
78	Electrical Works Including Emergency Generator				410,000
	Daktronics AV Works				

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
79	Daktronics AV Works				3,030,000
	Sprinklers				
80	Sprinklers				Incl
	Inground Services Diversion Works				
81	Inground Services Diversion Works				60,000
82	Preliminaries, Escalation, Fees, Contingencies etc - now applied at end of Option 2 Estimate for entire scheme				Excl
	COMPLIANCE & OPTION 1 SUBTOTAL (Excl GST)				**24,350,000**
	Exclusions				
	Property Purchase and associated costs				
	Finance, holding charges , cost of money provisions and legal fees				
	Escalation beyond 1 year from date of estimate				
	GST or Input tax credits				
	Loose furniture and equipment, curtains and blinds				
	Whitegoods, kitchen equipment and other 'plug in' electrical goods				
	AV equipment , POS or networking active equipment				
	Excavation in rock or additional foundations to suit poor ground conditions				
	On costs due to accelerated programme or staging				
	Works outside site boundary , Authorities fees or headworks charges, infrastructure upgrade works				
	Option 2 upgrade works				
	Widen existing door openings				
	Upgrade works to comply with current Section J requirements				
	Works to car parking				
	Remedial works to existing building structure and finishes				

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	New basketball court surface/hoops etc				
	Painting within existing stadia hall (except for new services)				
	Works to WCs and other areas shown as white on drawings				
	Ice baths to change rooms				
	Removal of asbestos in excess of provisional sum noted or other hazardous materials				
	Corporate parking				
	Post mix, beer fonts, beer lines, fridges (by beer/post mix provider)				
	Loose bar equipment				
	Window furnishings				
	New basket ball hoops				
	Slip on seat covers				
	Preliminaries, Escalation, Fees, Contingencies etc - now applied at end of Option 2 Estimate for entire scheme				
	Estimate Basis				
	This estimate is based on the following documentation provided by separate consultants without the benefit of full specification for materials and workmanship,bore logs, finished levels, structural drawings and construction details.				
	Philp Lighton drawings 20.318 /A0200D/ A0201E/ A202E/ A203D/A500J/ A501H/ A502E/ A300C/ SK408B dated 01/09/20				
	Engineering services amounts per JMG J195080SH - electrical services , mechanical services and sprinklers dated 04/09/20				
	AV - per Daktronics budget (undated)				
	Seat costs per PLA Seating matrix - option 1				
	The advised indication of cost is an estimate based on available information and as such is our opinion of likely cost for scope as described on the documents.				
	The costs indicated should only be used as target budgets during the design development as an aid to cost planning of this project.				
	Disclaimers				

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	The contents of this estimate should only be treated as advice on quantity surveying and like matters and not architectural, building surveying or engineering advice. We recommend that Clients consult with their respective advisors before relying upon it. This estimate is intended for use only by the client noted. WT Partnership does not accept any liability which may result of any other person acting upon or using the information contained in this report. Estimates and other data advised by third parties has been included on face value and has not been independently verified. Quantities are approximate and are not suitable for use in tendering documentation, marketing or lease purposes.				

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
1	**Compliance works (excluding fees and charges)**				
1.A	Refer to separate compliance works estimate	1	Item	4,280,000.00	4,280,000
	Compliance works (excluding fees and charges)				**4,280,000**
2	**New mobile 1:14 ramp up to mobile stage - excluded**				
2.A	Mobile ramp excluded - no part of revised scheme		Note		Excl
	New mobile 1:14 ramp up to mobile stage - excluded				**0**
3	**Pop Up Bar**				
	Demolition				
3.A	Demolition for pop up bar	1	Item	1,000	1,000
	Substructure				
3.B	Excluded		Note		Excl
	Internal Walls				
3.C	Stud partition walls	25	m2	150	3,750
	Internal Doors				
3.D	Excluded - existing		Note		Incl
	Floor Finishes				
3.E	Floor finishes - allowed as epoxy	49	m2	100	4,900
	Ceiling Finishes				
3.F	Excluded		Note		Excl
	Wall Finishes				
3.G	Finishes to corporate bar FOH side	42	m2	200	8,400
	Fitments				
3.H	Bar joinery - pop up (basic fold up tables etc)	15	m	1,000	15,000
3.I	Bar equipment - excluded		Note		Excl
	Hydraulic services				
3.J	Excluded per PLA advice		Note		Excl

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
3	**Pop Up Bar**				*(Continued)*
	Engineering Services				
3.K	See other sections		Note		Incl
3.L	Electrical - see separate section		Note		Incl
	Rounding				
3.M	Rounding	1	Item	950	950
	Pop Up Bar				**34,000**
4	**High quality Mobile operable seating down to court (store backstage) bottom plat 300 above floor extending up to 2100 +-**				
4.A	Operable seating - per PLA estimate for option 1	1	Item	251,426	251,426
	Rounding				
4.B	Rounding	1	Item	574	574
	High quality Mobile operable seating down to court (store backstage) bottom plat 300 above floor extending up to 2100 +-				**252,000**
5	**Ribbon audio visual located adjacent & parallel to grid G (opposite side of court) in front of players & scorers**				
5.A	Refer to Daktronics section of estimate		Note		Incl
	Ribbon audio visual located adjacent & parallel to grid G (opposite side of court) in front of players & scorers				**0**
6	**Rear wall decorative treatment**				
6.A	Rear wall decorative finish - allowed 4,000 high (assumed still required)	94	m2	300	28,200
6.B	Decorative finish to columns - excluded		Note		Excl
	Rounding				
6.C	Rounding	1	Item	800	800
	Rear wall decorative treatment				**29,000**
7	**Soft upgrade to green room toilets (now includes dressing rooms 1&2, back of house office, AV room and walk of fame corridor)**				
	Demolition				
7.A	Demolish wall, floor finishes and ceiling finishes - excluded existing to remain per PLA advice		Note		Excl
7.B	Demolish joinery	1	Item	500	500

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
7	**Soft upgrade to green room toilets (now includes dressing rooms 1&2, back of house office, AV room and walk of fame corridor)**				*(Continued)*
7.C	Demolition to alter door to access back of house office and sundry demolition works	1	Item	1,000	1,000
7.D	Demolish sanitary fixtures - excluded existing to remain per discussions with PLA		Note		Excl
	Internal Walls and Internal Doors				
7.E	New wall to AV room	63	m2	200	12,600
7.F	Double leaf door to AV room	1	no	2,000	2,000
7.G	Single leaf door to back of house office	1	no	1,300	1,300
	Internal Screens				
7.H	No new screens allowed		Note		Excl
	Finishes				
7.I	New floor finishes/ ceiling finishes to dressing rooms, WCs and walk of fame - excluded		Note		Excl
7.J	AV room floor finishes and floor prep works	48	m2	80	3,840
7.K	Paint to walls	985	m2	20	19,700
7.L	Paint to ceilings	276	m2	120	33,120
7.M	Minor patching to ceilings in WCs following ventilation upgrade works	1	Item	2,000	2,000
	Fitments				
7.N	Allowance for benches/hooks etc - scope of works not yet known	1	Item	5,000	5,000
	Sanitary Fixtures				
7.O	Excluded - no replacement of existing sanitary fixtures of new sanitary fixtures		Note		Excl
	Engineering Services				
7.P	See other sections		Note		Incl
	Rounding				
7.Q	Rounding	1	Item	940	940

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
7	**Soft upgrade to green room toilets (now includes dressing rooms 1&2, back of house office, AV room and walk of fame corridor)**				*(Continued)*
	Soft upgrade to green room toilets (now includes dressing rooms 1&2, back of house office, AV room and walk of fame corridor)				**82,000**
8	**Fire Curtain (now to pop up bar)**				
8.A	Fire curtain - allowed 6,500 high	89	m2	1,000	89,000
	Rounding				
8.B	Rounding	1	Item	0	0
	Fire Curtain (now to pop up bar)				**89,000**
9	**TV Coverage from plant room over, allow access through block wall & services**				
9.A	Provisional sum allowance for works - scope not known	1	Item	30,000	30,000
	Rounding				
9.B	Rounding	1	Item	0.00	0
	TV Coverage from plant room over, allow access through block wall & services				**30,000**
10	**Engineering Services - Electrical Corporate**				
10.A	Now included in other sections where applicable		Note		Incl
	Engineering Services - Electrical Corporate				**0**
11	**New cube hanging point – new support beams between trusses**				
11.A	Refer to Daktronics section of estimate		Note		Incl
	New cube hanging point – new support beams between trusses				**0**
12	**New 6 tone electric winch / remote control**				
12.A	Refer to Daktronics section of estimate		Note		Incl
	New 6 tone electric winch / remote control				**0**
13	**New 8m wide x 5m high 4 sided Cube complete with controls & mixing desk**				
13.A	Refer to Daktronics section of estimate		Note		Incl
	New 8m wide x 5m high 4 sided Cube complete with controls & mixing desk				**0**
14	**Link to audio site controller**				
14.A	Refer to Daktronics section of estimate		Note		Incl
	Link to audio site controller				**0**

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
15	**Mixing desk / content to be confirmed**				
15.A	Refer to Daktronics section of estimate		Note		Incl
	Mixing desk / content to be confirmed				**0**
16	**New audio separate from EWIS**				
16.A	Refer to Daktronics section of estimate		Note		Incl
	New audio separate from EWIS				**0**
17	**New speaker installation to whole of bowl**				
17.A	Refer to Daktronics section of estimate		Note		Incl
	New speaker installation to whole of bowl				**0**
18	**New speaker installation to concourse**				
18.A	Refer to Daktronics section of estimate		Note		Incl
	New speaker installation to concourse				**0**
19	**LED lighting to stadia bowl to TV coverage standard**				
19.A	Per JMG estimate dated 09/04/20 (2.302)	1	Item	565,000	565,000
19.B	BWIC with services	5	%	565,000	28,250
19.C	Rounding	1	Item	750	750
	LED lighting to stadia bowl to TV coverage standard				**594,000**
20	**LED coloured / controlled lighting to link with audio / whole of bowl**				
20.A	Per JMG estimate dated 04/09/20 (2.303)	1	Item	400,000	400,000
20.B	BWIC with services	5	%	400,000	20,000
20.C	Rounding	1	Item	0	0
	LED coloured / controlled lighting to link with audio / whole of bowl				**420,000**
21	**New concourse of concession lighting throughout**				
21.A	Per JMG estimate dated 04/09/20 (2.304)	1	Item	90,000	90,000
21.B	BWIC with services	5	%	90,000	4,500
21.C	Rounding	1	Item	500	500
	New concourse of concession lighting throughout				**95,000**
22	**Provide cooling and heating to stadia bowl**				
	Per JMG costs dated 04/09/20				
22.A	Auditorium Cooling (2.401)	1	Item	900,000.00	900,000
22.B	General allowance for mechanical services demolition - per allowance discussed with JMG	1	Item	50,000.00	50,000
22.C	BWIC with services @ 5%	5	%	950,000	47,500

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
22	**Provide cooling and heating to stadia bowl**				*(Continued)*
22.D	Rounding	1	Item	2,500	2,500
	Provide cooling and heating to stadia bowl				**1,000,000**
23	**Complex Central Thermal Plant**				
	Per JMG costs dated 04/09/20				
23.A	Complex Central Plant (2.402)	1	Item	280,000.00	280,000
23.B	BWIC with services @ 5%	5	%	280,000	14,000
23.C	Rounding	1	Item	0	0
	Complex Central Thermal Plant				**294,000**
24	**Provide cooling and heating to concourse and concession spaces**				
	Per JMG costs dated 04/09/20				
24.A	Conditioning to concourse space (2.1109)	1	Item	200,000.00	200,000
24.B	Conditioning to concessions space (2.813)	1	Item	96,000	96,000
24.C	BWIC with services @ 5%	5	%	296,000	14,800
24.D	Rounding	1	Item	200	200
	Provide cooling and heating to concourse and concession spaces				**311,000**
25	**Provide cooling and heating to corporate area**				
25.A	Now included in Corporate engineering services section of estimate		Note		Incl
	Provide cooling and heating to corporate area				**0**
26	**AHU to replace existing seminar room AC**				
	Per JMG costs dated 04/09/20				
26.A	Seminar/production (no JMG reference provided)	1	Item	56,000.00	56,000
26.B	BWIC with services @ 5%	5	%	56,000	2,800
26.C	Rounding	1	Item	200	200
	AHU to replace existing seminar room AC				**59,000**
27	**AHU to replace admin heating & conference AC**				
27.A	Now included in Corporate engineering services section of estimate		Note		Incl
	AHU to replace admin heating & conference AC				**0**
28	**Dressing Room**				
	Per JMG costs dated 04/09/20				
28.A	Dressing Room Area Mechanical Works (No JMG Reference provided)	1	Item	50,000.00	50,000

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
28	**Dressing Room**				*(Continued)*
28.B	BWIC with services @ 5%	5	%	50,000	2,500
28.C	Rounding	1	Item	500	500
	Dressing Room				**53,000**
29	**Automatic Control and BMS**				
	Per JMG costs dated 04/09/20				
29.A	Automatic Control and BMS (2.403)	1	Item	200,000	200,000
29.B	BWIC with services @ 5%	5	%	200,000	10,000
29.C	Rounding	1	Item	0	0
	Automatic Control and BMS				**210,000**
30	**Upgrade existing control rooms & media AC systems**				
	Per JMG costs dated 04/09/20				
30.A	Upgrade existing control room & media AC (2.405)	1	Item	30,000	30,000
30.B	BWIC with services @ 5%	5	%	30,000	1,500
30.C	Rounding	1	Item	500	500
	Upgrade existing control rooms & media AC systems				**32,000**
31	**Upgrade mechanical switchboards**				
	Per JMG costs dated 04/09/20				
31.A	Upgrade mechanical switchboards (2.406)	1	Item	120,000.00	120,000
31.B	BWIC with services @ 5%	5	%	120,000	6,000
31.C	Rounding	1	Item	0	0
	Upgrade mechanical switchboards				**126,000**
32	**Provide direct access from corporate to court side**				
32.A	Now included in corporate hospitality dining area		Note		Incl
	Provide direct access from corporate to court side				**0**
33	**Provide premium hospitality 3 course sit down / quality drinks service**				
	Demolition				
33.A	Demolish internal wall	84	m2	30.00	2,520
33.B	Demolish floor finishes	300	m2	10.00	3,000
33.C	Demolish ceiling finishes	300	m2	20.00	6,000
33.D	Sundry demolition works	1	Item	5,000.00	5,000
33.E	Make good following demolition works	1	Item	5,000.00	5,000

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
33	**Provide premium hospitality 3 course sit down / quality drinks service**				*(Continued)*
	Substructure				
33.F	Make good slab	300	m2	15.00	4,500
	Roof				
33.G	Works to existing roof - excluded		Note		Excl
	External Walls				
33.H	Works to existing walls - excluded		Note		Excl
	External Windows and Doors				
33.I	Works to existing external windows and doors		Note		Excl
	Internal Walls, Screens and Doors				
33.J	Internal walls	37	m2	210.00	7,770
33.K	EO for Glazed screens	19	m2	390.00	7,410
33.L	EO for Double leaf doors	3	no	3,500.00	10,500
	Wall Finishes				
33.M	Wall finishes to FOH spaces (average rate)	121	m2	250.00	30,250
33.N	Finish to circular columns	2	no	3,000.00	6,000
33.O	Finish to I beam columns	6	no	1,000.00	6,000
	Floor Finishes				
33.P	Floor finishes to FOH space (Average rate)	300	m2	200.00	60,000
	Ceiling Finishes				
33.Q	Ceiling finishes to FOH space	300	m2	300.00	90,000
	Fitments				
33.R	Signage	1	Item	10,000.00	10,000
33.S	Fire extinguishers	1	Item	2,000.00	2,000
	Engineering Services				
33.T	Allowance for Fire hose reel and connection	1	Item	4,000.00	4,000

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
33	**Provide premium hospitality 3 course sit down / quality drinks service**				*(Continued)*
33.U	See other sections		Note		Incl
	Contingency				
33.V	Rounding	1	Item	50	50
	Provide premium hospitality 3 course sit down / quality drinks service				**260,000**
34	**Provide link to external entertainment / BBQ hospitality**				
	Scope				
34.A	Previous allowances currently retained pending receipt of design documentation		Note		Scope
	Demolition				
34.B	Site preparation and clearing works	177	m2	30.00	5,310
	Substructure				
34.C	Foundation walls and footings - excluded		Note		Excl
34.D	Base concrete slab	131	m2	200.00	26,200
34.E	Structural fill - excluded		Note		Excl
34.F	Footings to take columns for new roof	303	m2	50.00	15,150
	Columns				
34.G	Columns to support new BBQ are roof	303	m2	75.00	22,725
	Roof				
34.H	Cut back roof and retrim/alter - framing to remain as existing	70	m2	100.00	7,000
34.I	Covered drop off roof	75	m2	500.00	37,500
34.J	Roof over outdoor area	303	m2	400.00	121,201
	External Walls				
34.K	Finish to retaining walls - excluded		Note		Excl
34.L	Aluminium framed glass wind break walls - 2,000 high incl support columns	100	m2	900.00	90,000
	Floor Finishes				

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34	**Provide link to external entertainment / BBQ hospitality**				*(Continued)*
34.M	Tiling	220	m2	200	44,000
34.N	All other floor finishes excluded		Note		Excl
	Ceiling Finishes				
34.O	Finish to drop off entry	75	m2	150.00	11,250
34.P	Repaint underside of existing roof over entrance	246	m2	30.00	7,380
34.Q	Ceiling to new roof	303	m2	150.00	45,450
	Fitments				
34.R	Outdoor BBQ/bar joinery	20	m	2,000.00	40,000
34.S	Booth seating/fire pit seating in timber - excluded		Note		Excl
34.T	Fire pit	2	no	2,500.00	5,000
34.U	Signage	1	Item	10,000.00	10,000
	Special Equipment				
34.V	Bar/BBQ equipment	1	Item	60,000.00	60,000
	Hydraulic Services				
34.W	Sinks/taps to bar/connections	1	Item	10,000.00	10,000
	Engineering Services				
34.X	See other section		Note		Incl
	External stormwater Drainage				
34.Y	Allowance for external stormwater drainage pits and connections	1	Item	15,000.00	15,000
	External Sewer Connections				
34.Z	Connect into existing sewer	1	Item	10,000.00	10,000
34.AA	New grease trap for BBQ - see commercial kitchen (assumes shared trap possible)		Note		Incl
	External Water Supply				
34.AB	Extend water to outdoor area	1	Item	5,000.00	5,000

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34	**Provide link to external entertainment / BBQ hospitality**				*(Continued)*
	External Light and Power				
34.AC	Extend power to outdoor area	1	Item	5,000.00	5,000
	Landscape and Improvements				
34.AD	Planting areas	1	Item	5,000.00	5,000
34.AE	Make good generally on completion - topsoil and seed	1	Item	1,000.00	1,000
	Rounding				
34.AF	Rounding	1	Item	834	834
	Provide link to external entertainment / BBQ hospitality				**600,000**
35	**Corporate ticket / entry point from external entertainment**				
35.A	Included in other areas		Note		Excl
	Corporate ticket / entry point from external entertainment				**0**
36	**Provide corporate toilets**				
36.A	Included as part of the compliance works WCs per PLA advice		Note		Excl
	Provide corporate toilets				**0**
37	**Provide corporate bar**				
	Demolition				
37.A	Allowance for demolition works	1	Item	5,000.00	5,000
	Substructure				
37.B	Make good slab	178	m2	25.00	4,450
	Internal Walls and Doors				
37.C	Stud partition wall around cool room - allowed 4,000 high curved	91	m2	250.00	22,750
37.D	Glazed entrance doors with highlight above (1x double leaf, 1 x single leaf)	1	Item	9,000.00	9,000
37.E	Cool room doors - see cool room costs		Note		Incl
37.F	See other sections		Note		Excl

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
37	**Provide corporate bar**				*(Continued)*
	Wall Finishes				
37.G	Wall finishes	70	m2	250.00	17,500
37.H	Finish to circular columns	2	no	3,000.00	6,000
37.I	Finish to I beam columns	6	no	1,000.00	6,000
	Floor Finishes				
37.J	Floor finishes	178	m2	200.00	35,600
	Ceiling Finishes				
37.K	Ceiling finishes	178	m2	300.00	53,400
	Fitments				
37.L	Bar/back bar joinery	20	m	3,000.00	60,000
	Special Equipment				
37.M	Cool room - see other sections		Note		Incl
37.N	Bar refrigeration equipment	1	Item	25,000.00	25,000
37.O	Post mix/beer lines/beer fonts - by beer and post mix suppliers		Note		Excl
	Hydraulic Serves to Bar				
37.P	Sinks/taps to bar/connections	5	no	5,000.00	25,000
37.Q	Trenching and make good	20	m	1,000.00	20,000
	Engineering Services				
37.R	See other sections		Note		Incl
	Rounding				
37.S	Rounding	1	Item	300	300
	Provide corporate bar				**290,000**
38	**Provide corporate premium parking**				
38.A	Excluded - no works required per PLA advice		Note		Excl
	Provide corporate premium parking				**0**

ESTIMATE DETAILS

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39	**Corporate Engineering Services**				
	Per JMG costs dated 04/09/20		Note		Incl
39.A	Corporate bar extension, AHU & ductwork distribution (2.515)	1	Item	45,000.00	45,000
39.B	AHU to replace corporate dining and Nostalgia Bar AC units (2.516)	1	Item	50,000	50,000
39.C	Ductwork modifications to suit (2.517)	1	Item	30,000	30,000
39.D	LED lighting (2.502)	1	Item	80,000.00	80,000
39.E	Emergency evac lights (2.503)	1	Item	10,000.00	10,000
39.F	Power services alterations (2.504)	1	Item	35,000.00	35,000
39.G	Comms & security (2.505)	1	Item	17,500.00	17,500
39.H	External LED lighting (2.506)	1	Item	25,000.00	25,000
39.I	Fire detection & EWIS - see compliance		Note		Incl
39.J	BWIC with services @ 5%	5	%	292,500	14,625
39.K	Rounding	1	Item	2,875	2,875
	Corporate Engineering Services				**310,000**
40	**Re-Purpose Area Between Corporate WC and Exit**				
40.A	Area now covered in office/kitchen extension section of estimate		Note		Incl
	Re-Purpose Area Between Corporate WC and Exit				**0**
41	**Provide contemporary Unisex players change**				
	Demolition				
41.A	Demolish lean to building	1	Item	5,000	5,000
41.B	Demolish hardstand	375	m2	20.00	7,500
41.C	Make good hotmix with boundary on completion	1	Item	2,000.00	2,000
	Substructure				
41.D	New slabs	375	m2	200	75,000
41.E	Allowance for driven timber piling	375	m2	150.00	56,250
	Columns				
41.F	Columns to extensions	375	m2	70	26,250
	Roof				
41.G	Roof to extension	375	m2	350	131,250

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41	**Provide contemporary Unisex players change**				*(Continued)*
41.H	Roof safety system	1	Item	5,000.00	5,000
	External Walls/Windows				
41.I	Extension external walls - allowed 4,000 high low spec metal cladding	321	m2	285	91,485
41.J	Allowance for external windows	30	m2	750.00	22,500
	Internal Walls				
41.K	Stud partition walls	407	m2	185	75,295
	Internal Screens and Borrowed Lights				
41.L	Laminate sheeted particleboard sheet toilet partition (to new and existing WCs)	6	cubicle	1,653	9,918
41.M	Shower cubicles	6	cubicle	3,000.00	18,000
	Internal Doors				
41.N	Solid core doors and closer	8	no	1,300	10,400
	Wall Finishes				
41.O	Vinyl - full height	619	m2	65	40,235
41.P	Paint to balance	204	m2	20.00	4,080
	Floor Finishes				
41.Q	Vinyl to floors	375	m2	75	28,125
	Ceiling Finishes				
41.R	New ceilings	375	m2	100	37,500
	Fitments				
41.S	Vanities	6	m	800	4,800
41.T	Mirrors	20	m2	270	5,400
41.U	WC fixtures and fittings	1	Item	4,000	4,000
41.V	DDA grab rails, shower seats etc	2	sets	2,300	4,600
41.W	Lockers	30	no	800	24,000

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41	**Provide contemporary Unisex players change**				*(Continued)*
41.X	Benches/peg rails	46	m	650.00	29,900
41.Y	Sundry joinery		Note		Excl
41.Z	Treatment equipment/facilities/massage - excluded		Note		Excl
	Sanitary Fixtures				
41.AA	Wcs	6	no	1,000	6,000
41.AB	Access WC	2	no	2,800.00	5,600
41.AC	Wash hand basins	8	no	600	4,800
41.AD	Showers - included as partitions	8	no		Incl
41.AE	DDA shower	2	no	500.00	1,000
41.AF	Cleaners sink (in cupboard in corridor)	1	no	1,500.00	1,500
41.AG	Drinking stations - excluded		Note		Excl
41.AH	Ice baths to change rooms - excluded		Note		Excl
	Sanitary Plumbing				
41.AI	UPVC soil waste and vent pipework [single storey]	27	fixt	832	22,459
	Water Supply				
41.AJ	Sink Mixer[so $320]	9	no	500	4,500
41.AK	Cold and hot water reticulation	27	fixt	681	18,397
41.AL	Showers	10	no	1,000.00	10,000
41.AM	Hot water supply	1	Item	10,000	10,000
	Engineering Services				
	Per JMG costs dated 04/09/20				
41.AN	General light and power (2.601)	1	Item	65,000.00	65,000
41.AO	Fire detection and EWIS (2.602)	1	Item	4,000.00	4,000
41.AP	Change room exhaust systems (2.605)	1	Item	20,000.00	20,000
41.AQ	Change room AHU and ductwork (2.606/2.607)	1	Item	75,000.00	75,000
41.AR	Allowance for BWIC with services	5	%	164,000.00	8,200
	External Sewer Drainage				
41.AS	Connect sewer into existing system - pipework	1	Item	5,000.00	5,000

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41	**Provide contemporary Unisex players change**				*(Continued)*
	External Stormwater Drainage				
41.AT	Stormwater pipework	85	m	150.00	12,750
41.AU	Pits	2	no	3,500.00	7,000
41.AV	Manhole	1	no	3,500.00	3,500
41.AW	Temporary works for diversion	1	Item	10,000.00	10,000
	External Roads				
	Roads				
41.AX	Re-construct pavement to match new levels for drainage	161	m2	75.00	12,075
	External Water Supply				
41.AY	Water connection to extension	1	Item	5,000.00	5,000
	External Power				
41.AZ	Power connection to extension	1	Item	5,000.00	5,000
	Rounding				
41.BA	Rounding	1	Item	14,732	14,732
	Provide contemporary Unisex players change				**1,050,000**
42	**New Sports Bar, Tote, Sky, Replay screens, fixed seating, Quality Bar, sit down meals and independent access & potentially independent operating times**				
	Demolition				
42.A	Allowance for demolition works to form penetrations for new sports bar	1	Item	10,000.00	10,000
	Substructure				
42.B	New slab to sports bar and demolish/replace slab to prep kitchen (new hydraulics to cut up slab & will requiring relevlling to suit falls of drains)	546	m2	300.00	163,800
42.C	Allowance for driven timber piling	546	m2	150.00	81,900
	Staircases				
42.D	Change in level steps - excluded		Note		Excl
42.E	Stairs in sports bar including handrails	1	Item	10,000.00	10,000

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42	**New Sports Bar, Tote, Sky, Replay screens, fixed seating, Quality Bar, sit down meals and independent access & potentially independent operating times**				*(Continued)*
	Columns				
42.F	Allowance for columns	546	m2	80.00	43,680
	Roof				
42.G	Sports bar roof	546	m2	400.00	218,400
42.H	Roof plant platform	40	m2	1,000.00	40,000
42.I	Skylight (curved) - excluded		Note		Excl
42.J	Acoustic louvres to roof plant	75	m2	900.00	67,500
42.K	Roof safety system	1	Item	8,000.00	8,000
	External Walls/Windows/Doors				
42.L	Curved metal walls to sports bar including framing, internal lining and insulation/sislation - allowed overall height of 8m average height	459	m2	550.00	252,448
42.M	EO for faceted aluminium framed glazing - achievable within rate for external wall	177	m2	300.00	53,100
	Internal Walls and Doors				
42.N	Stud partition wall allowed 5,000 high	214	m2	175.00	37,450
42.O	Glazed screen between bar and airlock	36	m2	600.00	21,600
42.P	Glazed entrance doors to bar	1	Item	9,000.00	9,000
42.Q	Doors/screens to sports bar entrance - excluded		Note		Excl
42.R	Kitchen doors	1	Item	5,000.00	5,000
42.S	Single leaf solid core painted door to WC lobby	1	no	1,300.00	1,300
	Wall Finishes				
42.T	Prep kitchen wall finishes - vinyl	172	m2	65.00	11,180
42.U	Wall finishes sports bar - allowed 5,000 high paint finish to 50%	483	m2	25.00	12,075
42.V	Wall finishes sports bar - allowed 5,000 feature wall linings to 50%	483	m2	250.00	120,750
	Floor Finishes				
42.W	Floor finishes - average rate	546	m2	140.00	76,440
42.X	Tactiles/nosings to stairs and ramp	1	Item	3,000.00	3,000

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42	**New Sports Bar, Tote, Sky, Replay screens, fixed seating, Quality Bar, sit down meals and independent access & potentially independent operating times**				*(Continued)*
	Ceiling Finishes				
42.Y	Ceiling finishes - acoustic plasterboard ceilings including provision for bulkheads etc	546	m2	220.00	120,120
42.Z	External soffit linings	80	m2	300.00	24,000
	Fitments				
42.AA	Bar joinery and back bar joinery	33	m	2,500.00	82,500
42.AB	Feature overhead joinery above bar counter	69	m2	700.00	48,300
42.AC	Allowance for prep kitchen stainless - see separate kitchen fitout provisional sum		Note		Excl
42.AD	Ramp balustrades in glass to one side and stainless handrail to wall side - excluded		Note		Excl
42.AE	Signage	1	Item	10,000.00	10,000
42.AF	Tote/Keno joinery - excluded		Note		Excl
42.AG	Other joinery - screens, wall mounted tables/bars, booth seating etc	1	Item	50,000.00	50,000
42.AH	Fire extinguishers/blankets	1	Item	5,000.00	5,000
	Special Equipment				
42.AI	Cool room - see other sections of estimate		Note		Incl
42.AJ	Kitchen equipment - see separate provisional sum allowances		Note		Incl
42.AK	Bar equipment	1	Item	50,000.00	50,000
42.AL	Post mix/beer lines/beer fonts - by beer and post mix suppliers		Note		Excl
	Hydraulic Services to Bar				
42.AM	Sinks/taps to bar/connections	5	no	5,000.00	25,000
42.AN	Eo for greasy waste drainage and floor wastes to kitchen	1	Item	5,000.00	5,000
	Engineering Services				
	Per JMG costs dated 04/09/20				
42.AO	General light and power (2.701)	1	Item	125,000.00	125,000
42.AP	Comms & security (2.702)	1	Item	20,000.00	20,000

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
42	**New Sports Bar, Tote, Sky, Replay screens, fixed seating, Quality Bar, sit down meals and independent access & potentially independent operating times**				*(Continued)*
42.AQ	New distribution and sub mains (2.703)	1	Item	40,000.00	40,000
42.AR	Fire detection & EWIS (2.703)	1	Item	7,500.00	7,500
42.AS	Sports bar AHU & ductwork (2.710)	1	Item	126,000.00	126,000
42.AT	Commercial kitchen exhaust (2.711)	1	Item	40,000.00	40,000
42.AU	Air make up (2.712)	1	Item	20,000.00	20,000
42.AV	Dishwasher exhaust (2.713)	1	Item	15,000.00	15,000
42.AW	General exhaust (2.714)	1	Item	10,000.00	10,000
42.AX	Toilet exhaust - see other sections		Note		Incl
42.AY	Allowance for Fire hose reel and connection - part of sprinkler rates		Note		Incl
42.AZ	Allowance for BWIC with services	5	%	403,500.00	20,175
	External Sewer Drainage				
42.BA	Connect sewer into existing system	1	Item	10,000.00	10,000
42.BB	Grease trap - assumed second grease trap required due to distance to main kitchen	1	Item	15,000.00	15,000
	External Stormwater Drainage				
42.BC	Connect stormwater into existing system	1	Item	5,000.00	5,000
42.BD	Alter carpark drainage in affected by extension - excluded		Note		Excl
	External Water Supply				
42.BE	Water connection to extension	1	Item	5,000.00	5,000
	Site Preparation				
42.BF	Demolish handstand and make good	1	Item	6,804.80	6,805
	Rounding				
42.BG	Rounding	1	Item	67,977	67,977
	New Sports Bar, Tote, Sky, Replay screens, fixed seating, Quality Bar, sit down meals and independent access & potentially independent operating times				**2,200,000**
43	**AV Audio feeds large screen display & Odds screens & write up /betting slopes**				
43.A	Included in other areas		Note		Excl

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43	**AV Audio feeds large screen display & Odds screens & write up /betting slopes**				*(Continued)*
	AV Audio feeds large screen display & Odds screens & write up /betting slopes				**0**
44	**Servery Kitchen**				
44.A	Included in other areas		Note		Excl
	Servery Kitchen				**0**
45	**New Ac to space Exhaust hood – make up air**				
45.A	Included in other areas		Note		Excl
	New Ac to space Exhaust hood – make up air				**0**
46	**Outside access to smoking area**				
46.A	Provisional sum allowance for smoker's terrace	1	Item	100,000.00	100,000
	Outside access to smoking area				**100,000**
47	**Expand Food & Beverage Concession areas either side of main entry and to Nostalgia Bar Space**				
	Demolition				
47.A	Demolish external walls to make way for foot and beverage extension	291	m2	100.00	29,100
47.B	Demolish ceiling finishes	217	m2	20.00	4,340
47.C	Demolish floor finishes	217	m2	10.00	2,170
47.D	Demolish internal walls	160	m2	20.00	3,200
47.E	Demolish existing roof - assumed roof replaced to allowed clear spans for new concessions area	165	m2	50.00	8,250
47.F	Demolish slab to concessions - assumed quicker/more cost effective to replace in lieu of making good and cutting in for columns etc to suit roof	165	m2	50.00	8,250
47.G	Make good generally following demolition works	1	Item	5,000.00	5,000
	Substructure				
47.H	Slab to extension (whole of concession area allowed as new except for Nostalgia Bar)	412	m2	250.00	103,000
47.I	Allowance for driven timber piling	412	m2	150.00	61,800
47.J	Make good slab in Nostablgia Bar	52	m2	20.00	1,040
	Columns				
47.K	Columns to extension (excluding Nostalgia Bar)	629	m2	50.00	31,450
	Roof				

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47	**Expand Food & Beverage Concession areas either side of main entry and to Nostalgia Bar Space**				*(Continued)*
47.L	Roof to extension (excluding Nostalgia Bar)	629	m2	400.00	251,600
	External Walls/Window				
47.M	Curved metal external walls to sports bar including framing, internal lining and insulation/sislation - allowed overall height of 6,800	509	m2	550.00	279,948
47.N	EO for faceted aluminium framed glazing	86	m2	300.00	25,800
	Internal Walls				
47.O	Internal walls	342	m2	160.00	54,720
	Internal Screens and Borrowed Lights				
47.P	First aid curtains and tracks	7	m	300	2,013
	Internal Doors				
47.Q	Single leaf internal doors	6	no	1,300	7,800
	Wall Finishes				
47.R	Wall finishes to concessions (average rate)	925	m2	100.00	92,500
	Ceiling Finishes				
47.S	New ceiling finish - average rate	464	m2	150.00	69,600
	Floor Finish				
47.T	Floor finish - average rate	681	m2	150.00	102,150
	Fitments				
47.U	Kitchen stainless benches - see kitchen fit out provisional sum		Note		Incl
47.V	Wall mounted dining benches	30	m	800	24,000
47.W	Concession 2 booth seating	1	Item	12,000	12,000
47.X	Merchandise sales shelving	13	m	1,000	13,000
47.Y	Servery counters (includes allowance for in Nostalgia Bar	32	m	2,000	64,000
47.Z	First aid joinery	1	Item	1,500	1,500

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
47	**Expand Food & Beverage Concession areas either side of main entry and to Nostalgia Bar Space**				*(Continued)*
47.AA	Seating - excluded		Note		Excl
47.AB	Signage to concessions and Bar	1	Item	15,000.00	15,000
	Special Equipment				
47.AC	Refrigeration equipment	1	Item	50,000.00	50,000
47.AD	Cool stores	2	no	18,000	36,000
47.AE	Post mix/beer lines/beer fonts - by beer and post mix suppliers		Note		Excl
47.AF	Concessions equipment - excluded		Note		Excl
	Hydraulic Services				
47.AG	Allowance for sinks to bar and concession spaces including sink, tapset, pipework and hot water supply	15	no	5,000.00	75,000
	Engineering Services				
	Per JMG costs dated 04/09/20				
47.AH	General light and power (2.801)	1	Item	110,000.00	110,000
47.AI	Comms & security (2.802)	1	Item	20,000.00	20,000
47.AJ	New distribution and sub mains (2.803)	1	Item	60,000.00	60,000
47.AK	Ticketing/access/merch/first aid/office - lighting, comms and security (2.904/2.905)	1	Item	27,500.00	27,500
47.AL	Fire detection & EWIS - see compliance		Note		Incl
47.AM	Conditioning to concessions (2.813) - see cooling and ventilation section of estimate				
47.AN	Commercial kitchen exhaust (2.814)	1	Item	60,000.00	60,000
47.AO	Air make up (2.815)	1	Item	20,000.00	20,000
47.AP	Allowance for Fire hose reel and connection	2	no	4,000.00	8,000
47.AQ	Allowance for BWIC with services	5	%	305,500.00	15,275
	External Sewer Drainage				
47.AR	Connect sewer into existing system	1	Item	5,000.00	5,000
47.AS	Grease trap - assumed third grease trap required due to distance to main kitchen or sports bar	1	Item	15,000.00	15,000
	External Stormwater Drainage				

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47	**Expand Food & Beverage Concession areas either side of main entry and to Nostalgia Bar Space**				*(Continued)*
47.AT	Connect stormwater into existing system	1	Item	5,000.00	5,000
	External Water Supply				
47.AU	Water connection to extension	1	Item	5,000.00	5,000
	Site Preparation				
47.AV	Demolish handstand and make good	1	Item	6,804.80	6,805
	Rounding				
47.AW	Rounding	1	Item	58,189	58,189
	Expand Food & Beverage Concession areas either side of main entry and to Nostalgia Bar Space				**1,850,000**
48	**Expand floor area to reduce congestion on concourse**				
48.A	Included in other areas		Note		Excl
	Expand floor area to reduce congestion on concourse				**0**
49	**Move service areas outbound to move patrons off concourse to stop queuing**				
49.A	Included in other areas		Note		Excl
	Move service areas outbound to move patrons off concourse to stop queuing				**0**
50	**Provide space for stand-up tables / chairs / bench perimeter table.**				
50.A	Included in other areas		Note		Excl
	Provide space for stand-up tables / chairs / bench perimeter table.				**0**
51	**Provide food and drink options in separate service points**				
51.A	Included in other areas		Note		Excl
	Provide food and drink options in separate service points				**0**
52	**Provide view to outside**				
52.A	Included in other areas		Note		Excl
	Provide view to outside				**0**
53	**Provide architectural feature promoting the DEC experience**				
53.A	Allowance for enhanced architectural features		Note		Excl

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
53	**Provide architectural feature promoting the DEC experience**				*(Continued)*
	Provide architectural feature promoting the DEC experience				**0**
54	**Contemporary colour scheme, colours and finishes**				
54.A	Included in other areas		Note		Excl
	Contemporary colour scheme, colours and finishes				**0**
55	**Inner Airlock Doors**				
	Scope				
55.A	Retained in estimate per PLA advice		Note		Scope
	Demolition				
55.B	Demolish existing doors and windows on airlock front façade - allowed 3,500 high	64	m2	40	2,560
	External Windows and Doors				
55.C	Aluminium framed single glazed commercial spec glazing - allowed 3,500 high	64	m2	750	48,000
55.D	Eo for double leaf doors	4	no	3,000	12,000
55.E	Eo for automatic hinged double leaf	4	no	10,000	40,000
	Finishes				
55.F	Make good existing wall and floor finishes following works	1	Item	1,000	1,000
55.G	Floor finishes - excluded		Note		Excl
55.H	Entrance matt alterations - excluded		Note		Excl
	Engineering Services				
55.I	Extend power to auto doors and link back to FIP etc	1	Item	10,000	10,000
	Rounding				
55.J	Rounding	1	Item	440	440
	Inner Airlock Doors				**114,000**
56	**Office off New Entrance**				
	Scope				
56.A	Office by entrance between grids 7&8 assumed to be ticket sales office		Note		Scope

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56	**Office off New Entrance**				*(Continued)*
	Demolition				
56.B	Allowance for demolition works	1	Item	5,000.00	5,000
	Substructure				
56.C	Slab to extension	17	m2	350.00	5,950
	Columns				
56.D	Columns to extension	17	m2	50.00	850
	Roof				
56.E	Roof to extension	17	m2	400.00	6,800
	External Walls/Window				
56.F	External windows/external walls (allowed 4,000 high)	42	m2	900.00	37,800
	Wall Finishes				
56.G	Wall finishes	68	m2	20.00	1,360
	Ceiling Finishes				
56.H	New ceiling finish	17	m2	100.00	1,700
	Floor Finish				
56.I	Floor finish	17	m2	70.00	1,190
	Fitments				
56.J	Ticket counters	11	m	1,000.00	11,000
56.K	Other ticket joinery	1	Item	3,000.00	3,000
56.L	Signage	1	Item	3,000.00	3,000
	Special Equipment				
56.M	Ticketing equipment and readers - excluded		Note		Excl
	Hydraulic Services				
56.N	Excluded		Note		Excl

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56	**Office off New Entrance**				*(Continued)*
	Engineering Services				
56.O	Included in other sections		Note		Incl
	External Stormwater Drainage				
56.P	Connect stormwater into existing system	1	Item	3,000.00	3,000
	Site Preparation				
56.Q	Demolish handstand and make good	1	Item	6,804.80	6,805
	Rounding				
56.R	Rounding	1	Item	545	545
	Office off New Entrance				**88,000**
57	**Provide Cover for Patrons purchasing tickets (Skylights to Main Airlock)**				
	Demolition				
57.A	Demolish section of roof for new skylight - assumed roof structure to remain over entire airlock	122	m2	50.00	6,100
57.B	Demolish air lock ceiling	122	m2	15.00	1,830
	Substructure				
57.C	Allowance for footings for new roof extension for covered entrance - excluded option 2 works		Note		Incl
57.D	New slab - see concourse section		Note		Incl
	Roof				
57.E	Aluminium trafficable skylight over airlock - single glazed, faceted including for support framing	122	m2	1,500.00	183,000
57.F	Allowance for tapered sloping roof to form covered entrance including all support framing and sheeting - option 2 works		Note		Excl
	External Windows and Doors				
57.G	Outer airlock window and doors - see compliance works		Note		Incl
57.H	Inner airlock windows and doors - excluded		Note		Excl

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
57	**Provide Cover for Patrons purchasing tickets (Skylights to Main Airlock)**				*(Continued)*
	Ceiling Finishes				
57.I	Finish to new roof (FC sheet)		Note		Excl
	Floor Finishes				
57.J	Airlock - existing				
	Airlock Wall Finishes				
57.K	Airlock wall finish - allowed 4,500 high	63	m2	250.00	15,750
	Fitments				
57.L	Turnstiles - excluded		Note		Excl
57.M	Allowance for bag checking station joinery - excluded		Note		Excl
57.N	Signage	1	Item	50,000.00	50,000
	Engineering Services				
	Per JMG costs dated 04/09/20				
57.O	New exterior lighting to entry portico & airlock (2.1001)	1	Item	15,000.00	15,000
57.P	New access path lighting (2.1002)	1	Item	50,000.00	50,000
57.Q	Power services & security to baggage checking stations (2.1003)	1	Item	7,500.00	7,500
57.R	Mechanical services - excluded			Note	Excl
57.S	Allowance for BWIC with services	5	%	72,500.00	3,625
57.T	See other section		Note		Incl
	External stormwater Drainage				
57.U	Allowance for external stormwater connections to roof	1	Item	10,000.00	10,000
	External Water Supply				
57.V	Extend water to outdoor area	1	Item	2,000.00	2,000
	Rounding				
57.W	Rounding	1	Item	195	195
	Provide Cover for Patrons purchasing tickets (Skylights to Main Airlock)				**345,000**

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
58	**Ticket scanning by staff in option 1**				
58.A	Option 1 - scanning by staff, assumed hand held devices, no works required		Note		Excl
	Ticket scanning by staff in option 1				**0**
59	**New Plaza, raise ground levels, new pavements,demolish roundabout & access road,, new pedestrian ramp from access road level, new stairs from road, new DDA parking spots, motorcycle parking spots, bike racks**				
	Demolition				
59.A	Demolish concrete paths	1,652	m2	25.00	41,300
59.B	Demolish hotmix parking/turning circle including kerbs	1,541	m2	23.95	36,910
59.C	Relocate 5 flag poles	5	no	1,300.00	6,500
59.D	Remove bollards and salvage for re-use	1	Item	300.00	300
59.E	Burn off line marking etc	1	Item	400.00	400
59.F	Demolish existing roundabout, parking and footpaths to make way for works - excluded build over top		Note		Excl
	Forecourt & Ramp				
59.G	New exposed aggregate forecourt and ramp only - pedestrian and light vehicle loadings only	3,675	m2	150.00	551,250
59.H	Hotmix patching/repairs	1	Item	10,000.00	10,000
59.I	Stairs	1	Item	8,000.00	8,000
59.J	Retaining walls (block) including footing and tanking - generally curved	278	m2	500.00	139,001
59.K	Render to retaining walls	278	m2	80.00	22,240
59.L	EO to increase spec of block walls to insitu concrete	278	m2	500	139,000
59.M	Structural fill - - RL and existing levels not known	4,737	m3	110.00	521,070
59.N	Balustrades to ramps/edges -metal	225	m	600.00	135,000
59.O	Target saving identified by PLA to reduce retaining walls/balustrade and add earth mounds - allow 50% reduction	1	Item	-100,000.00	-100,000
59.P	Tactiles	1	Item	10,000.00	10,000
59.Q	Planting and irrigation	893	m2	130.00	116,090
59.R	Topsoil and seed	4,437	m2	7	31,059
59.S	Allowance for signage and way-finding	1	Item	25,000.00	25,000
59.T	New speed table/crossover to carpark	1	Item	9,000.00	9,000
59.U	Less allowances included in compliance option	1	Item	-45,000	-45,000
59.V	Carpark DDA marking and bollards	13	spaces	1,000.00	13,000
59.W	Motorcycle parking bays	27	m2	130.00	3,510

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59	**New Plaza, raise ground levels, new pavements,demolish roundabout & access road,, new pedestrian ramp from access road level, new stairs from road, new DDA parking spots, motorcycle parking spots, bike racks**				*(Continued)*
59.X	Concrete for bike parking area	100	m2	120.00	12,000
59.Y	Bike racks	50	no	600.00	30,000
	Inground Services				
59.Z	Heel guard stainless drains	141	m	700.00	98,700
59.AA	Stormwater pipework	224	m	140.00	31,360
59.AB	Convert grated drains into manholes	2	no	1,800.00	3,600
59.AC	Allowance for external water points	1	Item	5,000.00	5,000
59.AD	External lighting - see other sections		Note		Incl
	Contingency				
59.AE	Rounding	1	Item	710	710
	New Plaza, raise ground levels, new pavements,demolish roundabout & access road,, new pedestrian ramp from access road level, new stairs from road, new DDA parking spots, motorcycle parking spots, bike racks				**1,855,000**
60	**New 34 Temporary Carpark Spaces**				
60.A	Strip site	849	m2	10.00	8,490
60.B	Carpark - base, hotmix, kerbs	849	m2	83.28	70,708
60.C	Line marking	34	bays	80.00	2,720
60.D	Drainage - scope of works and connections not known	849	m2	40.00	33,960
60.E	Lighting to carpark extension (Per JMG estimate 04/09/20 2.1708)	1	Item	20,000.00	20,000
60.F	Rounding	1	Item	4,122.00	4,122
	New 34 Temporary Carpark Spaces				**140,000**
61	**New metal façade & double glazing to food & beverage concessions, toilet expansion & Sports Bar for toilet expansion**				
61.A	Included in new build sections of estimate		Note		Incl
	New metal façade & double glazing to food & beverage concessions, toilet expansion & Sports Bar for toilet expansion				**0**
62	**Concourse Redecorate internal walls and ceiling**				
	Demolition				
62.A	Demolish existing ceilings	1,272	m2	20.00	25,440

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62	**Concourse Redecorate internal walls and ceiling**				*(Continued)*
62.B	Sundry demolition works	1	Item	10,000.00	10,000
	Ceiling Finishes				
62.C	Allownace for new ceiling finishes - flat plasterboard ceiling	1,272	m2	100.00	127,200
62.D	Feature ceilings - see section 1.103		Note		Incl
	Wall Finishes				
62.E	Wall finishes - paint finish allowed 4,500 high (average rate)	1,146	m2	20.00	22,920
62.F	Feature wall linings - see section 1.103		Note		Incl
62.G	Finish to circular columns - paint only	12	no	250.00	3,000
	Fitments				
62.H	Allowance for way finding marking	1	Item	40,000.00	40,000
62.I	AV - assumed part of Daktronics		Note		Incl
	Per JMG costs dated 04/09/20				
62.J	Evacuation lighting	1	Item	15,000.00	15,000
62.K	Power and comms for new AV and way finding	1	Item	25,000.00	25,000
62.L	Alterations & additions to existing distribution boards	1	Item	25,000.00	25,000
62.M	Fire detection & EWIS	1	Item	10,000.00	10,000
62.N	New lighting - see separate section		Note		Incl
62.O	Mechanical Services - see separate mechanical section		Note		Incl
62.P	Allownace for BWIC with services	5	%	75,000.00	3,750
	Rounding				
62.Q	Rounding	1	Item	2,690	2,690
	Concourse Redecorate internal walls and ceiling				**310,000**
63	**Concourse New carpet tiles**				
63.A	Demolish existing floor finish - tiles	1,272	m2	10.00	12,720
63.B	Grind back adhesive	1,272	m2	10.00	12,720
63.C	New carpet tiles	1,272	m2	80.00	101,760
63.D	Concourse stairs/ramps tactiles and nosings	1	Item	15,000.00	15,000
63.E	Ceramic tiles - excluded		Note		Excl

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63	**Concourse New carpet tiles**				*(Continued)*
	Rounding				
63.F	Rounding	1	Item	800	800
	Concourse New carpet tiles				**143,000**
64	**Concourse Higher key finishes and colour to walls and ceilings**				
	Ceiling Finishes				
64.A	Upsec ceilings flat plasterboard ceilings in concourse to combination of coffers/bulkheads and timber batten ceilings (overall combined rate = $350/m2) - allowed to entire area	1,272	m2	250.00	318,000
64.B	Feature ceilings - see section 1.103		Note		Incl
	Wall Finishes				
64.C	Upspec wall finishes specifications - timber over aluminium system or similar to say 50% of wall area	573	m2	400.00	229,200
64.D	Feature wall linings - see section 1.103		Note		Incl
	Rounding				
64.E	Rounding	1	Item	2,800	2,800
	Concourse Higher key finishes and colour to walls and ceilings				**550,000**
65	**Concourse Incorporation of AV, PA and way finding elements**				
65.A	Incl In other areas		Note		Incl
	Concourse Incorporation of AV, PA and way finding elements				**0**
66	**Concourse Office and conference space**				
66.A	New office included in separate section		Note		Scope
66.B	Former office areas now included in concessions section of estimate and compliance WC estimate		Note		Scope
	Concourse Office and conference space				**0**
67	**Concourse Existing WC Refurbishment**				
	Demolition				
67.A	Strip out existing WC and works to allow for new WCs	243	m2	100	24,300
	Substructure				
67.B	Existing slabs - make good	243	m2	20	4,860

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
67	**Concourse Existing WC Refurbishment**				*(Continued)*
	Internal Walls				
67.C	Allownace to alter internal walls to suit re-configuration of surround spaces	30	m2	200.00	6,000
67.D	Replace existing WC entrance doors where affected by re-configuration of surround	2	no	1,300.00	2,600
67.E	Replace doors to existing WC - excluded		Note		Excl
	Internal Screens and Borrowed Lights				
67.F	Laminate sheeted particleboard sheet toilet partition	44	cubicle	1,653	72,732
	Wall Finishes				
67.G	Tiling to walls	593	m2	150	88,950
	Floor Finishes				
67.H	Tiling and waterproofing to floors	243	m2	175	42,525
	Ceiling Finishes				
67.I	Repaint existing ceilings	243	m2	30	7,290
67.J	Patch/repair ceilings where affected by demolition works (assumed do not require re-sheeting)	1	Item	2,000.00	2,000
	Fitments				
67.K	Vanities	43	m	800	34,400
67.L	Mirrors	78	m2	270	21,060
67.M	WC fixtures and fittings	1	Item	30,000	30,000
	Sanitary Fixtures				
67.N	Wcs	44	no	1,000	44,000
67.O	Wash hand basins	71	no	600	42,600
67.P	Stainless steel urinal (or wall mounted urinals)	24	m	2,400	57,608
	Sanitary Plumbing				
67.Q	Locally adjust existing connections in existing facilities	1	Item	10,000	10,000
	Water Supply				

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67	**Concourse Existing WC Refurbishment**				*(Continued)*
67.R	Sink Mixer[so $320]	71	no	500	35,500
67.S	Locally adjust existing connections in existing facilities	1	Item	6,000	6,000
	Per JMG costs dated 04/09/20				
67.T	WC lighting to existing WCs (2.304)	1	Item	15,000	15,000
67.U	Power services to altered amenities (2.1102)	1	Item	25,000.00	25,000
67.V	Upgrade concourse WC exhaust fans and grilles (2.1111)	1	Item	40,000.00	40,000
67.W	Allowance for BWIC with services	5	%	80,000.00	4,000
	Rounding				
67.X	Rounding	1	Item	3,575	3,575
	Concourse Existing WC Refurbishment				**620,000**
68	**Concourse Evacuation Lighting, Power, Comms new A/V and Way finding**				
	Per JMG costs dated 04/09/20				
68.A	Review and upgrade of emergency evacuation lighting (2.1101)	1	Item	25,000.00	25,000
68.B	Power & Comms services, new A/V and way finding	1	Item	30,000.00	30,000
68.C	Allowance for BWIC with services	5	%	55,000.00	2,750
68.D	Rounding	1	Item	2,250.00	2,250
	Concourse Evacuation Lighting, Power, Comms new A/V and Way finding				**60,000**
69	**Painting of seats not practical**				
69.A	Excluded as advised		Note		Excl
	Painting of seats not practical				**0**
70	**Provide slip over colour and padded seat - excluded**				
70.A	Loose covers to seats - excluded no longer required per PLA advice		Note		Excl
	Provide slip over colour and padded seat - excluded				**0**
71	**Free-standing seats 256 players, scorers, corporate**				
71.A	Allowance for free standing seats	256	no	300.00	76,800
71.B	Rounding	1	Item	200.00	200
	Free-standing seats 256 players, scorers, corporate				**77,000**

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
72	**New kitchen main commercial kitchen**				
	Demolition				
72.A	Demolish external doors	1	Item	400	400
72.B	Demolish WC block	46	m2	200	9,177
	Substructure				
72.C	New slab to kitchen	267	m2	200.00	53,400
72.D	Allowance for driven timber piling	267	m2	150.00	40,050
	Columns				
72.E	Columns to kitchen	267	m2	100.00	26,700
	Roof				
72.F	Roof to extension	267	m2	350	93,450
72.G	Roof safety system	1	Item	5,000.00	5,000
	External Walls				
72.H	No longer applicable now landlocked around other building functions		Note		Excl
	External Windows and Doors				
72.I	No longer applicable now landlocked around other building functions		Note		Excl
	Internal Walls, Screens and Doors				
72.J	Perimeter walls to kitchen space to form shell	298	m2	270	80,460
72.K	Allowance for internal walls	150	m2	210.00	31,500
72.L	Double leaf doors to kitchen entrance	3	no	3,500.00	10,500
72.M	Single leaf door to kitchen entrance	1	no	2,000	2,000
72.N	Double leaf doors to kitchen store/office etc	3	no	2,500.00	7,500
	Wall Finishes				
72.O	Wall vinyl to kitchen - allowed 3,000 high	449	m2	65.00	29,185
72.P	Eo for stainless to walls allowed to 50% per PLA advice	224	m2	70	15,680

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
72	**New kitchen main commercial kitchen**				*(Continued)*
	Floor Finishes				
72.Q	Epoxy to kitchen floor	267	m2	150.00	40,050
	Ceiling Finishes				
72.R	Kitchen ceiling finishes	267	m2	110.00	29,370
	Fitments				
72.S	Fire extinguishers/blankets	1	Item	5,000.00	5,000
	Kitchen Fi tout				
72.T	Stainless benches - see kitchen fit out provisional sum		Note		Incl
72.U	Allowance for walk in cool rooms and freezers - see JMG section		Note		Incl
72.V	Kitchen equipment - see separate provisional sums section		Note		Incl
	Sanitary Fixtures				
72.W	Allowance for stainless integrated sinks	15	no	900.00	13,500
72.X	Allowance for wash hand basins	3	no	500.00	1,500
	Sanitary Plumbing				
72.Y	Floor wastes to kitchen and strip drains	1	Item	15,000.00	15,000
72.Z	Connections for kitchen equipment	1	Item	3,000.00	3,000
72.AA	HDPE pipework	1	Item	25,000.00	25,000
	Water Supply				
72.AB	Taps	18	no	600.00	10,800
72.AC	Connections for kitchen equipment	1	Item	3,000.00	3,000
72.AD	Hot and cold water reticulation	1	Item	20,000.00	20,000
72.AE	Hot water supply	1	Item	15,000.00	15,000
	Engineering Services				
	Per JMG costs dated 04/09/20		Note		Incl
72.AF	General light and power services (2.1302)	1	Item	60,000.00	60,000
72.AG	Comms and security (2.1303)	1	Item	10,000.00	10,000

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72	**New kitchen main commercial kitchen**				*(Continued)*
72.AH	New kitchen distribution board and submains (2.1304)	1	Item	40,000.00	40,000
72.AI	Fire detection and EWIS (2.1305)	1	Item	5,000.00	5,000
72.AJ	Exhaust hood (2.1304)	1	Item	90,000.00	90,000
72.AK	Make up air (2.1304)	1	Item	30,000.00	30,000
72.AL	Dishwasher exhaust (2.1310)	1	Item	15,000.00	15,000
72.AM	General exhaust (2.1311)	1	Item	10,000.00	10,000
72.AN	Cool rooms incl one in corporate area (2.1312)	3	no	15,000.00	45,000
72.AO	Freezer - none noted by JMG but assumed required?	1	Item	30,000.00	30,000
72.AP	Allowance for Fire hose reel and connection	2	no	4,000.00	8,000
72.AQ	BWIC with services	5	%	343,000.00	17,150
	External Sewer Drainage				
72.AR	Connect sewer into existing system	1	Item	20,000.00	20,000
72.AS	Grease trap	1	Item	30,000.00	30,000
	External Stormwater Drainage				
72.AT	Connect stormwater into existing system	1	Item	10,000.00	10,000
72.AU	Alter carpark drainage in affected by extension - excluded		Note		Excl
	External Water Supply				
72.AV	Water connection to extension	1	Item	5,000.00	5,000
	Site Preparation				
72.AW	Demolish handstand and make good	1	Item	6,804.80	6,805
	Rounding				
72.AX	Rounding	1	Item	31,823	31,823
	New kitchen main commercial kitchen				**1,050,000**
73	**Corporate area – cool room, freezers, painting, external access**				
73.A	Incl In other areas		Note		Incl
	Corporate area – cool room, freezers, painting, external access				**0**
74	**Rubbish solution**				
74.A	Allowance for rubbish storage slab	52	m2	150.00	7,800

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74	**Rubbish solution**				*(Continued)*
74.B	Rubbish store screening	62	m2	350.00	21,700
74.C	Gates to rubbish store	1	Item	2,000.00	2,000
74.D	Roof to rubbish store - excluded		Note		Excl
74.E	Stormwater drainage to rubbish store	1	Item	10,000.00	10,000
74.F	External lighting	1	Item	4,000.00	4,000
	Rounding				
74.G	Rounding	1	Item	2,500	2,500
	Rubbish solution				**48,000**
75	**Exhaust hood – make up air**				
75.A	Incl In other areas		Note		Incl
	Exhaust hood – make up air				**0**
76	**Gas Cooking /Gas Supply to Site**				
76.A	Gas bullet - excluded by gas supplier as part of gas contract		Note		Incl
76.B	Concrete slab to gas bullet	60	m2	150.00	9,000
76.C	Screening to gas bullet	115	m2	400.00	46,000
76.D	Gas reticulation around building - assumed in own trench	500	m	150.00	75,000
76.E	Allowance for trenching/making good hotmix and structural fill	1	Item	12,000.00	12,000
76.F	Stop valves etc	1	Item	5,000.00	5,000
76.G	Allowance for gas reticulation within main kitchen	1	Item	15,000.00	15,000
76.H	Allowance for gas reticulation within concessions kitchens	2	Item	10,000.00	20,000
76.I	Allowance for gas reticulation within sports bar kitchen	1	Item	15,000.00	15,000
76.J	Rounding	1	Item	3,000.00	3,000
	Gas Cooking /Gas Supply to Site				**200,000**
77	**Provisional sum for Kitchen Equipment**				
77.A	Kitchen equipment provisional sum per discussion with LK Group 08-09-20 - concession 1 and 2 areas, sports bar and commercial kitchen to cover equipment and stainless steel benches	1	Item	600,000.00	600,000
77.B	Bar and concession refrigeration - see bar and concession area costs		Note		Incl
77.C	Extract hoods and walk in cool rooms/freezers - see JMG costs		Note		Incl
	Provisional sum for Kitchen Equipment				**600,000**

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78	**Electrical Works Including Emergency Generator**				
	Engineering Services				
	Per JMG costs dated 04/09/20		Note		Incl
78.A	Alteration to existing site MSB - new site MSB upgrade now included in compliance in lieu of upgrade		Note		Incl
78.B	Re-location of HV power pole and associated overhead & underground supply to facilitate construction of BOH store (2.1706)	1	Item	60,000.00	60,000
78.C	Alterations to comms reticulation, including installation of new date racks and fibre optic tie cabling (2.1704)	1	Item	55,000	55,000
78.D	Alterations & additional to site FIP and EWIS system	1	Item	15,000.00	15,000
78.E	New emergency generator & UPS to FIBA requirements (2.1702)	1	Item	150,000	150,000
78.F	New generator DB to distribute emergency power (2.1703)	1	Item	60,000	60,000
78.G	Allownace for painting services in Bowl ceiling space generally	1	Item	50,000	50,000
78.H	BWIC with services	5	%	390,000.00	19,500
	Finishes				
78.I	Finishes within stadia - excluded pending PLA advice		Note		Excl
	Rounding				
78.J	Rounding	1	Item	500	500
	Electrical Works Including Emergency Generator				**410,000**
79	**Daktronics AV Works**				
79.A	Daktronics AV works - per Daktronics Derwent Entertainment Centre Budgetary Pricing - LED Video and Audio Solution estimate	1	Item	2,787,184	2,787,184
79.B	Allowance for steel hanging structure for centre hung display	1	Item	50,000	50,000
79.C	Allowance for support framing etc other display items	1	Item	50,000	50,000
79.D	Allowance for BWIC with AV generally	5	%	2,787,184	139,359
79.E	Rounding	1	Item	3,457.00	3,457
	Daktronics AV Works				**3,030,000**
80	**Sprinklers**				
80.A	Sprinklers included in compliance works estimate		Note		Incl
	Sprinklers				**0**

ESTIMATE DETAILS

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81	**Inground Services Diversion Works**				
	Water and Fire				
81.A	Water and fire ring main - see compliance works		Note		Incl
	Sewer Diversion				
81.B	Temporary works	1	Item	15,000.00	15,000
81.C	100mm sewer pipework in trench with structural fill	86	m	120.00	10,320
81.D	New sewer manholes	3	no	3,000.00	9,000
81.E	Eo for trenching/making good hotmix	30	m	60.00	1,800
81.F	Allownace for dewatering	1	Item	3,000.00	3,000
81.G	Stormwater relocation under proposed kitchen	1	Item	20,000.00	20,000
81.H	Rounding	1	Item	880.00	880
	Inground Services Diversion Works				**60,000**
82	**Preliminaries, Escalation, Fees, Contingencies etc - now applied at end of Option 2 Estimate for entire scheme**				
82.A	See end of option 2 estimate for Preliminaries, Escalation, Fees, Contingencies etc		Note		Incl
	Preliminaries, Escalation, Fees, Contingencies etc - now applied at end of Option 2 Estimate for entire scheme				**0**

ESTIMATE SUMMARY

WT PARTNERSHIP

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works

Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	Compliance Works and Option 1				
1	Compliance Works and Option 1				24,350,000
	OPTION 2 WORKS				
	Corporate Courtside				
2	Partial demolition of back stage rear wall, new structural support truss ,cols & founding				Excl
3	Corporate seating upgrade				30,000
	Cube /Audio				
4	Cube and audio to expanded complex as per option 1				NA
5	Adjustments for audio and ribbon for backstage alternatives per option 1				NA
	Stadia and Backstage Area Electric, Light and Power				
6	Stadia and Backstage Area				350,000
	Heating and Ventilation				
7	Adjustments to backstage area				0
	Corporate				
8	Corporate dining expansion	81	m2	2,358.02	191,000
	Players				
9	Players - see option 1				NA
	Sports Bar				
10	Sports Bar - see option 1				NA
	Concession Space				
11	Concession Space - see option 1				NA
	Ticketing / Access				

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
12	Electronic turn styles to front entry				110,000
13	External cover H beyond front door				900,000
14	Upgrade fencing and security - excluded				Excl
	Façade				
15	Façade - see option 1				NA
16	5 no Double Leaf Glazed Exit Doors				0
	Concourse				
17	Concourse - see option 1				NA
	Seating Stadia Bowl				
18	see item 1.11 operable seating backstage additional seats				NA
19	Replace and expand ex operable seating				1,800,000
20	Remove lower section of fixed concrete plat seating & replace with expanded operable relocatable seating for flexibility & additional seating				NA
21	Removal of lower section of fixed seating provides 350m2 expanded floor area				NA
22	Removal of seating allows more flexibility				NA
23	Replacement of whole of stadium seating with flip up seats - excluded				Excl
	Kitchen				
24	Increase kitchen capacity				NA
	Turning Circle				
25	Adjustments to Plaza to accept H shape roof				NA
	Storage Shed				
26	Colorbond shed with Mezzanine				436,000
	New Office Extension Works				
27	Office Extension, Staff Change Rooms and Security Office	690	m2	2,268.12	1,565,000

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	Seminar & Production Rooms				
28	Seminar & Production Room Light Refurbishment Only	133	m2	511.28	68,000
	Decant and Storage Costs				
29	Allownace for Decant of Remaining Loose Items at Dec and Disposal of On Site Storage				50,000
	Total Estimated Cost Option 2 (Excl GST)				**29,850,000**
	Minor Works Allowance/Out of Hours Working Allowance	5	%	29,850,000	1,500,000
	Escalation	5	%	31,350,000	1,570,000
	Design Contingency	10	%	32,920,000	3,300,000
	Head Contractor prelims and profit	13	%	36,220,000	4,710,000
	Construction Contingency	10	%	40,930,000	4,100,000
	Council Fees & Charges	0.3500	%	45,030,000	160,000
	Professional fees - LK Group to Advice on Agreed Fee Totals for Inclusion in Estimate	12	%	45,030,000	5,410,000
	TOTAL ESTIMATED CONSTRUCTION COST INCL ON COSTS (Excl GST)				**50,600,000**
	Exclusions				
	Property Purchase and associated costs				
	Finance, holding charges , cost of money provisions and legal fees				
	GST or Input tax credits				
	Escalation beyond 1 year from date of estimate				
	Loose furniture and equipment, curtains and blinds				
	Whitegoods, and other 'plug in' electrical goods				

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	POS or networking active equipment				
	Excavation in rock or additional foundations to suit poor ground conditions				
	On costs due to accelerated programme or staging				
	Works outside site boundary , Authorities fees or headworks charges, infrastructure upgrade works				
	Option 3 upgrade works				
	Works to car parking				
	Remedial works to existing building structure and finishes				
	New basketball court surface/hoops etc				
	Painting within existing stadia hall				
	Works to WCs and other areas shown as white on drawings				
	Ice baths to change rooms				
	Removal of asbestos in excess of provisional sum noted or other hazardous materials				
	Corporate parking				
	Post mix, beer fonts, beer lines, fridges (by beer/post mix provider)				
	Loose bar equipment				
	Window furnishings				
	New basket ball hoops				
	CCTV or security systems				
	Contractor ECI stage fees				
	Additional contractor D&C consultant fees in addition of existing design team not being novated over to succesful contractor				
	Contractor pricing "Risk Item" to cover contract Liquidated damages				
	Estimate Basis				
	This estimate is based on the following documentation provided by separate consultants without the benefit of full specification for materials and workmanship,bore logs, finished levels, structural drawings and construction details.				
	Philp Lighton drawings 20.318 /A0200D/ A0201E/ A202E/ A203D/A500J/ A501H/ A502E/ A300C/ SK408B dated 01/09/20				

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works

Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
	Engineering services amounts per JMG J195080SH - electrical services , mechanical services and sprinklers dated 04/09/20 AV - per Daktronics budget (undated) Seat costs per PLA Seating matrix - option 1 The advised indication of cost is an estimate based on available information and as such is our opinion of likely cost for scope as described on the documents. The costs indicated should only be used as target budgets during the design development as an aid to cost planning of this project. **Disclaimers** The contents of this estimate should only be treated as advice on quantity surveying and like matters and not architectural, building surveying or engineering advice. We recommend that Clients consult with their respective advisors before relying upon it. This estimate is intended for use only by the client noted. WT Partnership does not accept any liability which may result of any other person acting upon or using the information contained in this report. Estimates and other data advised by third parties has been included on face value and has not been independently verified. Quantities are approximate and are not suitable for use in tendering documentation, marketing or lease purposes.				

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
1	**Compliance Works and Option 1**				
1.A	See separate estimates for compliance works and option 1 details - total trade costs including on costs	1	Item	24,350,000.00	24,350,000
	Compliance Works and Option 1				**24,350,000**
2	**Partial demolition of back stage rear wall, new structural support truss ,cols & founding**				
2.A	No works to rear back stage enlargement included in current scheme		Note		Excl
	Partial demolition of back stage rear wall, new structural support truss ,cols & founding				**0**
3	**Corporate seating upgrade**				
3.A	Upgrade corporate seating (EO to Stage 1 seating allowance)	1	Item	29,574	29,574
	Rounding				
3.B	Rounding	1	Item	426.00	426
	Corporate seating upgrade				**30,000**
4	**Cube and audio to expanded complex as per option 1**				
4.A	See option 1 for cube		Note		NA
	Cube and audio to expanded complex as per option 1				**0**
5	**Adjustments for audio and ribbon for backstage alternatives per option 1**				
5.A	See option 1 audio and ribbon for backstage alterations		Note		NA
	Adjustments for audio and ribbon for backstage alternatives per option 1				**0**
6	**Stadia and Backstage Area**				
	Per JMG costs dated 04/09/20				
6.A	Back of house store general light and power (2.1502)	1	Item	25,000.00	25,000
6.B	Back of house store new DB and submains (2.1503)	1	Item	25,000.00	25,000
6.C	Stadia emergency evacuation lighting upgrade (2.1601)	1	Item	40,000.00	40,000
6.D	Relocation & installation of new stadia distribution board (2.1602)	1	Item	90,000.00	90,000
6.E	New back stage general lighting, power and emergency evacuation lighting (2.1603)	1	Item	50,000.00	50,000
6.F	New general light & power, AV and communications services to meeting room (2.1604)	1	Item	60,000.00	60,000
6.G	New Power & Comms services to serve new AV & courtside services	1	Item	40,000.00	40,000

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
6	**Stadia and Backstage Area**				*(Continued)*
6.H	BWIC with services @ 5%	5	%	330,000	16,500
6.I	Rounding	1	Item	3,500	3,500
	Stadia and Backstage Area				**350,000**
7	**Adjustments to backstage area**				
7.A	Excluded none in JMG scope of works		Note		Excl
	Adjustments to backstage area				**0**
8	**Corporate dining expansion**				
	Demolition				
8.A	Demolish windows/doors- allowed 4,000 high	94	m2	30.00	2,820
8.B	Demolish external slab	81	m2	40.00	3,240
8.C	Make good following demolition works	1	Item	5,000.00	5,000
	Substructure				
8.D	New concrete slab on ground	81	m2	250.00	20,250
8.E	Piling to corporate dining expansion timber driven piles	81	m2	150.00	12,150
	Columns				
8.F	Allowance for columns - excluded		Note		Excl
	Roof				
8.G	Works to roof - excluded under existing roof line		Note		Excl
	External Windows and doors				
8.H	External windows - allowed 4,000 high in single glazed aluminium glazed system (or allowance for external wall)	114	m2	850.00	96,900
8.I	EO for external double leaf single glazed manually operated hinged doors	5	no	2,000.00	10,000
	Internal Walls and Doors				
8.J	None applicable		Note		Excl
	Wall Finishes				
8.K	Wall finishes	19	m2	200.00	3,800

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
8	**Corporate dining expansion**				*(Continued)*
	Floor Finishes				
8.L	Floor finishes	81	m2	150.00	12,150
	Ceiling Finishes				
8.M	Ceiling finishes	81	m2	300.00	24,300
	Fitments				
8.N	Excluded - no additional works allowed		Note		Excl
	Engineering Services				
8.O	Included in base JMG services figures for corporate		Note		Incl
	Rounding				
8.P	Rounding	1	Item	390	390
	Corporate dining expansion				**191,000**
9	**Players - see option 1**				
9.A	See option 1 for players		Note		NA
	Players - see option 1				**0**
10	**Sports Bar - see option 1**				
10.A	See option 1 for sports bar		Note		NA
	Sports Bar - see option 1				**0**
11	**Concession Space - see option 1**				
11.A	See option 1 for Concession Space		Note		NA
	Concession Space - see option 1				**0**
12	**Electronic turn styles to front entry**				
12.A	Provisional sum allowance for ticket scanning equipment and turnstyles - per discussions with PLA	1	Item	100,000.00	100,000
12.B	Allowance for power and comms feed to turnstyles	1	Item	10,000.00	10,000
	Rounding				
12.C	Rounding	1	Item	0.00	0
	Electronic turn styles to front entry				**110,000**

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
13	**External cover H beyond front door**				
	Substructure				
13.A	Allowance for footings for new roof extension for covered entrance	2	no	25,000.00	50,000
13.B	Concrete plinth to take new columns	2	no	6,500	13,000
13.C	New slab - see concourse section		Note		Incl
	Roof				
13.D	Allowance for tapered sloping roof/sides to form covered entrance including all support framing and sheeting	640	m2	1,000.00	640,000
	Ceiling Finishes				
13.E	Finish to soffit of new roof - spec TBA	640	m2	250.00	160,000
	Floor Finishes				
13.F	Floor finish under covered external area - see plaza costs		Note		Incl
	Engineering Services				
13.G	Included in other JMG sections		Note		Incl
	External stormwater Drainage				
13.H	Allowance for external stormwater connections to roof	1	Item	10,000.00	10,000
	Rounding				
13.I	Rounding	1	Item	27,000	27,000
	External cover H beyond front door				**900,000**
14	**Upgrade fencing and security - excluded**				
14.A	No fencing upgrade required per PLA advice		Note		Excl
	Upgrade fencing and security - excluded				**0**
15	**Façade - see option 1**				
15.A	See option 1 for Façade		Note		NA
	Façade - see option 1				**0**
16	**5 no Double Leaf Glazed Exit Doors**				
16.A	Now included in other sections		Note		Incl
	5 no Double Leaf Glazed Exit Doors				**0**

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
17	**Concourse - see option 1**				
17.A	See option 1 for concourse		Note		NA
	Concourse - see option 1				**0**
18	**see item 1.11 operable seating backstage additional seats**				
18.A	Included in other sections		Note		Incl
	see item 1.11 operable seating backstage additional seats				**0**
19	**Replace and expand ex operable seating**				
	Demolition				
19.A	Demolish existing operable seating	474	m2	100.00	47,400
19.B	Demolish existing pre-cast plat seating	460	m2	200.00	92,000
	Substructure				
19.C	Make good slabs following demolition of plat seating	460	m2	100.00	46,000
19.D	Make good slabs following demolition of existing operable seating	474	m2	25.00	11,850
	Seating				
19.E	Option 2 seating - per PLA costs	1	Item	1,595,050.00	1,595,050
	Rounding				
19.F	Rounding	1	Item	7,700.00	7,700
	Replace and expand ex operable seating				**1,800,000**
20	**Remove lower section of fixed concrete plat seating & replace with expanded operable relocatable seating for flexibility & additional seating**				
20.A	Included in other sections		Note		Incl
	Remove lower section of fixed concrete plat seating & replace with expanded operable relocatable seating for flexibility & additional seating				**0**
21	**Removal of lower section of fixed seating provides 350m2 expanded floor area**				
21.A	Included in other sections		Note		Incl
	Removal of lower section of fixed seating provides 350m2 expanded floor area				**0**
22	**Removal of seating allows more flexibility**				
22.A	Included in other sections		Note		Incl

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
22	**Removal of seating allows more flexibility**				*(Continued)*
	Removal of seating allows more flexibility				**0**
23	**Replacement of whole of stadium seating with flip up seats - excluded**				
23.A	Excluded some existing seating to remain on existing plats		Note		Excl
	Replacement of whole of stadium seating with flip up seats - excluded				**0**
24	**Increase kitchen capacity**				
24.A	Included in Option 1		Note		Incl
	Increase kitchen capacity				**0**
25	**Adjustments to Plaza to accept H shape roof**				
25.A	See option 1 for forecourt works		Note		NA
	Adjustments to Plaza to accept H shape roof				**0**
26	**Colorbond shed with Mezzanine**				
	Demolition				
26.A	Demolition of hotmix for shed	369	m2	20.00	7,380
	Shed Works				
26.B	New colorbond shed shed 6,000 high - built by steel worker	369	m2	700.00	258,300
26.C	Upgrade wall cladding by side of office to standing seam finish per main build space	87	m2	180	15,660
26.D	Insulation to walls and roof	684	m2	25.00	17,100
26.E	Ply to walls with clear polyurethane finish to 1 side - 3,600 high	244	m2	70.00	17,080
26.F	Clear polyurethane finish to slab	369	m2	20.00	7,380
26.G	Mezzanine to 25% of FECA	70	m2	300.00	21,000
26.H	Stairs and balustrade to mezzanine	1	Item	10,000.00	10,000
26.I	Bollards and corner protectors	1	Item	3,000.00	3,000
	Engineering Services				
	Per JMG estimate dated 04/09/20				
26.J	General light and power services	1	Item	25,000.00	25,000
26.K	New distribution board and submains	1	Item	25,000.00	25,000
26.L	Fire detection and EWIS	1	Item	5,000.00	5,000
26.M	Heating & ventilation to BOH shed (2.409)	1	Item	20,000.00	20,000
26.N	BWIC with services	5	%	75,000.00	3,750

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
26	**Colorbond shed with Mezzanine**				*(Continued)*
	Rounding				
26.O	Rounding	1	Item	350.00	350
	Colorbond shed with Mezzanine				**436,000**
27	**Office Extension, Staff Change Rooms and Security Office**				
	Demolition				
27.A	Demolish external stairs	52	m2	100	5,200
27.B	Demolish hotmix	634	m2	20	12,680
27.C	Demolition to allow for works generally	1	Item	5,000	5,000
	Substructure				
27.D	Concrete slab on ground	592	m2	200	118,400
27.E	Allowance for driven timber piling	592	m2	150.00	88,800
27.F	Make good slabs to security office and staff wc and laundry	56	m2	50	2,800
	Columns				
27.G	Allowance for columns	592	m2	60.00	35,520
	Upper Floors				
27.H	Suspended upper floor to plant roof access corridor	43	m2	450	19,350
27.I	Insulation to underside off upper floor	43	m2	50	2,150
	Staircases				
27.J	Stairs to access plant space	1	Item	12,000.00	12,000
	Roof				
27.K	Roof to extension	592	m2	350	207,200
27.L	Roof safety system	1	Item	5,000.00	5,000
27.M	Works to existing section of roof - excluded		Note		Excl
	External Walls/Windows/Doors				
27.N	Metal walls to office on North elevation, Structuur cladding (aluminium), spandeck or similar profile (aluminium) or similar substrate girts, framing and internal lining and plasterboard linings	163	m2	410.00	66,830

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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
27	**Office Extension, Staff Change Rooms and Security Office**				*(Continued)*
27.O	Metal walls to office on east elevation (back of house), 2 layers of spandeck or similar (aluminium), girts, framing and internal lining and plasterboard lining	179	m2	310.00	55,490
27.P	Eo for external windows (Scope TBA)	82	m2	440	36,080
27.Q	Double leaf exit doors (solid core)	3	no	3,000	9,000
27.R	Foyer waiting area - 2 sets of automatic double leaf doors	2	no	15,000	30,000
	Internal Walls				
27.S	Stud partition wall allowed 3,000 high	369	m2	185.00	68,265
	Internal Screens and Borrowed Lights				
27.T	Glazed screens to offices and NBl meeting room 3,000 - aluminium frame with Hushlam or similar glass	54	m2	600.00	32,400
27.U	Privacy film	54	m2	150	8,100
27.V	Frameless glass to reception screen	8	m2	1,300	10,400
27.W	Staff WC partitions	3	no	1,600	4,800
	Internal Doors				
27.X	Single leaf aluminium framed glazed doors to offices etc	9	no	2,300	20,700
27.Y	Double leaf aluminium framed glazed doors to offices et	2	no	3,500	7,000
27.Z	Access control to corridor, NBL office, Dec management doors	2	no	3,000	6,000
27.AA	Single leaf doors to WC change etc	6	no	1,300	7,800
	Wall Finishes				
27.AB	Paint finishes to walls	731	m2	20	14,620
27.AC	Feature wall finishes to NBL office, reception/foyer	118	m2	200	23,600
27.AD	Vinyl to laundry/change/staff WC	238	m2	50	11,900
27.AE	Staff kitchen splashbacks	6	m2	150	900
	Floor Finishes				
27.AF	Floor finishes - average rate	647	m2	70.00	45,290
27.AG	Entry matt	6	m2	450.00	2,700
27.AH	Upper floor access corridor finish - excluded assumed plain grey unfinished concrete		Note		Excl

Project: T19-095 Dec Upgrade Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
27	**Office Extension, Staff Change Rooms and Security Office**				*(Continued)*
	Ceiling Finishes				
27.AI	Ceiling finishes	647	m2	85.00	54,995
27.AJ	Eo for acoustic linings etc	266	m2	40	10,640
27.AK	Features to foyer/NBL office	1	Item	3,000	3,000
	Fitments				
27.AL	Reception counter	4	m	2,000	8,000
27.AM	Reception side counter	4	m	1,000	4,000
27.AN	Staff kitchen	5	m	1,400	7,000
27.AO	Staff wall mounted dining bench	5	m	600	3,000
27.AP	Change room benches/peg rails	28	m	700	19,600
27.AQ	Lockers	100	no	350	35,000
27.AR	Laundry	3	m	1,200	3,600
27.AS	Staff vanity	3	m	700	2,100
27.AT	Staff WC/locker/change fixtures and fittings, paper holders, mirrors etc	1	Item	10,000	10,000
27.AU	Building signage	1	Item	10,000	10,000
27.AV	Fire extinguishers/statutory signage	1	Item	3,000	3,000
27.AW	All other items - excluded assumed FF&E		Note		Excl
	Special Equipment				
27.AX	Staff kitchen appliances	1	Item	5,000	5,000
27.AY	Laundry equipment - excluded assumed FF&E		Note		Excl
27.AZ	AV equipment - excluded		Note		Excl
	Sanitary Fixtures				
27.BA	WC	3	no	850	2,550
27.BB	Wash hand basin	3	no	400	1,200
27.BC	Laundry trough	1	no	600	600
27.BD	Kitchen	1	no	600	600
27.BE	Sanitary plumbing	8	no	1,000	8,000
27.BF	Floor waste	2	no	250	500
27.BG	Water Supply	8	no	681	5,451
27.BH	Taps	5	no	540	2,700

Project: T19-095 Dec Upgrade Works
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Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
27	**Office Extension, Staff Change Rooms and Security Office**				*(Continued)*
27.BI	Hot water supply	1	Item	3,300	3,300
27.BJ	Chilli billi	1	no	4,500	4,500
	Engineering Services				
	Per JMG costs dated 04/09/20				
27.BK	Mechanical services	1	Item	114,000.00	114,000
27.BL	Electrical services	1	Item	157,500.00	157,500
27.BM	BWIC with services	3	%	271,500.00	8,145
	External Sewer Drainage				
27.BN	Connect sewer into existing system	1	Item	10,000.00	10,000
	External Stormwater Drainage				
27.BO	Stormwater pipework	118	m	150.00	17,700
27.BP	Pits/manholes	4	no	3,500.00	14,000
27.BQ	Temporary works for diversion	1	Item	10,000.00	10,000
	External Water Supply				
27.BR	Water connection to extension	1	Item	5,000.00	5,000
	Roads				
27.BS	Re-construct pavement to match new levels for drainage	487	m2	75.00	36,525
27.BT	kerb and channel	61	m	85.00	5,185
	Rounding				
27.BU	Rounding	1	Item	2,634	2,634
	Office Extension, Staff Change Rooms and Security Office				**1,565,000**
28	**Seminar & Production Room Light Refurbishment Only**				
	Demolition				
28.A	Demolish floor finishes	133	m2	10.00	1,330
28.B	Demolish ceiling finishes	133	m2	20.00	2,660
28.C	Demolish joinery	1	Item	500	500
28.D	Demolition to alter doors etc	1	Item	1,000	1,000

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
28	**Seminar & Production Room Light Refurbishment Only**				*(Continued)*
28.E	Demolish sanitary fixtures - excluded existing to remain per discussions with PLA		Note		Excl
	Internal Walls and Internal Doors				
28.F	Wall alterations	1	Item	1,500	1,500
28.G	Double leaf door to production room	1	no	2,000	2,000
28.H	Operable wall - existing		Note		Excl
	Internal Screens				
28.I	No new screens allowed		Note		Excl
	Finishes				
28.J	Floor finishes	133	m2	75	9,975
28.K	New acoustic plasterboard ceiling	133	m2	140.00	18,620
28.L	AV room floor finishes and floor prep works	48	m2	80	3,840
28.M	Paint to walls	250	m2	20	5,000
28.N	Paint to ceilings	133	m2	120	15,960
	Fitments				
28.O	Allowance for joinery	1	Item	5,000	5,000
	Sanitary Fixtures				
28.P	Excluded - no replacement of existing sanitary fixtures or new sanitary fixtures		Note		Excl
	Engineering Services				
28.Q	See other sections		Note		Incl
	Rounding				
28.R	Rounding	1	Item	615	615
	Seminar & Production Room Light Refurbishment Only				**68,000**

ESTIMATE DETAILS

Project: T19-095 Dec Upgrade Works
Building: Option 2 Works
Details: Estimate of Likely Cost
Version T19-095B1 09-09-20

Ref	Description	Quantity	Unit	Rate	Estimated Cost ($)
29	**Allownace for Decant of Remaining Loose Items at Dec and Disposal of On Site Storage**				
29.A	Provisional sum allowance for decant of remaining unfixed and loose FF&E items and storage on site or disposal off site	1	Item	50,000	50,000
	Allownace for Decant of Remaining Loose Items at Dec and Disposal of On Site Storage				**50,000**

ROOFING & CLADDING REPLACEMENT

ID	ITEM	RATE*		TOTAL
1	**1. Preliminaries**			
2	Project Management	$56,910.00	$ 56,910.00	
3	Site management, supervision	#########	$ 133,400.00	
4	Labour	$ -	$ -	
5	Scaffolding	$ -	$ -	
6	Mobile plant/EWP	$ -	$ -	
7	Site compound/amenities/cribbing	$14,190.00	$ 14,190.00	
8	Temporary services	$20,360.00	$ 20,360.00	
9	Rubbish removal	$ 6,000.00	$ 6,000.00	
10	Temporary protection/hoardings	$50,000.00	$ 50,000.00	
11	Final clean	$ -	$ -	
12	Other	$ -	$ -	
13	**Subtotal**	**Subtotal**		**$ 280,860.00**
14	**2. Trade Works:**			
15	Rectification/investigation costs to date (actual/incurred)	$30,844.00	$ 30,844.00	
16	Adjustment (VOS calculation correction)	-$ 2,284.00	-$ 2,284.00	
17	Remove existing redundant packs of material on the existing roof	$ 2,500.00	$ 2,500.00	
18	Remove and replace existing roofing with new	#########	$ 2,668,120.00	
19	Cranage/hoisting to roofing works	#########	$ 808,080.00	
20	Remove and replace existing cladding with new	#########	$ 2,076,660.00	
21	Cranage/hoisting to cladding works	#########	$ 216,540.00	
22	Disconnect, move and reconnect any external mechanical services effected by the removal of roofing or cladding	$31,140.00	$ 31,140.00	
23	Disconnect, move and reconnect any external electrical services effected by the removal of roofing or cladding	$ 9,900.00	$ 9,900.00	
24	Repainting existing wall louvres and grilles - in below PC Sum		$ -	
25	**Subtotal**	**Subtotal**		**$ 5,841,500.00**
26	**3. Administration**			
27	Offsite Overheads & Margin	8%	$ 538,989.00	
28	**Subtotal**	**Subtotal**		**$ 538,989.00**
29	**4. Contingency**			
30	Construction - VOS exclusions and any unknowns		$ 216,948.00	
	Subtotal			**$ 216,948.00**
32	**5. Provisional Sums:**			
33	Structural steel supports to new roof	#########	$ 250,000.00	
34	Structural steel supports to new cladding	#########	$ 250,000.00	
35	Patch, repair plasterboard for new internal downpipes	$10,000.00	$ 10,000.00	
36	Paint to plasterboard for new internal downpipes, existing steel and new mechanical grilles	$25,000.00	$ 25,000.00	
37	Height Safety Management	$60,000.00	$ 60,000.00	
38	Unforeseen structural work	$20,000.00	$ 20,000.00	
39	**Subtotal**	**Subtotal**		**$ 615,000.00**
40	**6. Other**			
41	Allowance for attendance to undertake roof repairs and leaks for next 12mths. Excludes repair of any internal works damaged by water leaks.		$ 20,000.00	
42				**$ 20,000.00**
43				
44	**Subtotal Items 1 to 6**			**$ 7,513,297.00**
45	**7. Consultants**			
46	PLA Roofing - Refer to email to DSG on 18/8/21		$ 159,400.00	
47	PLA Cladding – Refer to email to DSG on 7/6/21		$ 83,255.00	
48	Superintendent		$ 30,000.00	
49	**Subtotal**	**Subtotal**		**$ 272,655.00**
50	**8. Third parties**			
51	Authority Fees Planning and building permits		$ 10,000.00	
52	**Subtotal**			**$ 10,000.00**
53	**9. Contingency**			
54	Consultant		$ 28,265.00	
55	**Subtotal**			**$ 28,265.00**
56				
57	**Subtotal items 7 to 9**			**$ 310,920.00**
58				
59	**Total Items 1 - 9**		**$ 7,824,217**	**$ 7,824,217.00**
60	**Notes**			

61	1. Construction cost reference: 1.1 MSBA-P0-HCV195 -R1 LKPG Deliver Recommendation - Final 1.2 MSBA-D0-HC195: VOS Derwent Enterainment Centre - Roofing and Cladding replacement Revision 3 Dated 25 January 2022 1.3 WT document: MSBA Reroofing & Recladding works QS Assessment of VOS Variation proposal 3rd December 2021. 1.3.1 Appendix A VOS Variation submission Rev1 Date 02/12/21 1.3.1 Appendix B; VOS Variation breakdown 1.3.1 Appendix C; VOS Subcontractor quotations-Profile roofing
62	2. PLA fees are inclusive of other consultants' costs based on provisional sum allowances. If those funds are exceeded, cost would be drawn from the consultancy contingency. If they are used, any unspent allowances will not be claimed.
63	3. Cranage costs capped at $1.025m. 3.1 VOS and subcontractor liable for costs in excess of this allowance. 3.2 Profit share for any unspent allowance. Any unspent allowance is shared between VOS (20%), Profile (40%) and DSG (40%). 3.3 Any costs not incurred relating to PS allowances 1 to 6 are not subject to the profit share.
64	
65	

Attachment 4: Project Design Documentation for the Project Stage 1

DERWENT ENTERTAINMENT CENTRE

SHEET	Sheet Name	Current Revision	Current Revision Date	Current Revision Description
A0000	COVER SHEET	A	11.09.20	STAGE 1 ENABLING PACKAGE
A0010	SITE PLAN EXISTING CONDITIONS & DEMOLITION	D	11.09.20	STAGE 1 ENABLING PACKAGE
A0011	DEMOLITION - LOWER GROUND	C	11.09.20	STAGE 1 ENABLING PACKAGE
A0012	DEMOLITION - UPPER GROUND	C	11.09.20	STAGE 1 ENABLING PACKAGE
A0013	DEMOLITION - TOP PLAT	F	11.09.20	STAGE 1 ENABLING PACKAGE
A0301	STAGE 1 OVERLAY EXISTING & NEW - LOWER GROUND	E	11.09.20	STAGE 1 ENABLING PACKAGE
A0302	STAGE 1 OVERLAY EXISTING & NEW - UPPER GROUND	E	11.09.20	STAGE 1 ENABLING PACKAGE
A0303	STAGE 1 ENABLING EXISTING & NEW - TOP PLAT	A	11.09.20	STAGE 1 ENABLING PACKAGE
A0350	STAGE 1 OVERLAY EXISTING & NEW - SITE PLAN	D	11.09.20	STAGE 1 ENABLING PACKAGE
A0380	STAGE 1 SLOTH PLAN - LOWER GROUND	E	11.09.20	STAGE 1 ENABLING PACKAGE
A0381	STAGE 1 BLOCK PLAN - UPPER GROUND	B	11.09.20	STAGE 1 ENABLING PACKAGE
A0501	DEMOLITION SHEET - LOWER GROUND	A	11.09.20	STAGE 1 ENABLING PACKAGE
A0502	DEMOLITION SHEET - UPPER GROUND	A	11.09.20	STAGE 1 ENABLING PACKAGE
A0700	GENERAL SERIES - TOP PLAT	A	11.09.20	STAGE 1 ENABLING PACKAGE
A0800	GENERAL SERIES - ROOF	B	11.09.20	STAGE 1 ENABLING PACKAGE

PhiloLighton Architects

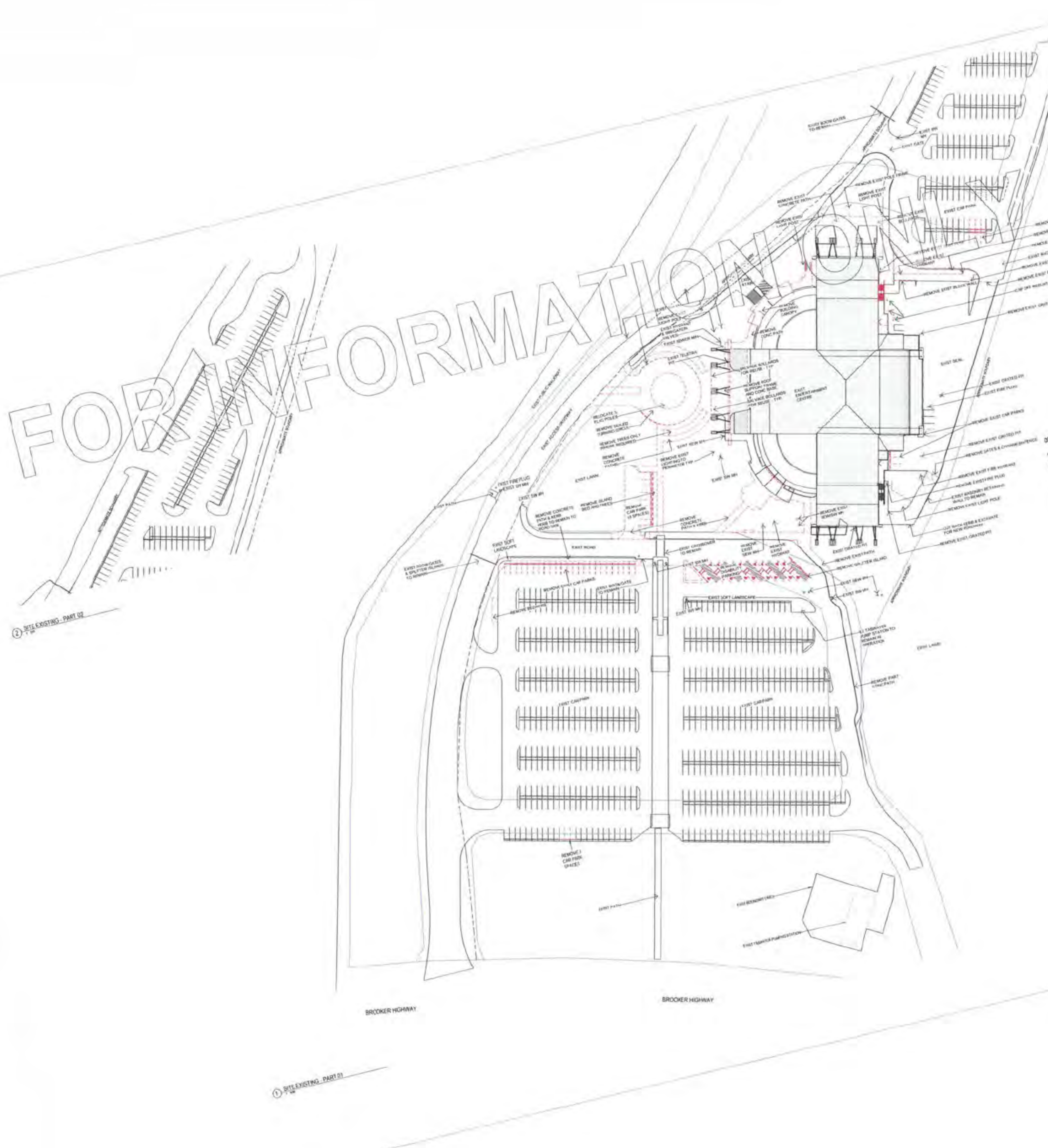
Rev	Description	Date	Date
A	ENG. COMMENTS ISSUE		

LD GROUP
DERWENT ENTERTAINMENT CENTRE
101 BECKNER HWY, GLENCROPP TAS 7010

COVER SHEET

STAGE 1 ENABLING PACKAGE

Drawn By:	Plot:	Issued Date:
JD	11.09.20	20.318
Scale: @ A0	Date: 11.09.20	
Drawing No: A0000	Rev: A	



DEMOLITION - TYPICAL NOTES

REMOVE ALL OBSOLETE PLUMBING, ELECTRICAL, WATER & MECHANICAL SERVICES AND CAP.
RETAIN AND PROTECT ALL SITE SPECIFIC SERVICES AND ENSURE CONTINUED OPERATION.

REMOVE EXISTING CARPET, CERAMIC TILES & VINYL FLOOR FINISHES WHERE NEW FINISHES OR REQUIRED FINISHES ARE SHOWN. PROVIDE APPROVED LEVELLING PRODUCTS AND PREPARE CONCRETE AND TIMBER FLOORS FOR NEW FLOOR FINISHES. ARDIT OR EQUAL CEMENT SCREED WHERE REQUIRED TO APPROVAL.

REMOVE ALL OBSOLETE JOINERY, BENCHES, CUPBOARDS, SIGNS & SHELVING.

PROPRIETOR TO REMOVE ALL REQUIRED ITEMS BEFORE CONTRACTOR TO COMMENCE ON SITE (EG SECURITY DEVICES, SIGNAGE ETC)

REMOVE ALL OBSOLETE MECHANICAL, FIRE, SECURITY, DATA AND ELECTRICAL EQUIPMENT, SPEAKERS, HEATERS, LIGHT FITTINGS, SWITCHES AND EXIT SIGNS. REMOVE OBSOLETE GRILLES, AC DUCTS & UNITS. HAND BACK TO PROPRIETOR.

FORM OPENINGS AND TRIM FOR PENETRATIONS FOR MECHANICAL GRILLES WHERE REQUIRED IN EXISTING WALLS AND CEILINGS - MAKE GOOD SURROUNDS.

SALVAGE FIRE EXTINGUISHERS, BLANKETS, SIGNAGE AND HOSE REELS FOR REUSE. ALLOW TO REINSTALL AS PER NEW ENGINEERING DETAIL(S). REMOVE ALL OBSOLETE DIRECTIONAL SIGNAGE.

REMOVE ALL OBSOLETE CURTAINS, BLINDS & ADVERTISING MATERIAL AS DIRECTED BY CLIENT. STORE BLINDS FOR REINSTALL.

REMOVE EXISTING WALL VINYL LINING FROM INTERNAL WALLS WHERE REQUIRED AND MAKE GOOD PLASTER WALLS FOR PAINTING.

ANY CIVIL OR STRUCTURAL ELEMENTS TO BE DEMOLISHED OR REMOVED IS TO BE DONE IN STRICT ACCORDANCE WITH ENGINEERS DETAILS.

PhilipLighton Architects

LK GROUP
DERWENT ENTERTAINMENT CENTRE
461 BROOKER HWY, GLENORCHY TAS 7010

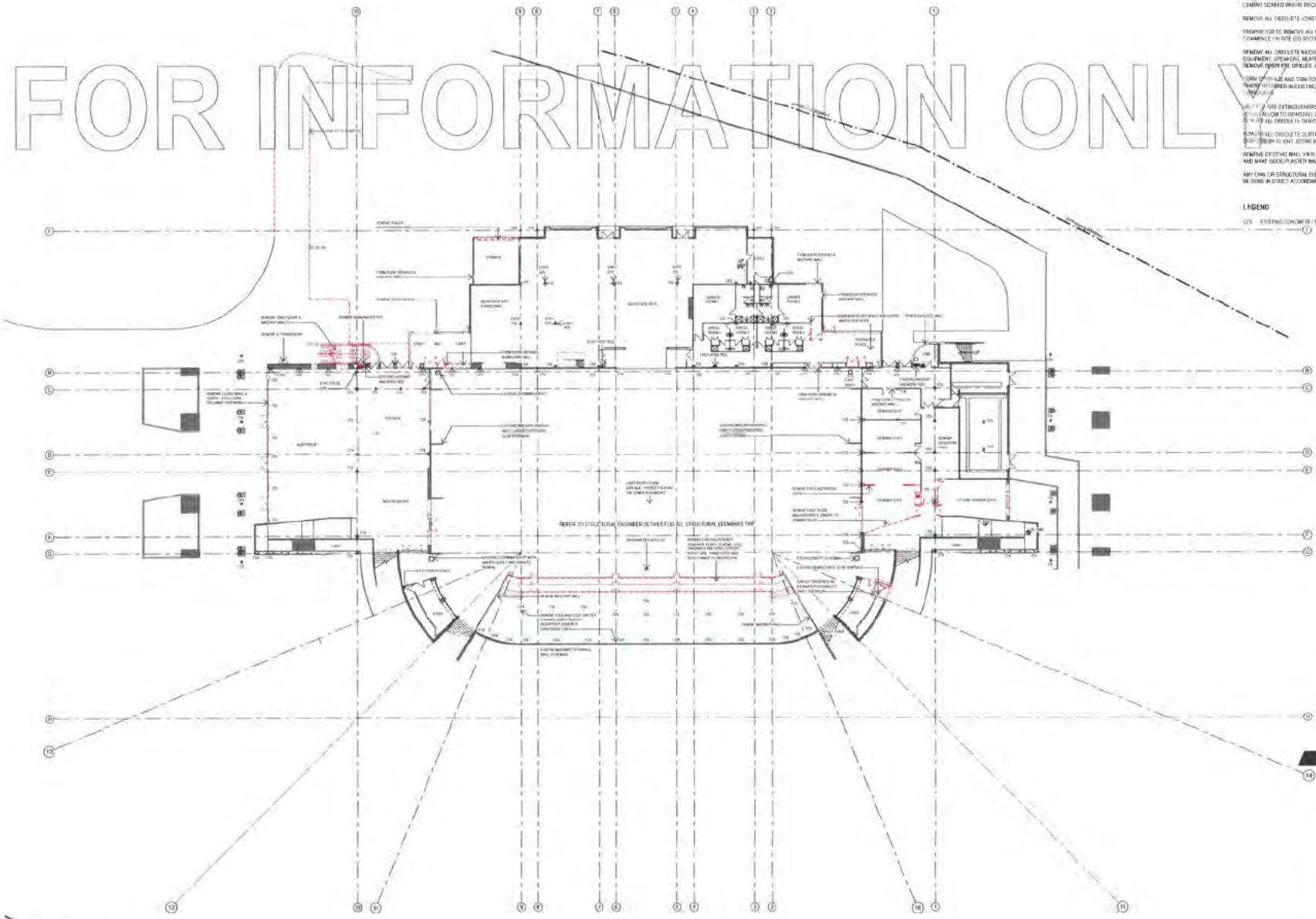
SITE PLAN EXISTING CONDITIONS & DEMOLITION

STAGE 1 ENABLING PACKAGE

20.318

A0200

F



DEMOLITION - TYPICAL NOTES

REMOVE ALL OBSOLETE PLUMBING, ELECTRICAL, WATER & MECHANICAL SERVICES AND CAP.
RETAIN AND PROTECT ALL SITE SPECIFIC SERVICES AND ENSURE CONTINUED OPERATION

REMOVE EXISTING CARPET, CERAMIC TILES & VINYL FLOOR FINISHES WHERE NEW FINISHES OR REQUIRED FINISHES ARE SHOWN. PROVIDE APPROVED LEVELLING PRODUCTS AND PREPARE CONCRETE AND TIMBER FLOORS FOR NEW FLOOR FINISHES. ADJOIN DRY SCRIM. CEMENT SCRIED WHERE REQUIRED TO APPROVAL

REMOVE ALL OBSOLETE JOINERY, BENCHES, CUPBOARDS, SIGNS & SHELVING

PROPERTY TO REMOVE ALL REQUIRED ITEMS BEFORE CONTRACTOR TO COMMENCE ON SITE (EG SECURITY DEVICES, SIGNAGE ETC)

REMOVE ALL OBSOLETE MECHANICAL, FIRE, SECURITY, DATA AND ELECTRICAL EQUIPMENT, SPEAKERS, HEATERS, LIGHT FITTINGS, SWITCHES AND EXIT SIGNS
REMOVE DOOR FIRE GRILLES, AC DUCTS & UNITS AND BACK TO PROPERTOR

TRIM OPENINGS AND TRIM FOR PENETRATIONS FOR MECHANICAL GRILLES WHERE REQUIRED IN EXISTING WALLS AND CEILINGS. MAKE GOOD

REMOVE FIRE EXTINGUISHERS, BLANKETS, SIGNAGE AND HOSE REELS FOR [illegible] TO REINSTALL AS PER RENKEN ENGINEERS DETAILS
REMOVE ALL OBSOLETE DIRECTIONAL SIGNAGE

REMOVE ALL OBSOLETE CURTAINS, BLINDS & ADVERTISING MATERIAL AS DIRECTED BY CLIENT. STORE IN ROOM FOR REINSTALL

REMOVE EXISTING WALL VINYL / MAKE FROM INTERNAL WALLS WHERE REQUIRED AND MAKE GOOD PLASTER WALLS FOR PAINTING

ANY CIVIL OR STRUCTURAL ELEMENTS TO BE DEMOLISHED OR REMOVED IS TO BE DONE IN STRICT ACCORDANCE WITH ENGINEERS DETAILS

LEGEND

CON EXISTING CONCRETE / STEEL COLUMN

1 LGL EXG

Phillip Lighton Architects

Rev	Description	Chkd	Date
A	PRELIMINARY		22.01.20
B	PRELIMINARY		29.01.20
C	PRELIMINARY		30.01.20
D	PRELIMINARY		06.02.20
E	PRELIMINARY		10.02.20
F	PRELIM. SUITE 1 ENABLING PACKAGE		17.02.20
G	STAGE 1 ENABLING PACKAGE		15.06.20

Project
LU GROUP
DYNAMO EDUCATIONAL CENTRE
101 BROOKER AVE, BENTLEIGH EAST 3165

Title
DEMOLITION - LOWER GROUND

Issue
STAGE 1 ENABLING PACKAGE

Drawn By	JS	Scale	@ A1	Project Number
Issue	For Information	Date	15.06.20	20.318
Drawing No.	A1201			Rev. G

DEMOLITION - TYPICAL NOTES

REMOVE ALL OBSOLETE PLUMBING, ELECTRICAL, WATER & MECHANICAL SERVICES AND CAP.
RETAIN AND PROTECT ALL SITE SPECIFIC SERVICES AND ENSURE CONTINUED OPERATION.

REMOVE EXISTING CARPET, CERAMIC TILES & VINYL FLOOR FINISHES WHERE NEW FINISHES OR REQUIRED FINISHES ARE SHOWN. PROVIDE APPROVED LEVELLING PRODUCTS AND PREPARE CONCRETE AS TIMBER FLOORS FOR NEW FLOOR FINISHES. ABOUT OR EQUAL CEMENT SCREED WHERE REQUIRED TO APPROVAL

REMOVE ALL OBSOLETE JOINERY, BENCHES, CUPBOARDS, SIGNS & SHELVING

PROPRIETOR TO REMOVE ALL REQUIRED ITEMS BEFORE CONTRACTOR TO COMMENCE ON SITE (EG SECURITY DEVICES, SIGNAGE, ETC)

REMOVE ALL OBSOLETE MECHANICAL, FIRE, SECURITY, DATA AND ELECTRICAL EQUIPMENT, SPEAKERS, HEATERS, LIGHT FITTINGS, SWITCHES AND EXIT SIGNS. REMOVE GRILLE (GRILLE, AC DUCTS & LIMITS HAND BACK TO PROPRIETOR

FORM OPENINGS AND TRIM FOR PENETRATIONS FOR MECHANICAL (SEE SERVICES DRAWINGS) IN EXISTING WALLS AND CEILINGS - MAKE GOOD

REMOVE FIRE EXTINGUISHERS, BLANKETS, SIGNAGE AND HOSE REELS FOR REINSTALL ALLOW TO REINSTALL AS PER NEW ENGINEERS DETAILS.

REMOVE ALL OBSOLETE DIRECTIONAL SIGNAGE

REMOVE ALL OBSOLETE CURTAINS, BLINDS & ADVERTISING MATERIAL AS DIRECTED BY CLIENT. STORE BLINDS FOR REINSTALL

REMOVE EXISTING WALL VINYL LETTERS FROM INTERNAL WALLS WHERE REQUIRED AND MAKE GOOD PLASTER WALLS FOR PAINTING

ANY CIVIL OR STRUCTURAL ELEMENTS TO BE DEMOLISHED OR REMOVED IS TO BE DONE IN STRICT ACCORDANCE WITH ENGINEERS DETAILS

LEGEND

COL EXISTING CONCRETE / STEEL COLUMN

REFER TO STRUCTURAL ENGINEER DETAILS FOR ALL STRUCTURAL ELEMENTS TYP

1 LOWER EXCO
1 : 100

PhillipLighten Architects

Rev	Description	Date	Client
A	ISSUED FOR		
B	ISSUED FOR		
C	ISSUED FOR		
D	ISSUED FOR		
E	ISSUED FOR		
F	ISSUED FOR		
G	ISSUED FOR TOWN PLANNING		
H	ISSUED FOR BUILDING		

Project
LI GROUP
CEMENT ENTERTAINMENT CENTRE
99 BROOKER AVE, BELMONT WA 6104

Title
DEMOLITION - UPPER GROUND

Status
STAGE 1 ENABLING PACKAGE

Drawn by	Date	Project Number
Author	Checked by	20.318
Scale	Date	
As indicated @ A3	14.05.20	
Drawing No.		Rev.
A0202		G

DEMOLITION TYPICAL NOTES

REMOVE ALL OBSOLETE PLUMBING, ELECTRICAL WATER & MECHANICAL SERVICES AND CAP.
RETAIN AND PROTECT ALL SITE SPECIFIC SERVICES AND ENSURE CONTINUED OPERATION

REMOVE EXISTING CARPET, CERAMIC TILES & VINYL FLOOR FINISHES AS REQUIRED FOR NEW FINISHES AND PREPARE CONCRETE AND TIMBER FLOORS FOR NEW FLOOR FINISHES. ARCH OR ENGR. CEMENT SCREED WHERE REQUIRED TO APPROVAL

REMOVE ALL OBSOLETE JOINERY, BENCHES, CUPBOARDS, SIGNS & SHELVING

PROPRIETOR TO REMOVE ALL REQUIRED ITEMS BEFORE CONTRACTOR TO COMMENCE ON SITE (EG SECURITY SERVICES, SIGNAGE ETC)

REMOVE ALL OBSOLETE MECHANICAL, FIRE, SECURITY, DATA AND ELECTRICAL EQUIPMENT, SPEAKERS, HEATERS, LIGHT FITTINGS, SWITCHES AND TEXT WORKS
REMOVE EXPOSED CONDUITS, AC DUCTS & UNITS. MAKE GOOD TO PROPRIETOR

FORM OPENINGS AND TRIM FOR PENETRATIONS FOR MECHANICAL GRILLES [illegible] REQUIRED IN EXISTING WALLS AND CEILINGS - MAKE GOOD

REMOVE FIRE EXTINGUISHERS, BLANKETS, SIGNAGE AND HOSE REELS FOR [illegible] ALLOW TO REINSTALL AS PER NEW ENGINEERS SET PLUS
REMOVE ALL OBSOLETE DIRECTIONAL SIGNAGE

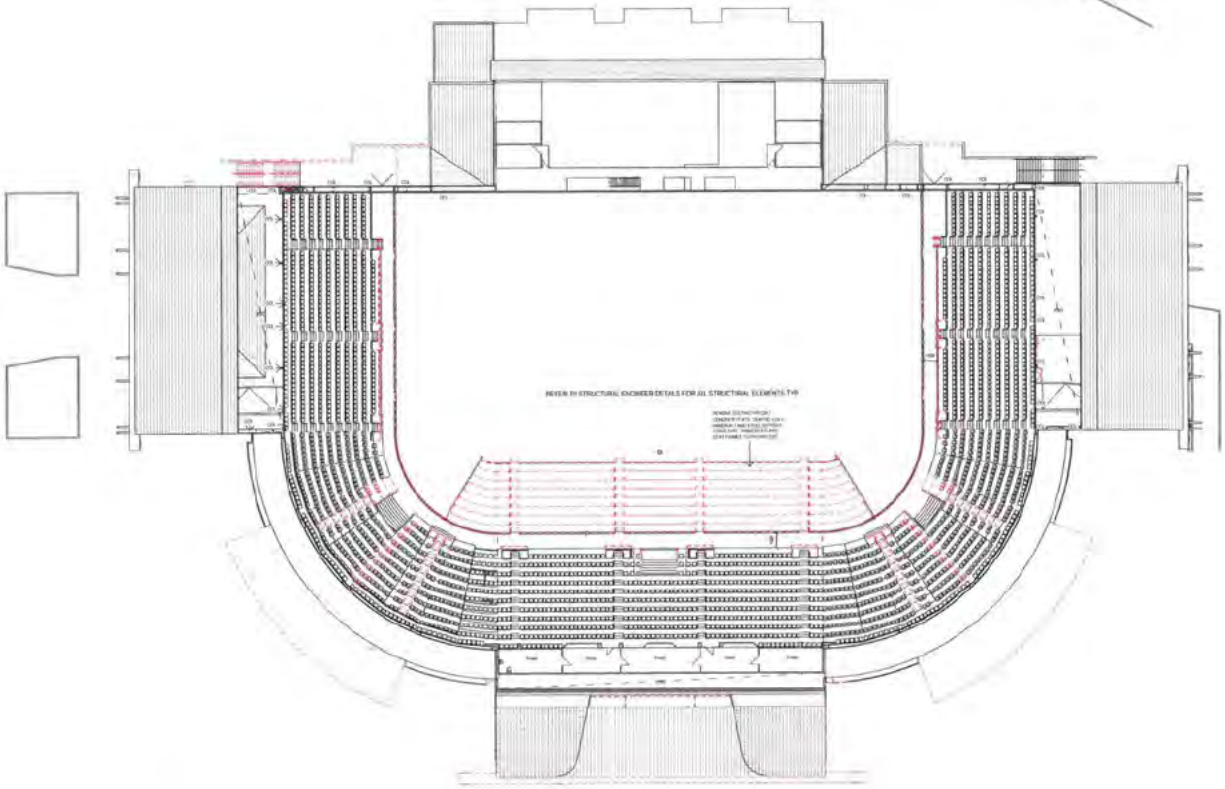
REMOVE ALL OBSOLETE CURTAINS, BLINDS & ADVERTISING MATERIALS
[illegible] DELIV CLIENT. STORE BLINDS FOR REINSTALL

REMOVE CEILING WALL VINYL LINING FROM INTERNAL WALLS WHERE REQUIRED AND MAKE GOOD PLASTER WALLS FOR PAINTING

ANY CIVIL OR STRUCTURAL ELEMENTS TO BE DEMOLISHED OR REMENTS TO BE DONE IN STRICT ACCORDANCE WITH ENGINEERS DETAILS

LEGEND

CO1 EXISTING CONCRETE TIERED COLUMN



1 L02 EXG
1 : 200

Architects

Rev	Description	Drwn	Date
A	[illegible]		[illegible]
B	[illegible]		[illegible]
C	[illegible]		[illegible]
D	[illegible]		[illegible]
E	[illegible]		[illegible]
F	[illegible]		[illegible]

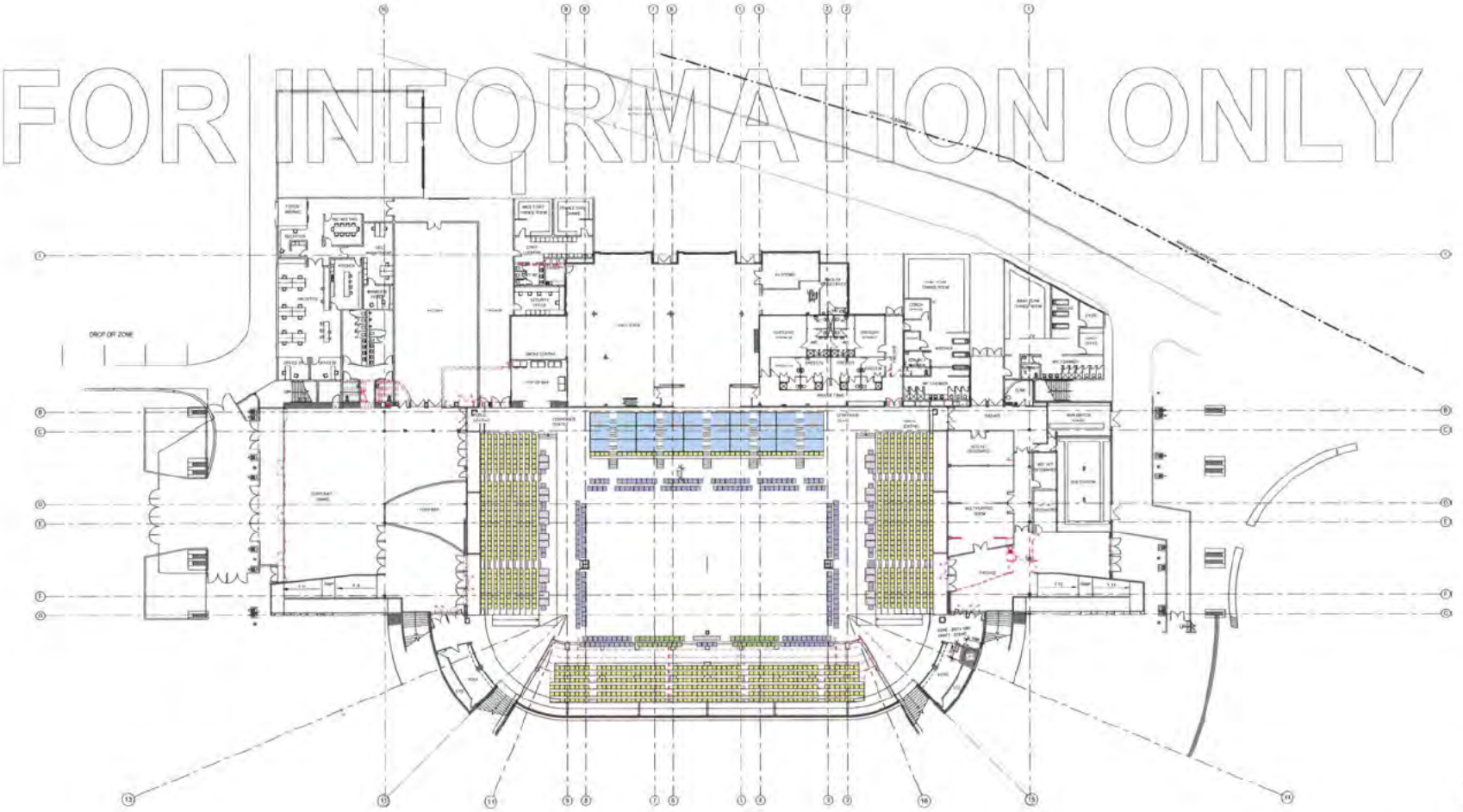
LB GROUP
[illegible]

DEMOLITION - TOP FLAT

STAGE 1 ENABLING PACKAGE

Status	Rev	Project Number	
Scale @ A0	Date	20.118	
Drawing No. A0203		Rev F	

FOR INFORMATION ONLY



1 LGL STAGE 1 OVERLAY EXISTING AND NEW

Phillip Pilgrim Architects

Rev	Description	Dwn	Date
A	ENGINEERING COORDINATION		
B	CIVIL COORDINATION		

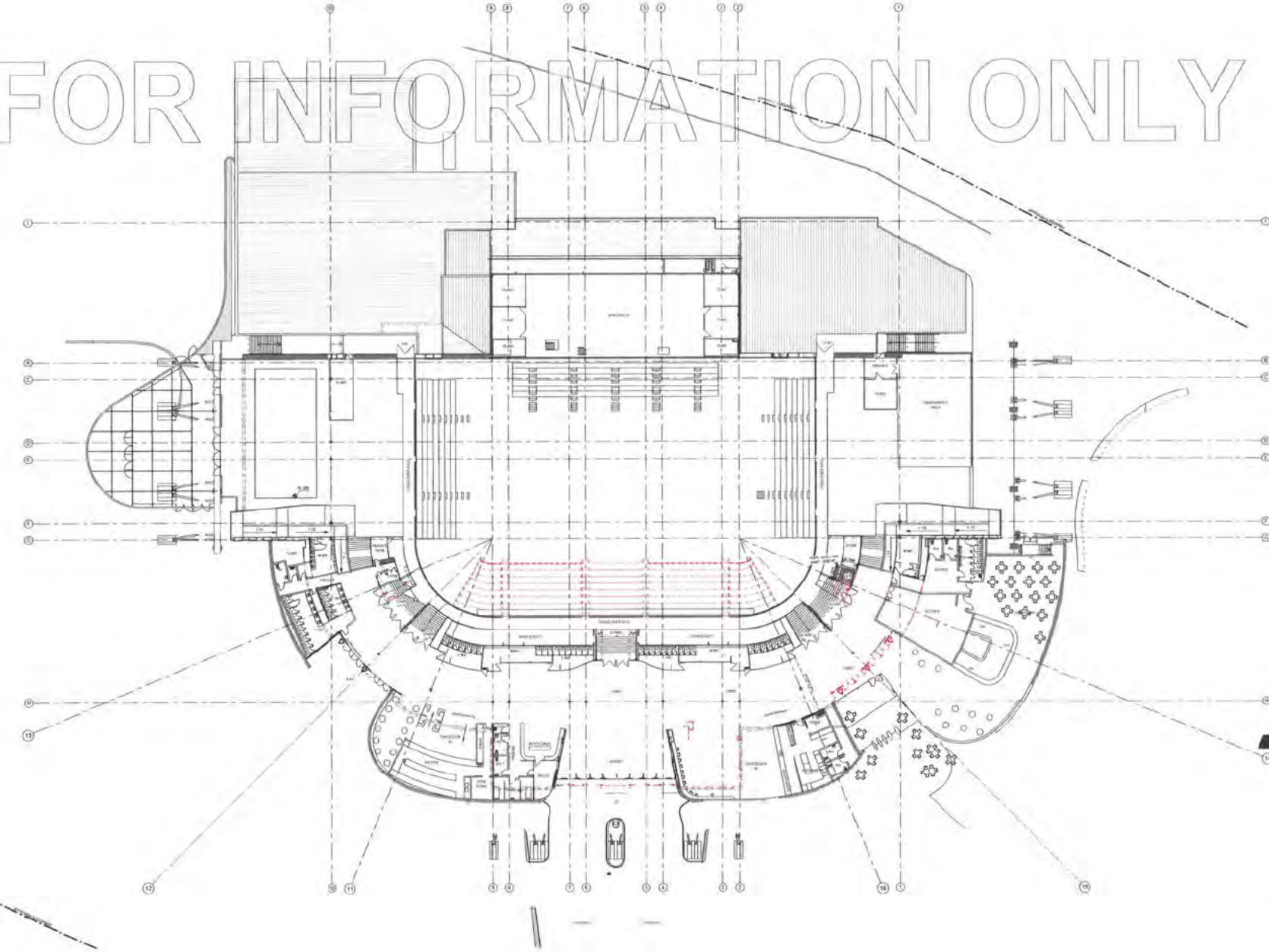
LK GROUP
DARWIN ENTERTAINMENT CENTRE
80 DICKSON AVE, MILLNER NT 0810

STAGE 1 OVERLAY EXISTING & NEW - LOWER GROUND

STAGE 1 ENABLING PACKAGE

Drawn By	SS	Date	17
Date		Scale	1:100 @
Project Number		20.318	
Drawing No.	A0300	Rev	B

FOR INFORMATION ONLY



1 L01_ STAGE 1 OVERLAY EXISTING AND NEW

Philiplighton Architects

Rev	Description:	Dwn	Date:
A	ISSUE 1 FOR EMERGING DESIGN		10.04.18
B	ISSUE 2 FOR PLANNING		08.06.18

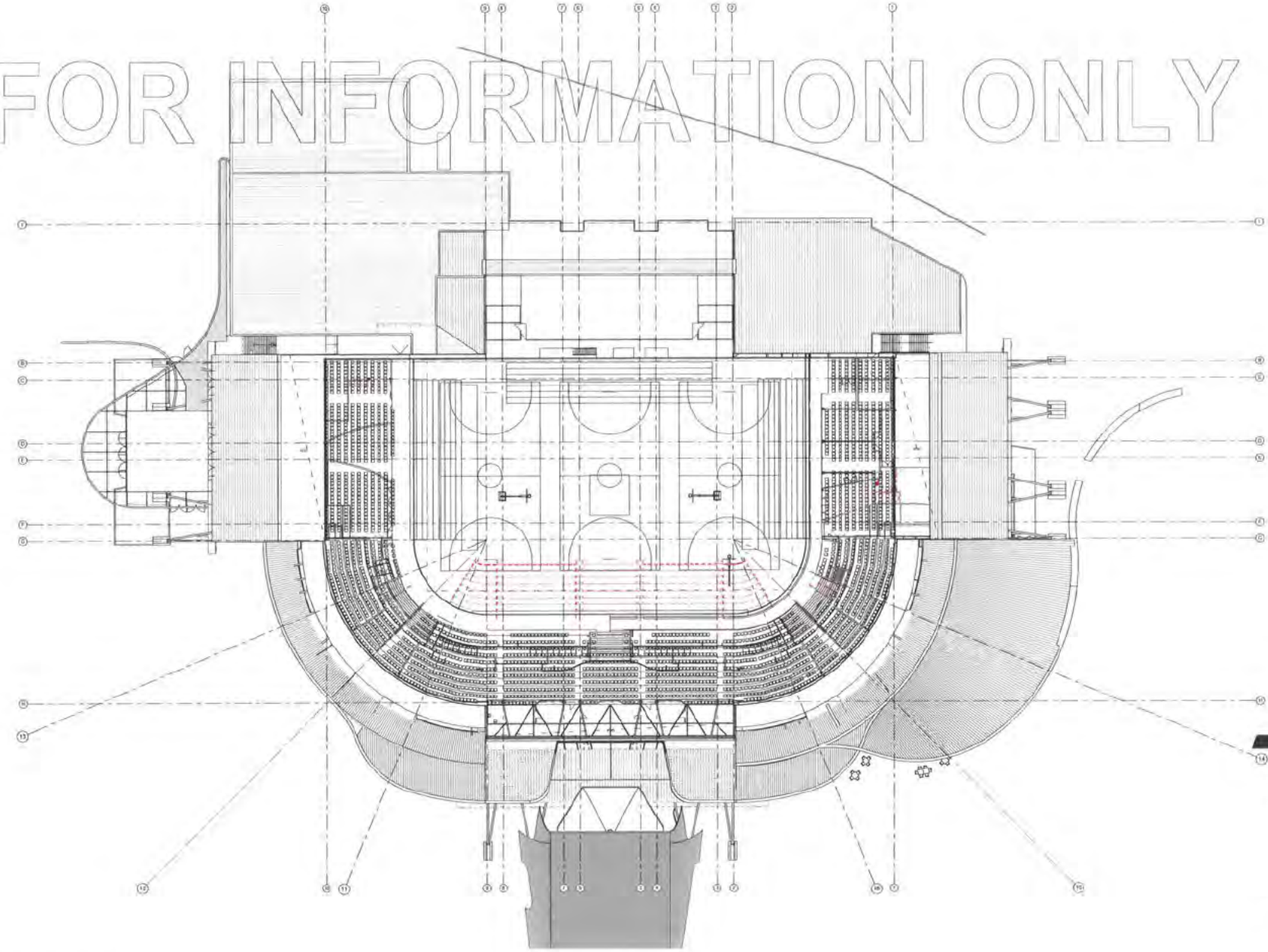
LX GROUP
INTERNATIONAL ARRIVALS TERMINAL
600 BROOKER AVEN, DEMOCRACY 140 7910

STAGE 1 OVERLAY EXISTING & NEW - UPPER GROUND

STAGE 1 ENABLING PACKAGE

Drawn By:	CG	Chkd:	TP	Project Number:
SCALE:	1:100 @ A1	Date:	10.04.18	20.518
Drawing No:	A0301			Rev: B

FOR INFORMATION ONLY



1 L02 STAGE 1 OVERLAY EXISTING AND NEW
1 : 150

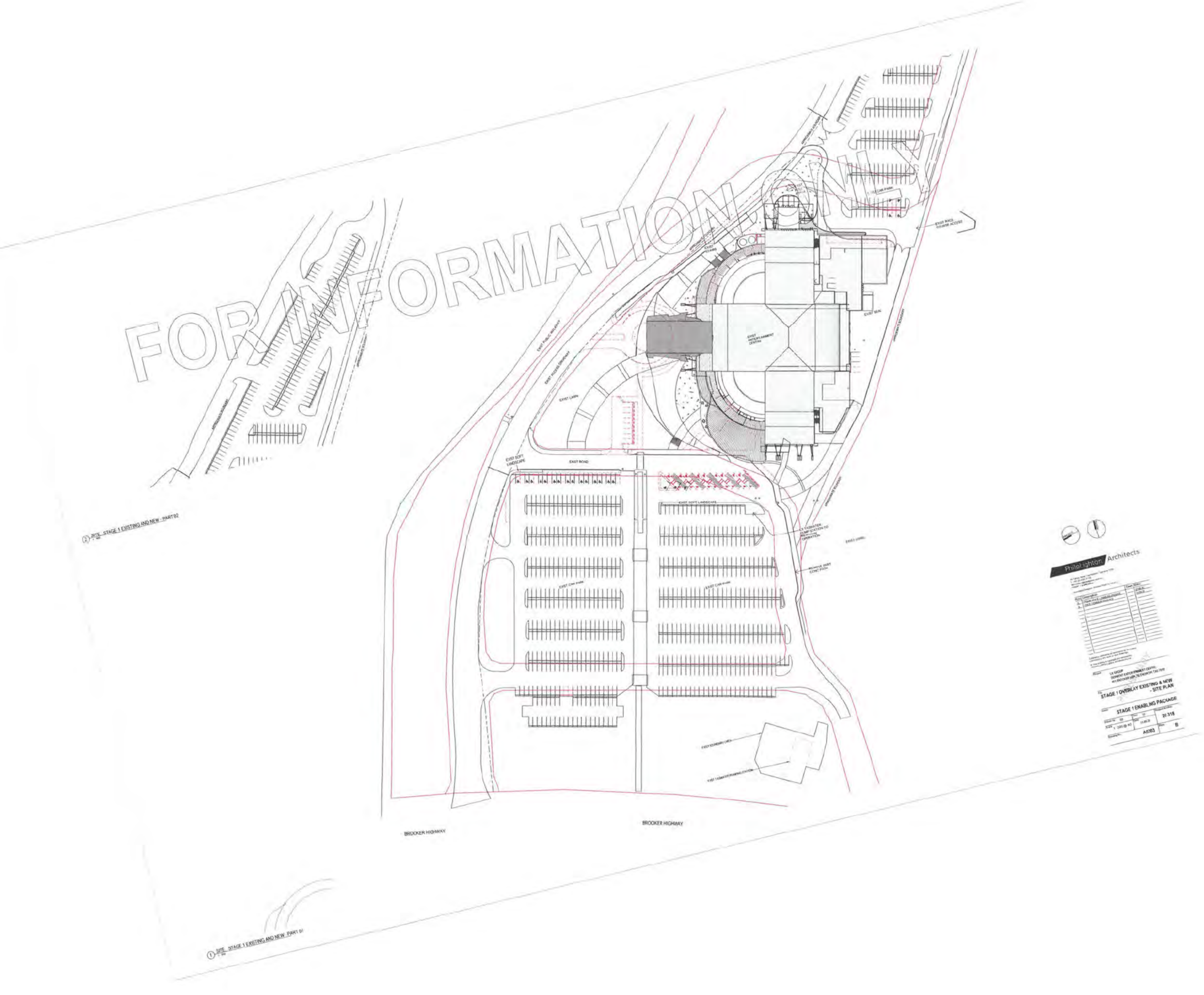
Phillip Lighton Architects

Rev	Description	Drawn	Date
A	ISSUE TITLE / DRAWING NOTE		
B	CHECK DIMS AS PER PLOT		

CA GROUP
GERMENY | HIGH CURRENT CENTRE
GEC BROCKEN HILL TO THOROW 132 20 KV

STAGE 1 OVERLAY EXISTING & NEW - TOP FLAT

Drawn By: GL	Date: 07	Project Number:	
Scale: 1 : 200 @ A0	Drawing Status: 11.09.20	20.318	
Drawing No: A0302	Rev: B		



PhilipLighton Architects

Project: LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

Title: **STAGE 1 OVERLAY EXISTING & NEW - SITE PLAN**

Issue: **STAGE 1 ENABLING PACKAGE**

Drawn by SB	Chkd	Project Number	21.318
Scale 1:500 @ A0	Date	Rev	B
Drawing No.	A0303		

LEGEND

REMOVE ALL PLUMBING FIXTURES, FITTINGS AND EQUIPMENT, JOINERY, TOILET PARTITIONS, ENTIRE CEILING SYSTEMS & BULKHEADS, FLOOR & WALL FINISHES.
REMOVE NON LOAD BEARING BLOCK AND PLASTERBOARD WALLS AND MAINTAIN ALL STRUCTURAL ELEMENTS
CAP AND PROTECT ALL SERVICES FOR RE-USE.
REMOVE CONCRETE FLOOR PLINTHS
REFER TO SERVICES ENGINEERS FOR ELECTRICAL, MECHANICAL & HYDRAULIC DETAILS
PROVIDE TEMPORARY LIGHTING TO ALL AREAS OF DEMOLITION WORK ON COMPLETION

REMOVE ALL PLUMBING FIXTURES, FITTINGS & EQUIPMENT, JOINERY, TOILET PARTITIONS, CEILING & FLOOR FINISHES.
MAINTAIN PRIMARY CEILING GRID FOR RE-USE
CAP AND PROTECT ALL SERVICES FOR RE-USE.
RETAIN AND PROTECT URINAL
RETAIN & PROTECT DOORS & METAL DOOR FRAMES
PROVIDE TEMPORARY LIGHTING TO ALL AREAS OF DEMOLITION WORK ON COMPLETION

REMOVE OPERABLE SEATING, SUPPORT STRUCTURE AND HAND TO CLIENT (EX GRRIP TO CONFIRM)

EXISTING TO BE REMOVED

GENERAL NOTES

NO EXTERNAL WALLS OR DOORS TO BE REMOVED
MAINTAIN BUILDING INTEGRITY, SECURITY & WEATHER PROOFNESS
MAINTAIN FIRE DETECTION & PROTECTION SYSTEM UNLESS WRITTEN PERMISSION FROM ISSFIRE, BUILDING SURVEYOR AND A BUILDING PERMIT IS ISSUED
REFER TO ASBESTOS REPORT
READ BLOCK PLAN IN CONJUNCTION WITH PRELIMINARY REFERENCE DEMOLITION PLANS & EXISTING & NEW OVERLAY PLANS
NO STRUCTURAL ELEMENTS TO BE REMOVED OR MODIFIED

1 L0L STAGE 1 BLOCK PLAN
1 : 100

PhilipLighten Architects

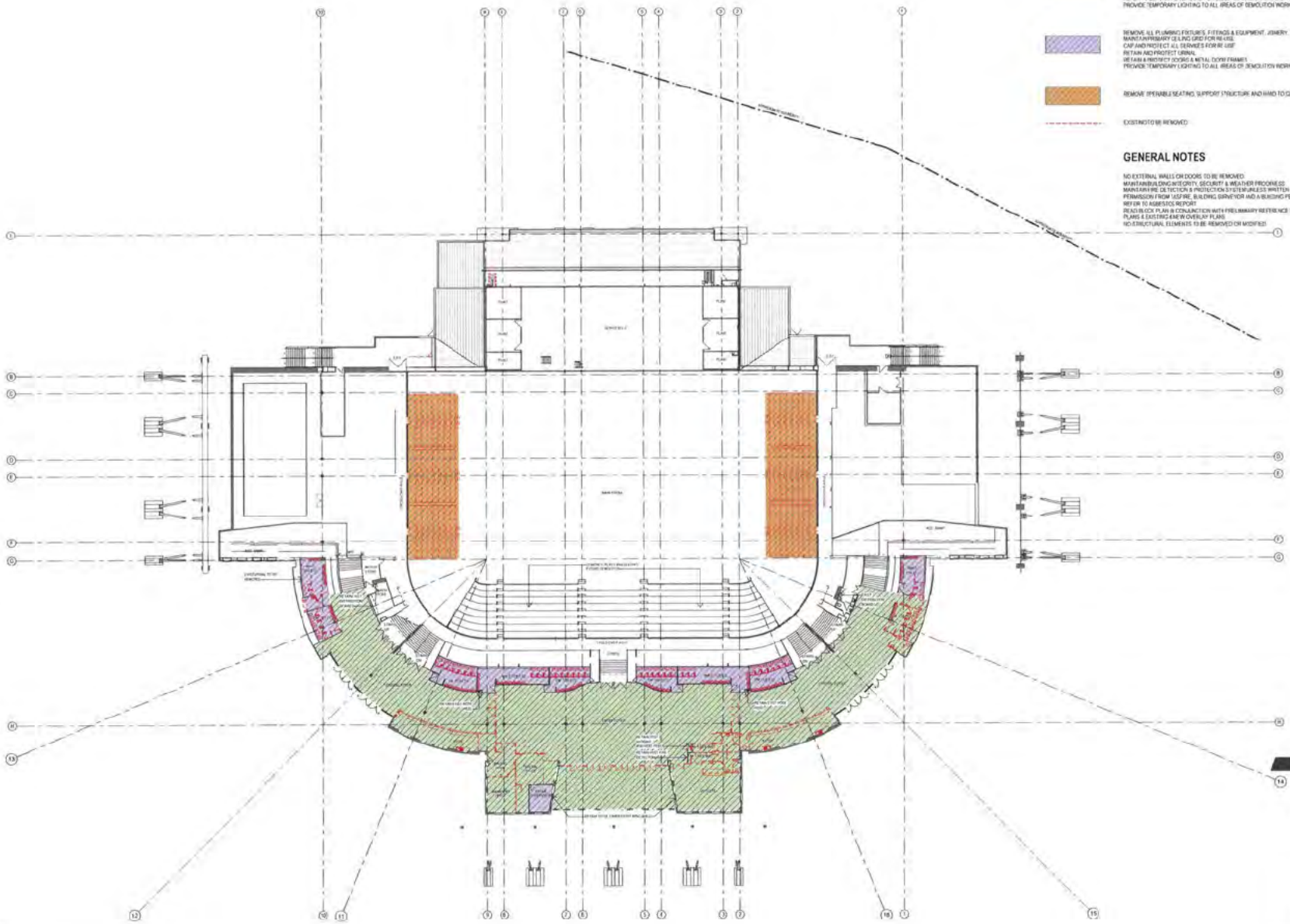
Rev	Description	Drwn	Date
A	ISSUE FOR TENDER		19.06.20
B	ISSUE FOR PLANNING		12.08.20

Project
LK GROUP
ECONEXT ENTERTAINMENT CENTRE
601 BRICKER HWY, GLENROY VIC 3046

Title
STAGE 1 BLOCK PLAN - LOWER GROUND

Phase
STAGE 1 ENABLING PACKAGE

Drawn by	Rev	Project Number
BS	01	20.318
Scale: As indicated @ A0	Date: 14.08.20	
Drawing No. A0304		Rev: B



LEGEND

REMOVE ALL PLUMBING FIXTURES, FITTINGS AND EQUIPMENT, JOINERY, TOILET PARTITIONS ENTIRE CEILING SYSTEMS & BULKHEADS, FLOOR & WALL LININGS.
REMOVE NON LOADBEARING BLOCK AND PLASTERBOARD WALLS AND MAINTAIN ALL STRUCTURAL ELEMENTS
CAP AND PROTECT ALL SERVICES FOR RE - USE
REMOVE CONCRETE FLOOR PLINTHS
REFER TO SERVICES ENGINEERS FOR ELECTRICAL, MECHANICAL & HYDRAULIC DETAILS
PROVIDE TEMPORARY LIGHTING TO ALL AREAS OF DEMOLITION WORK ON COMPLETION

REMOVE ALL PLUMBING FIXTURES, FITTINGS & EQUIPMENT, JOINERY, TOILET PARTITIONS, CEILING & FLOOR LINING.
MAINTAIN PRIMARY CEILING GRID FOR RE-USE.
CAP AND PROTECT ALL SERVICES FOR RE-USE
RETAIN AND PROTECT LINING.
RETAIN & PROTECT DOORS & METAL DOOR FRAMES
PROVIDE TEMPORARY LIGHTING TO ALL AREAS OF DEMOLITION WORK ON COMPLETION

REMOVE OPERABLE SEATING, SUPPORT STRUCTURE AND RAKE TO CLIENT (i.e. GROUP TO CONFIRM)

EXISTING TO BE REMOVED

GENERAL NOTES

NO EXTERNAL WALLS OR DOORS TO BE REMOVED
MAINTAIN BUILDING INTEGRITY, SECURITY & WEATHER PROOFNESS
MAINTAIN FIRE DETECTION & PROTECTION SYSTEM UNLESS WRITTEN PERMISSION FROM LFSFIRE, BUILDING SURVEYOR AND A BUILDING PERMIT IS ISSUED.
REFER TO ASBESTOS REPORT
READ BLOCK PLAN IN CONJUNCTION WITH PRELIMINARY REFERENCE DEMOLITION PLANS & EXISTING AS-BUILT OVERLAY PLANS
NO STRUCTURAL ELEMENTS TO BE REMOVED OR MODIFIED

1 L00_ STAGE 1 BLOCK PLAN

PhilipLighton Architects

Rev	Description	Date
A	ISSUE FOR CONSTRUCTION	7.05.20
B	ISSUE FOR CONSTRUCTION	5.06.20

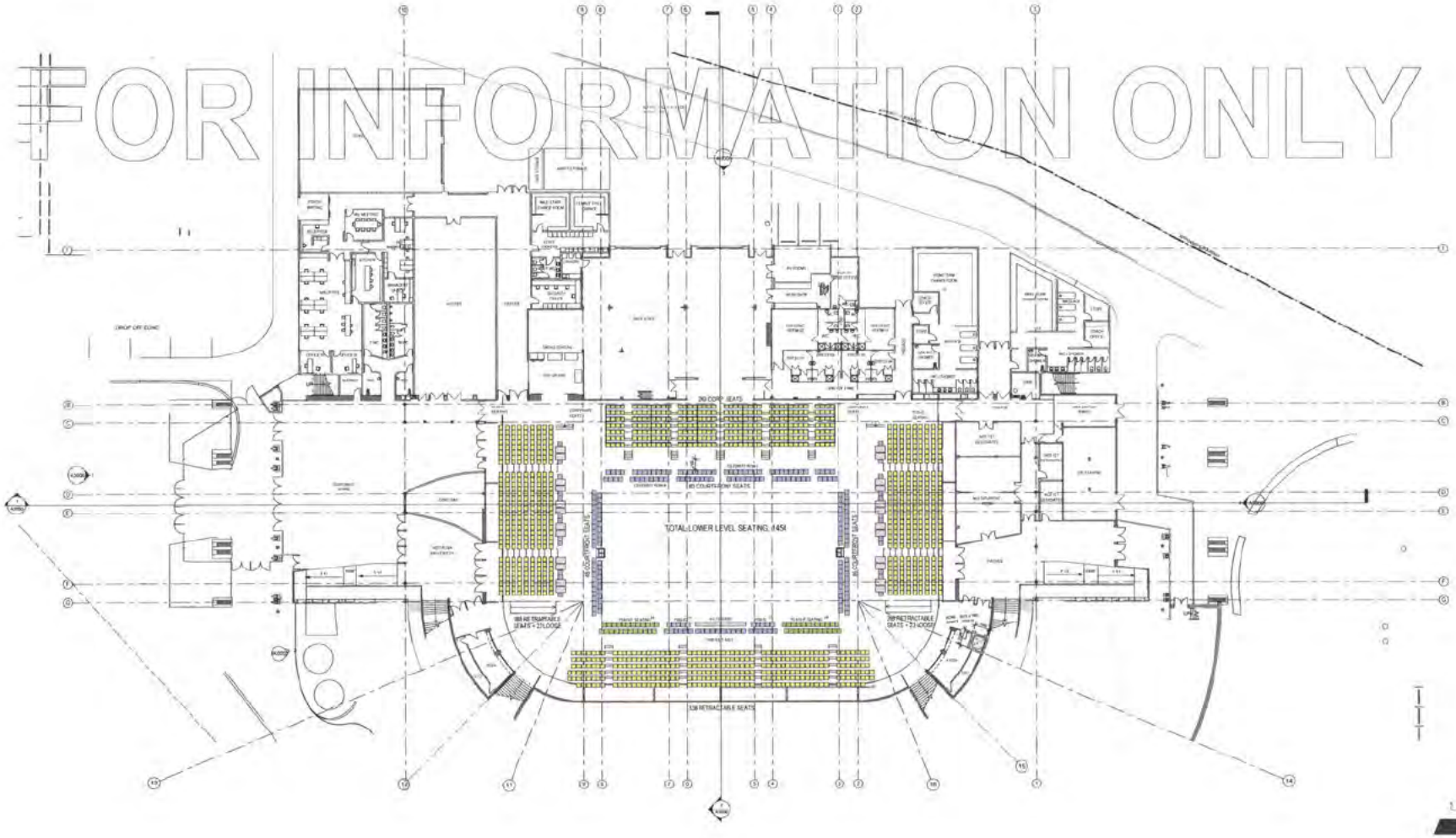
Project
LX GROUP
GERMAN ENTERTAINMENT CENTRE
420 BROOKER WAY, ENDEAVOUR HILLS (BH)

Title
STAGE 1 BLOCK PLAN - UPPER GROUND

Issue
STAGE 1 ENABLING PACKAGE

Drawn by: SD	Date: 19	Project Number: 20.318	
Scale: As indicated @ A0	Date: 21.06.20		
Drawing No.: A0305		Rev: B	

FOR INFORMATION ONLY



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PhilpLighton Architects

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LU GROUP
COMMUNITY ENTERTAINMENT CENTRE

GENERAL SERIES - LOWER GROUND

STAGE 1 ENABLING PACKAGE

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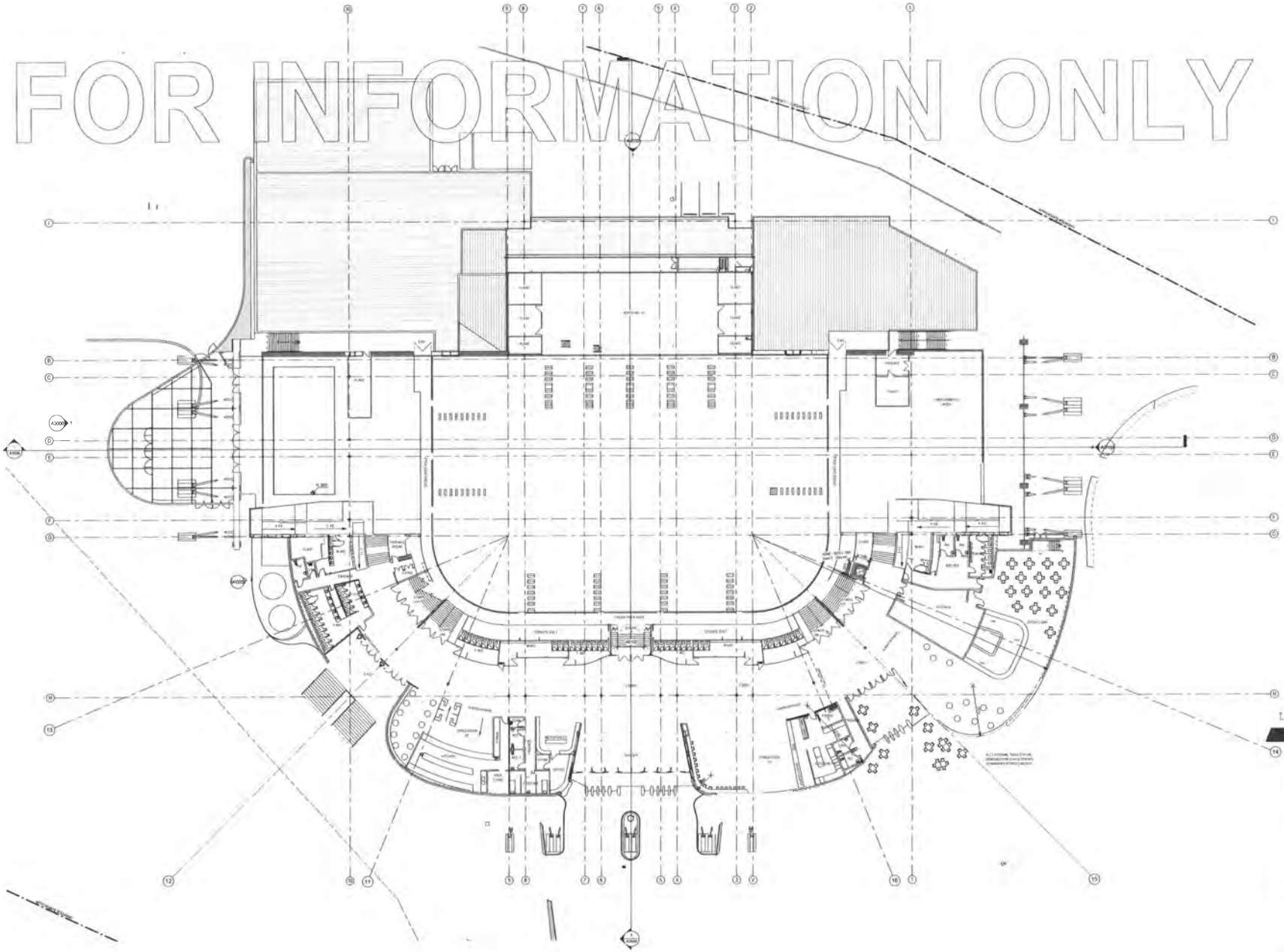
Scale	1 : 200 @ A0	Date	01.08.18
Drawing No.	A1500	Project Number	20.318
		Rev	N

FOR INFORMATION ONLY



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LX GROUP
DERWENT ENTERTAINMENT CENTRE

GENERAL SERIES - UPPER GROUND

STAGE 1 ENABLING PACKAGE

20.318

A0501

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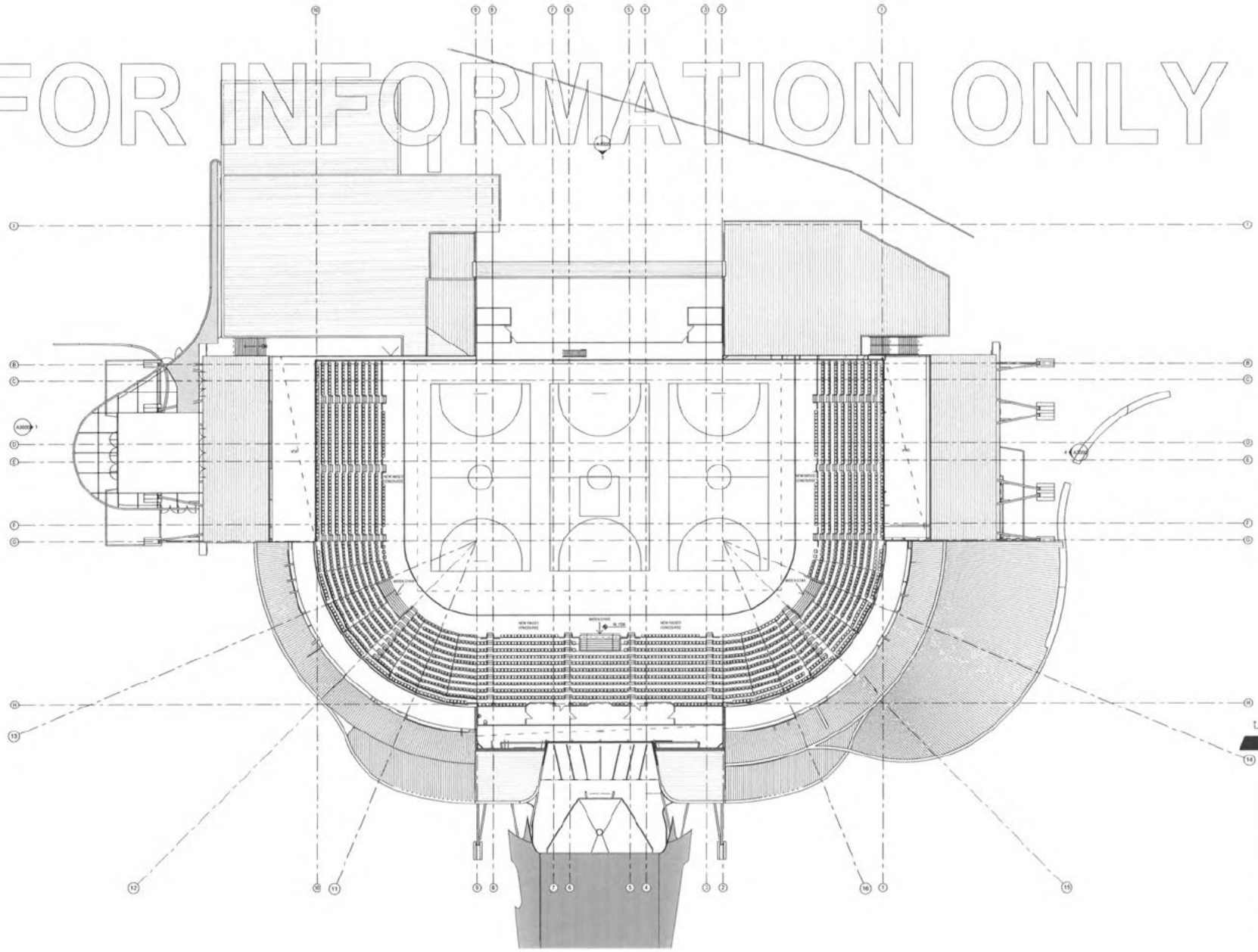
FOR INFORMATION ONLY



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PhilpLighton Architects

Rev	Description	Chkd	Date
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B	ISSUED FOR		19.08.25
C	ISSUED FOR		19.08.25
D	ISSUED FOR		19.08.25
E	ISSUED FOR		19.08.25
F	ISSUED FOR		19.08.25
G	ISSUED FOR		19.08.25
H	ISSUED FOR		19.08.25

Contractor shall verify all dimensions on site before commencing any work or shop drawings.

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Project
LX GROUP
DONNENT ENTERTAINMENT CENTRE
661 BRODIE WAY, KENDRICKY TAS 7010

Title
GENERAL SERIES - TOP PLAT

Status
STAGE 1 ENABLING PACKAGE

Drawn by	Issue
JT	All
Scale	Date
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Project Number	
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Drawing No.	Rev.
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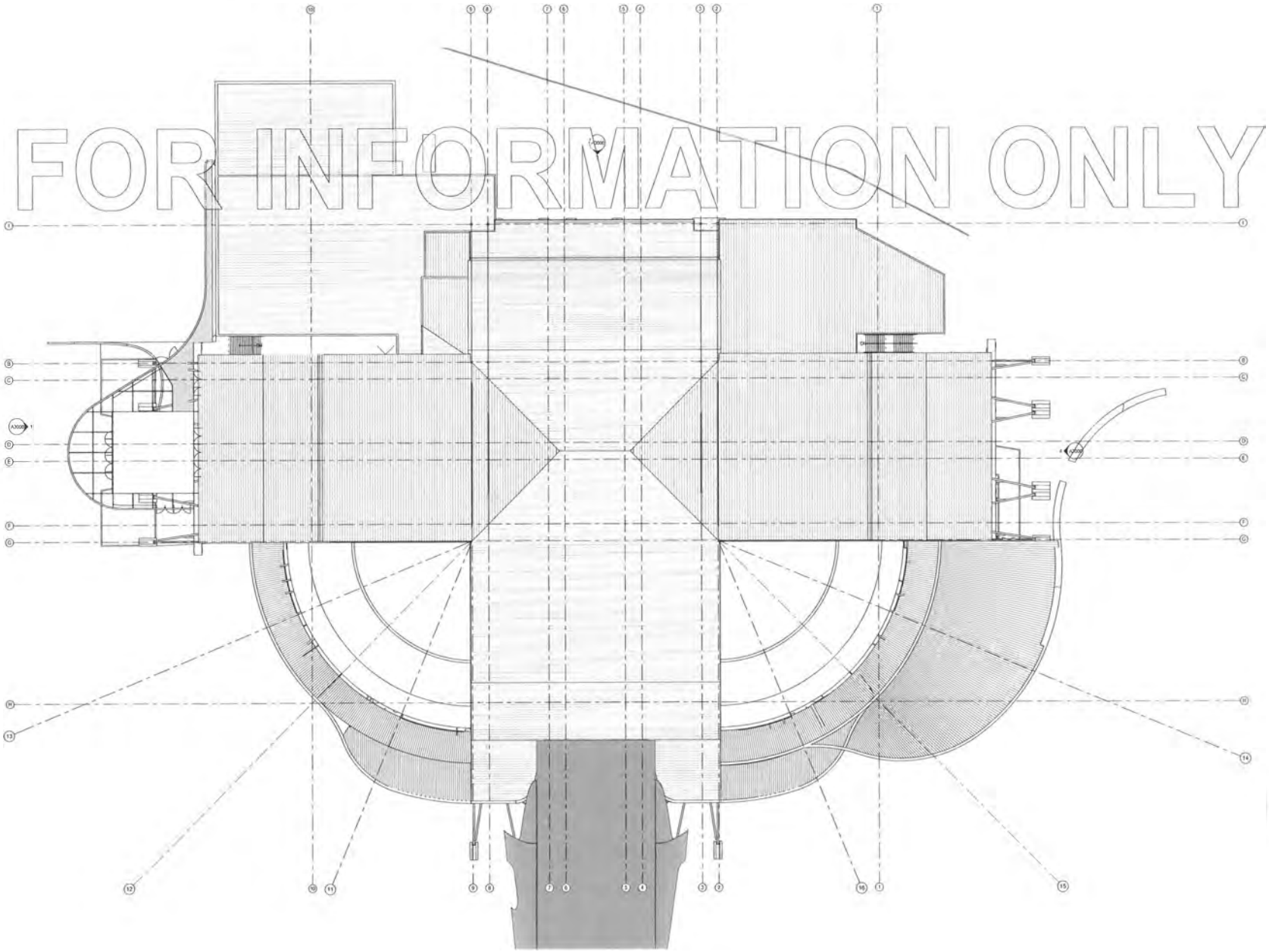

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PhilipLighton Architects

Rev	Description	Date	Drawn
A	ISSUE FOR S.1 ENABLING PACKAGE	11.05.22	CB
B	ISSUE FOR PLANNING	11.08.22	CB

Project
LV GROUP
DERMENT ENTERTAINMENT CENTRE
651 BRICKER WAY, GLENEAGH TAS 7010

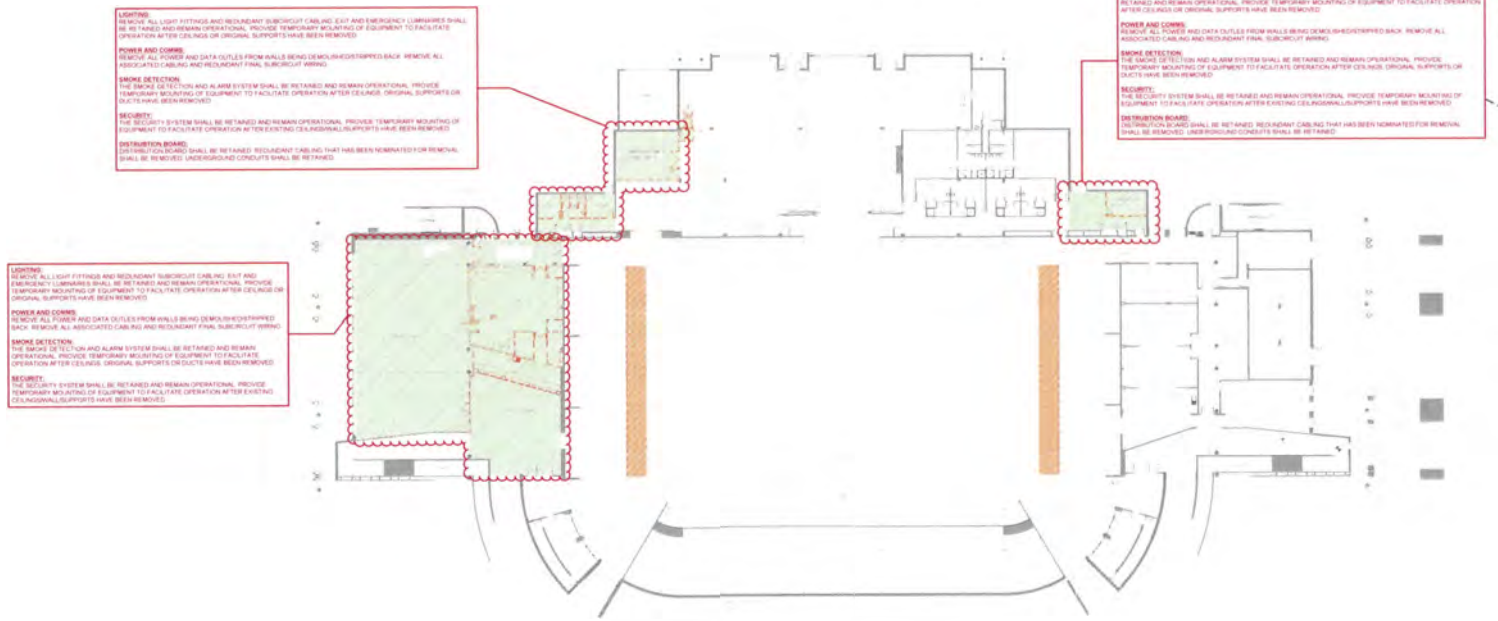
File
GENERAL SERIES - ROOF

Issue
STAGE 1 ENABLING PACKAGE

Drawn By	Author	Date	Approved	Project Number
Scale		11.08.22		20.316
@ A1				
Drawing No.		A0503		B

LEGEND

GENERAL NOTES



1 L01_ STAGE 1 BLOCK PLAN
1 : 200

PRELIMINARY

Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.

DEC REDEVELOPMENT PROJECT
601 BROOKER HWY, GLENORCHY

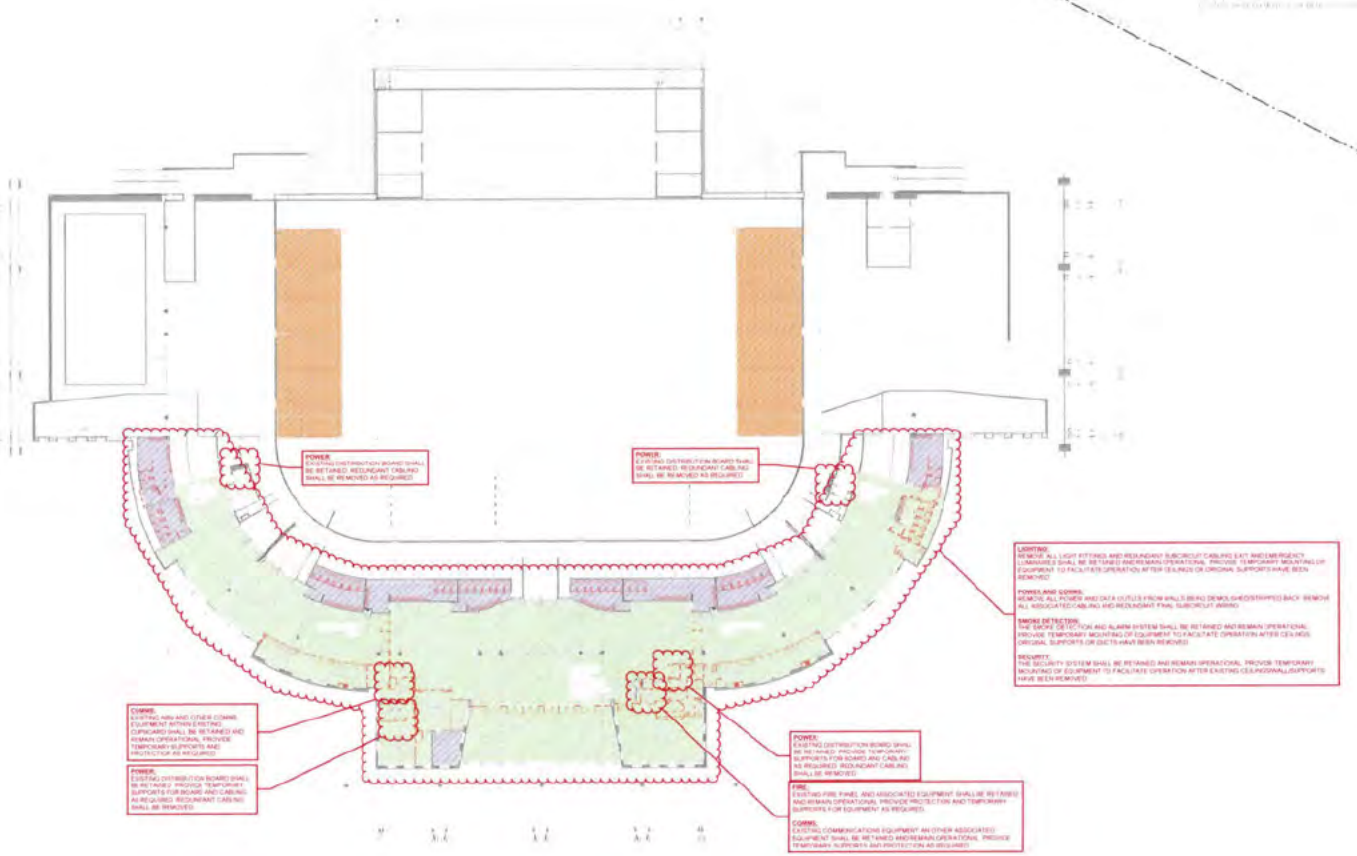
ELECTRICAL SERVICES
ENABLING WORKS - LOWER GROUND, DEMOLITION PLAN

J195080SH

EWE-110 P1

LEGEND

GENERAL NOTES



1 LGU_STAGE 1 BLOCK PLAN

P1 9.09.20 PRELIMINARY
REV DATE ISSUE

Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.

PROJECT
DEC REDEVELOPMENT PROJECT
501 BROOKER HWY, GLENORCHY

TITLE
ELECTRICAL SERVICES
ENABLING WORKS - UPPER GROUND_DEMOLITION PLAN

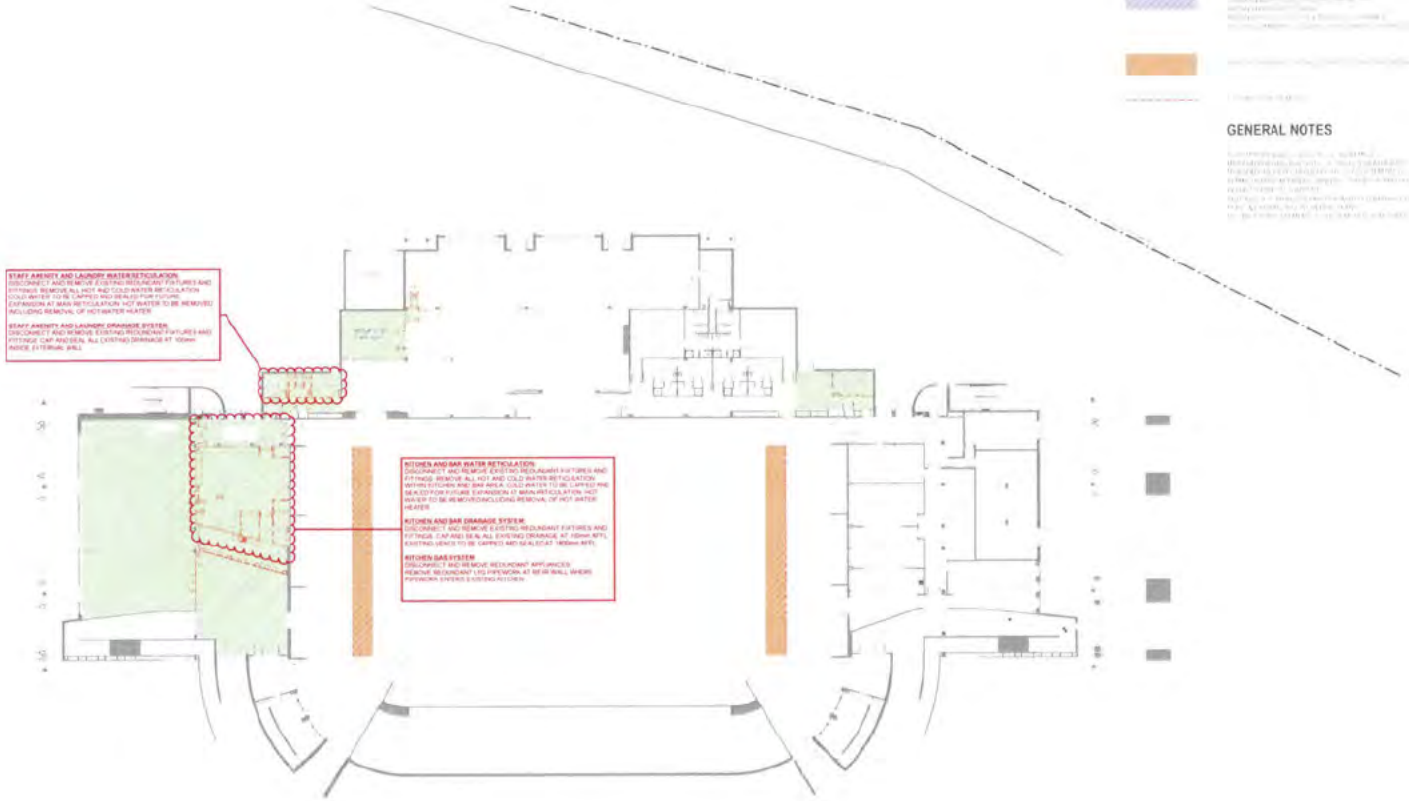
SCALES @ A1 DESIGNED BY DRAWN BY
Designer Author
PLOT DATE

PROJECT NO. J195080SH
DRG NO. EW-E-120
REVISION P1

PRELIMINARY

LEGEND

GENERAL NOTES



1 L01_STAGE 1 BLOCK PLAN
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PRELIMINARY

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P1	10.05.20	PRELIMINARY

Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.

DESCRIPTION
DEC REDEVELOPMENT PROJECT
601 BROOKER HWY, GLENORCHY

TITLE
HYDRAULIC SERVICES
ENABLING WORKS : LOWER GROUND, DEMOLITION PLAN

Designed	MA
Drawn	MA
Checked	MA
Approved	MA

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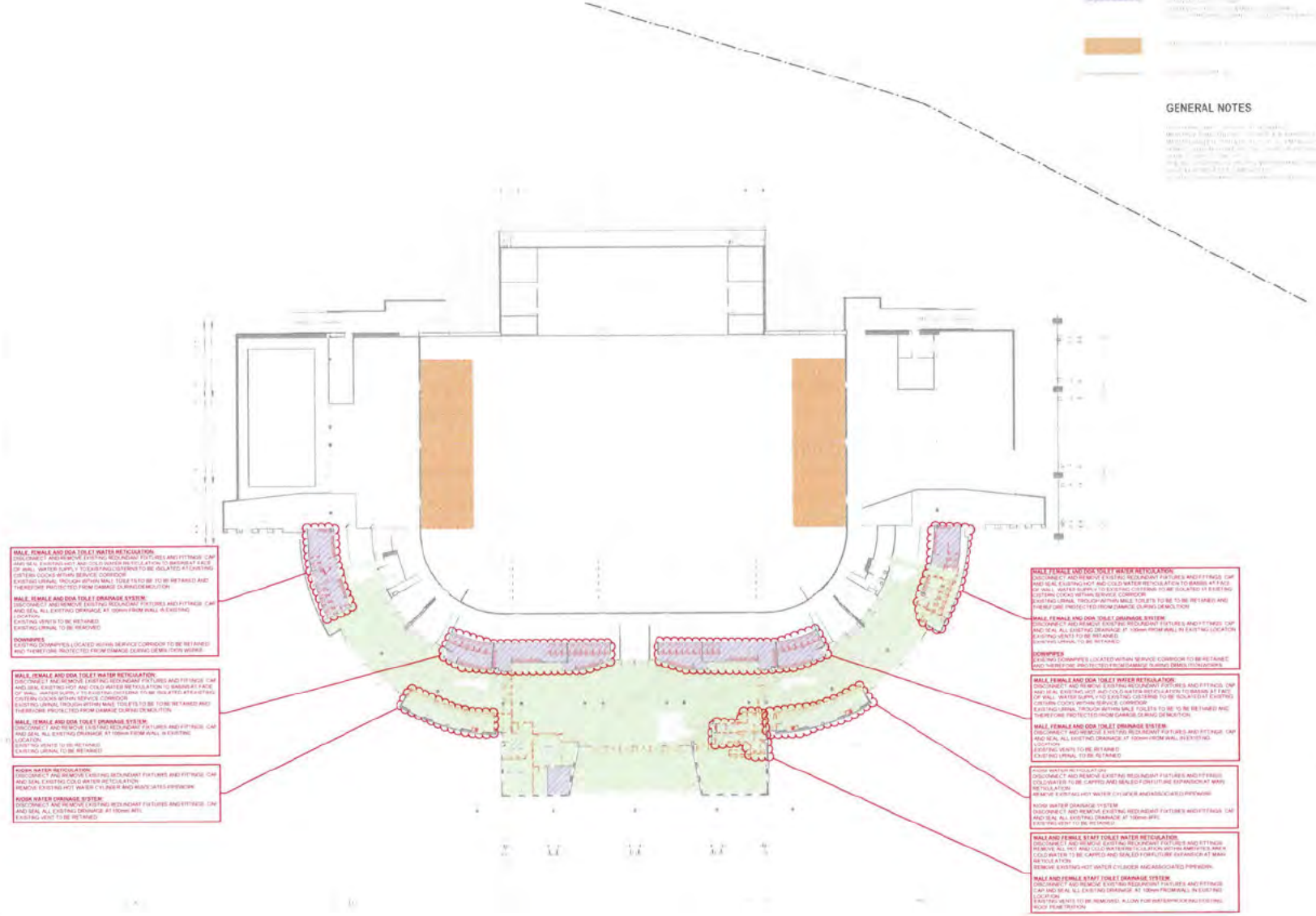
Designer Author
PLOT DATE 5/05/2020 12:18 PM

JOB NO. J195080SH
DRAWING NO. EW-H-110
REVISION P1

LEGEND

GENERAL NOTES



1 LOU_STAGE 1 BLOCK PLAN
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PRELIMINARY

Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.

DEC REDEVELOPMENT PROJECT
601 BROOKER HWY, GLENORCHY

HYDRAULIC SERVICES
ENABLING WORKS - UPPER GROUND, DEMOLITION PLAN

Designed	MK
Drawn	MK
Checked	GH
Approved	GH

SCALES @ A1 1:200 1:100 @ A3
Designer: Author:
PLOT DATE: 12/05/2021 11:12:16

PROJECT NO: J19S080SH
DWG NO: EWH120
REVISION: P1

REV	DATE	DESCRIPTION
P1	11.05.22	PRELIMINARY
REV	DATE	DESCRIPTION

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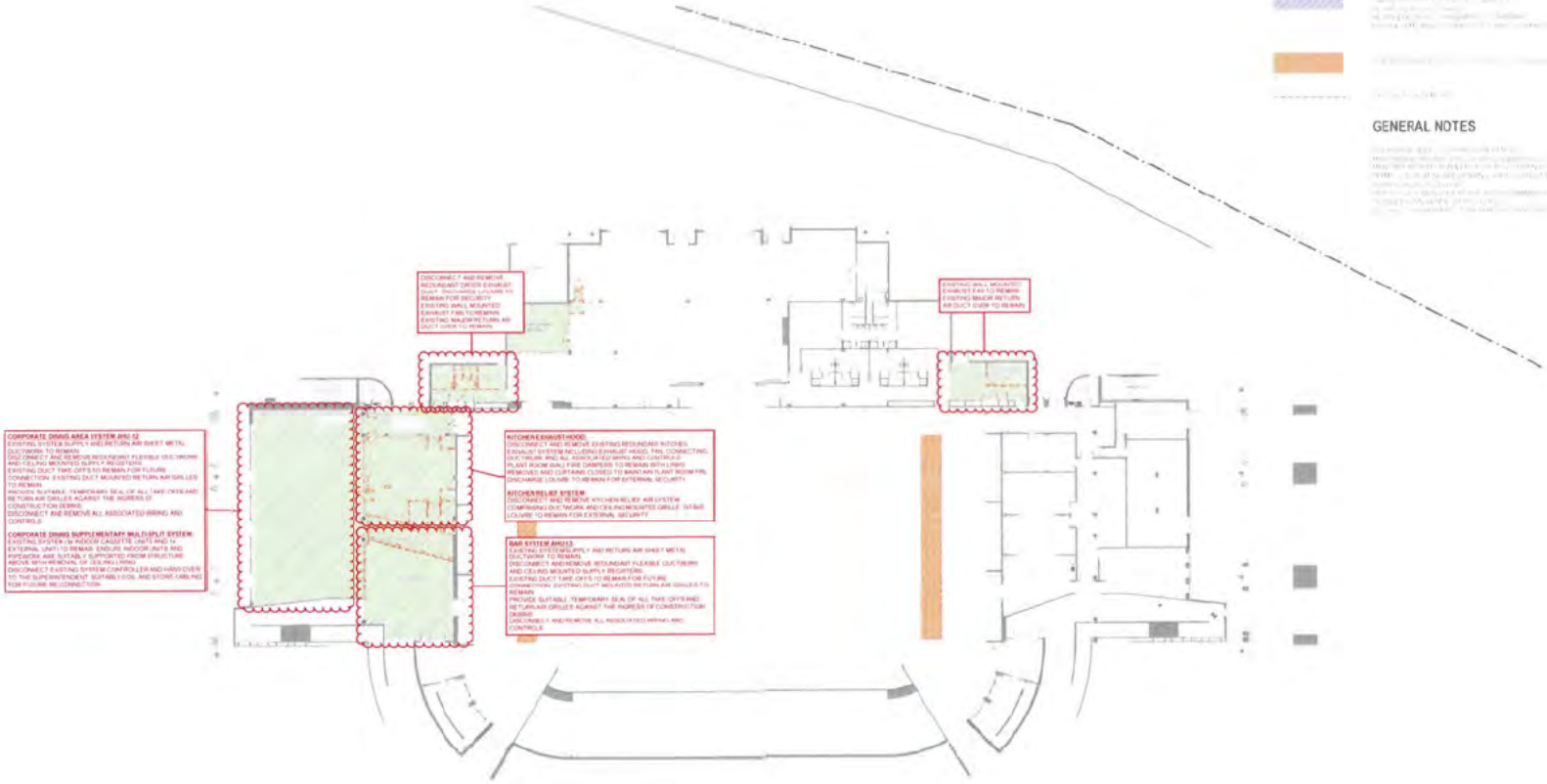
LEGEND

GENERAL NOTES



1 L01_STAGE 1 BLOCK PLAN
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PRELIMINARY

Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.

DEC REDEVELOPMENT PROJECT
601 BROOKER HWY, GLENORCHY

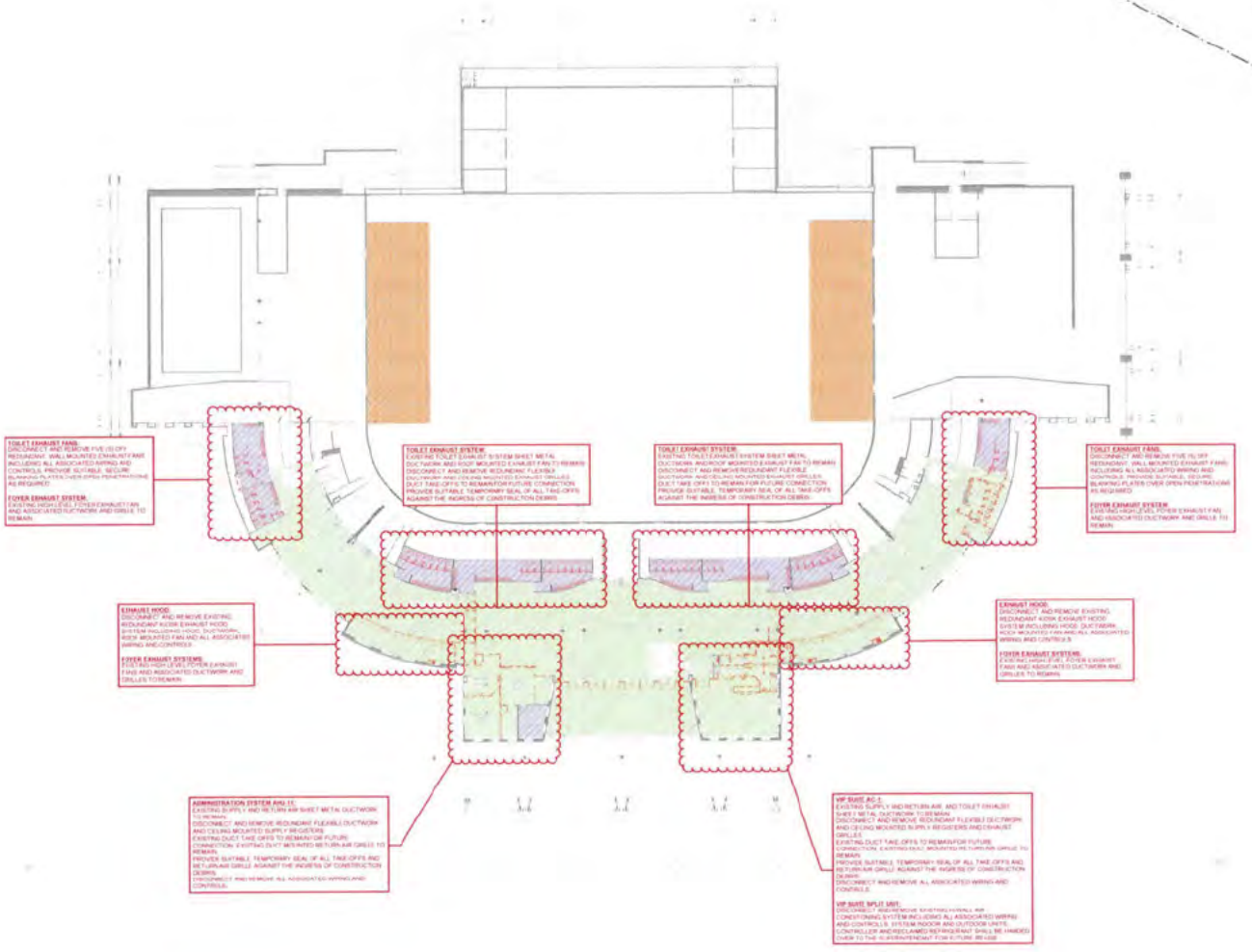
MECHANICAL SERVICES
ENABLING WORKS - LOWER GROUND, DEMOLITION PLAN

J195080SH

DWG NO: EW-M-110
REVISION: P1

LEGEND

GENERAL NOTES



1 LGU_STAGE 1 BLOCK PLAN

Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.

PROJECT
DEC REDEVELOPMENT PROJECT
601 BROOKER HWY, GLENORCHY

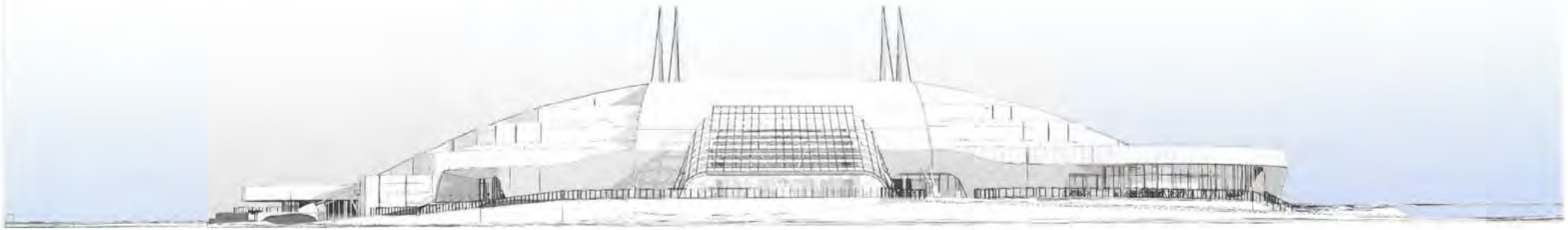
TITLE
MECHANICAL SERVICES
ENABLING WORKS - UPPER GROUND, DEMOLITION PLAN

PROJECT NO. J195080SH
DRAWING NO. EW-M-120
REVISION P1

PRELIMINARY

Attachment 5: Preliminary Project Design Documentation for the Project Stage 2A and the Project Stage 2B

1 ARCHITECTURAL



DERWENT ENTERTAINMENT CENTRE REDEVELOPMENT

DERWENT ENTERTAINMENT CENTRE REDEVELOPMENT

Sheet No	Sheet Name	Current Revision	Current Revision Date	Current Revision Description
A0000	COVER SHEET	D	16-10-20	DESIGN DEVELOPMENT
A0100	SITE PLAN	D	16-10-20	DESIGN DEVELOPMENT
A0200	SITE PLAN LOGISTIC+CONSTEWLG DEMOLITION	D	16-10-20	DESIGN DEVELOPMENT
A0201	DEMOLITION - LOWER GROUND	D	16-10-20	DESIGN DEVELOPMENT
A0202	DEMOLITION - UPPER GROUND	D	16-10-20	DESIGN DEVELOPMENT
A0203	DEMOLITION - ROOF PLAT	D	16-10-20	DESIGN DEVELOPMENT
A0500	EXTERNAL SERIES 1 LOWER GROUND	D	16-10-20	DESIGN DEVELOPMENT
A0501	GENERAL SERIES - UPPER GROUND	D	16-10-20	DESIGN DEVELOPMENT
A0502	GENERAL SERIES - TOP PLAT	D	16-10-20	DESIGN DEVELOPMENT
A0503	GENERAL SERIES - ROOF	C	16-10-20	DESIGN DEVELOPMENT
A1000	LOWER GROUND - PART 01	C	16-10-20	DESIGN DEVELOPMENT
A1001	LOWER GROUND - PART 02	C	16-10-20	DESIGN DEVELOPMENT
A1002	LOWER GROUND - PART 03	B	16-10-20	DESIGN DEVELOPMENT
A1003	UPPER GROUND - PART 01	B	16-10-20	DESIGN DEVELOPMENT
A1004	UPPER GROUND - PART 02	B	16-10-20	DESIGN DEVELOPMENT
A1005	UPPER GROUND - PART 03	B	16-10-20	DESIGN DEVELOPMENT
A1006	TOP PLAT - PART 01	B	16-10-20	DESIGN DEVELOPMENT
A1007	TOP PLAT - PART 02	A	16-10-20	DESIGN DEVELOPMENT
A1008	TOP PLAT - PART 03	A	16-10-20	DESIGN DEVELOPMENT
A1009	ROOF PLAN - PART 02	B	16-10-20	DESIGN DEVELOPMENT
A1010	ROOF PLAN - PART 03	B	16-10-20	DESIGN DEVELOPMENT
A1011	ROOF PLAN - PART 01	C	16-10-20	DESIGN DEVELOPMENT
A1601	WALL PARTITION SETOUT - LOWER GROUND - PART 02	A	16-10-20	DESIGN DEVELOPMENT
A1602	WALL PARTITION SETOUT - LOWER GROUND - PART 01	A	16-10-20	DESIGN DEVELOPMENT
A1603	WALL PARTITION SETOUT - UPPER GROUND - PART 04	A	16-10-20	DESIGN DEVELOPMENT
A1604	WALL PARTITION SETOUT - UPPER GROUND - PART 03	A	16-10-20	DESIGN DEVELOPMENT
A1605	WALL PARTITION SETOUT - UPPER GROUND - PART 02	A	16-10-20	DESIGN DEVELOPMENT
A1650	LOOSE FURNITURE & JOINERY - LOWER GROUND - PART 02	A	16-10-20	DESIGN DEVELOPMENT
A1651	LOOSE FURNITURE & JOINERY - LOWER GROUND - PART 02	A	16-10-20	DESIGN DEVELOPMENT
A1652	LOOSE FURNITURE & JOINERY - LOWER GROUND - PART 01	A	16-10-20	DESIGN DEVELOPMENT
A1653	LOOSE FURNITURE & JOINERY - UPPER GROUND - PART 01	A	16-10-20	DESIGN DEVELOPMENT
A1654	LOOSE FURNITURE & JOINERY - UPPER GROUND - PART 02	A	16-10-20	DESIGN DEVELOPMENT
A1655	LOOSE FURNITURE & JOINERY - UPPER GROUND - PART 03	A	16-10-20	DESIGN DEVELOPMENT
A2000	RCP - LOWER GROUND - PART 01	B	16-10-20	DESIGN DEVELOPMENT
A2001	RCP - LOWER GROUND - PART 02	B	16-10-20	DESIGN DEVELOPMENT
A2002	RCP - LOWER GROUND - PART 03	C	16-10-20	DESIGN DEVELOPMENT
A2003	RCP - UPPER GROUND - PART 01	B	16-10-20	DESIGN DEVELOPMENT
A2004	RCP - UPPER GROUND - PART 02	B	16-10-20	DESIGN DEVELOPMENT
A2005	RCP - UPPER GROUND - PART 03	B	16-10-20	DESIGN DEVELOPMENT
A3000	BUILDING ELEVATIONS	B	16-10-20	DESIGN DEVELOPMENT
A7000	WALL DETAILS - SHEET 01	A	16-10-20	DESIGN DEVELOPMENT

PhilipLighton Architects

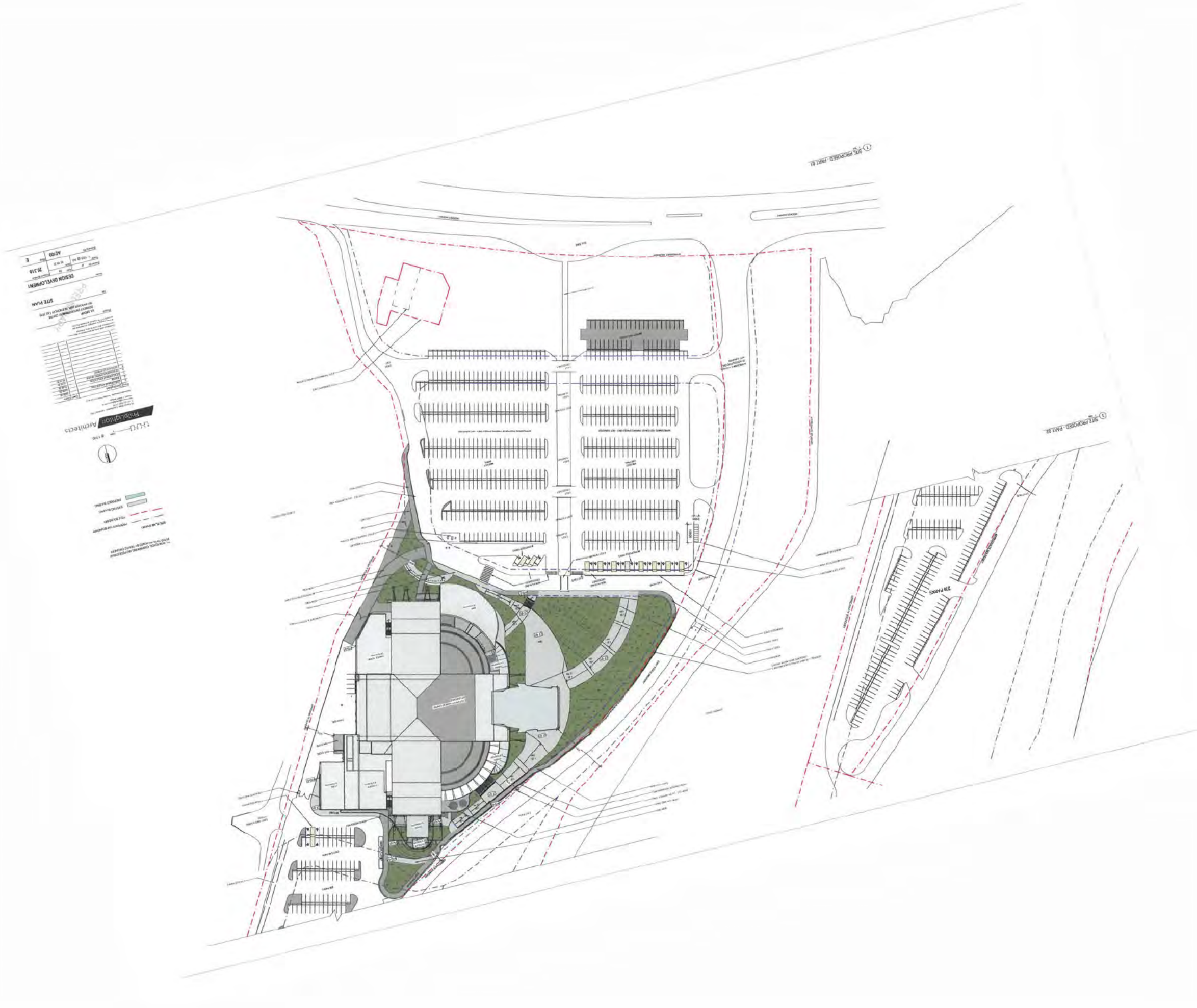
Rev	Description	Chkd	Date
A	PLANNING APPLICATION	---	16.10.20
B	DEVELOPMENT APPLICATION	---	16.10.20
C	REVISED DEVELOPED DESIGN	---	31.01.20
D	REVISED DEVELOPED	---	31.03.20

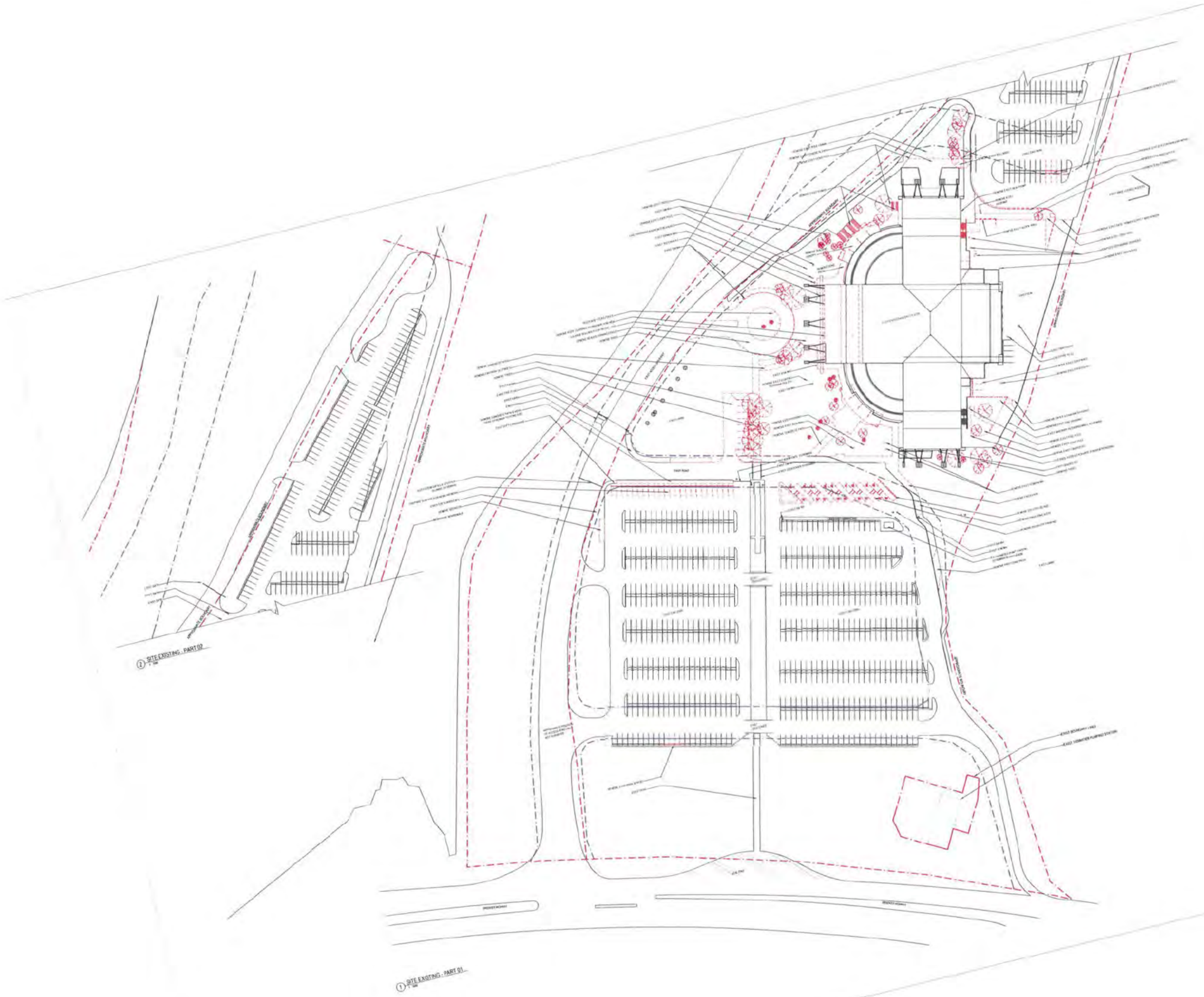
LS GROUP
DERWENT ENTERTAINMENT CENTRE

COVER SHEET

DESIGN DEVELOPMENT

Drawn by	TD	Rev	D	Project Number
Scale	@ A0	Date	31.03.20	20.318
Drawing No	A0000			Rev D


SITE PROPOSED - PART 01
SITE PROPOSED - PART 02
MOUNT HENRY
MOUNT HENRY
229 PARKS
STAGE
SITE PLAN
DESIGN DEVELOPMENT
A0700
2.319
Philip Lighton Architects



② SITE EXISTING - PART 02
1 : 500

① SITE EXISTING - PART 01
1 : 500

SITE PLAN LEGEND

PROPOSED DEP BOUNDARY

PROPERTY TITLE BOUNDARY

Phil Lighton Architects

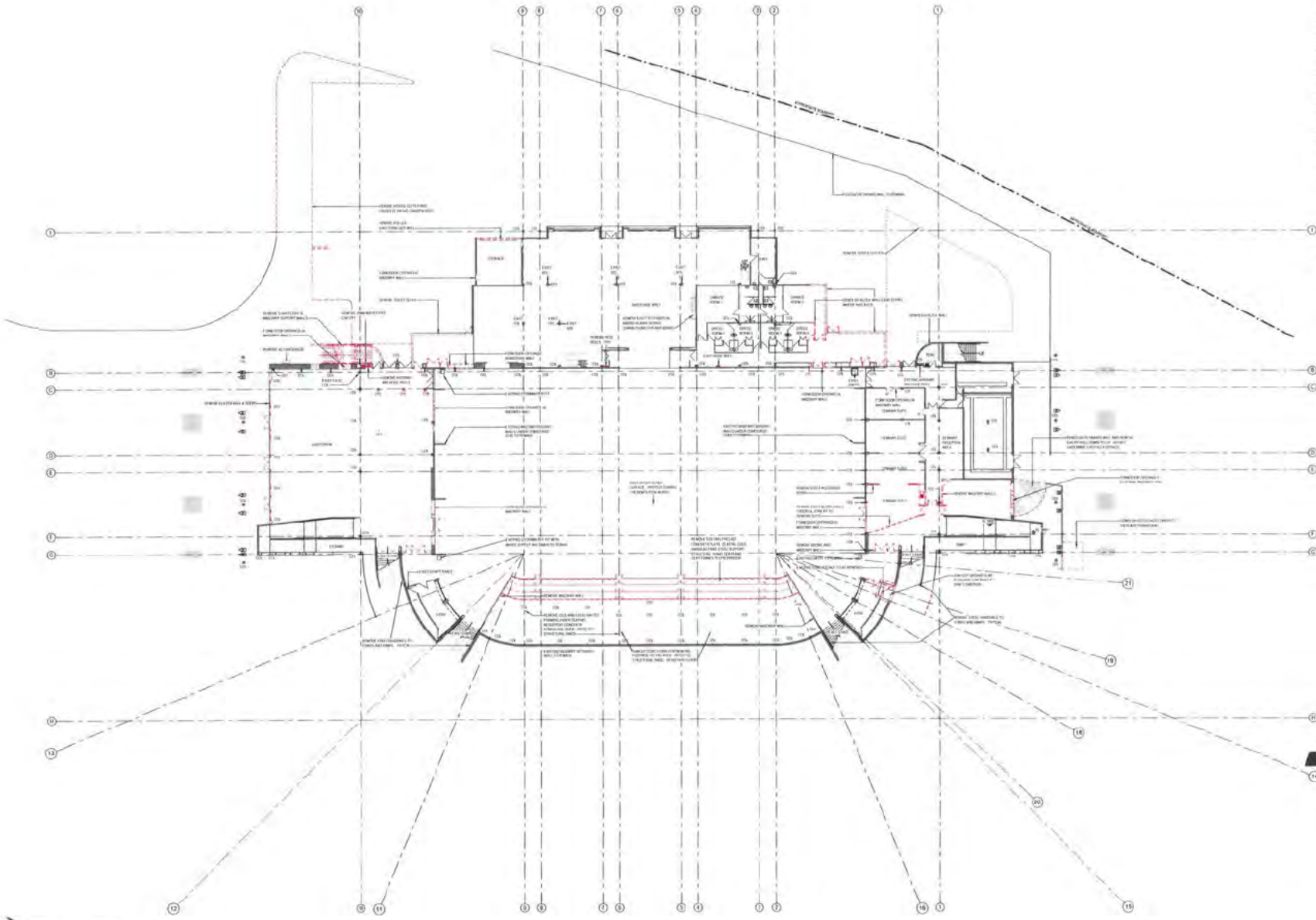
Rev	Description	Date
A	ISSUED FOR INFORMATION	12.08.25
B	ISSUED FOR PLANNING REVIEW	19.09.25
C	ISSUED FOR PLANNING REVIEW	10.10.25
D	ISSUED FOR PLANNING	16.10.25

LK GROUP
DEVELOPER CONSULTANTS PTY LTD
401 BROOKER AVE, EDGEWATER 6027 (WA)

SITE PLAN EXISTING CONDITIONS & DEMOLITION

DESIGN DEVELOPMENT

Scale @ A1	1 : 500	Project Number	20.318
Drawn by	LK	Date	16.10.25
Drawing No.	A0200	Rev	D



DEMOLITION - TYPICAL NOTES

LEGEND

Philip Lighton Architects

Rev	Description	Chkd	Date
A	DEVELOPMENT APPLICATION		
B	DEVELOPMENT APPLICATION		
C	DESIGN DEVELOPMENT		
D	DESIGN DEVELOPMENT		

UQ GROUP
DERMATOLOGY TREATMENT CENTRE
661 BRUNSWICK ST, NEWMARKET QLD 4051

DEMOLITION - LOWER GROUND

DESIGN DEVELOPMENT

Drawn By: JT	Rev: AB	Project Number: 20.318	
Scale: As indicated @ A0	Date: 15.10.20		
Drawing No: A0201		Rev: D	

DEMOLITION - TYPICAL NOTES

REMOVE ALL CONDUCTS PLUMBING, ELECTRICAL WIRES & MECHANICAL EQUIPMENT FROM CAST
AS SHOWN PROJECT (& SITE SPECIFIC SERVICES AND ENDURE DURING DEMOLITION

REMOVE TEMPORARY CLADDING, CITY HOARDING, SCAFFOLDING, SIGNAGE, ETC AS REQUIRED
REMOVE ALL WINDOWS AND WINDOWS INSTALLED TO ALL CAST IN SITU CONCRETE
REMOVE CROSS CUT CLEAR TO EXISTING MASONRY AND GROUNDS

REMOVE EXISTING CARPET, CERAMIC, TILES & VINYL FLOOR
FINISHES WHERE NEW FINISHES ARE REQUIRED TO MAKE GOOD
FINISHES, APPROVED QUALITY AND PROTECTED AND ENSURE CONTRACTOR HAS
ENERGY LOSS THROUGH CONSTRUCTION. IMPACT ON DUST
CONTRACTOR TO PROVIDE WASTE REQUIRED TO APPROVAL

REMOVE ALL TIMBERS TO CEILINGS, BEAMS & STRUCTURE, SUPPORTS TO FLOOR
STAIR & HANDRAILS, TIGHT PARTITIONS

PROVIDE TEMPORARY SUPPORTS TO ALL REQUIRED STAIRS AND LIFT CONSTRUCTION
COMPLY WITH ALL RELEVANT CURRENT STANDARDS

HEATING INSTALLATION INCLUDING PIPEWORK, RADIATORS, FITTINGS, THERMOSTATS
TO BE REMOVED TO PLANT ROOM FOR DISPOSAL

REMOVE ALL OBSOLETE MECHANICAL FIRE, SECURITY, DATA INSTALLATIONS
EQUIPMENT, WIRELESS, HEATERS, LIGHT FITTINGS, SWITCHES AND TEST TO BE
REMOVE OBSOLETE ON ONLY ALL ACCESS & LIMITS, MAKE BACK TO EXISTING OR
AS NOTED REQUIRED

FORM OPENINGS AND TEMPORARY PROTECTION FOR NEW STRUCTURAL OPENINGS
AS NOTED QUALITY AS EXISTING AND COMPLY WITH ALL TIMES TO BE
IMPLEMENTED

REMOVE EXISTING LIGHTING AND ELECTRICAL SERVICES AS NOTED

REMOVE EXISTING SECURITY SYSTEM
ALL NOTED TO BE REMOVED AND DISPOSED OF

LEGEND

REMOVE ALL OBSOLETE FURNITURE, CARPETS & SOFT FURNISHINGS AS NOTED

REMOVE EXISTING PANEL SYSTEMS AND ASSOCIATED MATERIAL AS
EXISTING AS NOTED

NOTE GPO, SPECIFICATIONS, ELEMENTS TO BE DEMOLISHED OR REMOVED AS
BE DONE IN STRICT ACCORDANCE WITH STANDARD DETAILS

1 LOU P XG
1 : 100

@ 1:200

PhilipLighton Architects

Rev	Description	Chkd	Date
A	DEVELOPMENT APPLICATION		
B	PRE-APPLICATION		
C	TENDER/CONSTRUCTION		
D	PLANNING/CONSENT		

Project
LX CHOIR
DEMENTIA INTERVENTION CENTRE
NEW BROADWAY, LONDON, SW1H 0BH

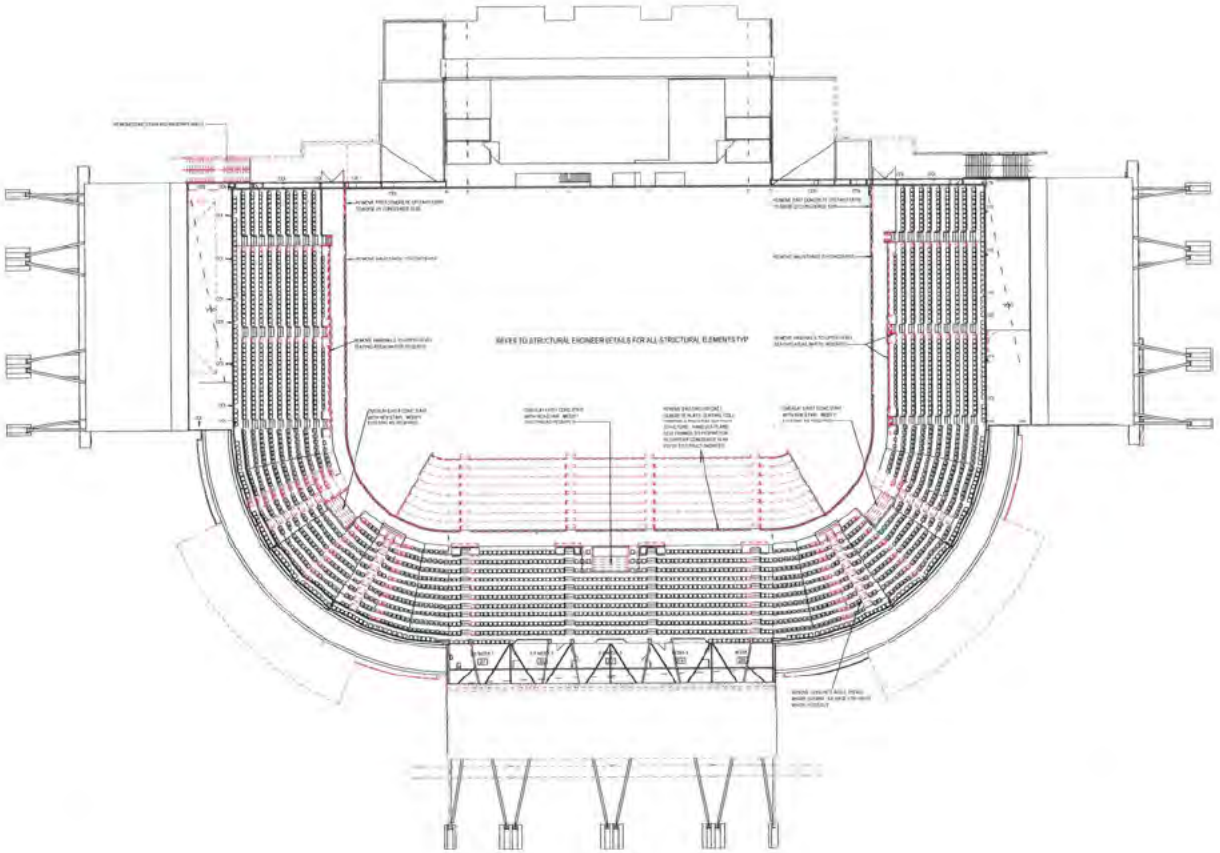
Title
DEMOLITION - UPPER GROUND

Status
DESIGN DEVELOPMENT

Drawn by	SS	Chkd	AP
Scale	As indicated @ A3	Date	15.05.20
Drawing No.	A0202	Project Number	20318
		Rev.	D

DEMOLITION - TYPICAL NOTES

LEGEND



1 L02 EXG

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Phillip Lighton Architects

Rev	Description	Date
A	PRELIMINARY	14.06.19
B	PRELIMINARY	28.06.19
C	PRELIMINARY	22.08.19
D	PRELIMINARY	12.09.19
E	PRELIMINARY (AMENDED PROPOSAL)	17.09.19
F	ISSUE - DRAFT NOT FOR CONSTRUCTION	27.09.19
G	DESIGN DEVELOPMENT	8.10.19

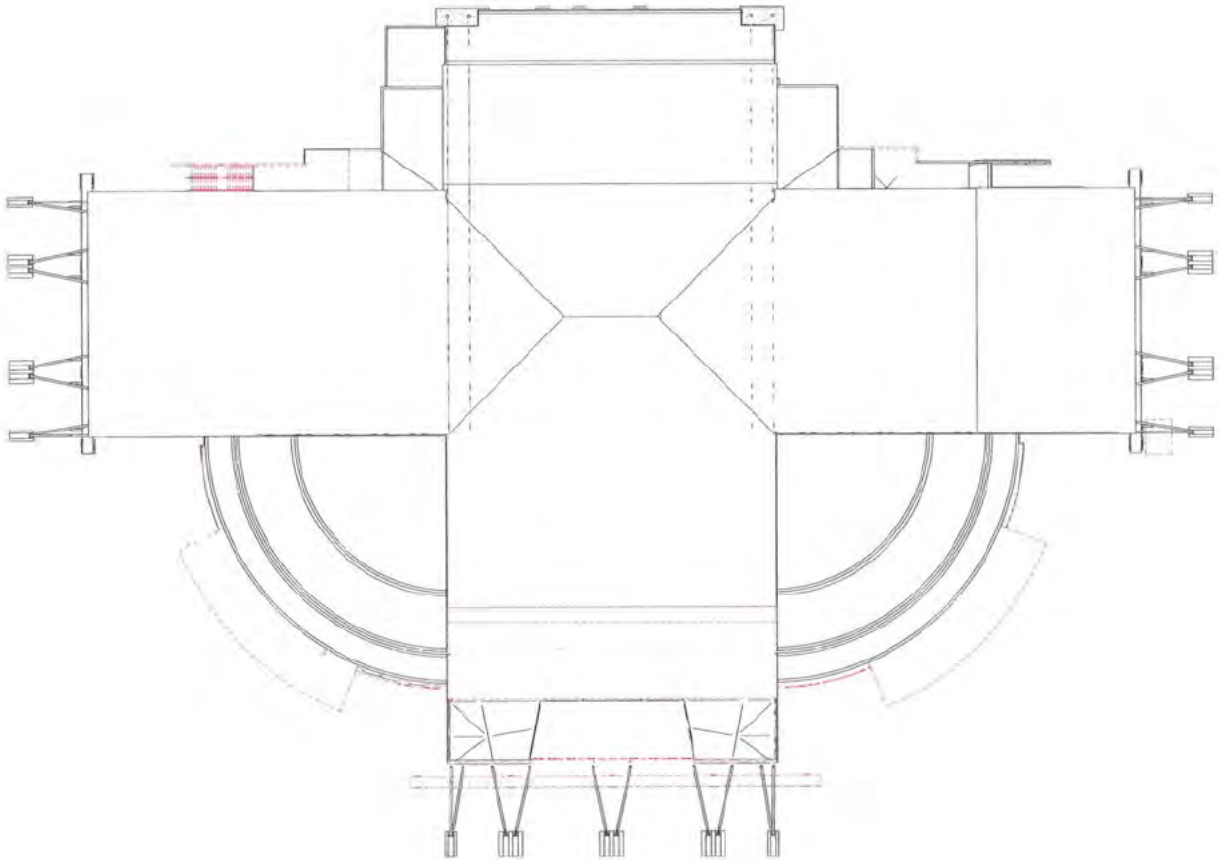
UK GROUP
DERIMENT ENTERTAINMENT CENTRE
651 BROOKER ROAD, TULLAMARINE VIC 3043

DEMOLITION - TOP FLAT

DESIGN DEVELOPMENT

Drawn By	Date	Project Number
SS	08.10.19	20.318
Scale: As indicated @ A3		
Drawing No: A0203	Rev: G	

DEMOLITION - TYPICAL NOTES



① LB0 DEMO
1:200

1:200

Phillip Lighton Architects

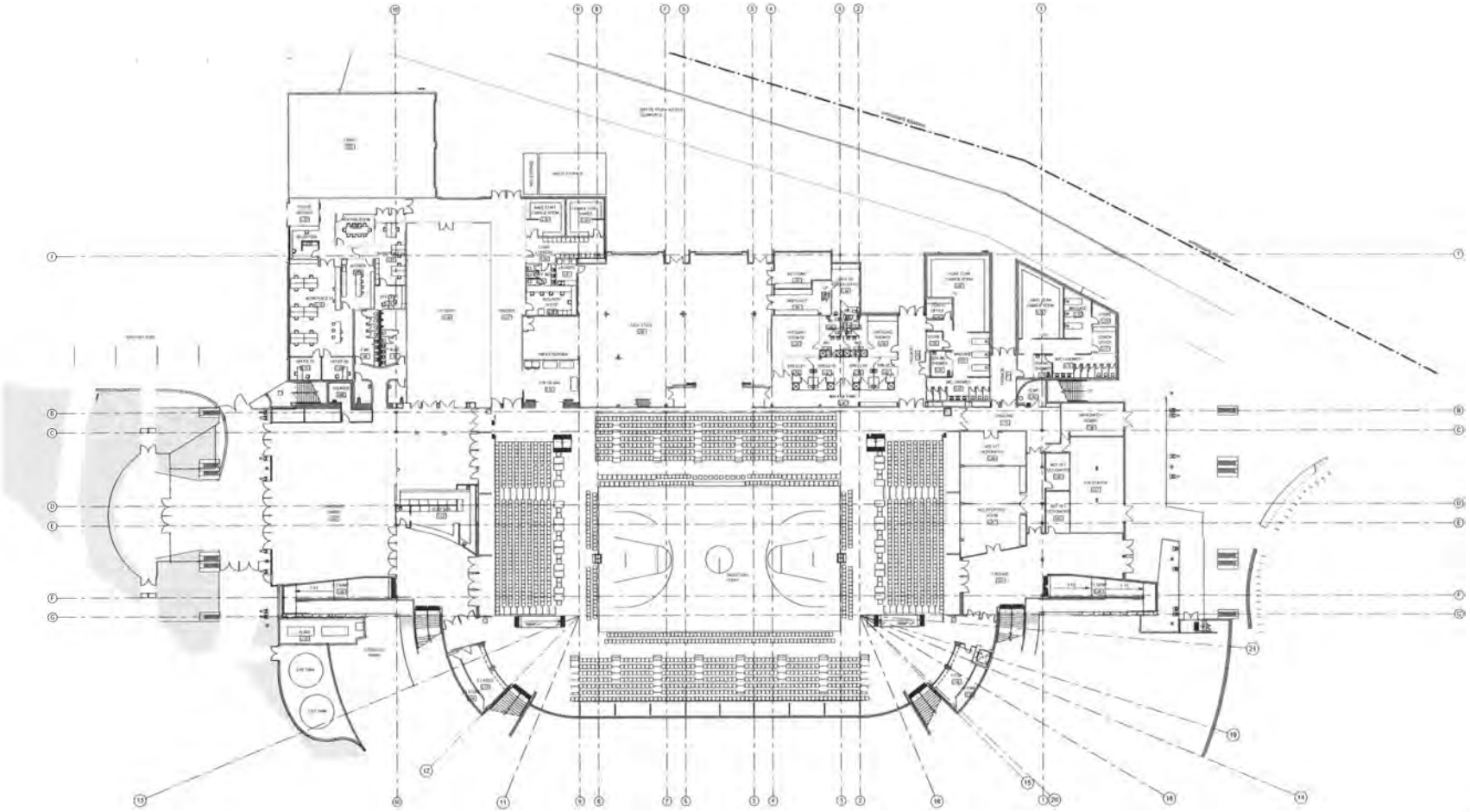
Rev	Description	Date
A	PLANNING ISSUE	15.10.20

Project
LX GROUP
Schweitzer-Cooper Precinct
161 BROOKER AVE, BEAUMONT SA 5066

Title
DEMOLITION - ROOF

Status
DESIGN DEVELOPMENT

Drawn by	Date	Project Number
SS	AT	20.318
Scale	Date	
As indicated @ A0	15.10.20	
Drawing No		Rev
A0204		A



PhilpLighton Architects

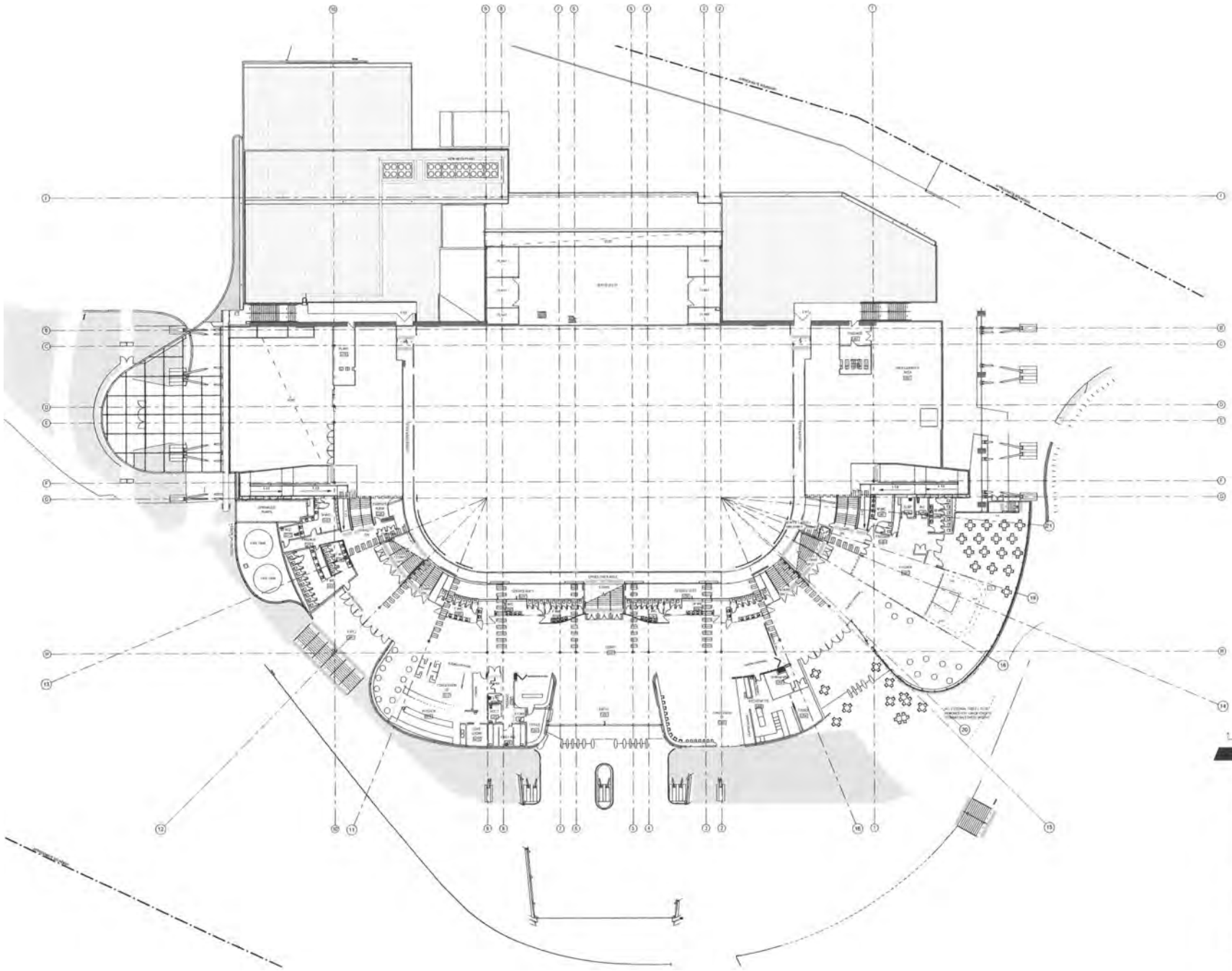
GENERAL SERIES - LOWER GROUND

DESIGN DEVELOPMENT

20.318

A0500

D



Philip Lighton Architects

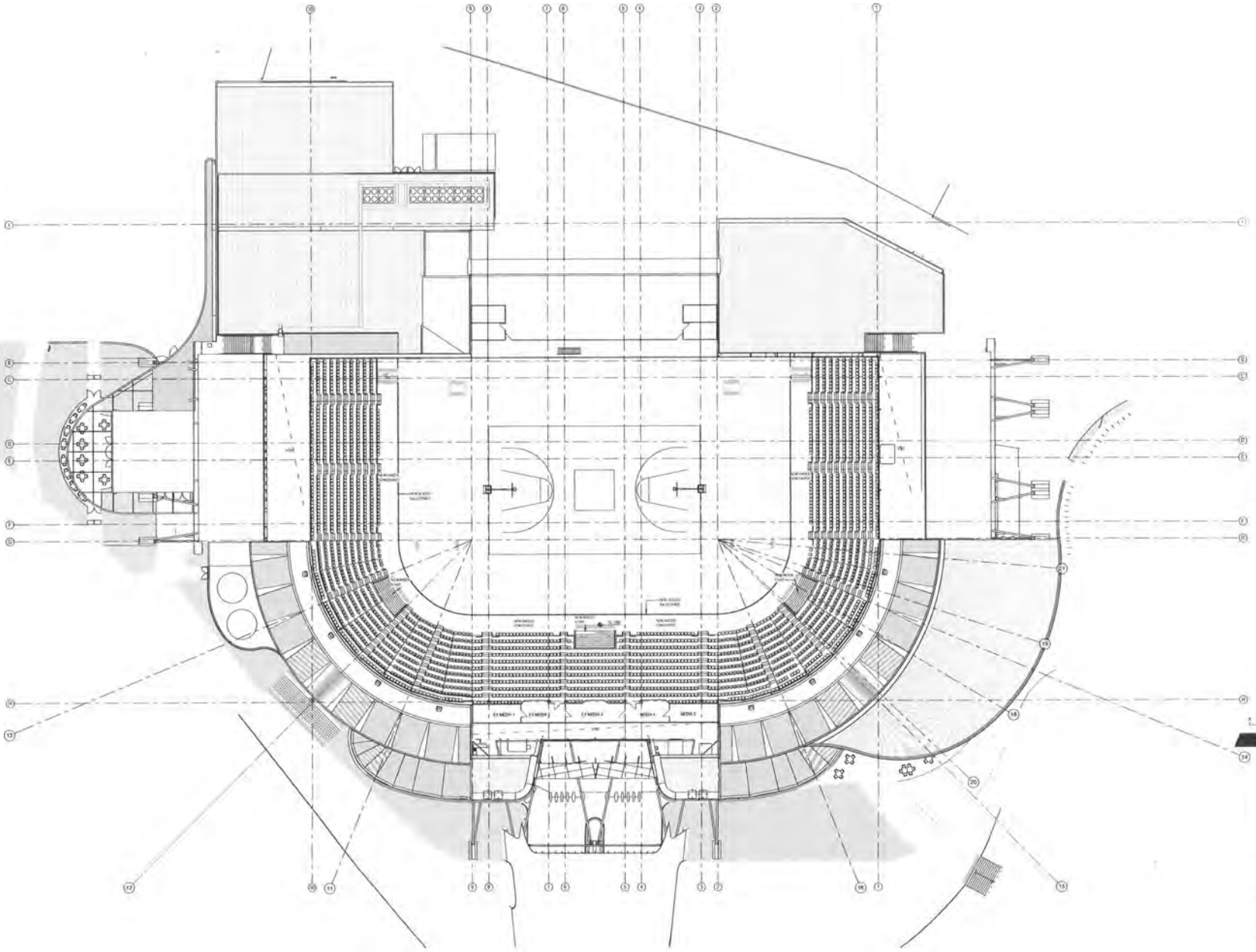
Rev	Description	Date	Check
A			
B			
C			
D			

LX GROUP
CLEMENT CATEYE LIBRARY CENTRE
483 BRIGHTON ROAD, BENTLEIGH VIC 3216

GENERAL SERIES - UPPER GROUND

DESIGN DEVELOPMENT

Drawn By: JT	Area: A1	Project Number: 20.318
Scale: 1 : 200 @ A0	Date: 16.10.20	
Drawing No.: A0501		Rev: D



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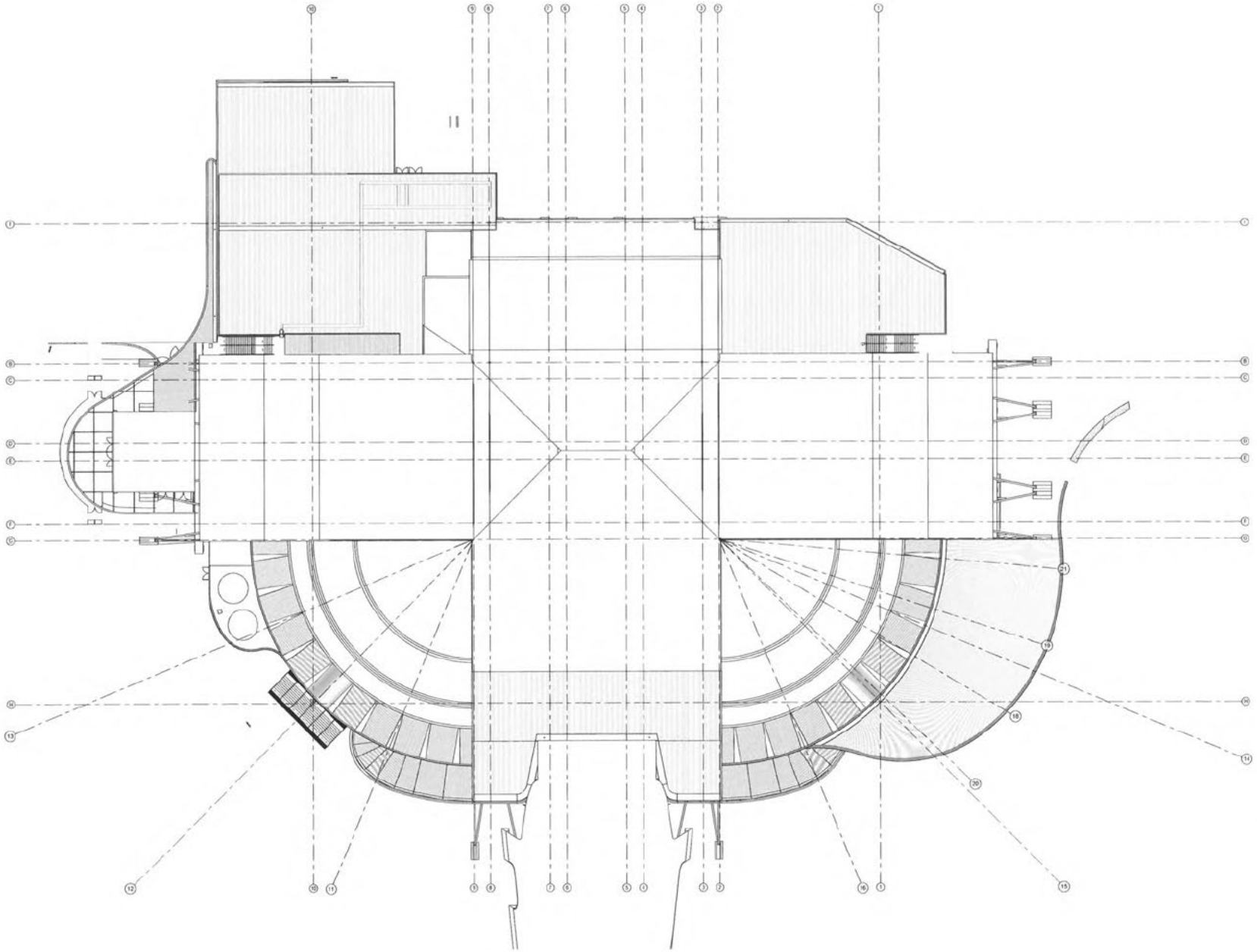
GENERAL SERIES - TOP PLAT

DESIGN DEVELOPMENT

20.318

A0502

K



1 L01_GS Roof
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@ 1:200

PhilipLighton Architects

Rev	Description	Chkd	Date
A	PRELIM. STAGE COMMENCEMENT		03.06.20
B	CADD COMMENCEMENT		12.06.20
C	DESIGN DEVELOPMENT		19.10.20

Contractor shall verify all dimensions on site before commencing any work or shop drawings.

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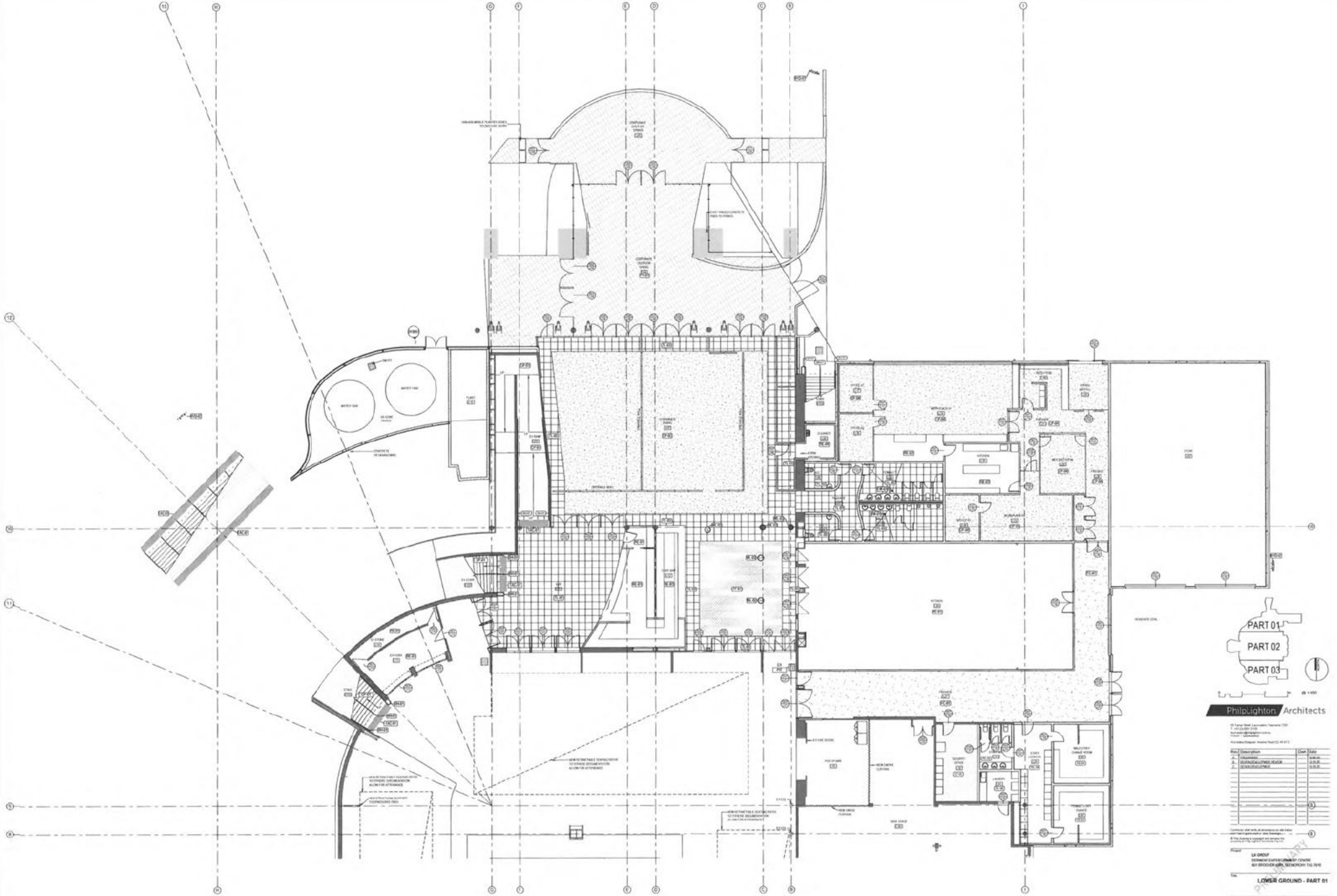
Project
LA GROUP
DERWENT ENTERTAINMENT CENTRE
901 BROOKER HWY GLENORCHY TAS 7010

Title
GENERAL SERIES - ROOF

Status
STAGE 1 ENABLING PACKAGE

Drawn by	Approved	Project Number
MA	TP	20.318
Scale	Date	
1 : 200 @ A0	16.10.20	
Drawing No.		Rev.
A0103		C

PRELIMINARY



1 LGL GA - PART 01

PhilipLighton Architects

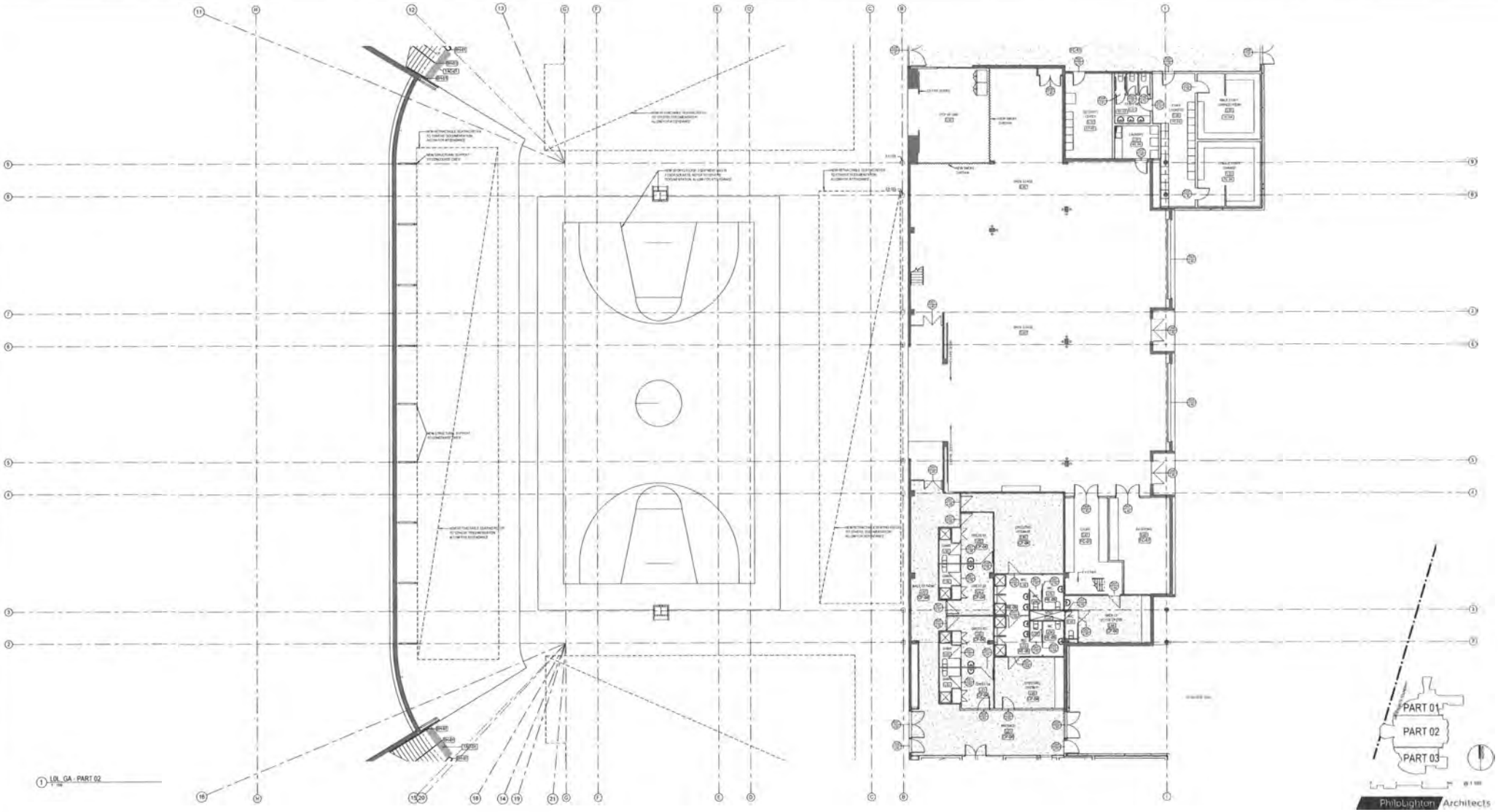
Rev	Description	Chk	Date
A	ISSUE/ISSUED		22.05.20
B	ISSUE/ISSUED FOR DEVELOPMENT REVIEW		12.06.20
C	ISSUE/ISSUED FOR DEVELOPMENT REVIEW		16.10.20

Project
LX GROUP
ENTERTAINMENT CENTRE
601 BROOKER AVEN, BENDIGO VIC 3516

Title
LOWER GROUND - PART 01

Issue
DESIGN DEVELOPMENT

Drawn by	JT	Chkd	AP
Scale	As indicated @ A3	Date	16.10.20
Drawing No.	A1001	Project Number	26.318
		Rev	C



1 LGL GA - PART 02
1 : 100

PhiloLighton Architects

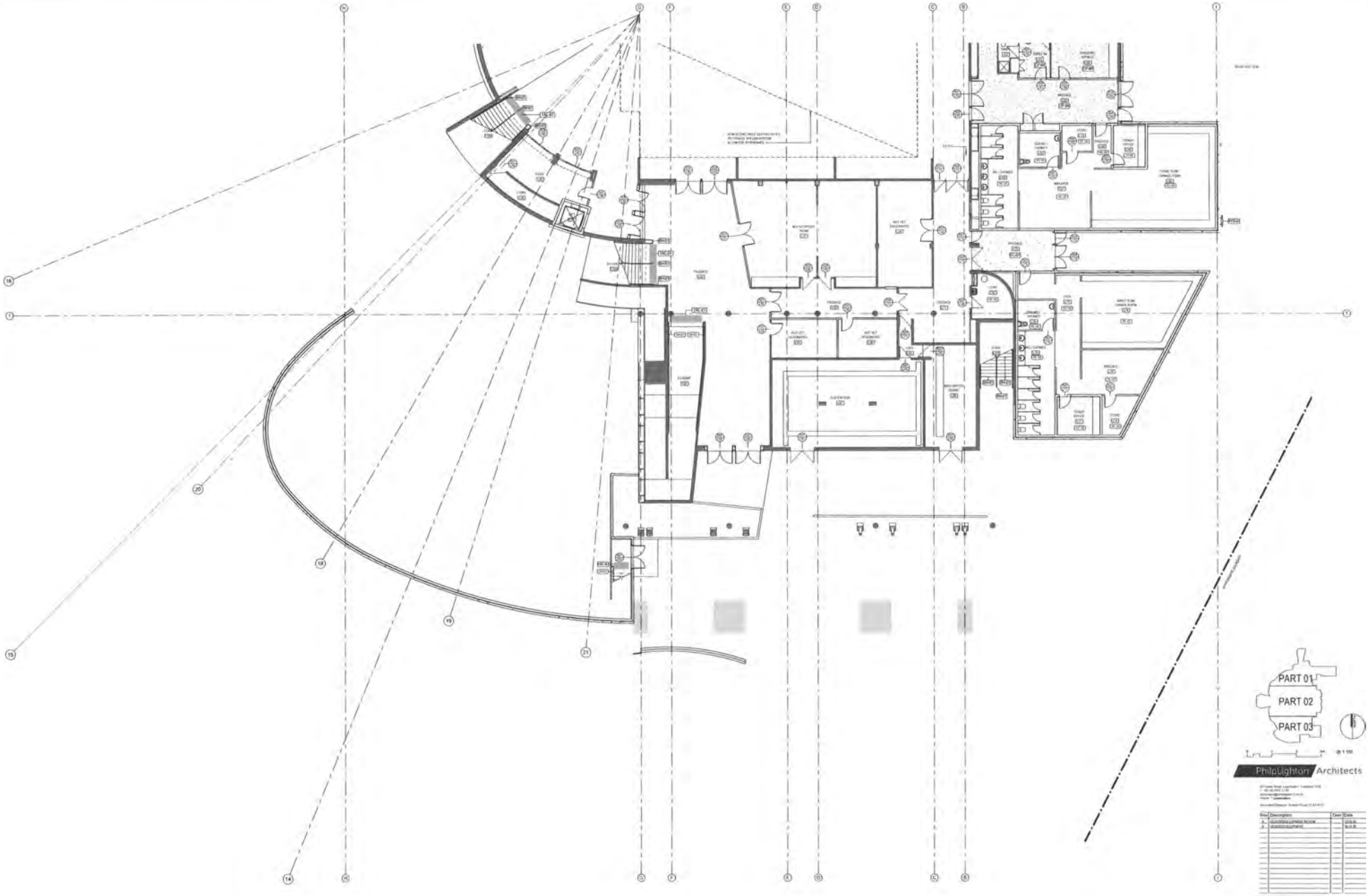
Rev	Description	Date	Chkd
A	ISSUE FOR DA		
B	ISSUE FOR DEVELOPMENT REVIEW		
C	ISSUE FOR DEVELOPMENT		

LB GROUP
DERWENT ENTERTAINMENT CENTRE
651 BRACKEN HILL, BEENLEIGH, Qld 4207

LOWER GROUND - PART 02

DESIGN DEVELOPMENT

Drawn By: AT	Date: 23.10.20	Project Number: 20.316	
Scale: 1:100 @ A0 / 1:200 @ A3	Date: 30.10.20		
Drawing No: A1901		Rev: C	



PART 01
PART 02
PART 03

PhilpLighton Architects

LX GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

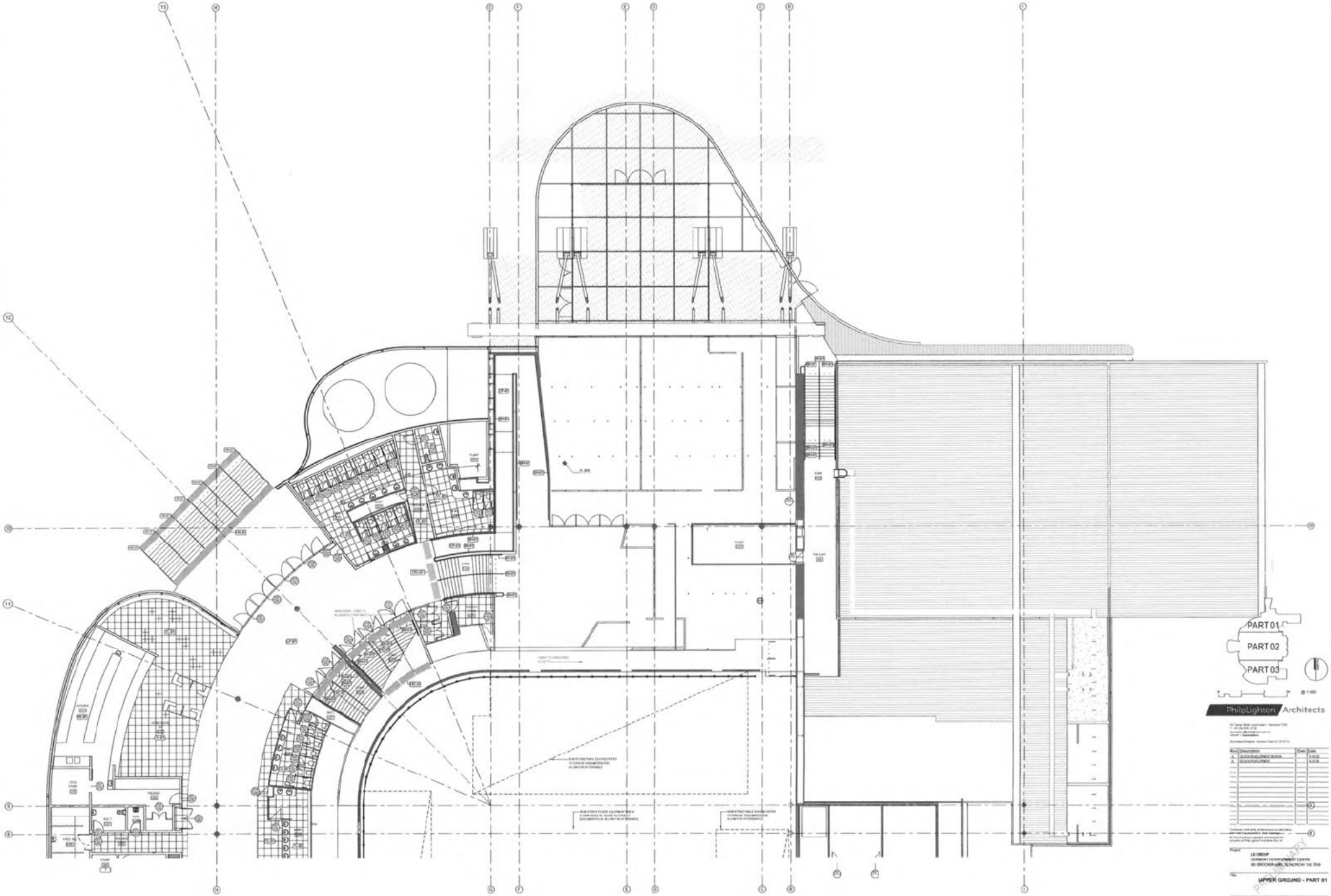
LOWER GROUND - PART 03

DESIGN DEVELOPMENT

20.316

A1002

B



PhilpLighton Architects

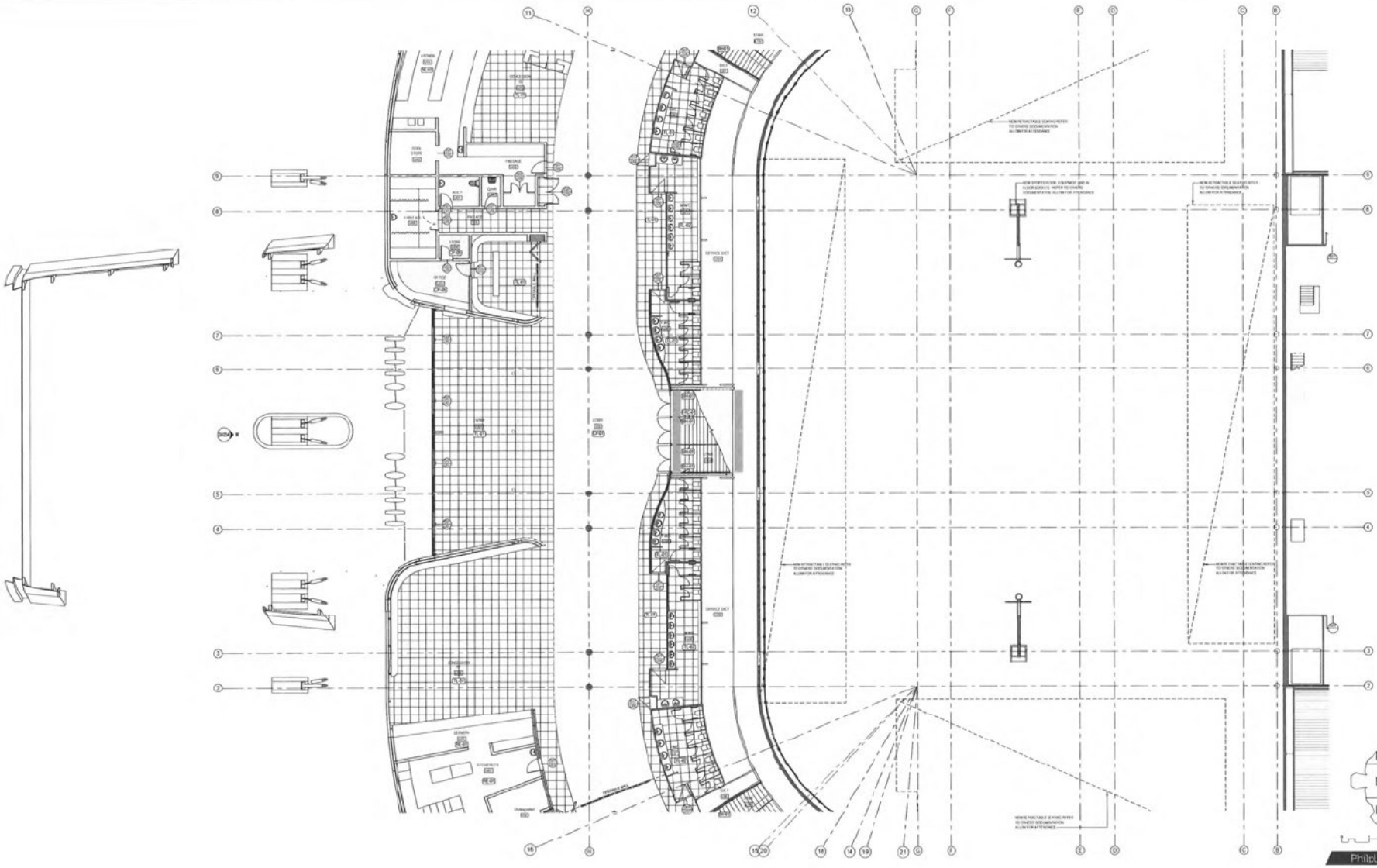
Rev	Description	Date
A	DESIGN DEVELOPMENT REVIEW	8.10.20
B	DESIGN DEVELOPMENT	6.07.21

Project
LK GROUP
CENTENNIAL CHILD REHABILITATION CENTRE
601 BRODER BVD, SLIVNORAH 140.7510

Title
UPPER GROUND - PART 01

Issue
DESIGN DEVELOPMENT

Drawn By	Eta	Paper	A0
Checked		Date	16.10.21
Drawing No	A1003	Project Number	20.318
		Rev	B



PhilpLighton Architects

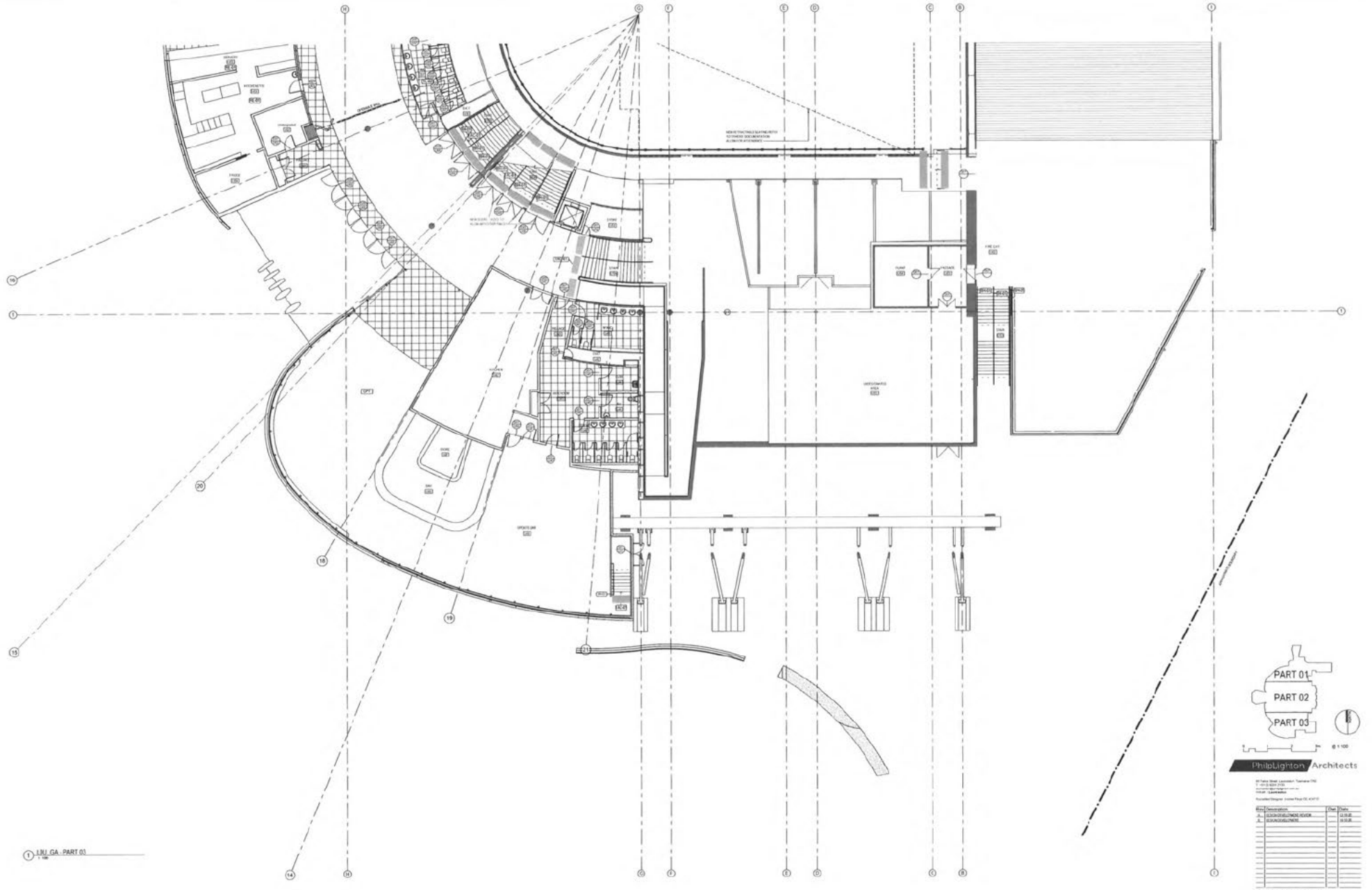
Rev	Description	Dwn	Date
A			
B			

Project
LX GROUP
ELEMENT EXPERIENCE CENTRE
601 BROKER BVD, SEMORORY TAS 7018

Title
UPPER GROUND - PART 02

Issue
DESIGN DEVELOPMENT

Drawn by	EM	Paper	A2	Project Number
Scale		Date	16.10.20	20.318
Drawing No	A1004			Rev B



1 UU_GA - PART 03
1 : 100

PART 01
PART 02
PART 03

0 1m 2m @ 1:100

PhilpLighton Architects

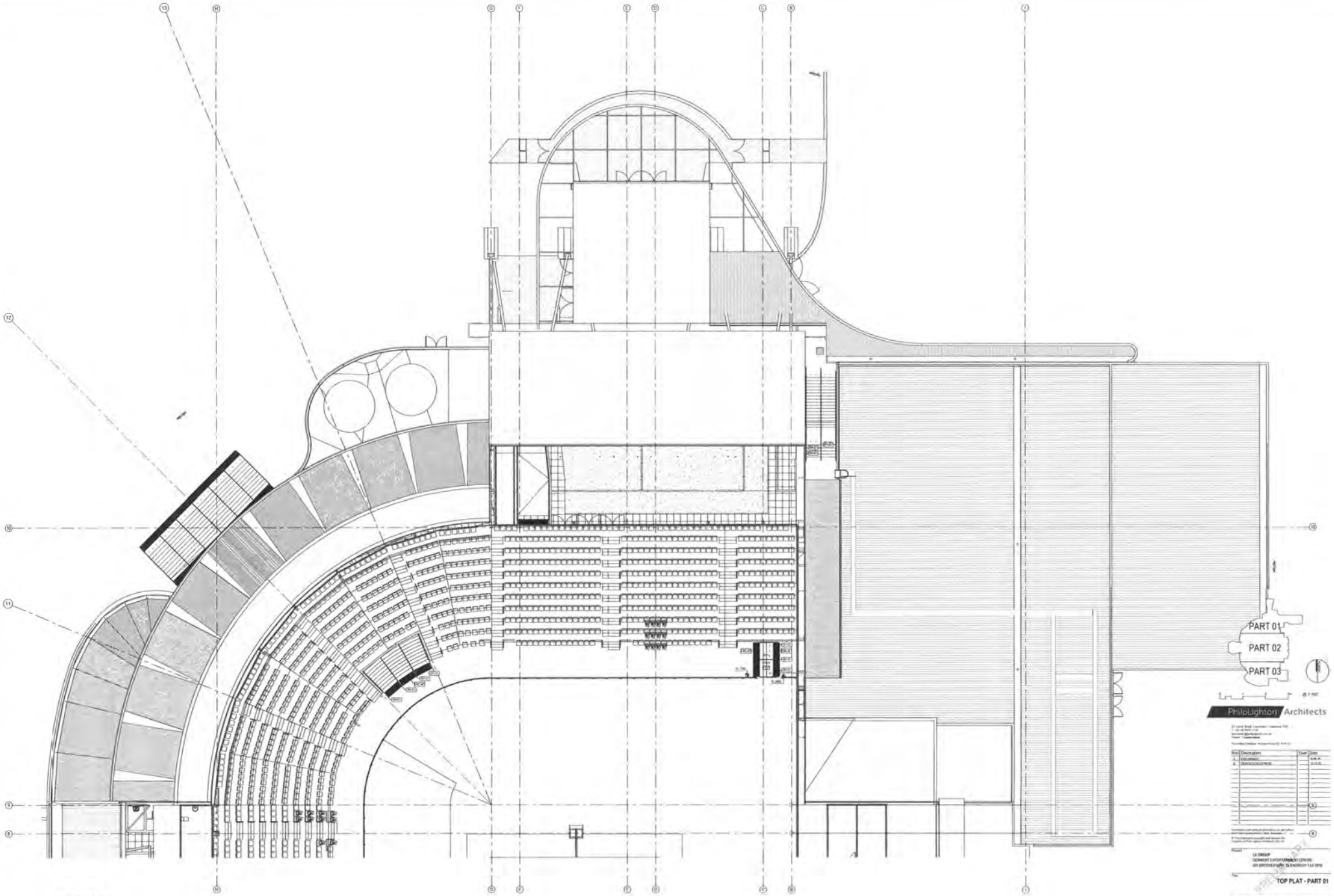
Rev	Description	Chkd	Date
A	ISSUED FOR DEVELOPMENT REVIEW		12.09.25
B	ISSUED FOR DEVELOPMENT		15.10.25

Project
LK GROUP
DERWENT ENTERTAINMENT CENTRE
401 BRIDGEWATER, BLENDROY TAS 7010

Title
UPPER GROUND - PART 03

Issue
DESIGN DEVELOPMENT

Drawn by	Paper	Project Number
EM	A1	20.318
Scale	Date	
	15.10.25	
Drawing No.		Rev.
A1005		B



1 L02_CA - PART 01

PhiloLighton Architects

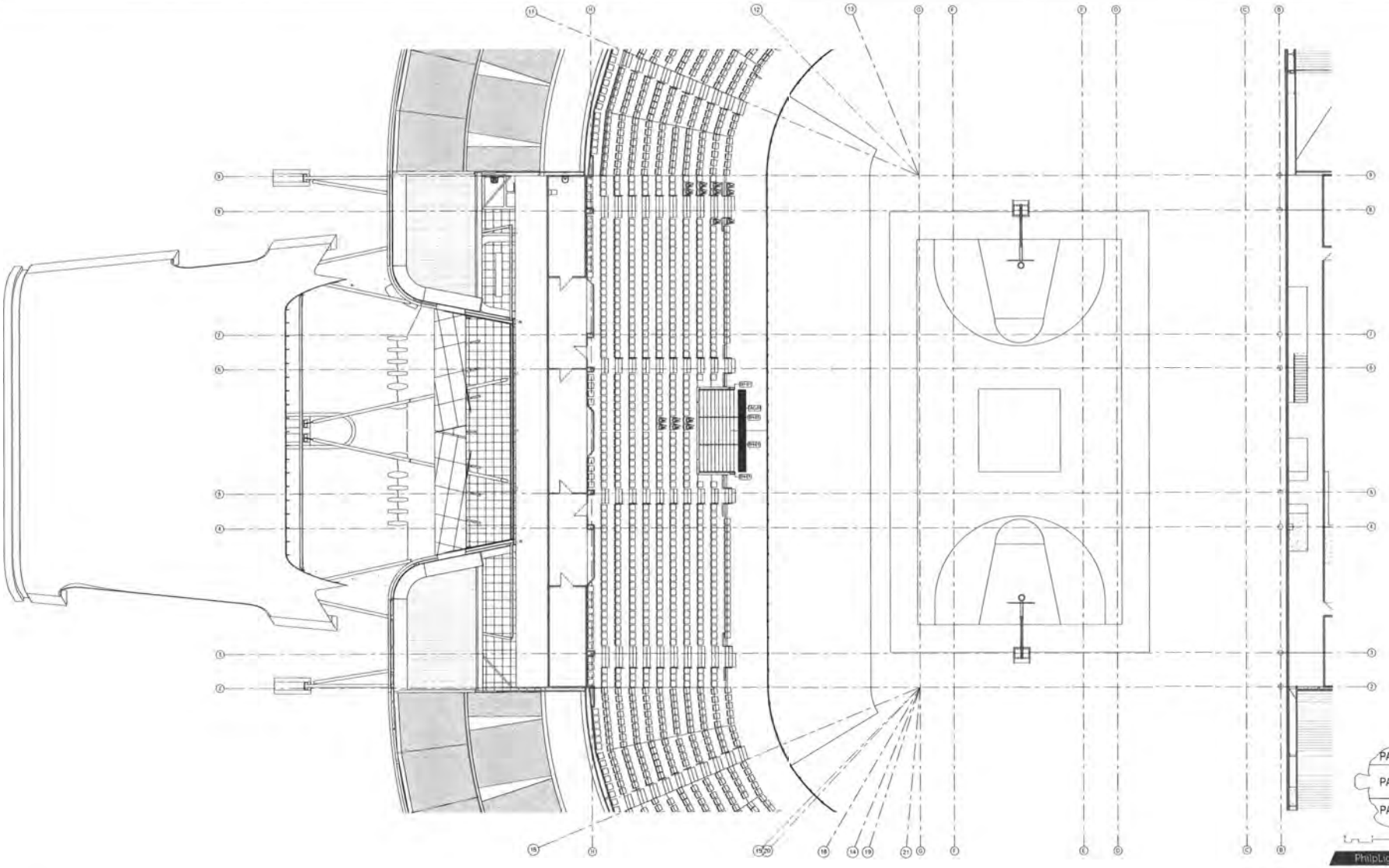
Rev	Description	Chkd	Date
A	ISSUE FOR DA		
B	DESIGN DEVELOPMENT		

LK GROUP

TOP PLAT - PART 01

DESIGN DEVELOPMENT

Drawn By	JT	Date	02	Project Number
Scale		Date	10.10.25	20.318
Drawing No.	A1006		Rev.	B



1 L02_GA - PART 02
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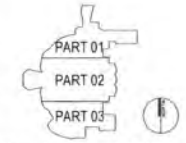


PhilpLighton Architects

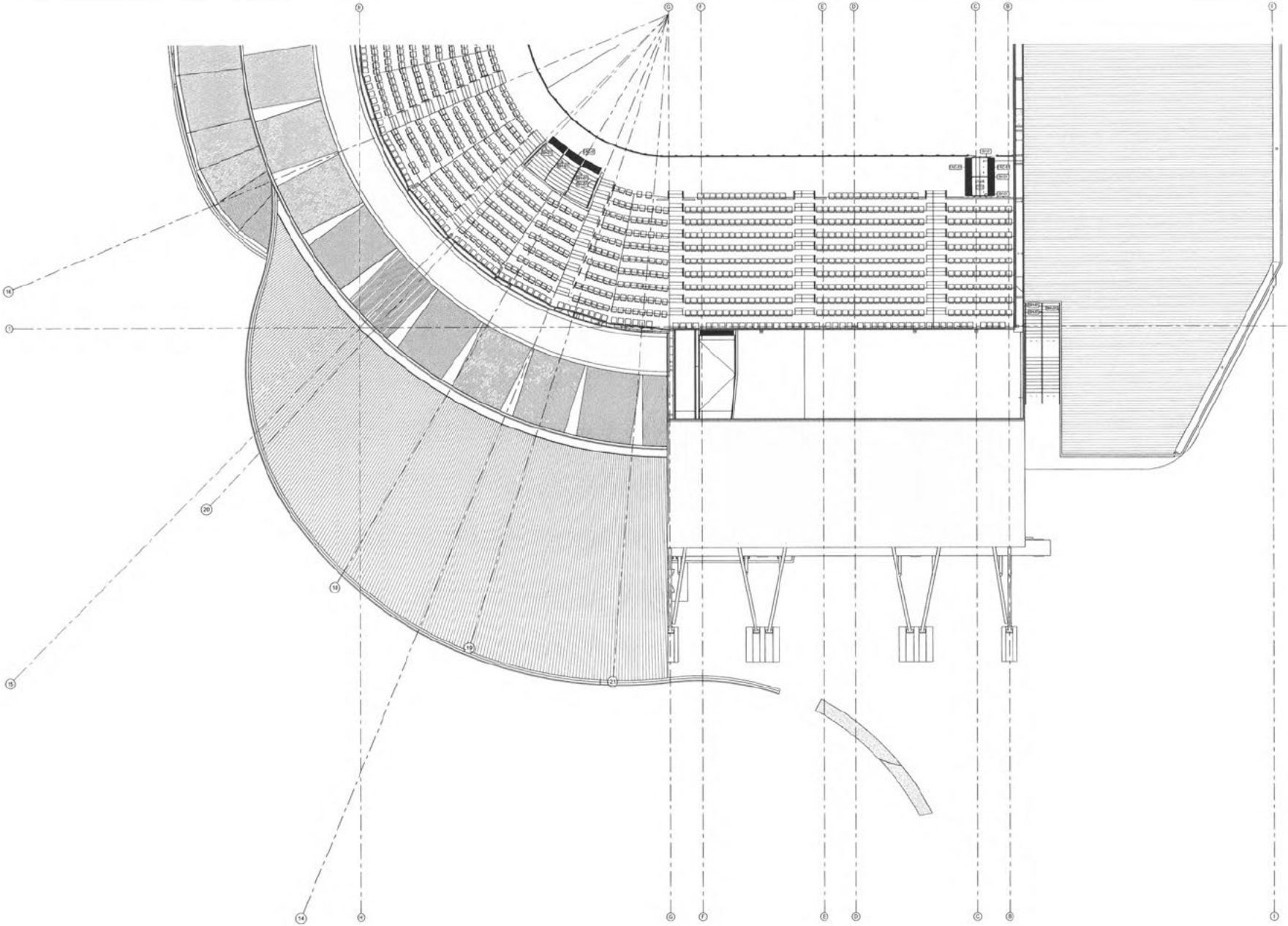
Rev	Description	Date	Dwn
A	DEVELOPED DESIGN		

LK GROUP
DERWENT EVENT & CONVENTION CENTRE
655 BRIDGE ROAD, GLENORCHY TAS 7010

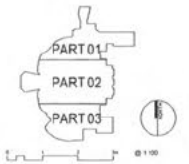
TOP PLAT - PART 02

DESIGN DEVELOPMENT

Drawn By	Appd	Project Number
JT	AP	20.318
Scale	Date	
	16.10.20	
Drawing No.		Rev
A1007		A



1 L02 GA - PART 03
1 : 100



@ 1:100

PhilipLighton Architects

Rev	Description	Dwn	Date
A	DESIGN DEVELOPMENT		19.10.20

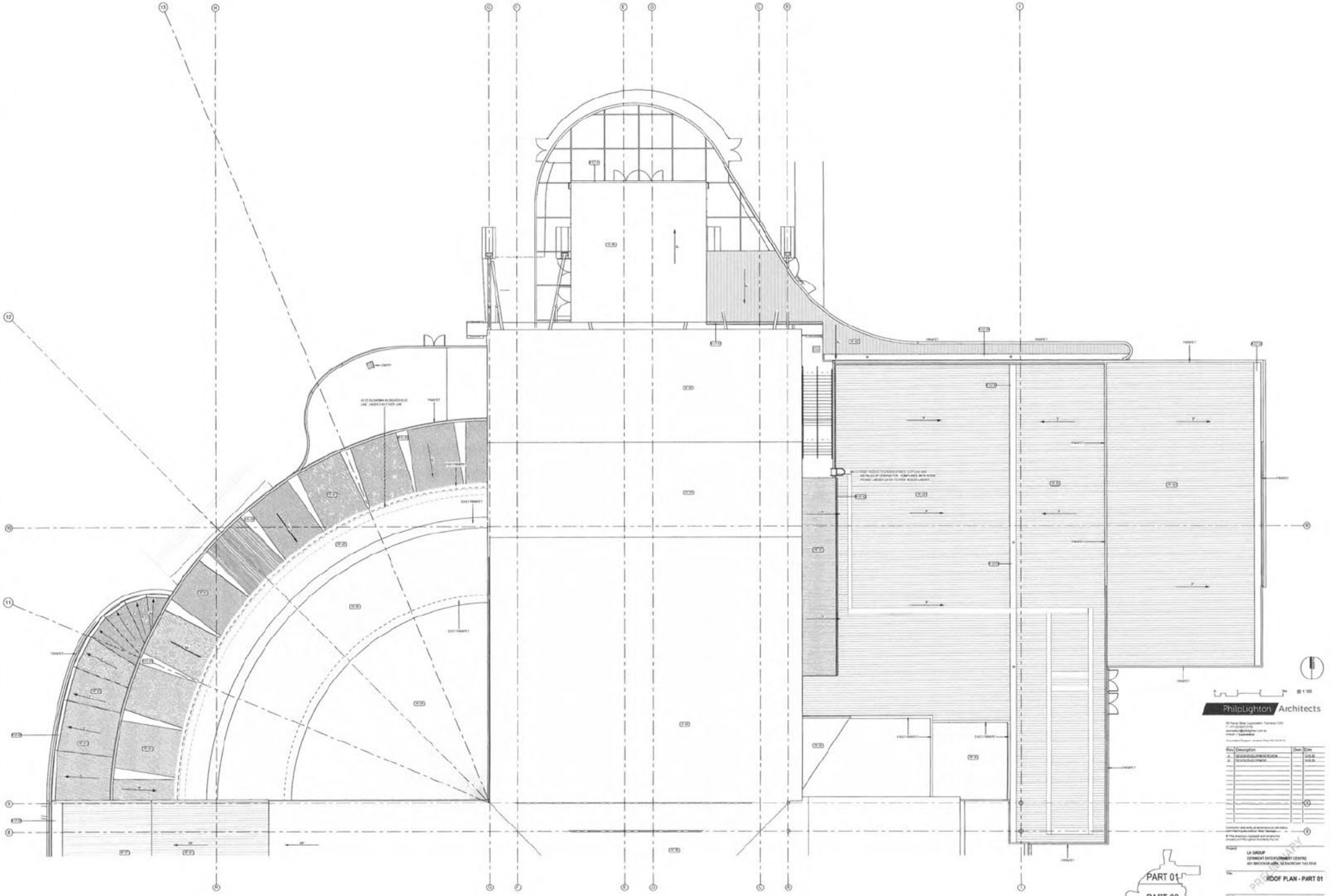
Project
LX GROUP
DEPARTMENT OF HUMANITY CENTRE
661 BROOKES HILL, TENDERON TAS 7510

Title
TOP FLAT - PART 03

PRELIMINARY

Issue
DESIGN DEVELOPMENT

Drawn by	Rev	Project Number
SS	AF	20318
Check	Date	
	19.10.20	
Drawing No		Rev
A1004		A



1 L03_GA - PART 01
1:100

PART 01
PART 02
PART 03

PhilipLighton Architects

Rev	Description	Dwn	Date
A	DESIGN DEVELOPMENT REVIEW		12.05.20
B	DESIGN DEVELOPMENT		18.05.20

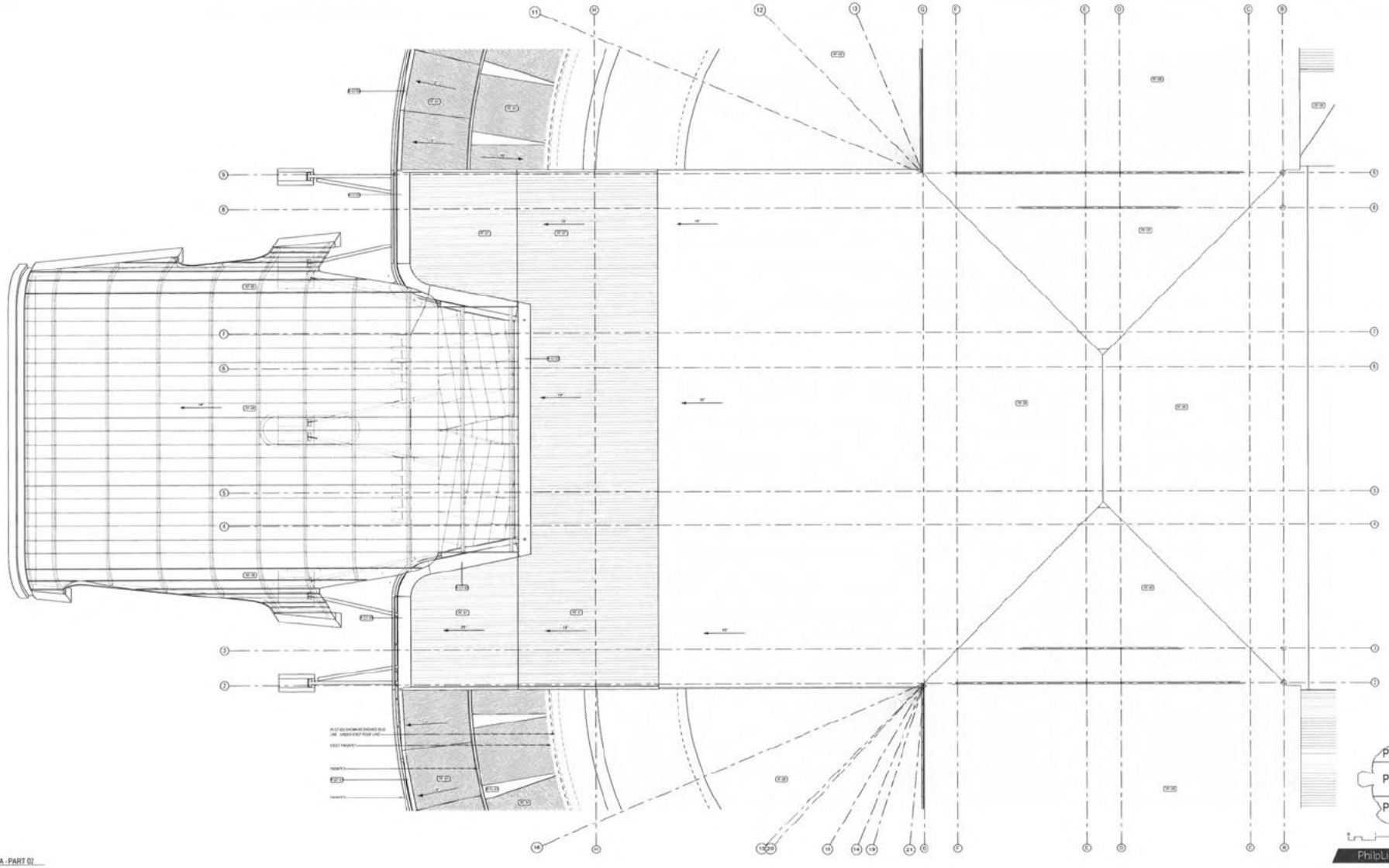
Project
LX GROUP
DERWENT ENTERTAINMENT CENTRE
601 MACQUARIE WHARF, SANDY BAY, TASMANIA

Title
ROOF PLAN - PART 01

PRELIMINARY

Issued
DESIGN DEVELOPMENT

Drawn by	Plot	Project Number
SD	AS	20.318
Scale	Date	
As indicated @ A1	18.05.20	
Drawing No		Rev
A1009		B



1 L03_GA - PART 02
1 : 100

PART 01
PART 02
PART 03

@ 1:100

PhilpLighton Architects

Rev	Description	Dwn	Date
A	ISSUED FOR PLANNING REVIEW		12.10.20
B	ISSUED FOR DEVELOPMENT		29.10.20

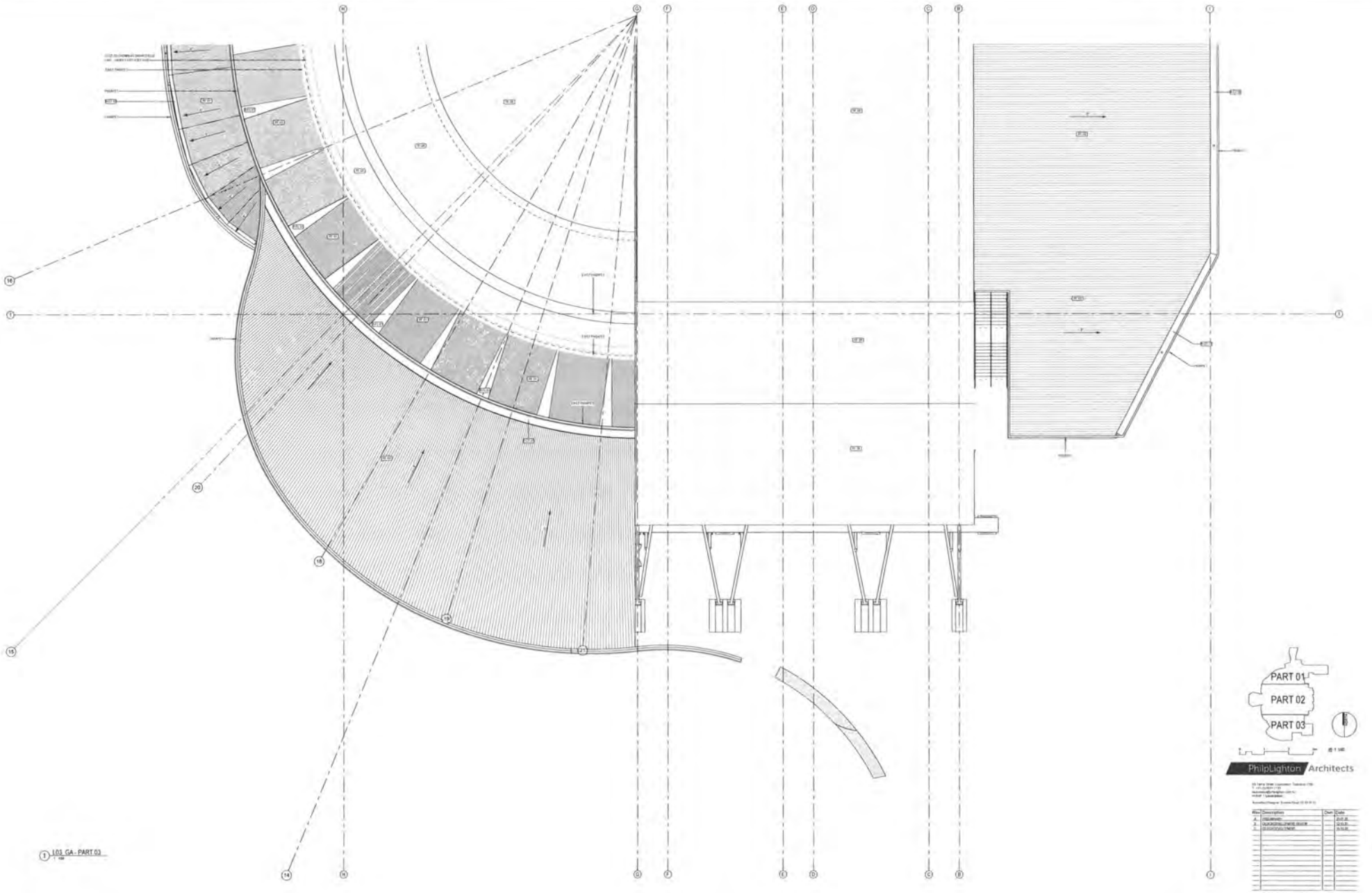
Client
UK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BRIDGEWATER, GLENORCHY TAS 7010

Title
ROOF PLAN - PART 02

PRELIMINARY

Status
DESIGN DEVELOPMENT

Drawn by	MS	Scale	A1
Scale	As indicated @ A1	Date	16.10.20
Drawing No.	A1010	Project Number	20.318
		Rev.	B



1 L01 GA - PART 03
1:100

PART 01
PART 02
PART 03

PhilpLighton Architects

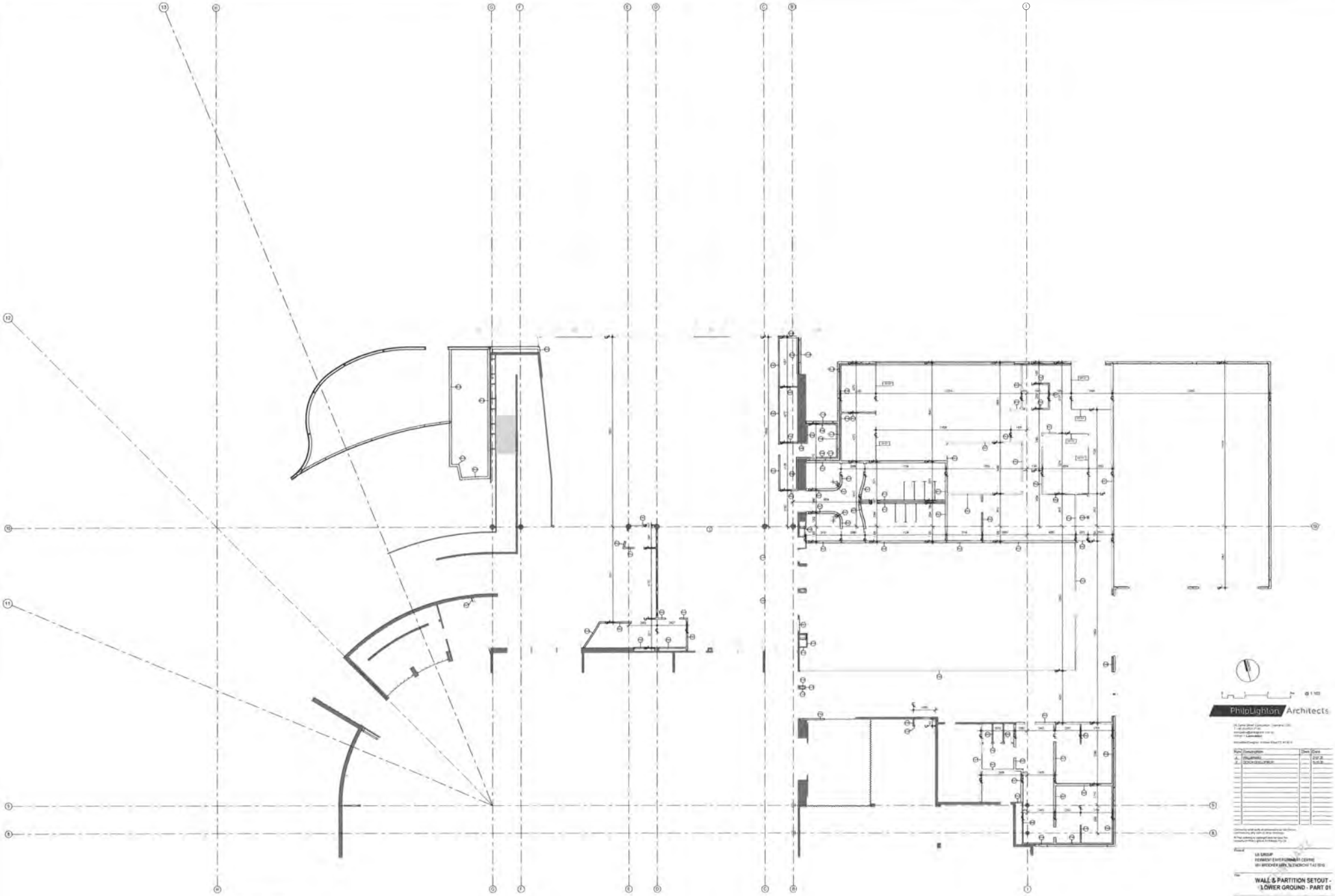
Rev	Description	Chkd	Date
A	ISSUED FOR		20.01.31
B	DEVELOPED PLANNING ISSUE		20.10.30
C	DESIGN DEVELOPMENT		20.10.30

Client
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

Title
ROOF PLAN - PART 03

Status
DESIGN DEVELOPMENT

Drawn by: SS	Rev: All	Project Number: 20.318	
Scale: As indicated @ A0	Date: 15.10.20		
Drawing No: A1011		Rev: C	



1 LGL_WPSET - PART 01
1 : 100

PhilpLighton Architects

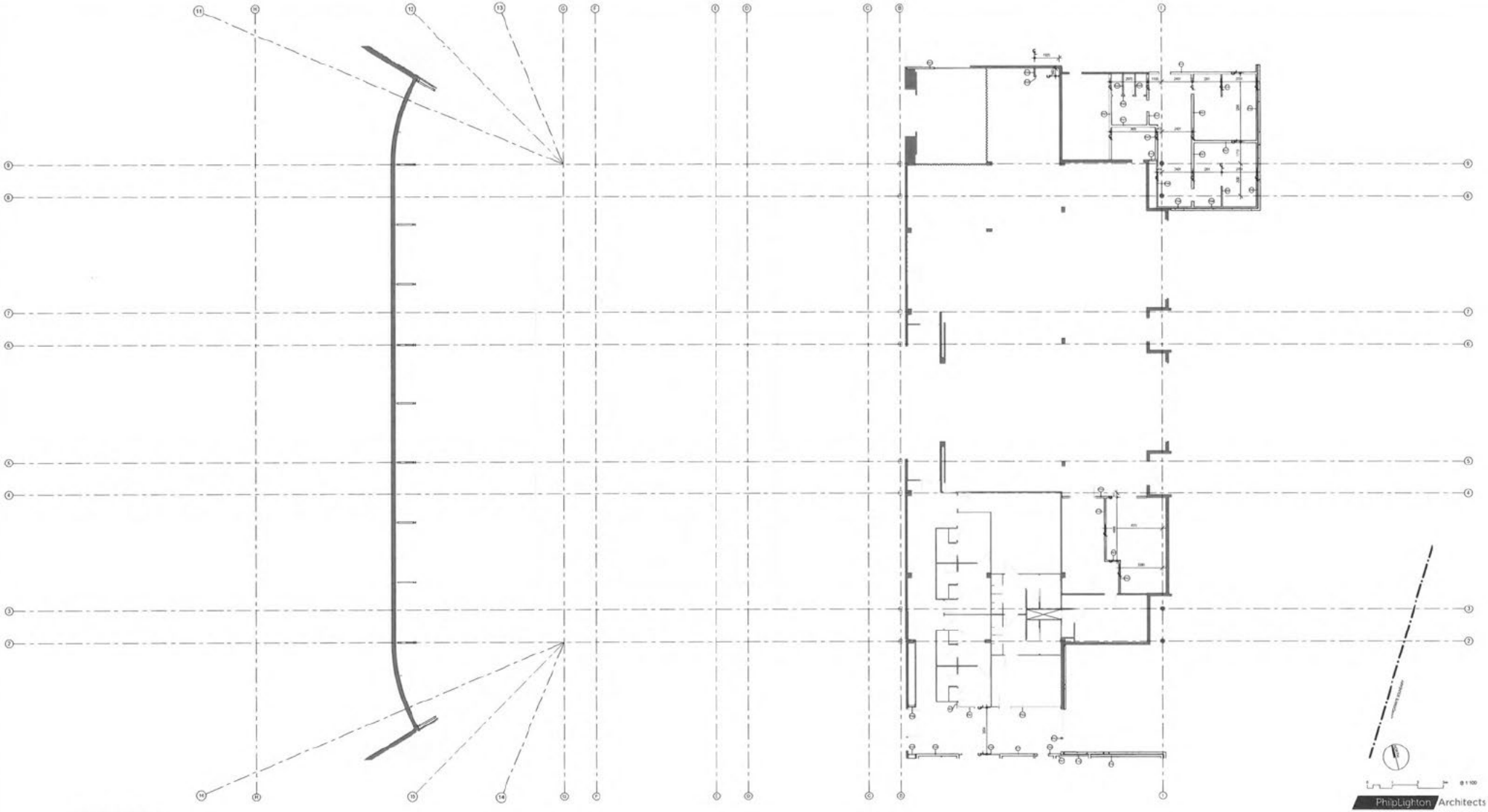
Rev	Description	Chkd	Date
A	PRELIMINARY		23.07.20
B	DESIGN DEVELOPMENT		15.10.20

LG GROUP
HERMIT ESTATE REDEVELOPMENT CENTRE
101 BROOKER AVEN, BLTHBROOK T 6.0 3010

WALL & PARTITION SETOUT - LOWER GROUND - PART 01

DESIGN DEVELOPMENT

Drawn By	DM	Plot	23
Scale	1 : 100 @ A0	Date	15.10.20
Project Number			20.319
Drawing No	A1600		
Rev	B		



1 LOL_WPSET - PART 02
1 : 100

@ 1:100

PhilpLighton Architects

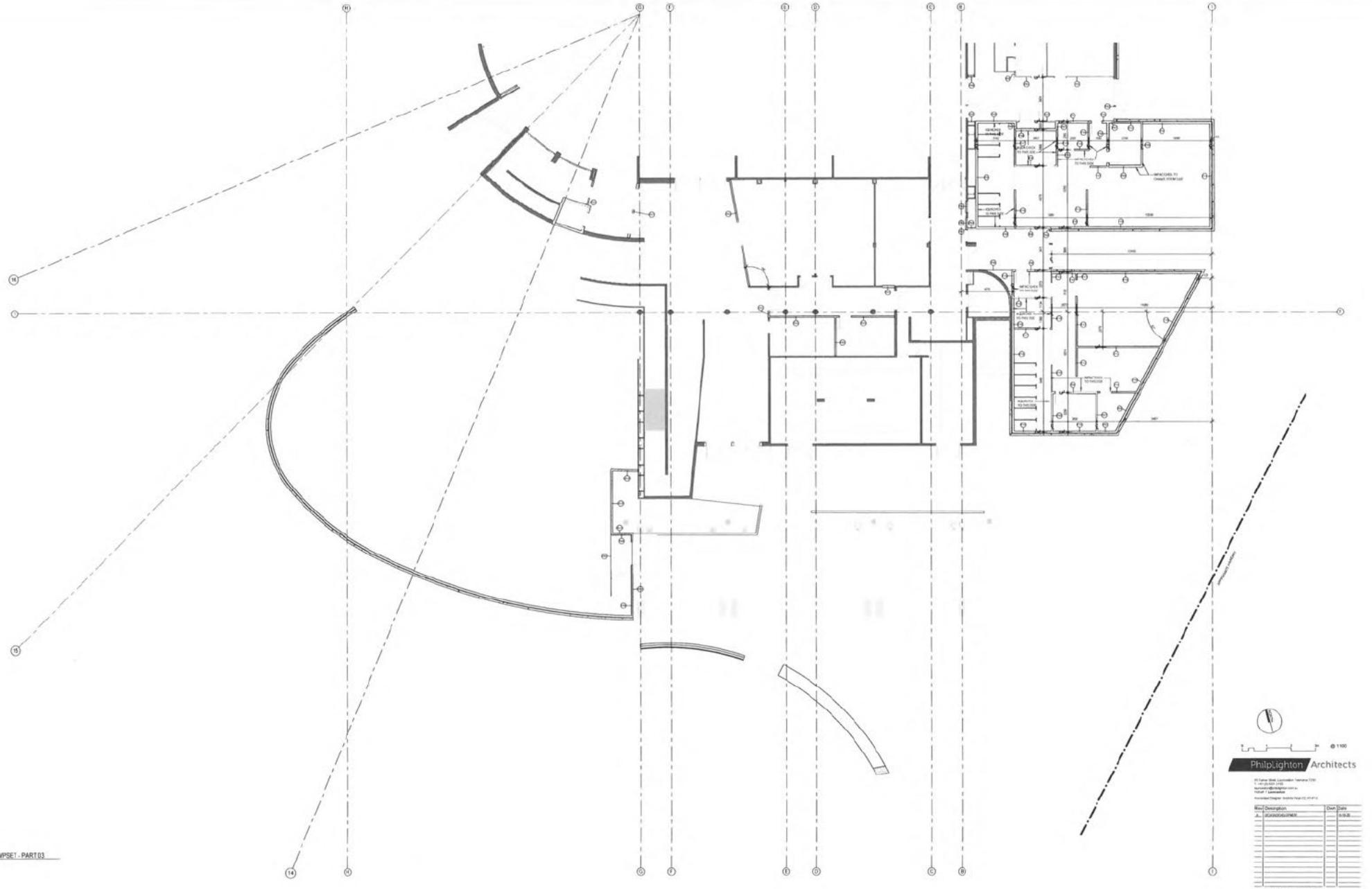
Rev	Description	Chkd	Date
A	ISSUED FOR DEVELOPMENT		15.10.20

Project
LX GROUP
DERRENT ENTERTAINMENT CENTRE
691 BROOKER HWY, TEMPORY TAS 7018

Title
WALL & PARTITION SETOUT - LOWER GROUND - PART 02

Issue
DESIGN DEVELOPMENT

Drawn by	Chkd	Appd	Project Number
Scale 1 : 100 @ A0		Date 15.10.20	20.318
Drawing No. A1501			Rev A



1 LOL WPSET - PART 03

PhilpLighton Architects

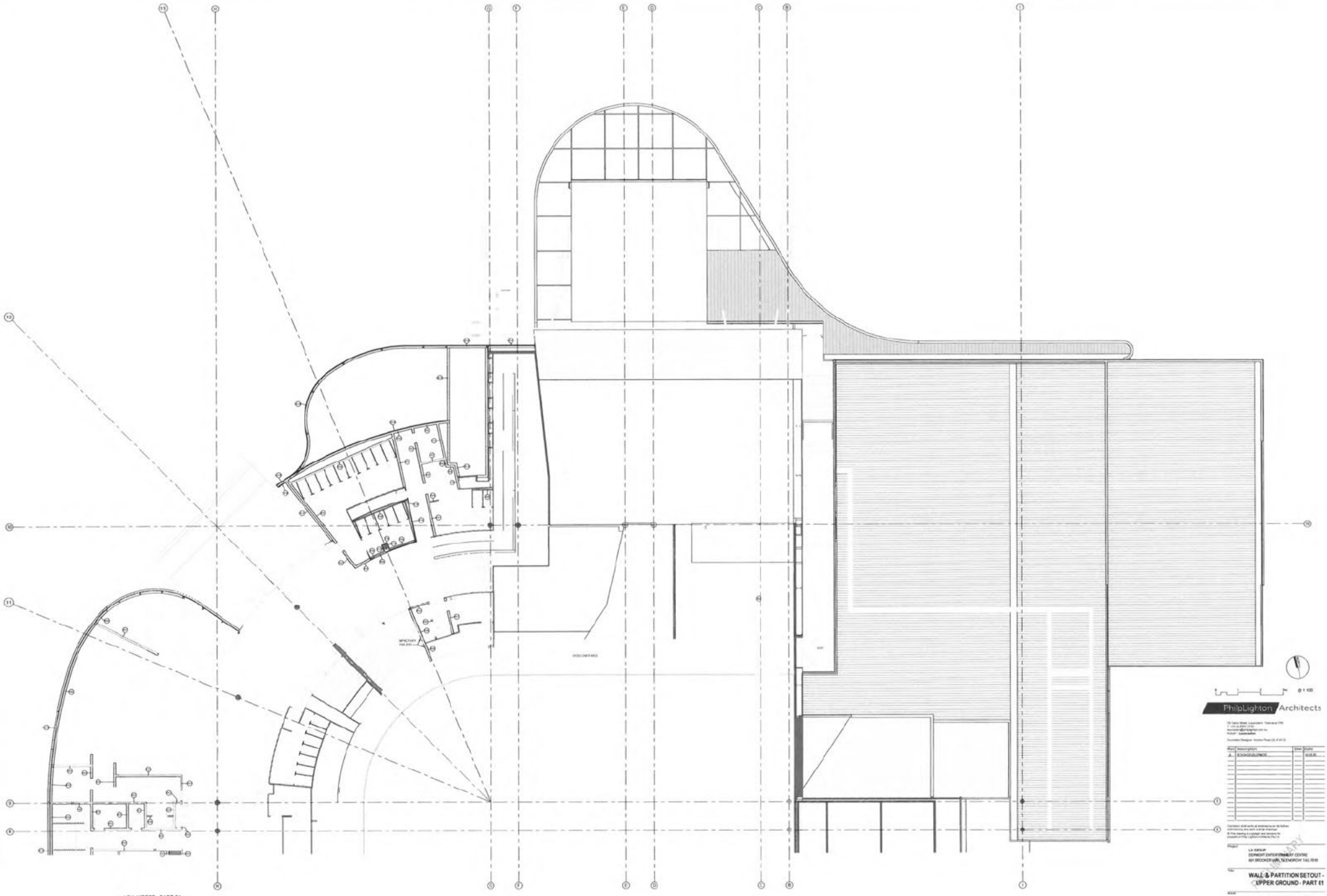
Rev	Description	Dwn	Date
A	ISSUED FOR ELEMENT		15.10.25

Project
LK GROUP
DERIMENT ENTERTAINMENT CENTRE
901 BRICKER ROAD, TELEMORAH TAS 7010

Title
WALL & PARTITION SETOUT - LOWER GROUND - PART 03

Issue
DESIGN DEVELOPMENT

Drawn by	Chkd	Project Number
EM	TP	25.318
Scale: 1 : 100 @ A3	Date: 15.10.25	
Drawing No: A1602	Rev: A	



1 LOU WIPSET - PART 01
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PhilpLighton Architects

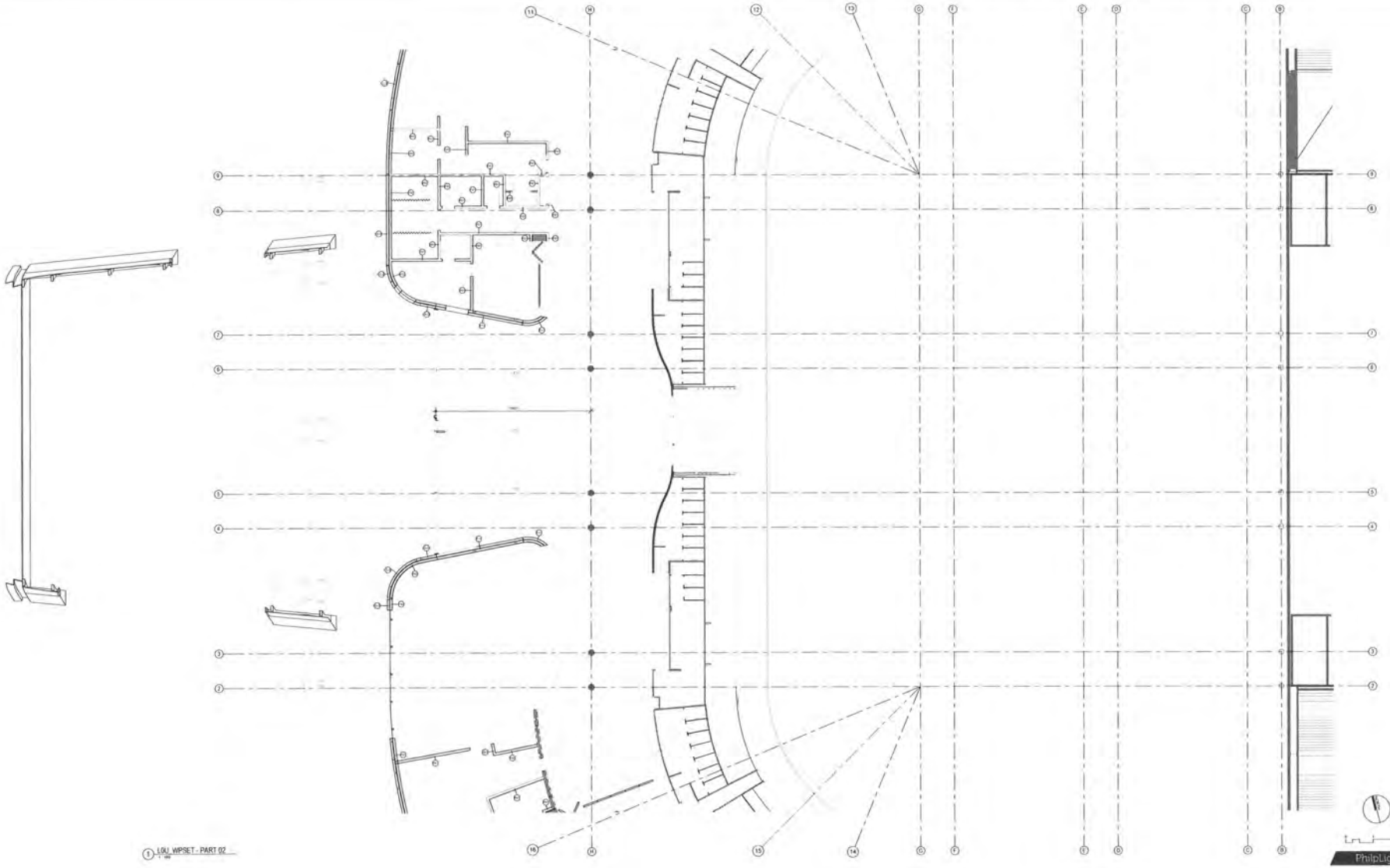
Rev	Description	Dwn	Date
A	ISSUED FOR DEVELOPMENT		16.10.25

Project
LV GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROCKEN HILL, GLENORCHY TAS 7010

Title
WALL & PARTITION SETOUT - UPPER GROUND - PART 01

Issue
DESIGN DEVELOPMENT

Drawn By	EM	Plan 'D' Size	Project Number
Scale	1 : 100 @ A0	16.10.25	20.318
Drawing No	A1003		Rev A



1 LGU_WPSET - PART 02

PhilpLighton Architects

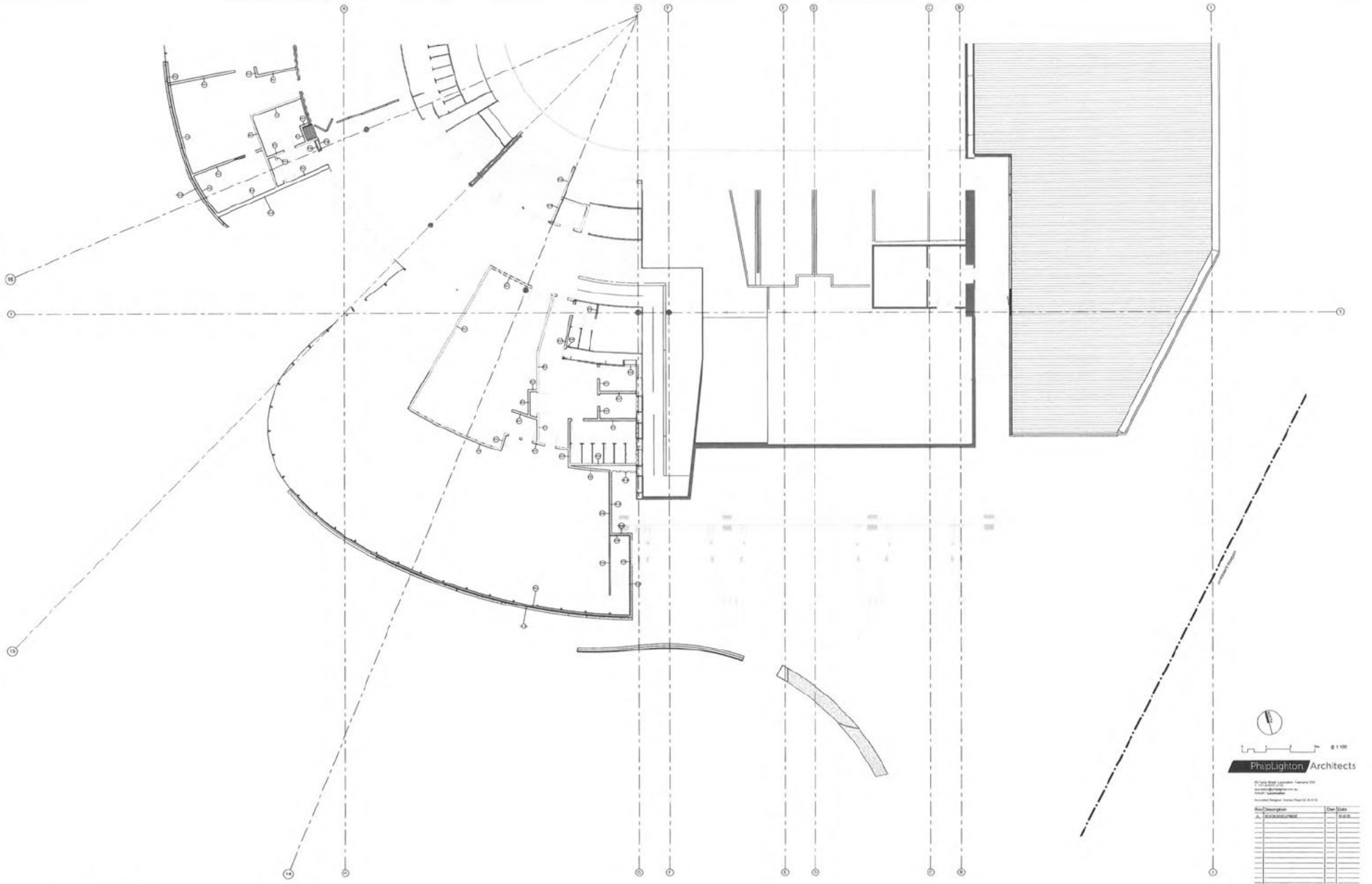
Rev	Description	Chk	Date
A			

LK GROUP
DERWENT ENTERTAINMENT CENTRE
81 BROOKER HWY, GLENORCHY TAS 7010

WALL & PARTITION SETOUT - UPPER GROUND - PART 02

DESIGN DEVELOPMENT

Drawn by:	Chk:	Project Number:	
Date:		20.318	
Drawing No:		Rev:	
A1604		A	



1 LGU_WPSET - PART 01
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PhipLighton Architects

Rev	Description	Dwn	Date
A			

Project
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

Title
WALL & PARTITION SETOUT - UPPER GROUND - PART 03

Issue
DESIGN DEVELOPMENT

Drawn by	Author	Rev	Approved	Project Number
Scale	1 : 100 @ A0	Date	16.10.20	20.318
Drawing No.	A1605			Rev A

INDICATIVE LOOSE FURNITURE AND EQUIPMENT SHOWN ONLY
NOT IN SCOPE / SELECTION AND SPECIFICATION BY OTHERS

PrincipLighton Architects

@ 1:100

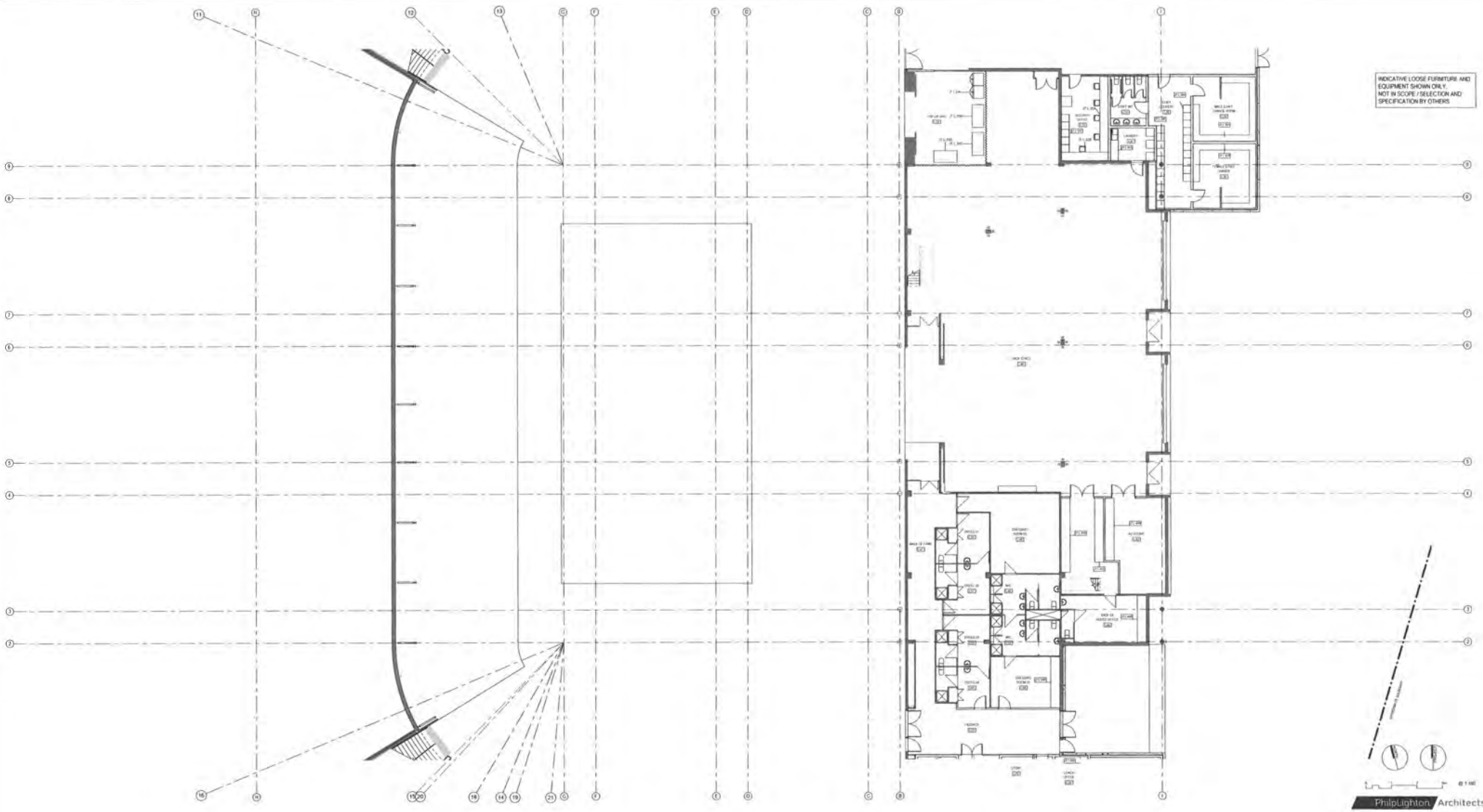
LOOSE FURNITURE & JOINERY - LOWER GROUND - PART 01

DESIGN DEVELOPMENT

2018

A1860

A



INDICATIVE LOOSE FURNITURE AND EQUIPMENT SHOWN ONLY.
NOT IN SCOPE / SELECTION AND SPECIFICATION BY OTHERS

PhilpLighton Architects

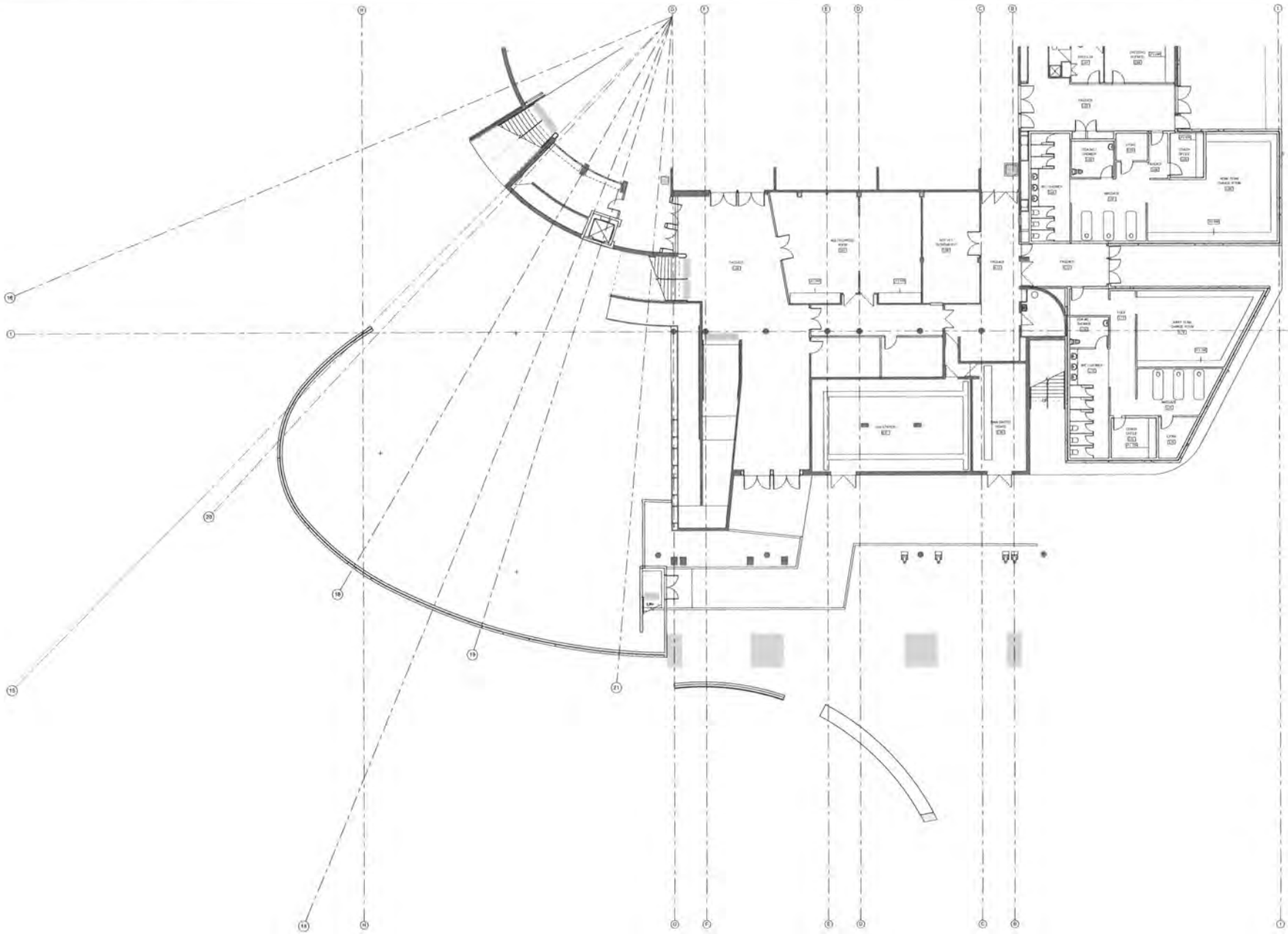
Rev	Description	Dwn	Date
A	DESIGN DEVELOPMENT		15.10.20

Project
LX GROUP
DERWENT ENTERTAINMENT CENTRE
80 BROOKER HWY, GLENORCHY TAS 7010

Title
LOOSE FURNITURE & JOINERY - LOWER GROUND - PART 02

Issue
DESIGN DEVELOPMENT

Drawn by	pp	Plot	Project Number
Date		15.10.20	20.318
Drawing No.	A1801		Rev. A



INDICATIVE LOOSE FURNITURE AND EQUIPMENT SHOWN ONLY
NOT IN SCOPE / SELECTION AND SPECIFICATION BY OTHERS

PhilpLighton Architects

Rev	Description	Date	Date
A	ISSUED FOR PLANNING		19.03.20

VICTORIOUS
DEVONPORT ENTERTAINMENT CENTRE
91 BROOKER AVE, DEVONPORT TAS 7310

LOOSE FURNITURE & JOINERY - LOWER GROUND - PART 03

DESIGN DEVELOPMENT

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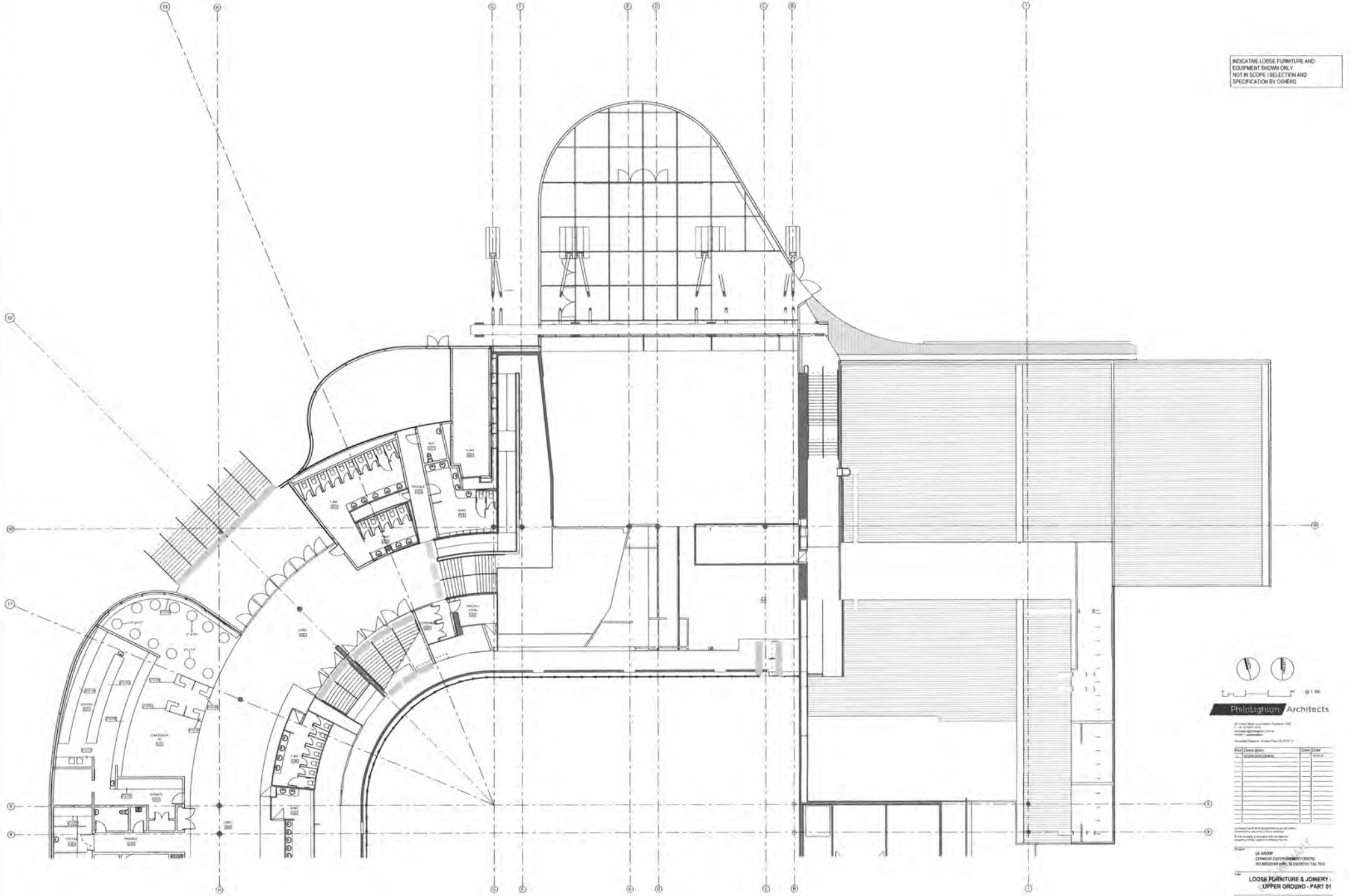
Drawing No.:	A1802	Rev.:	A


INDICATIVE LOOSE FURNITURE AND EQUIPMENT SHOWN ONLY.
NOT IN SCOPE / SELECTION AND SPECIFICATION BY OTHERS
PhilipLighton Architects
LX GROUP
LOOSE FURNITURE & JOINERY - UPPER GROUND - PART 01
DESIGN DEVELOPMENT
20.318
A1803
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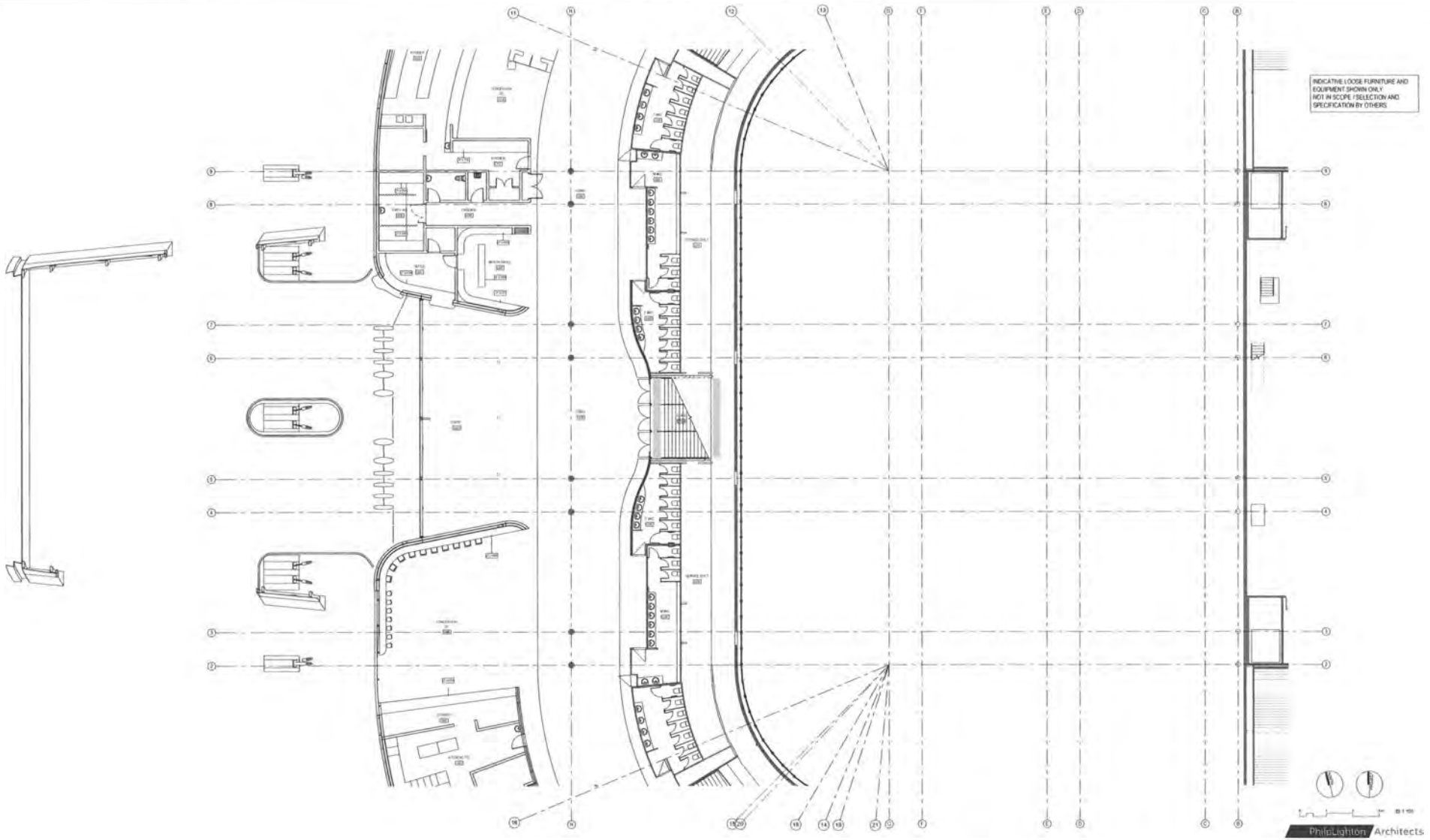


PhilipLighton Architects

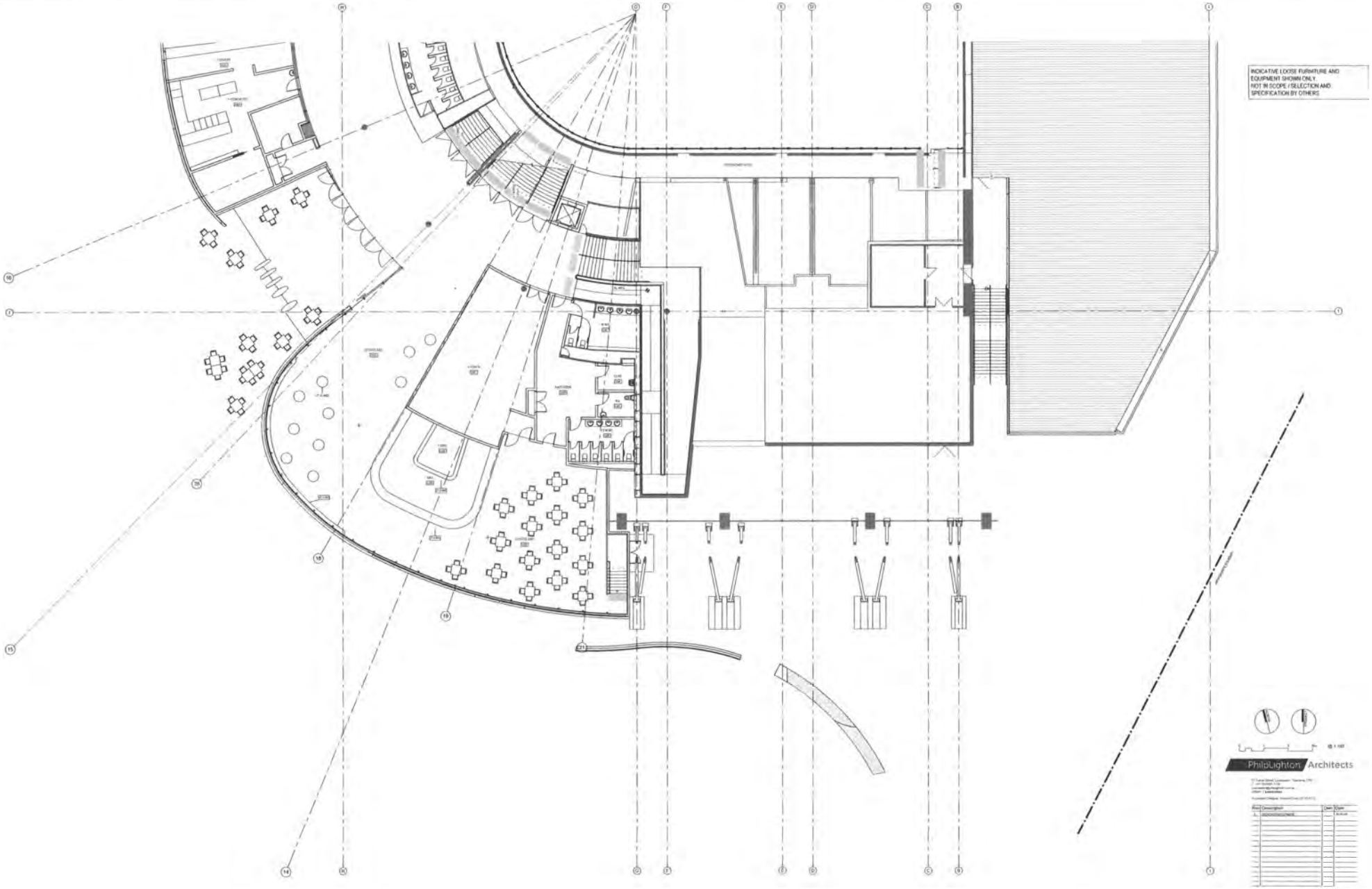
LOOSE FURNITURE & JOINERY - UPPER GROUND - PART 02

DESIGN DEVELOPMENT

20.318

A1804

A



INDICATIVE LOOSE FURNITURE AND EQUIPMENT SHOWN ONLY. NOT IN SCOPE / SELECTION AND SPECIFICATION BY OTHERS

PhilpLighton Architects

LE GROUP

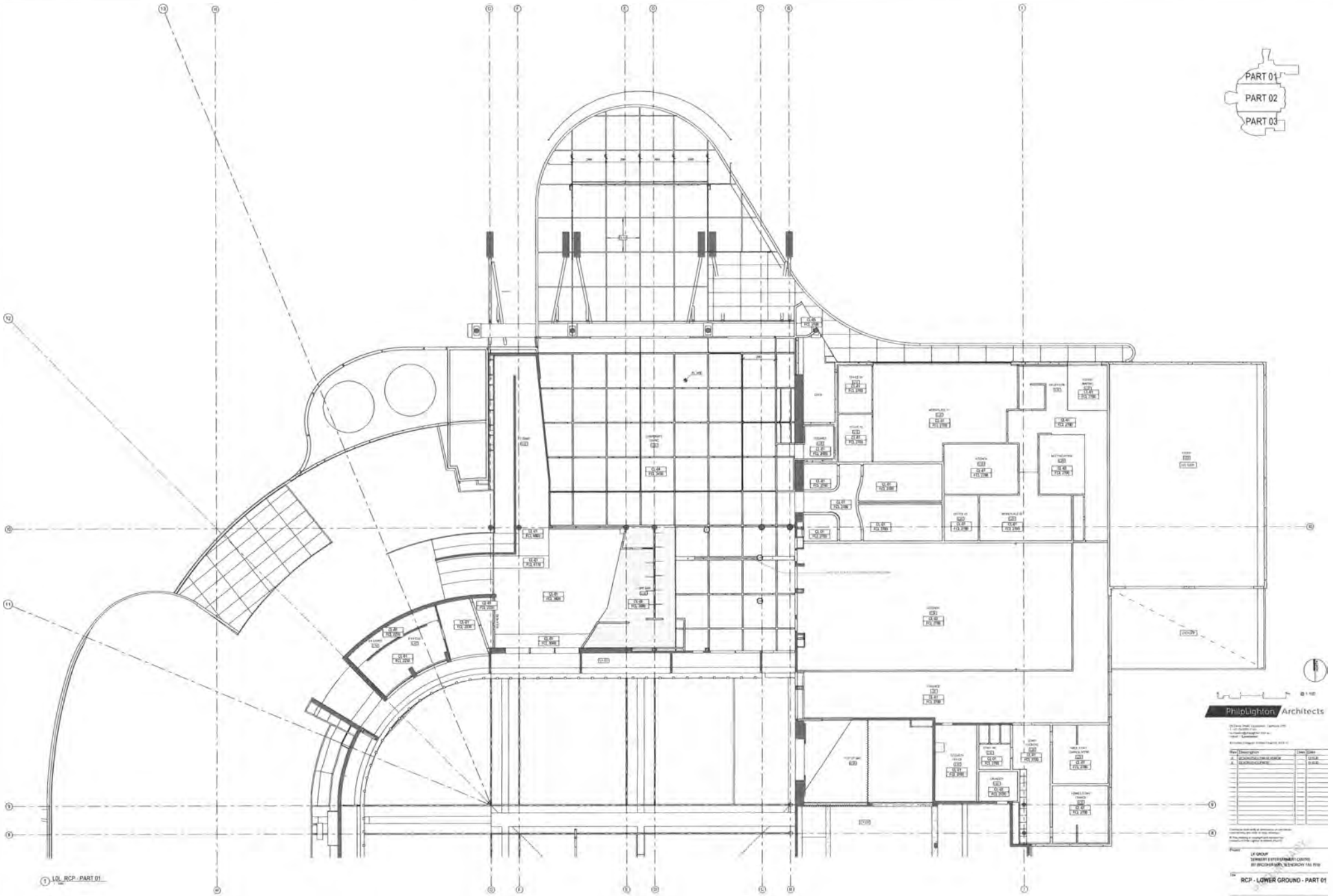
LOOSE FURNITURE & JOINERY - UPPER GROUND - PART 03

DESIGN DEVELOPMENT

20.319

A1805

A



PhilipLighton Architects

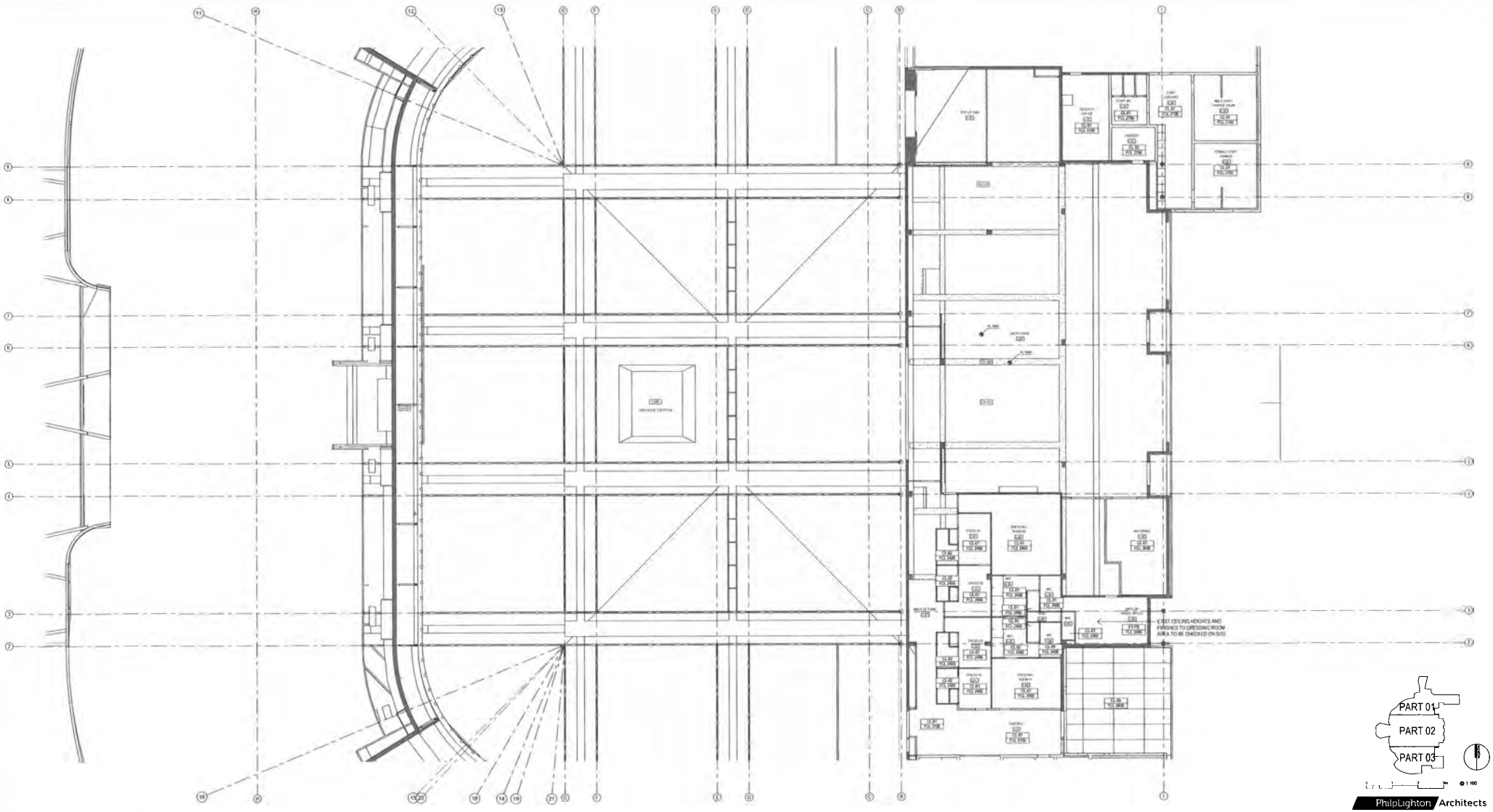
Rev	Description	Date	Chkd
A			
B			

LK GROUP
TERMINUS ENTERTAINMENT CENTRE
BRUCE HIGHWAY, SUNSHINE COAST

RCP - LOWER GROUND - PART 01

DESIGN DEVELOPMENT

Drawn By: JDW	Paper Size: A1		Project Number:
Scale: As indicated @ A0	Date: 05.10.20		20.318
Drawing No: A2000		Rev: B	



① L0L RCP - PART 02
1 : 100

0 1 2 3m @ 1 100

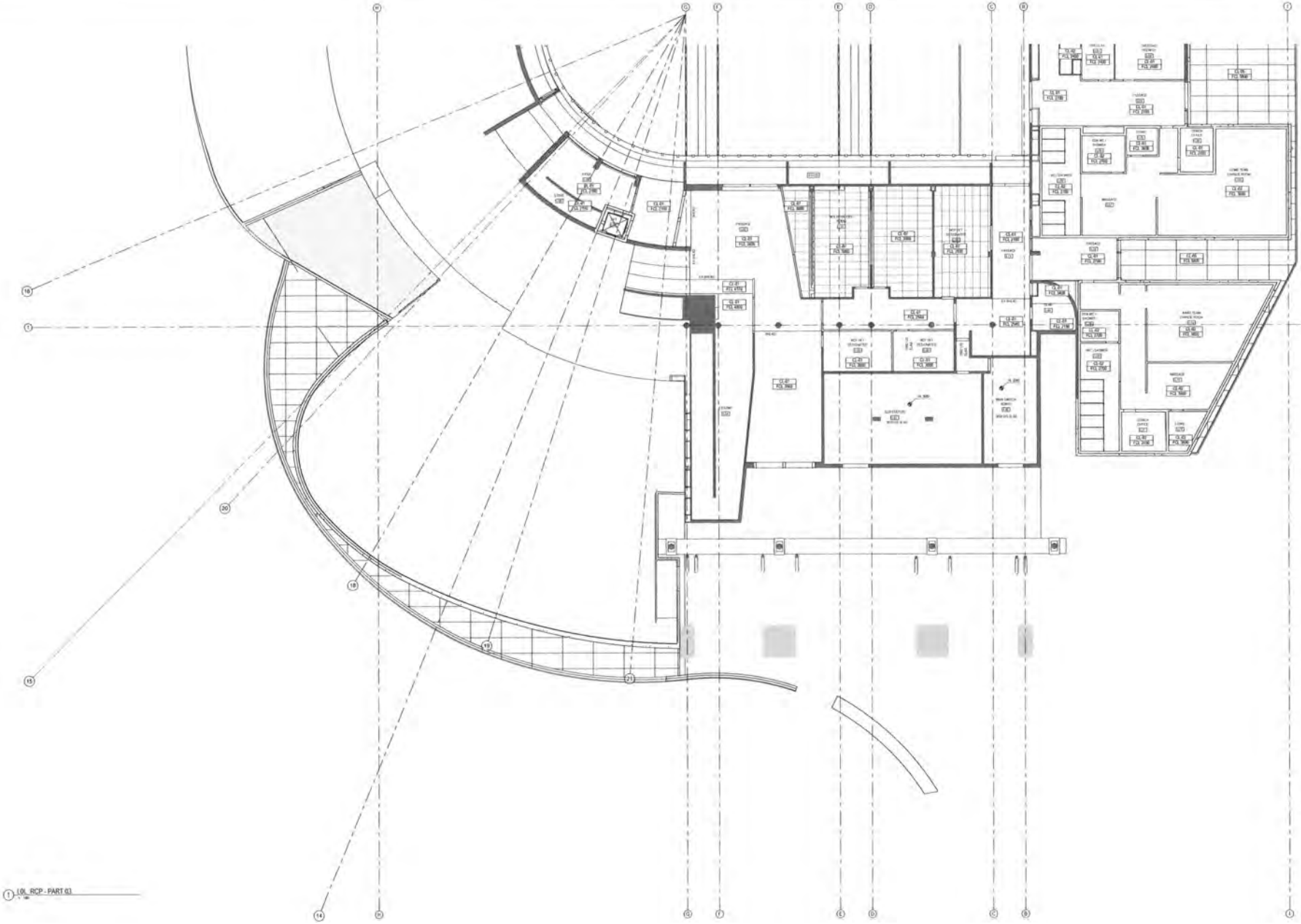
PhilpLighton Architects

Project
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

Title
RCP - LOWER GROUND - PART 02

Issue
DESIGN DEVELOPMENT

Drawn by JF	Appr. AF	Project Number
Scale As indicated @ A0	Date 16-10-20	20.318
Drawing No. A2001		Rev B



1 LGL_RCP - PART 03
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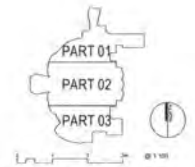

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PhilpLighton Architects

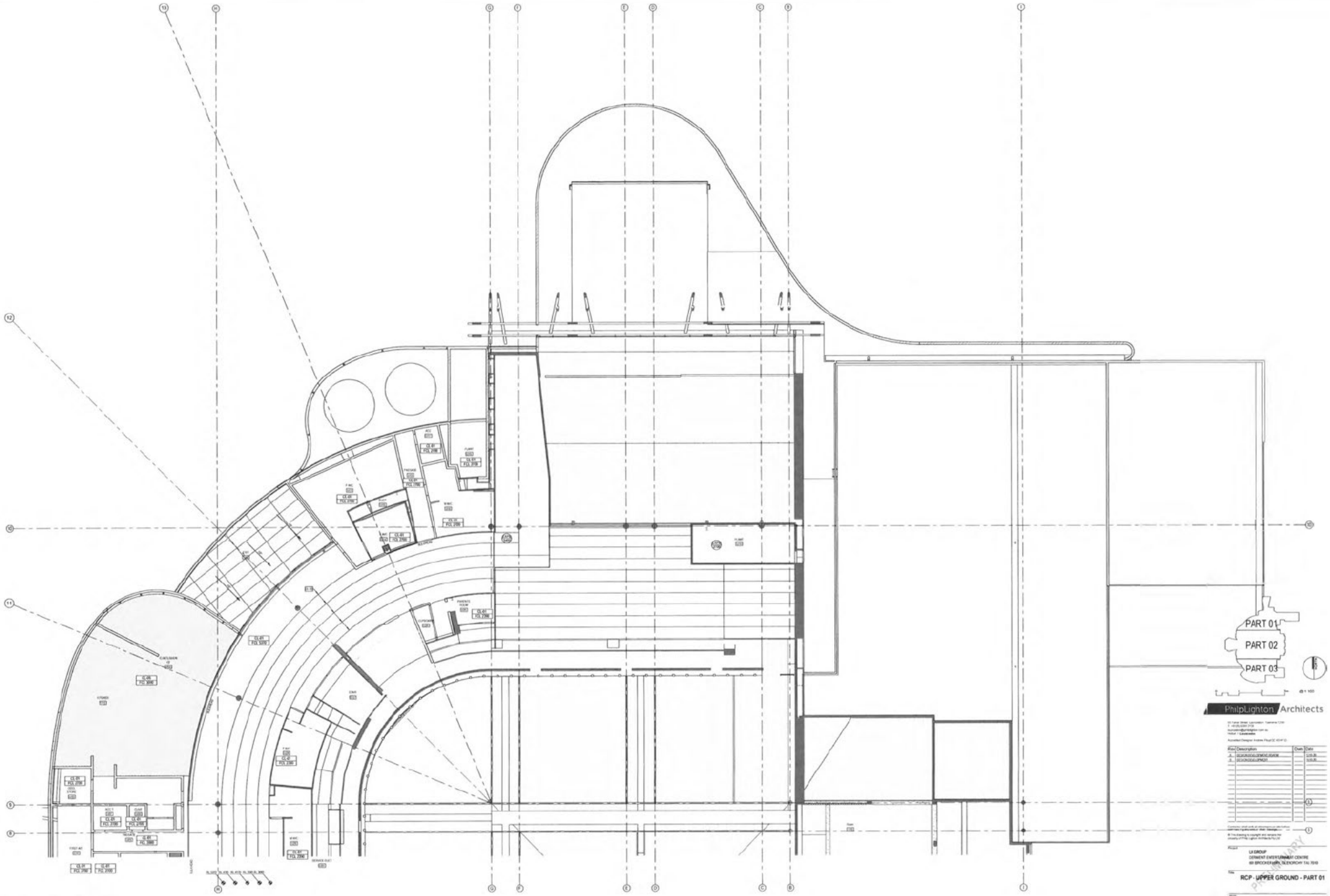
Rev	Description	Date	Chkd
A	ISSUE FOR DA		
B	ISSUE FOR DA RFI RESPONSE		
C	ISSUE FOR DA RFI RESPONSE		

Client:
LG GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

Title:
RCP - LOWER GROUND - PART 03

Status:
DESIGN DEVELOPMENT

Drawn By: JT	Date: 18.12.20	Project Number: 20.318	
Checked By: PL	Scale: @ A1		
Drawing No.: A2002		Rev: C	



1 LOLL RCP - PART 01
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PhilpLighton Architects

Rev	Description	Dwn	Date
A	DESIGN DEVELOPMENT REVIEW		11.05.20
B	DESIGN DEVELOPMENT		18.05.20

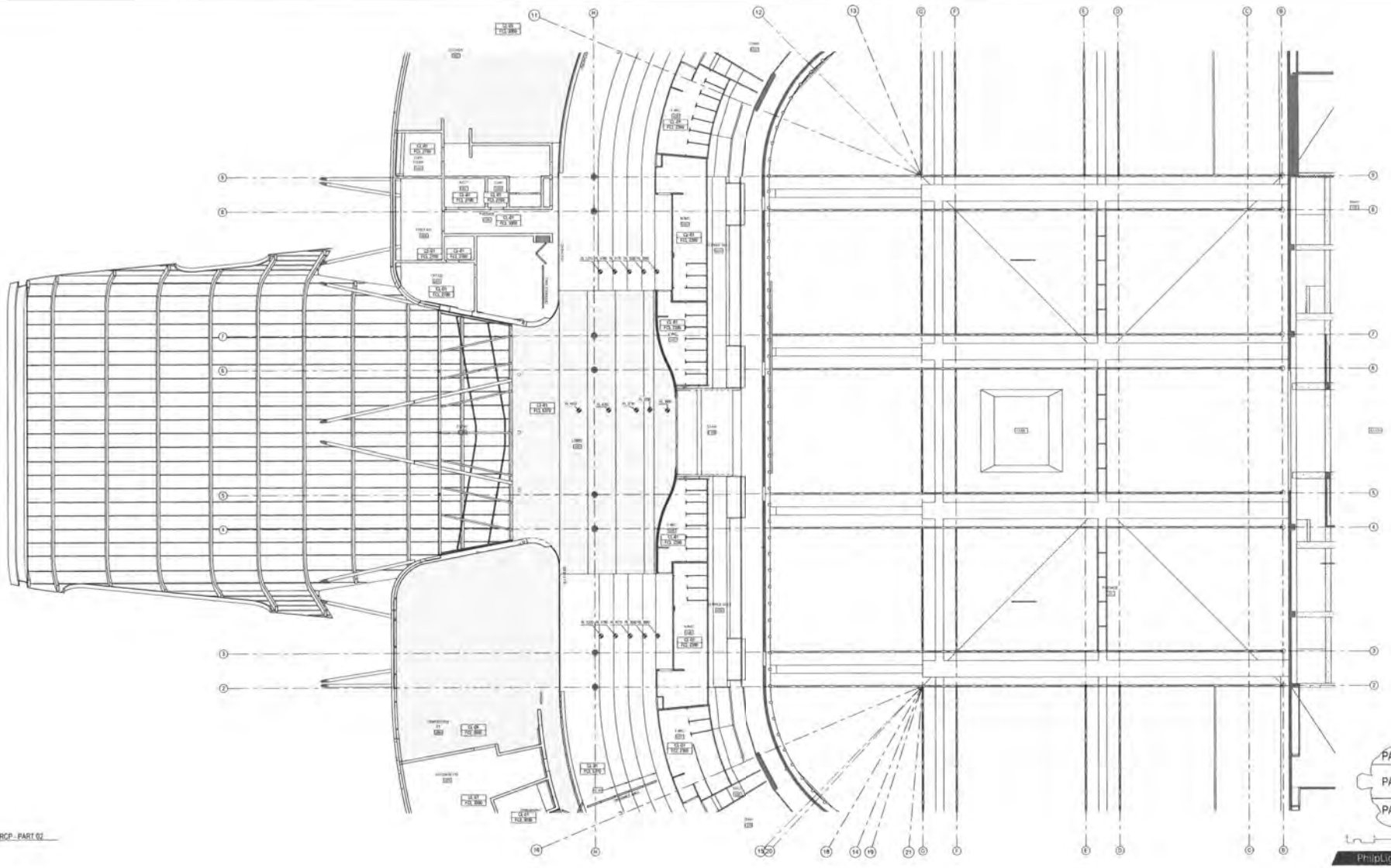
LX GROUP
DERMENT EVENT PRIMARY CENTRE
400 BRICKFIELDS, GLENORCHY TAS 7010

RCP - UPPER GROUND - PART 01

DESIGN DEVELOPMENT

Drawn by	Z	Appd	AK	Project number
Date	18.05.20			20.218
Drawing no.	A2003			Rev B

PRELIMINARY



1 LGU RCP - PART 02
1:100

PART 01
PART 02
PART 03

@ 1:100

PhilipLighton Architects

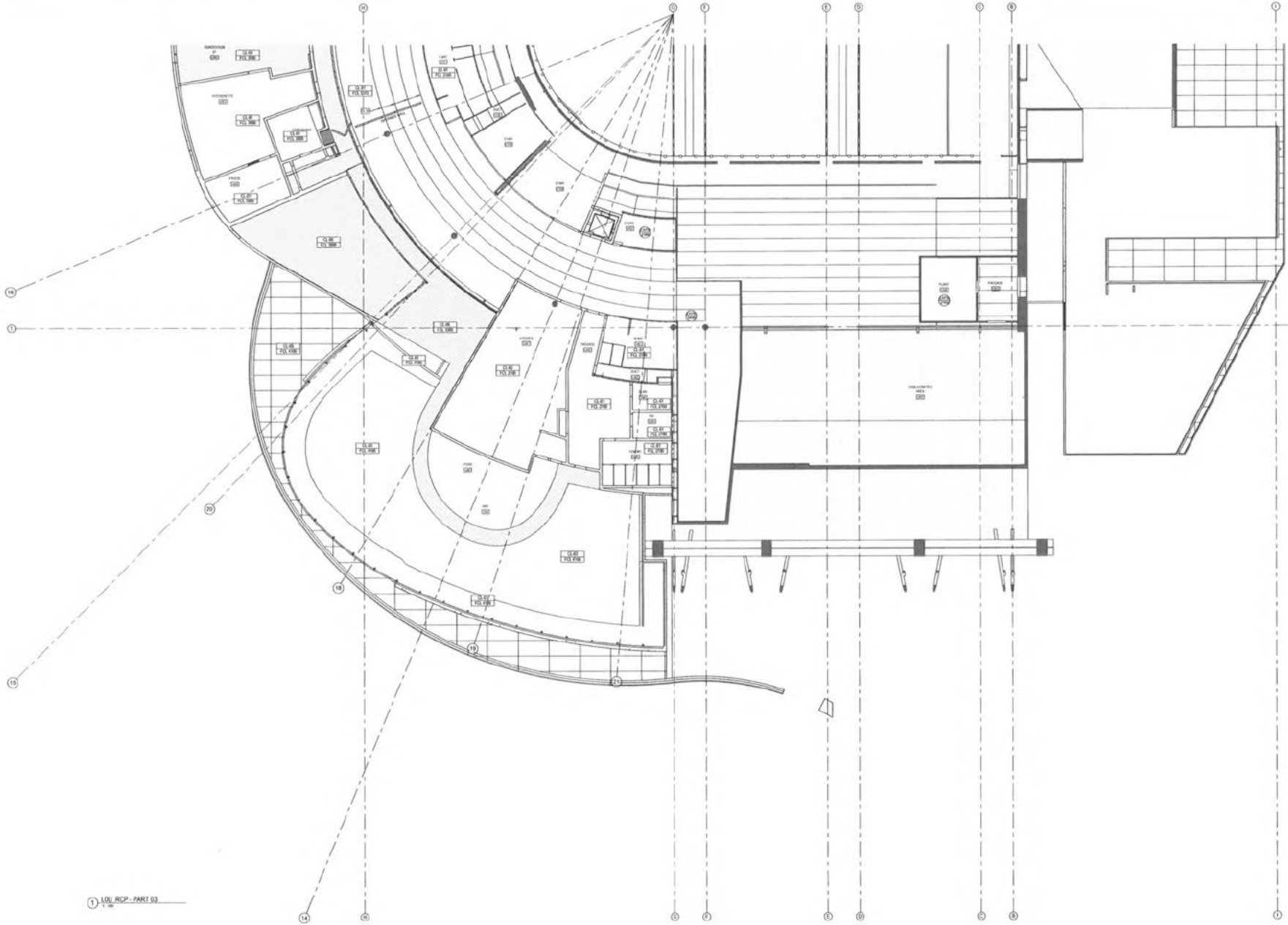
Rev	Description	Cnd	Date
A			
B			

LB GROUP
CERMENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

RCP - UPPER GROUND - PART 02

DESIGN DEVELOPMENT

Drawn By	JT	Size	A2
Scale		Date	18.10.20
Drawing No.	A2004	Project Number	20.316
		Rev	B



1 LOU_RCP - PART 03
1 : 100

PART 01
PART 02
PART 03

@ 1:100

PhilpLighton Architects

Rev	Description	Dwn	Date
A	SCHEMATIC ESTIMATE REVIEW		02.06.20
B	SCHEMATIC ESTIMATE		05.06.20

Contractor shall verify all dimensions on site before commencing any work or shop drawings.
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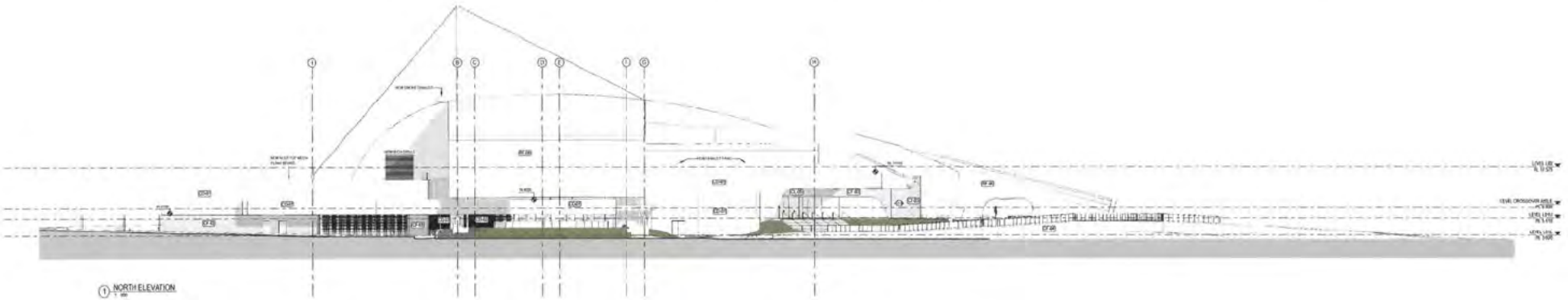
Project
LK GROUP
DERIMENT ENTERTAINMENT CENTRE
601 BROOKER AVE, GLENORCHY TAS 7010

Title
RCP - UPPER GROUND - PART 03

Status
DESIGN DEVELOPMENT

Drawn by	Appr.	Project Number
JB/SK	Date 15.9.20	20.318
Drawing No. A2005		Rev D



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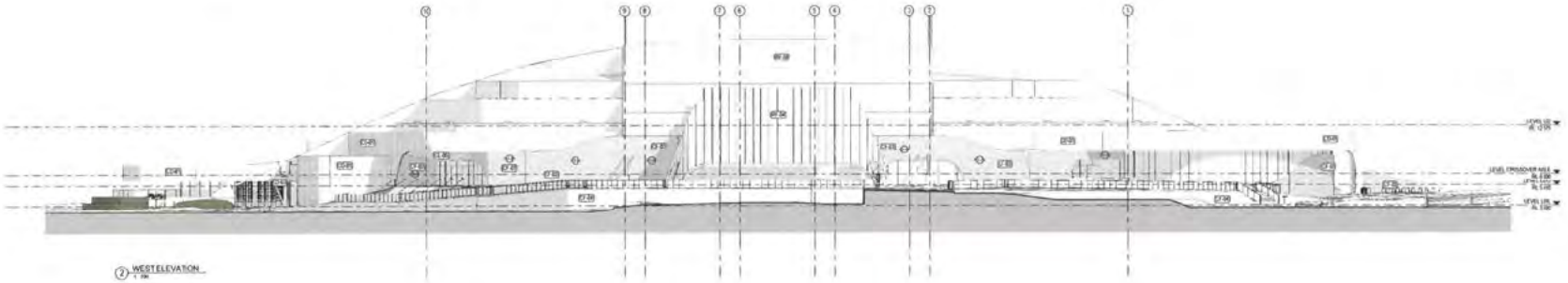

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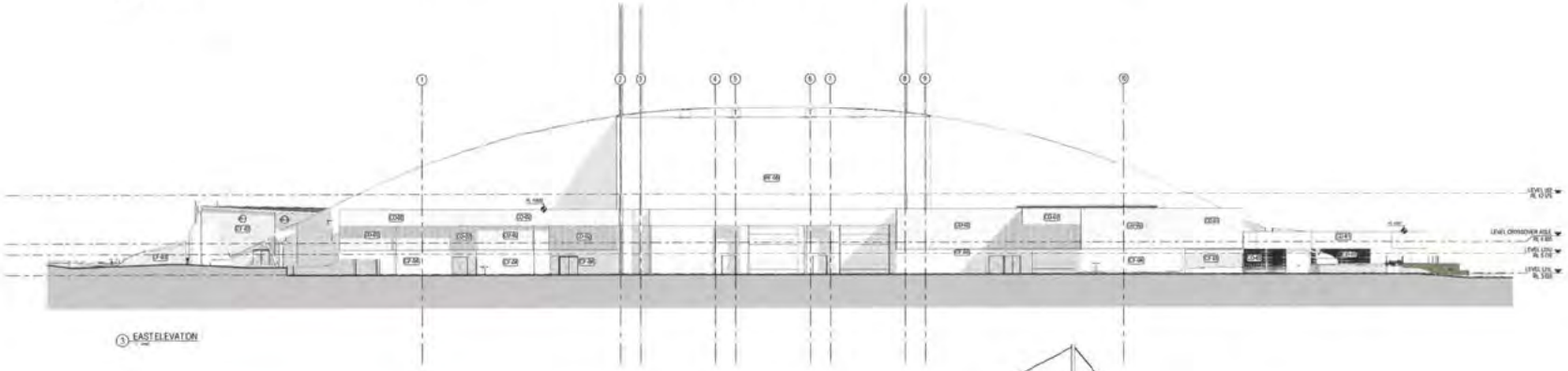

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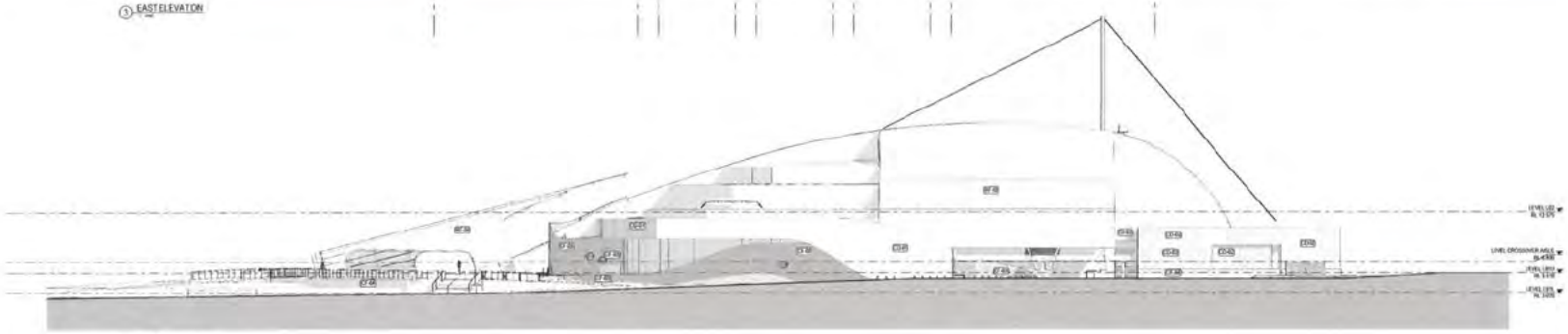

4 SOUTH ELEVATION

@ 1:200

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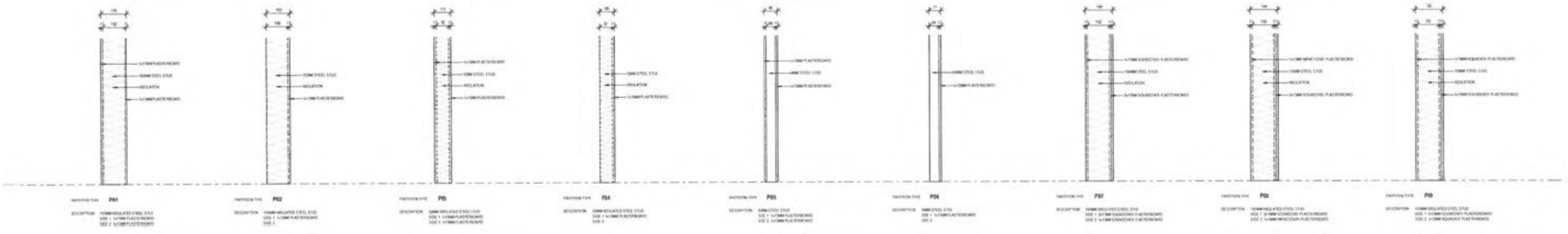
Rev	Description	Date
A	DEVELOPMENT APPLICATION	04.06.21
B	DEVELOPMENT APPLICATION	15.06.21
C	DEVELOPMENT APPLICATION	24.06.21
D	TECHNICAL/DETAILED DESIGN	27.09.21
E	DESIGN DEVELOPMENT	18.02.22

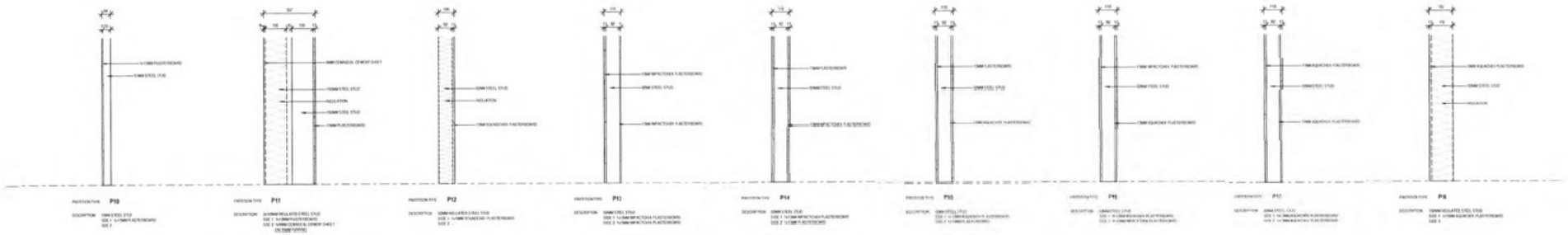
LA GROUP
DERWENT ENTERTAINMENT CENTRE
4011 BROOKER HWY, SENNORAH TAS 7010

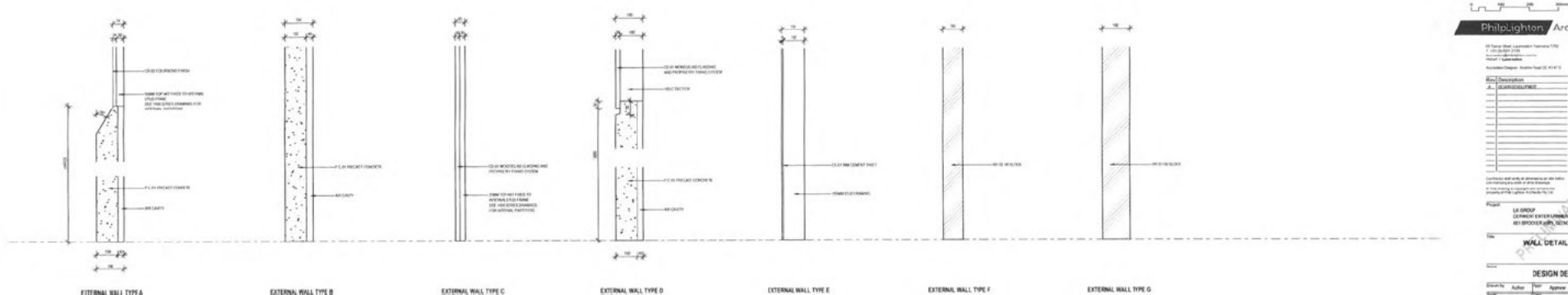
BUILDING ELEVATIONS

DESIGN DEVELOPMENT

Scale	Drawn	Project Number
As indicated @ A0	15.12.21	20.318
Drawing No.		Rev
A3000		E







PARTITION TYPE P01
DESCRIPTION 70MM INSULATED STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2: 1x13MM PLASTERBOARD

PARTITION TYPE P02
DESCRIPTION 70MM INSULATED STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2:

PARTITION TYPE P03
DESCRIPTION 92MM INSULATED STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2: 1x13MM PLASTERBOARD

PARTITION TYPE P04
DESCRIPTION 92MM INSULATED STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2:

PARTITION TYPE P05
DESCRIPTION 64MM STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2: 1x13MM PLASTERBOARD

PARTITION TYPE P06
DESCRIPTION 64MM STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2:

PARTITION TYPE P07
DESCRIPTION 70MM INSULATED STEEL STUD
SIDE 1: 2x13MM SOUNDCHEK PLASTERBOARD
SIDE 2: 1x13MM SOUNDCHEK PLASTERBOARD

PARTITION TYPE P08
DESCRIPTION 70MM INSULATED STEEL STUD
SIDE 1: 2x13MM SOUNDCHEK PLASTERBOARD
SIDE 2: 1x13MM IMPACTCHEK PLASTERBOARD

PARTITION TYPE P09
DESCRIPTION 70MM INSULATED STEEL STUD
SIDE 1: 1x13MM AQUACHEK PLASTERBOARD
SIDE 2: 1x13MM SOUNDCHEK PLASTERBOARD

PARTITION TYPE P10
DESCRIPTION 92MM STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2:

PARTITION TYPE P11
DESCRIPTION 240MM INSULATED STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2: 16MM CEMINSUL CEMENT SHEET
(TO TOWN CENTRE)

PARTITION TYPE P12
DESCRIPTION 92MM INSULATED STEEL STUD
SIDE 1: 1x13MM STANDARD PLASTERBOARD
SIDE 2:

PARTITION TYPE P13
DESCRIPTION 92MM STEEL STUD
SIDE 1: 1x13MM IMPACTCHEK PLASTERBOARD
SIDE 2: 1x13MM IMPACTCHEK PLASTERBOARD

PARTITION TYPE P14
DESCRIPTION 120MM STEEL STUD
SIDE 1: 1x13MM IMPACTCHEK PLASTERBOARD
SIDE 2: 1x13MM PLASTERBOARD

PARTITION TYPE P15
DESCRIPTION 120MM STEEL STUD
SIDE 1: 1x13MM PLASTERBOARD
SIDE 2: 1x13MM AQUACHEK PLASTERBOARD

PARTITION TYPE P16
DESCRIPTION 138MM STEEL STUD
SIDE 1: 1x13MM IMPACTCHEK PLASTERBOARD
SIDE 2: 1x13MM SOUNDCHEK PLASTERBOARD

PARTITION TYPE P17
DESCRIPTION 92MM STEEL STUD
SIDE 1: 1x13MM AQUACHEK PLASTERBOARD
SIDE 2: 1x13MM AQUACHEK PLASTERBOARD

PARTITION TYPE P18
DESCRIPTION 70MM INSULATED STEEL STUD
SIDE 1: 1x13MM AQUACHEK PLASTERBOARD
SIDE 2:

PARTITION TYPE P19
DESCRIPTION 70MM INSULATED STEEL STUD
SIDE 1: 1x13MM IMPACTCHEK PLASTERBOARD
SIDE 2:

PARTITION TYPE P20
DESCRIPTION 70MM STEEL STUD
SIDE 1: 1x13MM IMPACTCHEK PLASTERBOARD
SIDE 2: 1x13MM IMPACTCHEK PLASTERBOARD

FITTING WALL TYPE A

EXTERNAL WALL TYPE B

EXTERNAL WALL TYPE C

EXTERNAL WALL TYPE D

EXTERNAL WALL TYPE E

EXTERNAL WALL TYPE F

EXTERNAL WALL TYPE G

0 100 200 300mm @ 1:10

PhilpLighton Architects

Rev	Description	Dwn	Date
A	DEVELOPMENT		9.09.25

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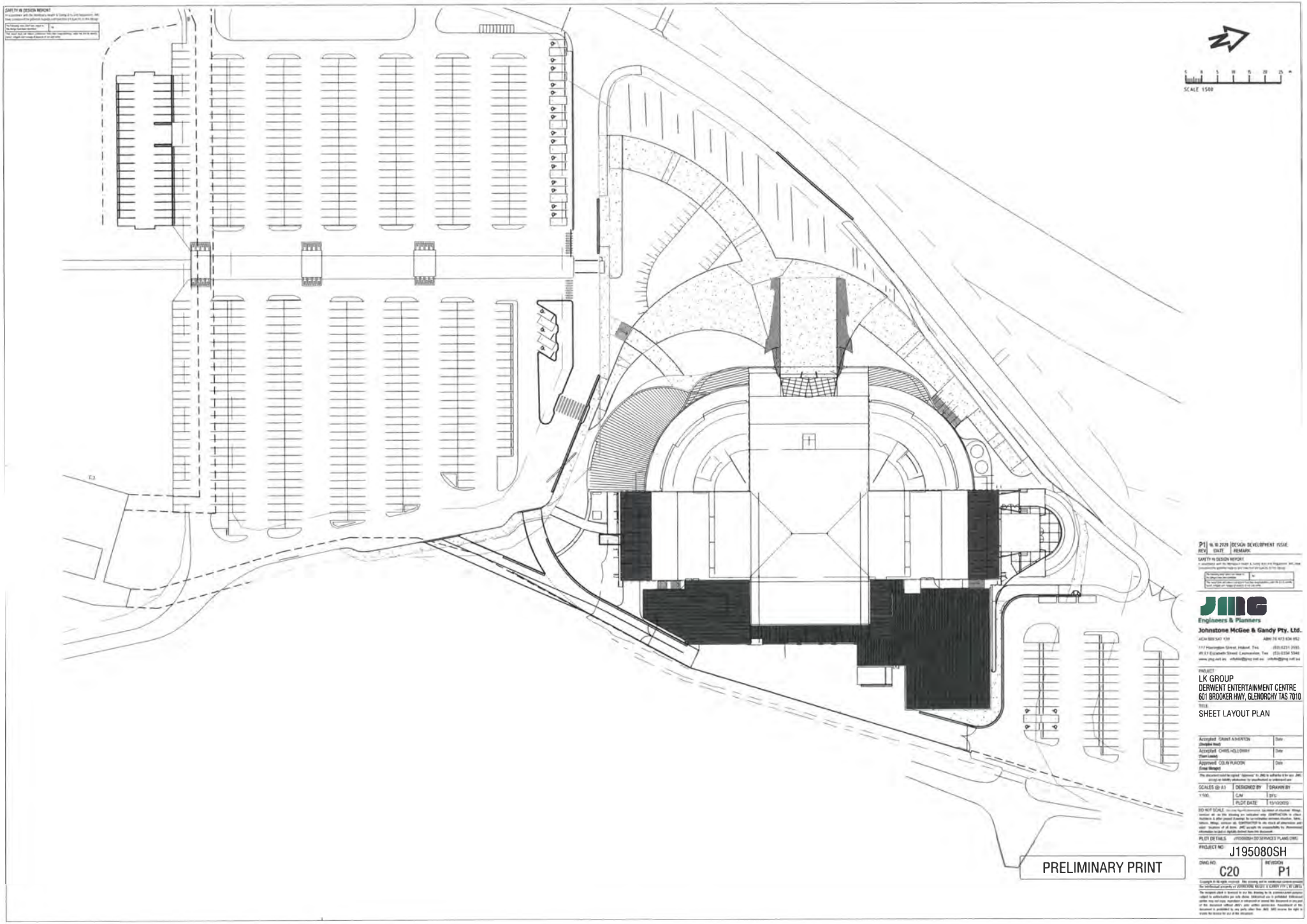
PRELIMINARY

Project
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

Title
WALL DETAILS - SHEET 01

Status
DESIGN DEVELOPMENT

Drawn by	Author	Date	Approved	Project Number
Scale	1 : 10 @ A0	Date Printed	19.09.25	20.318
Drawing No.	A7560			Rev. A



SAFETY IN DESIGN REPORT

REV	DATE	REMARK
P1	16.10.2020	DESIGN DEVELOPMENT ISSUE

Engineers & Planners

Johnstone McGee & Gandy Pty. Ltd.

PROJECT
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

TITLE
SHEET LAYOUT PLAN

Accepted: DAVID ATHERTON (Discipline Head)		Date:
Accepted: CHRIS HOLLOWAY (Team Leader)		Date:
Approved: CEDRIN PUKICH (Group Manager)		Date:

SCALES @ A1	DESIGNED BY	DRAWN BY
1:500	CJM	DFU
	PLOT DATE	15/10/2020

DO NOT SCALE

PLOT DETAILS J195080SH DD SERVICES PLANS DWG

PROJECT NO: J195080SH

DWG NO.	REVISION
C20	P1

P1 | 16.10.2020 | DESIGN DEVELOPMENT ISSUE
REV | DATE | REMARK

Engineers & Planners

Johnstone McGee & Gandy Pty. Ltd.

ACN 009 547 130 ABN 76 473 834 852

117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6334 5548
www.jmg.net.au mail@jmg.net.au mail@jmg.net.au

PROJECT
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

TITLE
SURFACE FINISH PLAN

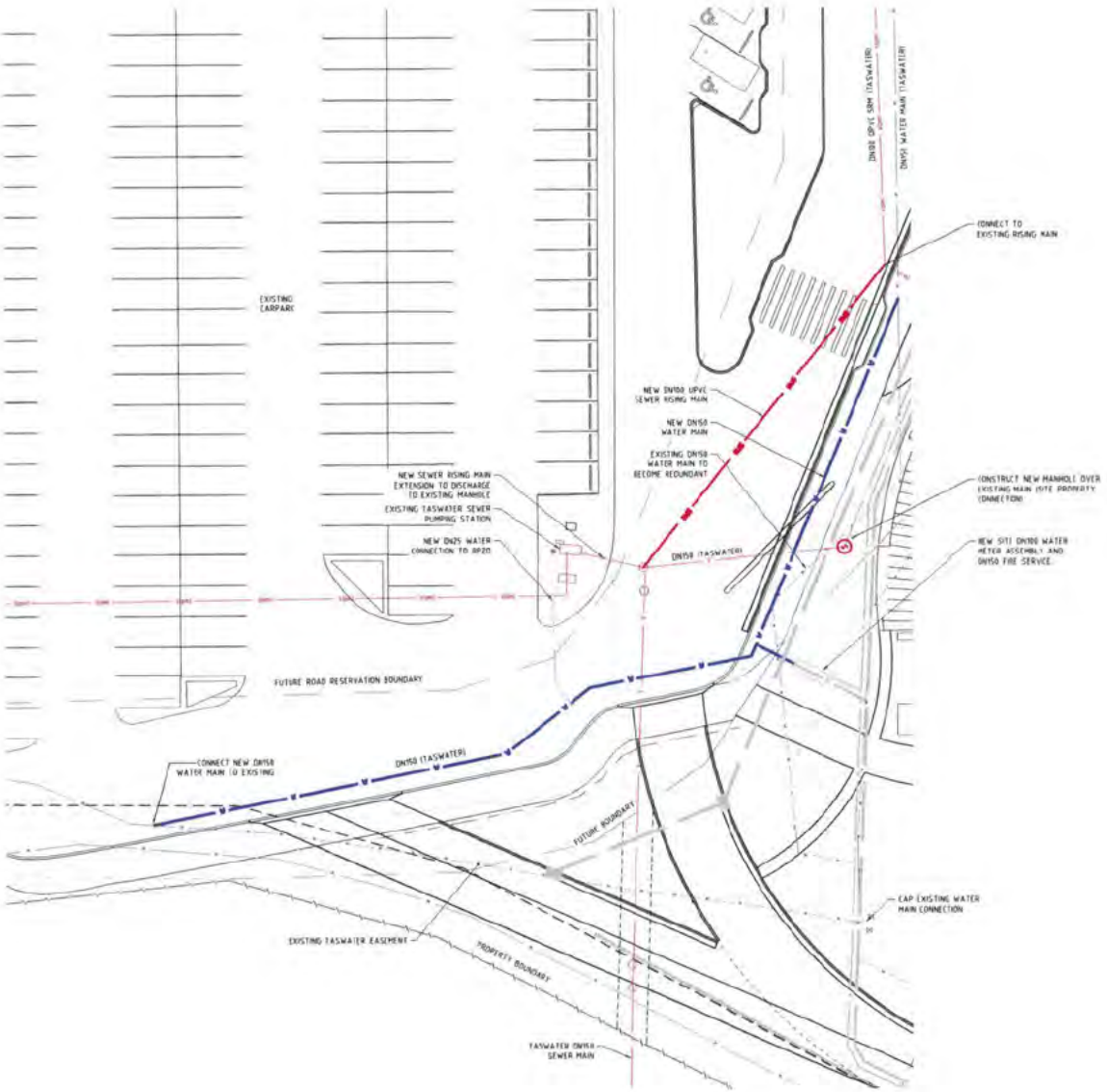
Accepted: GRANT ATHERTON (Discipline Head)	Date
Accepted: CHRIS HOLLOWAY (Team Leader)	Date
Approved: COLIN PUNDON (Group Manager)	Date

SCALES @ A1	DESIGNED BY	DRAWN BY
1:400	CJW	DFG
	PLOT DATE	15/10/2020

PLOT DETAILS J195080SH DD PAVEMENT PLAN DWG

PROJECT NO. J195080SH

DWG NO. C24 | REVISION P1



SCALE 1:200

PRELIMINARY PRINT

REV	DATE	REMARK
P1	16.10.2020	DESIGN DEVELOPMENT ISSUE

SAFETY IN DESIGN REPORT

Johnstone McGee & Gandy Pty. Ltd.
ACN 009 547 139 ABN 76 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
69-51 Elizabeth Street, Launceston, Tas (03) 6334 5548
www.jmg.net.au mail@jmg.net.au mail@jmg.net.au

PROJECT
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

TITLE
TASWATER SERVICE RELOCATIONS

ALL DIGITAL GRANT ADOPTION (Discipline Head)		Sign
Accepted: CHRIS HOLLOWAY (Task Leader)		Date
Approved: COLIN PURDEN (Group Manager)		Date

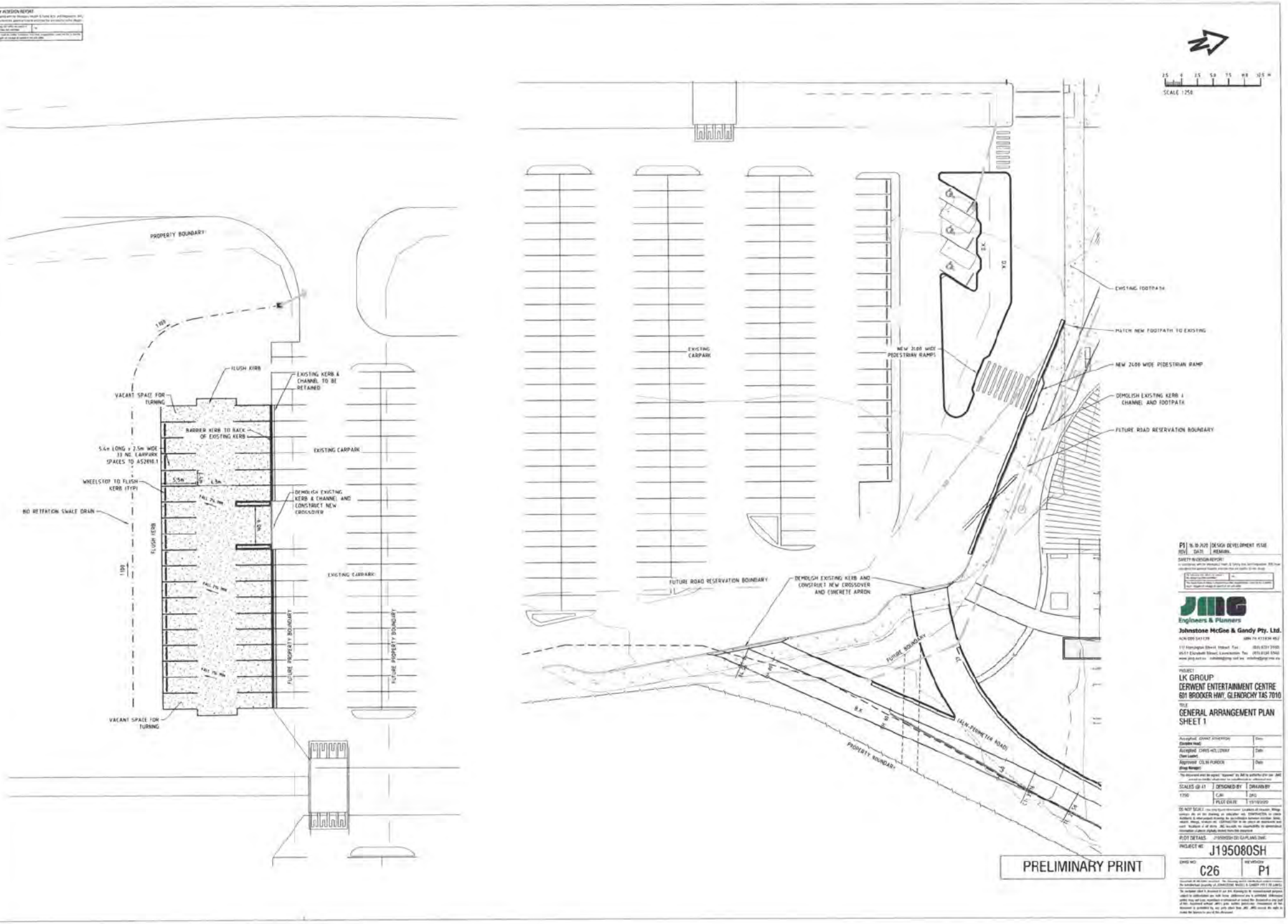
SCALES @ A1	DESIGNED BY	DRAWN BY
1:200	CJM	DKS
	PLOT DATE	15/10/2020

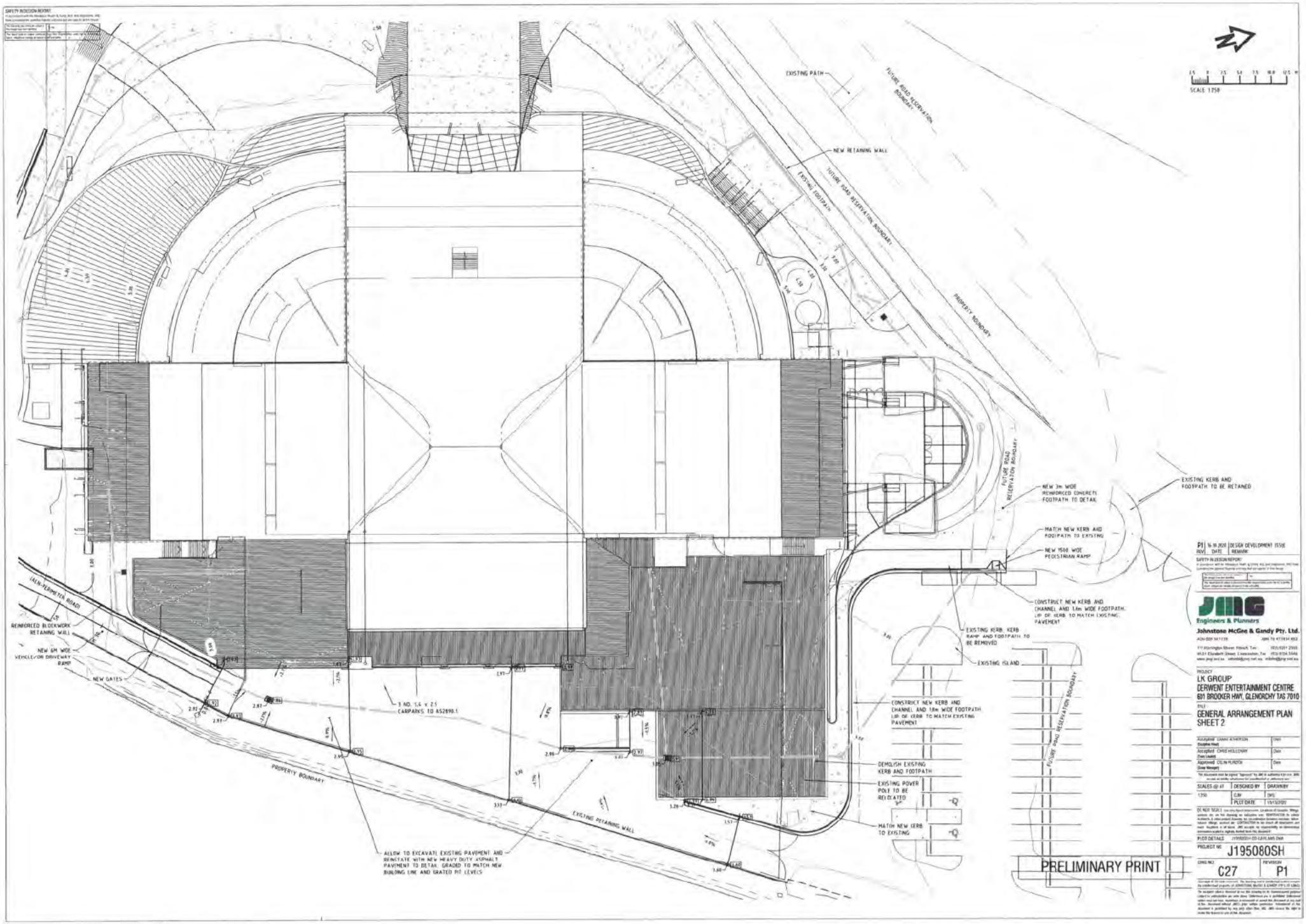
DO NOT SCALE - use only figured dimensions. Verify all dimensions on site before any work is commenced. Report any discrepancies to JMG. Refer to Architectural and other consultants' drawings for detailed dimensions. Refer to Structural Engineer's drawings for all footings, slabs, beams, walls, columns and structural steelwork. Refer to Hydraulic Engineer's drawings for all sanitary drainage, stormwater drainage, water supply and fire services. Refer to Mechanical Engineer's drawings for all mechanical ventilation and air conditioning services. Refer to Electrical Engineer's drawings for all electrical services. Refer to Landscape Architect's drawings for all landscaping and irrigation. Refer to Civil Engineer's drawings for all civil works. Refer to Surveyor's drawings for all survey information. Refer to Geotechnical Engineer's drawings for all geotechnical information. Refer to Traffic Engineer's drawings for all traffic information. Refer to Acoustic Engineer's drawings for all acoustic information. Refer to Fire Engineer's drawings for all fire engineering information. Refer to Building Surveyor's drawings for all building surveying information. Refer to Access Consultant's drawings for all access information. Refer to Energy Consultant's drawings for all energy information. Refer to Waste Consultant's drawings for all waste information. Refer to Specialist Consultant's drawings for all specialist information. Refer to Specification for all specified items. Refer to Schedules for all schedules. Refer to Contract Documents for all contract information. Refer to Statutory Authorities for all statutory information. Refer to Client for all client information. Refer to Contractor for all contractor information. Refer to Subcontractor for all subcontractor information. Refer to Supplier for all supplier information. Refer to Manufacturer for all manufacturer information. Refer to Installer for all installer information. Refer to Commissioning Agent for all commissioning information. Refer to Facility Manager for all facility management information. Refer to Operation and Maintenance Manual for all operation and maintenance information. Refer to As Constructed Drawings for all as constructed information. Refer to Warranty for all warranty information. Refer to Guarantee for all guarantee information. Refer to Insurance for all insurance information. Refer to Bond for all bond information. Refer to Retention for all retention information. Refer to Liquidated Damages for all liquidated damages information. Refer to Defects Liability Period for all defects liability period information. Refer to Practical Completion for all practical completion information. Refer to Final Completion for all final completion information. Refer to Occupation Certificate for all occupation certificate information. Refer to Certificate of Classification for all certificate of classification information. Refer to Certificate of Compliance for all certificate of compliance information. Refer to Certificate of Design for all certificate of design information. Refer to Certificate of Construction for all certificate of construction information. Refer to Certificate of Commissioning for all certificate of commissioning information. Refer to Certificate of Completion for all certificate of completion information. Refer to Certificate of Occupancy for all certificate of occupancy information. Refer to Certificate of Classification for all certificate of classification information. Refer to Certificate of Compliance for all certificate of compliance information. Refer to Certificate of Design for all certificate of design information. Refer to Certificate of Construction for all certificate of construction information. Refer to Certificate of Commissioning for all certificate of commissioning information. Refer to Certificate of Completion for all certificate of completion information. Refer to Certificate of Occupancy for all certificate of occupancy information.

PLOT DETAILS: J195080 DP SERVICES PLANS T.DWG

PROJECT NO: J195080SH

DWG NO: C25 REVISION: P1


SCALE 1:250
PROPERTY BOUNDARY
VACANT SPACE FOR TURNING
FLUSH KERB
EXISTING KERB & CHANNEL TO BE RETAINED
BARRIER KERB TO BACK OF EXISTING KERB
5.4m LONG x 2.5m WIDE 33 NO. CARPARK SPACES TO AS2890.1
WHEELSTOP TO FLUSH KERB (TYP)
NO RETENTION SWALE DRAIN
DEMOLISH EXISTING KERB & CHANNEL AND CONSTRUCT NEW CROSSOVER
EXISTING CARPARK
FUTURE PROPERTY BOUNDARY
EXISTING FOOTPATH
MATCH NEW FOOTPATH TO EXISTING
NEW 2400 WIDE PEDESTRIAN RAMPS
NEW 2400 WIDE PEDESTRIAN RAMP
DEMOLISH EXISTING KERB & CHANNEL AND FOOTPATH
FUTURE ROAD RESERVATION BOUNDARY
DEMOLISH EXISTING KERB AND CONSTRUCT NEW CROSSOVER AND CONCRETE APRON
FUTURE BOUNDARY
CALM PENINSULA ROAD
PRELIMINARY PRINT
P1 16.10.2020 DESIGN DEVELOPMENT ISSUE
Johnstone McGee & Gandy Pty. Ltd.
PROJECT
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010
TITLE
GENERAL ARRANGEMENT PLAN
SHEET 1
SCALES @ A1
DESIGNED BY
DRAWN BY
PROJECT NO
J195080SH
DWG NO
C26
REVISION
P1


SCALE 1:250
EXISTING PATH
FUTURE ROAD RESERVATION BOUNDARY
NEW RETAINING WALL
EXISTING FOOTPATH
PROPERTY BOUNDARY
NEW 3m WIDE REINFORCED CONCRETE FOOTPATH TO DETAIL
EXISTING KERB AND FOOTPATH TO BE RETAINED
MATCH NEW KERB AND FOOTPATH TO EXISTING
NEW 150E WIDE PEDESTRIAN RAMP
CONSTRUCT NEW KERB AND CHANNEL AND 1.4m WIDE FOOTPATH. LIP OF KERB TO MATCH EXISTING PAVEMENT
EXISTING KERB, KERB RAMP AND FOOTPATH TO BE REMOVED
EXISTING ISLAND
CONSTRUCT NEW KERB AND CHANNEL AND 1.8m WIDE FOOTPATH. LIP OF KERB TO MATCH EXISTING PAVEMENT
DEMOLISH EXISTING KERB AND FOOTPATH
EXISTING POWER POLE TO BE RELOCATED
MATCH NEW KERB TO EXISTING
FUTURE ROAD RESERVATION BOUNDARY
IALN-HERMITAGE ROAD
REINFORCED BLOCKWORK RETAINING WALL
NEW 6M WIDE VEHICLE/CAR DRIVEWAY RAMP
NEW GATES
3 NO. 5.4 x 2.5 CARPARKS TO AS2890.1
PROPERTY BOUNDARY
EXISTING RETAINING WALL
ALLOW TO EXCAVATE EXISTING PAVEMENT AND REINSTATE WITH NEW HEAVY DUTY ASPHALT PAVEMENT TO DETAIL. GRADED TO MATCH NEW BUILDING LINE AND GRATED PIT LEVELS
SAFETY IN DESIGN REPORT
P1 16.10.2020 DESIGN DEVELOPMENT ISSUE
REV. DATE REMARK
JMG
Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.
ACN 009 547 139 ABN 76 473 941 452
117 Harrington Street Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street Launceston, Tas (03) 6334 5548
www.jmg.net.au mail@jmg.net.au mail@jmg.net.au
PROJECT
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010
TITLE
GENERAL ARRANGEMENT PLAN
SHEET 2
Acceptance LEANN ATHERTON Date
Accepted CHRIS HOLLOWAY Date
Approved COLIN MURDOCH Date
SCALES @ A1 1:250
DESIGNED BY CJW
DRAWN BY DRG
PLOT DATE 15/10/2020
PLOT DETAILS J195080SH-00-GA-PLANS.DWF
PROJECT NO J195080SH
DWG NO C27
REVISION P1
PRELIMINARY PRINT

SAFETY IN DESIGN REPORT

The following risks cannot be reduced through normal construction practices:	Nil

The above risks have been identified and communicated to the Principal Contractor.

SCALE 1:250

16 MOTOR CYCLE SPACE @1.2 x 2.5 DEMOLISH EXISTING KERB AND CHANNEL AND CONSTRUCT NEW SPOON DRAIN. NEW ASPHALT PAVEMENT WITH PERIMETER DRY KERB

EXISTING PATH

EXISTING PEDESTRIAN RAMP

BOLLARD (TYP)

15 NO. - 5.4 LONG X 2.5 WIDE DDA CARPARK SPACE TO AS2890.6 (TYP)

EXISTING CARPARK

FUTURE ROAD RESERVATION BOUNDARY

FUTURE ROAD RESERVATION BOUNDARY

EXISTING PROPERTY BOUNDARY

FUTURE ROAD RESERVATION BOUNDARY

DEMOLISH EXISTING CROSSOVER AND CONSTRUCT NEW KERB AND CHANNEL TO MATCH EXISTING

DEMOLISH EXISTING KERB AND REMOVE ASPHALT AND PAVEMENT MATERIAL

DEMOLISH EXISTING CROSSOVER AND CONSTRUCT NEW KERB AND CHANNEL AND FOOTPATH TO MATCH EXISTING

CONNECT NEW STORMWATER TO EXISTING MANHOLE

EXISTING FOOTPATH TO BE DEMOLISHED

DEMOLISH EXISTING KERBS, SEAL AND REMOVE PAVEMENT MATERIAL

EXISTING ISLAND TO BE DEMOLISHED

3 NO. - 5.4 LONG X 2.5 WIDE DDA CARPARK SPACE TO AS2890.6 (TYP)

BOLLARD

CONSTRUCT NEW PAVEMENT KERBS AND ISLAND INFILL ON EXISTING PAVEMENT

EXISTING CARPARK

EXISTING PROPERTY BOUNDARY

EXISTING PATH

PRELIMINARY PRINT

REV	DATE	REMARK
P1	16.10.2020	DESIGN DEVELOPMENT ISSUE

SAFETY IN DESIGN REPORT

The following risks cannot be reduced through normal construction practices:	Nil

The above risks have been identified and communicated to the Principal Contractor.

Engineers & Planners

Johnstone McGee & Gandy Pty. Ltd.

ACN 009 547 135 ABN 76 473 634 852

117 Harrington Street, Hobart, Tas (03) 6231 2555

45/51 Elizabeth Street, Launceston, Tas (03) 6334 5548

www.jmg.net.au mhobart@jmg.net.au mlaunceston@jmg.net.au

PROJECT

LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010

TITLE

GENERAL ARRANGEMENT PLAN
SHEET 3

Accepted (Print & Title) (Chapter Head)		Date
Accepted CHRIS HOLLOWAY (Town Leader)		Date
Approved COLIN PLUNDER (Engineering Manager)		Date

The document must be signed "Approved" by JMG to authorise it for use. JMG accept no liability whatsoever for unauthorised or withdrawn use.

SCALES @ A1	DESIGNED BY	DRAWN BY
1:250	CJM	DTG
	PLOT DATE	15/10/2020

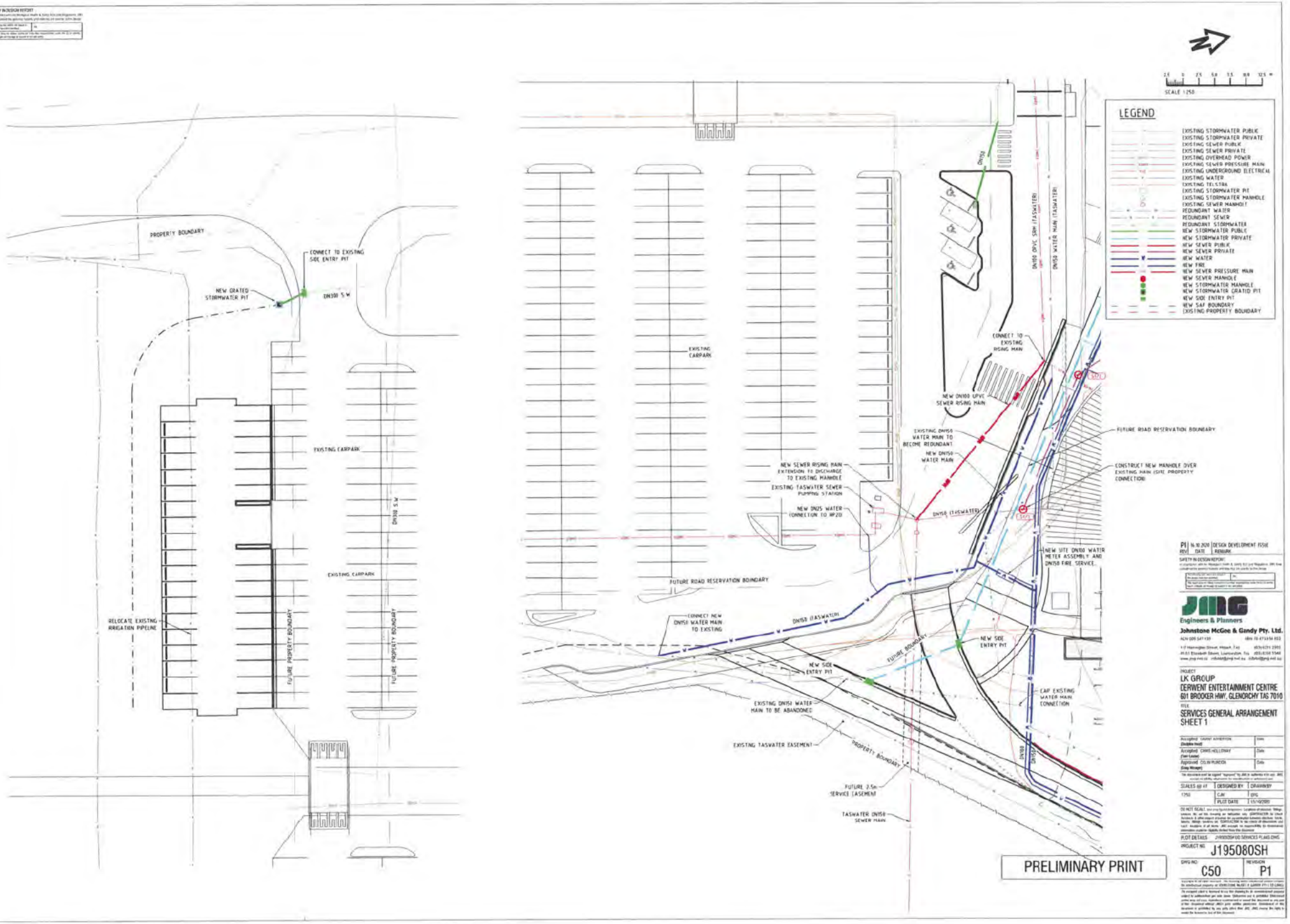
DISKETTE SCALE: Use only figured dimensions. Locations of services (Mingo symbols) are an approximate only. CONTRACTOR to check locations & other services (including the reticulation between property boundary & the street) before commencing any work. Contractor to make location of all items and accept all responsibility for determined information supplied verbal from this document.

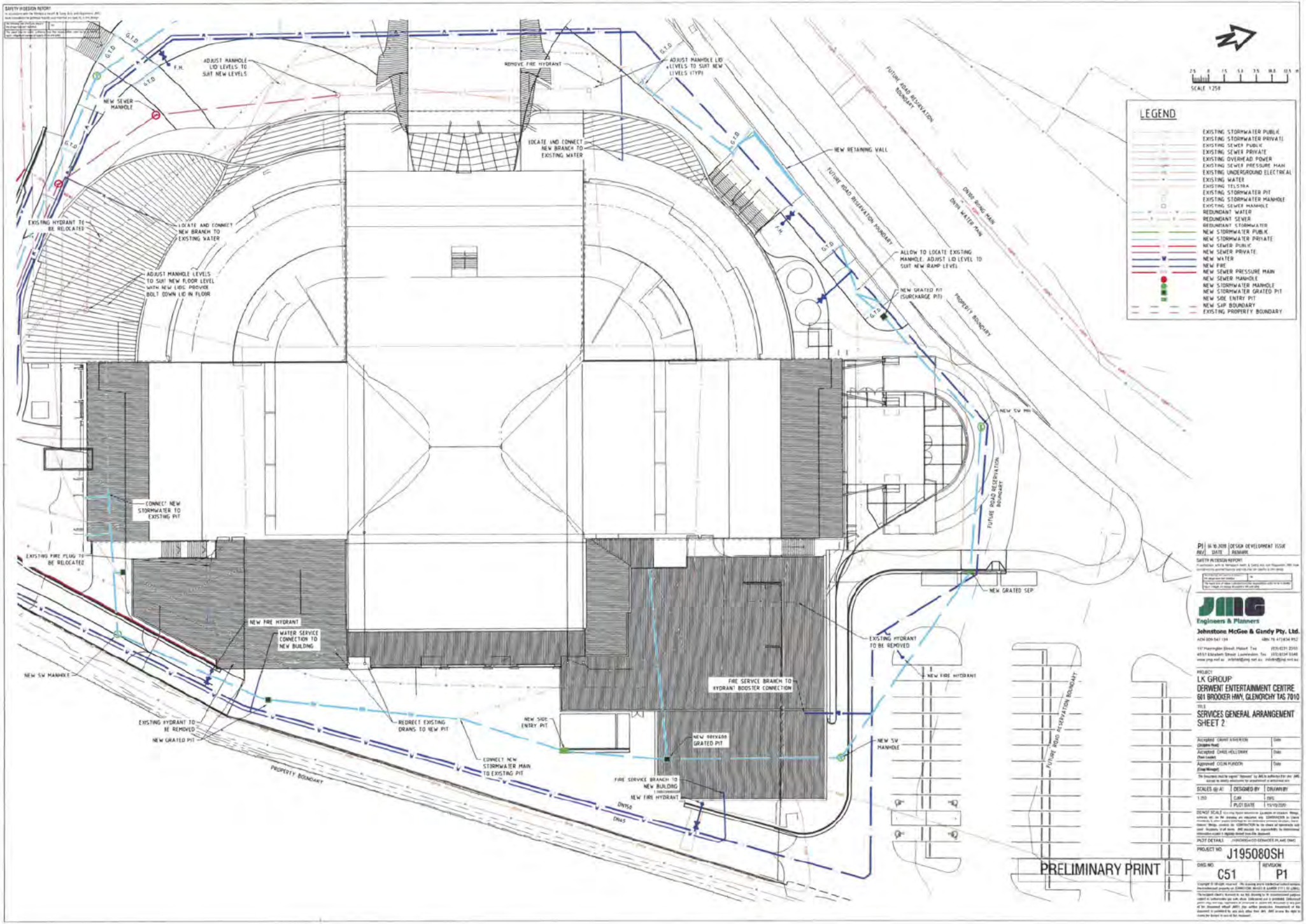
PLOT DETAILS J195080SH-DR-GA-PLAN1.DWG

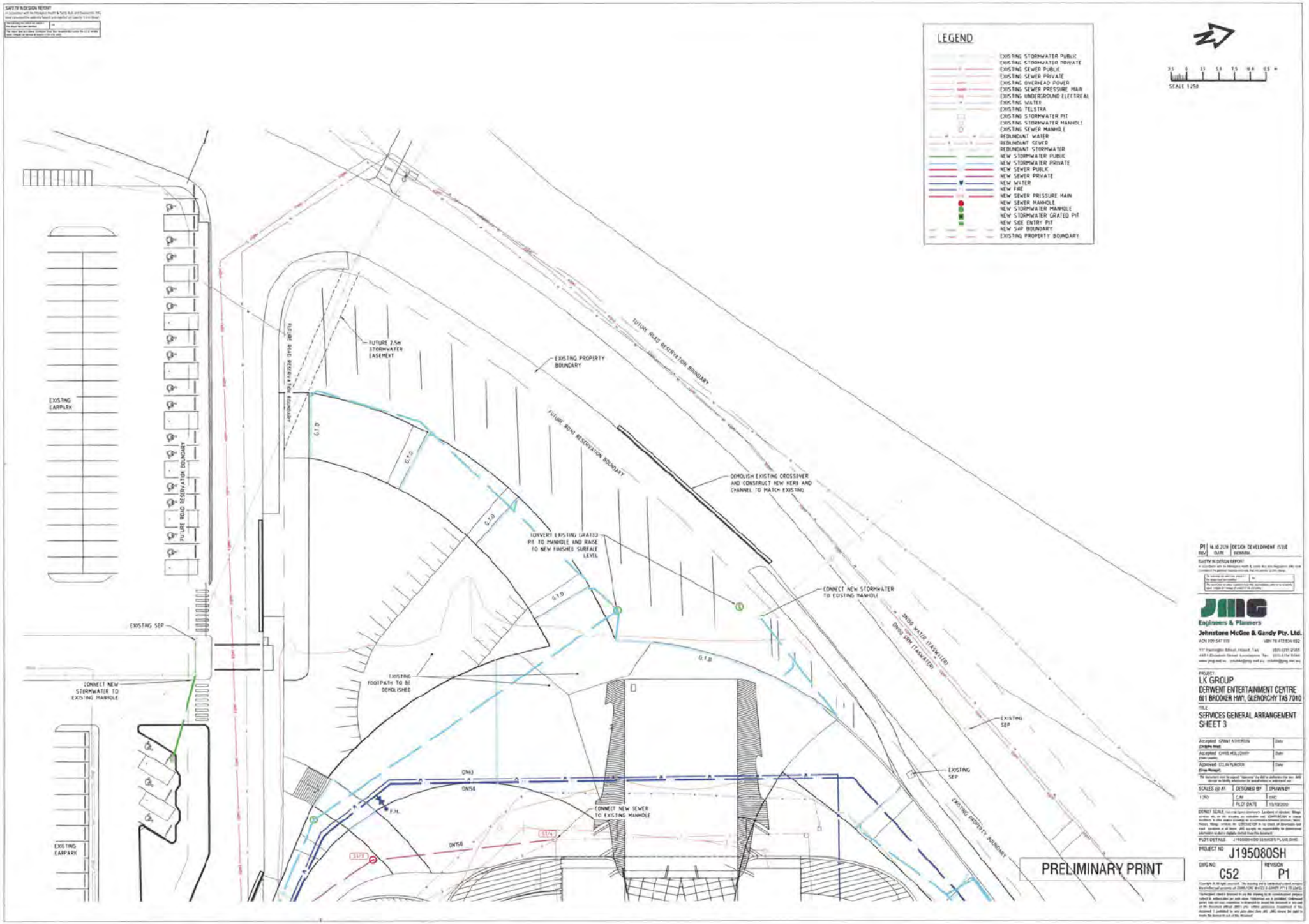
PROJECT NO. J195080SH

DWG NO. C28

REVISION P1


SCALE 1:250
LEGEND
EXISTING STORMWATER PUBLIC
EXISTING STORMWATER PRIVATE
EXISTING SEWER PUBLIC
EXISTING SEWER PRIVATE
EXISTING OVERHEAD POWER
EXISTING SEWER PRESSURE MAIN
EXISTING UNDERGROUND ELECTRICAL
EXISTING WATER
EXISTING TELSTRA
EXISTING STORMWATER PIT
EXISTING STORMWATER MANHOLE
EXISTING SEWER MANHOLE
REDUNDANT WATER
REDUNDANT SEWER
REDUNDANT STORMWATER
NEW STORMWATER PUBLIC
NEW STORMWATER PRIVATE
NEW SEWER PUBLIC
NEW SEWER PRIVATE
NEW WATER
NEW FRD
NEW SEWER PRESSURE MAIN
NEW SEWER MANHOLE
NEW STORMWATER MANHOLE
NEW STORMWATER GRATID PIT
NEW SIDE ENTRY PIT
NEW SAF BOUNDARY
EXISTING PROPERTY BOUNDARY
PROPERTY BOUNDARY
CONNECT TO EXISTING SIDE ENTRY PIT
NEW GRATED STORMWATER PIT
DN100 S.W
EXISTING CARPARK
DN150 S.W
EXISTING CARPARK
RELOCATE EXISTING IRRIGATION PIPELINE
FUTURE PROPERTY BOUNDARY
FUTURE PROPERTY BOUNDARY
DN150
DN150 UPVC SRM (TASWATER)
DN150 WATER MAIN (TASWATER)
EXISTING CARPARK
CONNECT TO EXISTING RISING MAIN
NEW DN100 UPVC SEWER RISING MAIN
EXISTING DN150 WATER MAIN TO BECOME REDUNDANT
NEW DN150 WATER MAIN
FUTURE ROAD RESERVATION BOUNDARY
CONSTRUCT NEW MANHOLE OVER EXISTING MAIN (SITE PROPERTY CONNECTION)
NEW SEWER RISING MAIN EXTENSION TO DISCHARGE TO EXISTING MANHOLE
EXISTING TASWATER SEWER PUMPING STATION
NEW DN25 WATER CONNECTION TO WP20
DN150 (TASWATER)
NEW SITE DN150 WATER METER ASSEMBLY AND DN150 FIRE SERVICE.
FUTURE ROAD RESERVATION BOUNDARY
CONNECT NEW DN150 WATER MAIN TO EXISTING
DN150 (TASWATER)
FUTURE BOUNDARY
NEW SIDE ENTRY PIT
NEW SIDE ENTRY PIT
CAP EXISTING WATER MAIN CONNECTION
EXISTING DN150 WATER MAIN TO BE ABANDONED
EXISTING TASWATER EASEMENT
PROPERTY BOUNDARY
DN150
FUTURE 2.5m SERVICE EASEMENT
TASWATER DN150 SEWER MAIN
PRELIMINARY PRINT
P1 14.10.2020 DESIGN DEVELOPMENT ISSUE
REV DATE REMARK
SAFETY IN DESIGN REPORT
Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.
ACN 009 547 939 ABN 76 473 834 853
PROJECT
LK GROUP
CERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010
FILE
SERVICES GENERAL ARRANGEMENT SHEET 1
Accepted YANNI ADAMITON (Bubble Head) Date
Accepted CHRIS HOLLOWAY (Yan Locke) Date
Approved COLIN RUDDICK (Craig Mclaga) Date
SCALES @ A1 1:250
DESIGNED BY CJW
DRAWN BY DPG
PLOT DATE 15/10/2020
DO NOT SCALE
PLOT DETAILS J195080SH SERVICES PLANS.DWG
PROJECT NO. J195080SH
DWG NO. C50
REVISION P1


SAFETY IN DESIGN REPORT
ADJUST MANHOLE LID LEVELS TO SUIT NEW LEVELS
NEW SEWER MANHOLE
F.H.
REMOVE FIRE HYDRANT
ADJUST MANHOLE LID LEVELS TO SUIT NEW LEVELS (TYP)
LOCATE AND CONNECT NEW BRANCH TO EXISTING WATER
NEW RETAINING WALL
FUTURE ROAD RESERVATION BOUNDARY
DN90 RISING MAIN
DN90 WATER MAIN
EXISTING HYDRANT TO BE RELOCATED
LOCATE AND CONNECT NEW BRANCH TO EXISTING WATER
ADJUST MANHOLE LEVELS TO SUIT NEW FLOOR LEVEL WITH NEW LIDS PROVIDE BOLT DOWN LID IN FLOOR
ALLOW TO LOCATE EXISTING MANHOLE, ADJUST LID LEVEL TO SUIT NEW RAMP LEVEL
NEW GRATED PIT (SURCHARGE PIT)
PROPERTY BOUNDARY
NEW SW MH
FUTURE ROAD RESERVATION BOUNDARY
CONNECT NEW STORMWATER TO EXISTING PIT
EXISTING FIRE PLUG TO BE RELOCATED
NEW GRATED SEP
NEW FIRE HYDRANT
WATER SERVICE CONNECTION TO NEW BUILDING
EXISTING HYDRANT TO BE REMOVED
FIRE SERVICE BRANCH TO HYDRANT BOOSTER CONNECTION
NEW FIRE HYDRANT
NEW SW MANHOLE
EXISTING HYDRANT TO BE REMOVED
NEW GRATED PIT
REDIRECT EXISTING DRAINS TO NEW PIT
NEW SIDE ENTRY PIT
NEW 900X450 GRATED PIT
CONNECT NEW STORMWATER MAIN TO EXISTING PIT
NEW SW MANHOLE
FUTURE ROAD RESERVATION BOUNDARY
PROPERTY BOUNDARY
FIRE SERVICE BRANCH TO NEW BUILDING
NEW FIRE HYDRANT
DN150
DN65
SCALE 1:250
LEGEND
EXISTING STORMWATER PUBLIC
EXISTING STORMWATER PRIVATE
EXISTING SEWER PUBLIC
EXISTING SEWER PRIVATE
EXISTING OVERHEAD POWER
EXISTING SEWER PRESSURE MAIN
EXISTING UNDERGROUND ELECTRICAL
EXISTING WATER
EXISTING TELSTRA
EXISTING STORMWATER PIT
EXISTING STORMWATER MANHOLE
EXISTING SEWER MANHOLE
REDUNDANT WATER
REDUNDANT SEWER
REDUNDANT STORMWATER
NEW STORMWATER PUBLIC
NEW STORMWATER PRIVATE
NEW SEWER PUBLIC
NEW SEWER PRIVATE
NEW WATER
NEW FIRE
NEW SEWER PRESSURE MAIN
NEW SEWER MANHOLE
NEW STORMWATER MANHOLE
NEW STORMWATER GRATED PIT
NEW SIDE ENTRY PIT
NEW SAP BOUNDARY
EXISTING PROPERTY BOUNDARY
P1 16.10.2020 DESIGN DEVELOPMENT ISSUE
REV DATE REMARK
Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.
ACN 009 547 139 ABN 76 473 834 852
PROJECT:
LK GROUP
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HWY, GLENORCHY TAS 7010
SERVICES GENERAL ARRANGEMENT SHEET 2
Accepted GRANT EMERSON (Discipline Head)
Accepted CHAD HOLLOWAY (Team Leader)
Approved COLIN FURDON (Group Manager)
SCALES @ A1
1:250
DESIGNED BY CJW
DRAWN BY RPG
PLOT DATE 15/10/2020
PLOT DETAILS J:\PROJ\SH\CAD\SCHEMES\PLANS\DWG
PROJECT NO. J195080SH
DWG NO. C51
REVISION P1
PRELIMINARY PRINT

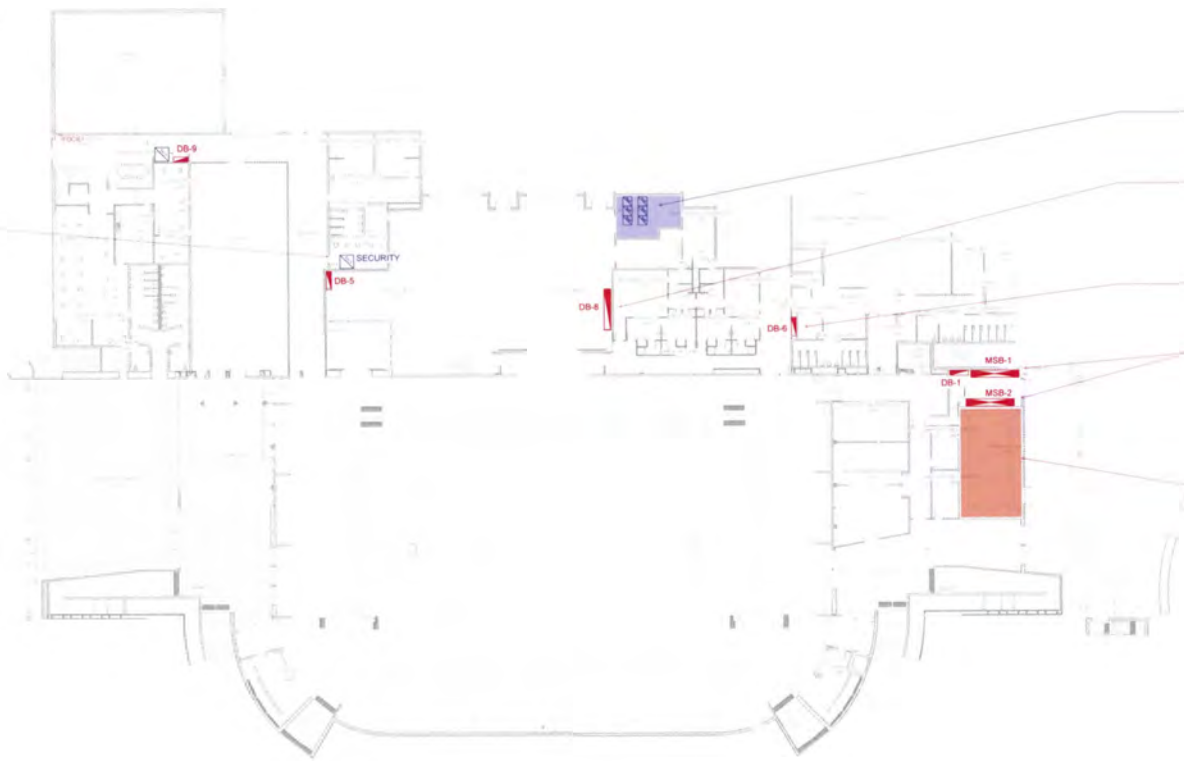

LEGEND
EXISTING STORMWATER PUBLIC
EXISTING STORMWATER PRIVATE
EXISTING SEWER PUBLIC
EXISTING SEWER PRIVATE
EXISTING OVERHEAD POWER
EXISTING SEWER PRESSURE MAIN
EXISTING UNDERGROUND ELECTRICAL
EXISTING WATER
EXISTING TELSTRA
EXISTING STORMWATER PIT
EXISTING STORMWATER MANHOLE
EXISTING SEWER MANHOLE
REDUNDANT WATER
REDUNDANT SEWER
REDUNDANT STORMWATER
NEW STORMWATER PUBLIC
NEW STORMWATER PRIVATE
NEW SEWER PUBLIC
NEW SEWER PRIVATE
NEW WATER
NEW FIRE
NEW SEWER PRESSURE MAIN
NEW SEWER MANHOLE
NEW STORMWATER MANHOLE
NEW STORMWATER GRATED PIT
NEW SEE ENTRY PIT
NEW SAP BOUNDARY
EXISTING PROPERTY BOUNDARY
SCALE 1:250
EXISTING CARPARK
FUTURE ROAD RESERVATION BOUNDARY
FUTURE 2.5M STORMWATER EASEMENT
EXISTING PROPERTY BOUNDARY
FUTURE ROAD RESERVATION BOUNDARY
DEMOLISH EXISTING CROSSOVER AND CONSTRUCT NEW KERB AND CHANNEL TO MATCH EXISTING
CONVERT EXISTING GRATED PIT TO MANHOLE AND RAISE TO NEW FINISHED SURFACE LEVEL
CONNECT NEW STORMWATER TO EXISTING MANHOLE
EXISTING SEP
CONNECT NEW STORMWATER TO EXISTING MANHOLE
EXISTING FOOTPATH TO BE DEMOLISHED
DN63 WATER (CLASSIFIED)
DN63 SEWER (CLASSIFIED)
EXISTING SEP
EXISTING SEP
EXISTING PROPERTY BOUNDARY
DN63
DN150
DN150
CONNECT NEW SEWER TO EXISTING MANHOLE
EXISTING CARPARK
PRELIMINARY PRINT
P1 16.10.2020 DESGA DEVELOPMENT ISSUE
SAFETY IN DESIGN REPORT
Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.
ACN 009 547 110
PROJECT:
LK GROUP
DERWENT ENTERTAINMENT CENTRE
661 BROOKER HWY, GLENORCHY TAS 7010
TITLE:
SERVICES GENERAL ARRANGEMENT
SHEET 3
Accepted GRANT ASHERON (Delphi Hire)
Accepted CHRIS HOLLOWAY (Tim Foster)
Approved COLIN PLAISTER (Lisa Rosser)
SCALES @ A1
1:250
DESIGNED BY
DRAWN BY
CAD
PLOT DATE
PROJECT NO
J195080SH
DWG NO.
C52
REVISION
P1

3 SERVICES

COMMUNICATIONS RACKS DISTRIBUTED AROUND BUILDING

NEW MAIN FIRE INDICATOR & CONTROL PANEL LOCATED WITHIN AIRLOCK

SECURITY ROOM WITH SECURITY SYSTEM RACK CONTAINED WITHIN



AV ROOM WITH RACKS FOR MEDIA AND AV EQUIPMENT

NEW EVENTS SWITCHBOARD TO CATER FOR HIGH POWER TEMPORARY SHOW SPECIFIC EQUIPMENT

ELECTRICAL SWITCHBOARDS DISTRIBUTED AROUND BUILDING AS REQUIRED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND BEST PRACTICE

NEW MAIN SWITCHBOARDS LOCATED WITHIN EXISTING MAIN SWITCHROOM

EXISTING TASNETWORKS SUBSTATION SHALL BE RETAINED AND UTILISED

JMG
Engineers & Planners

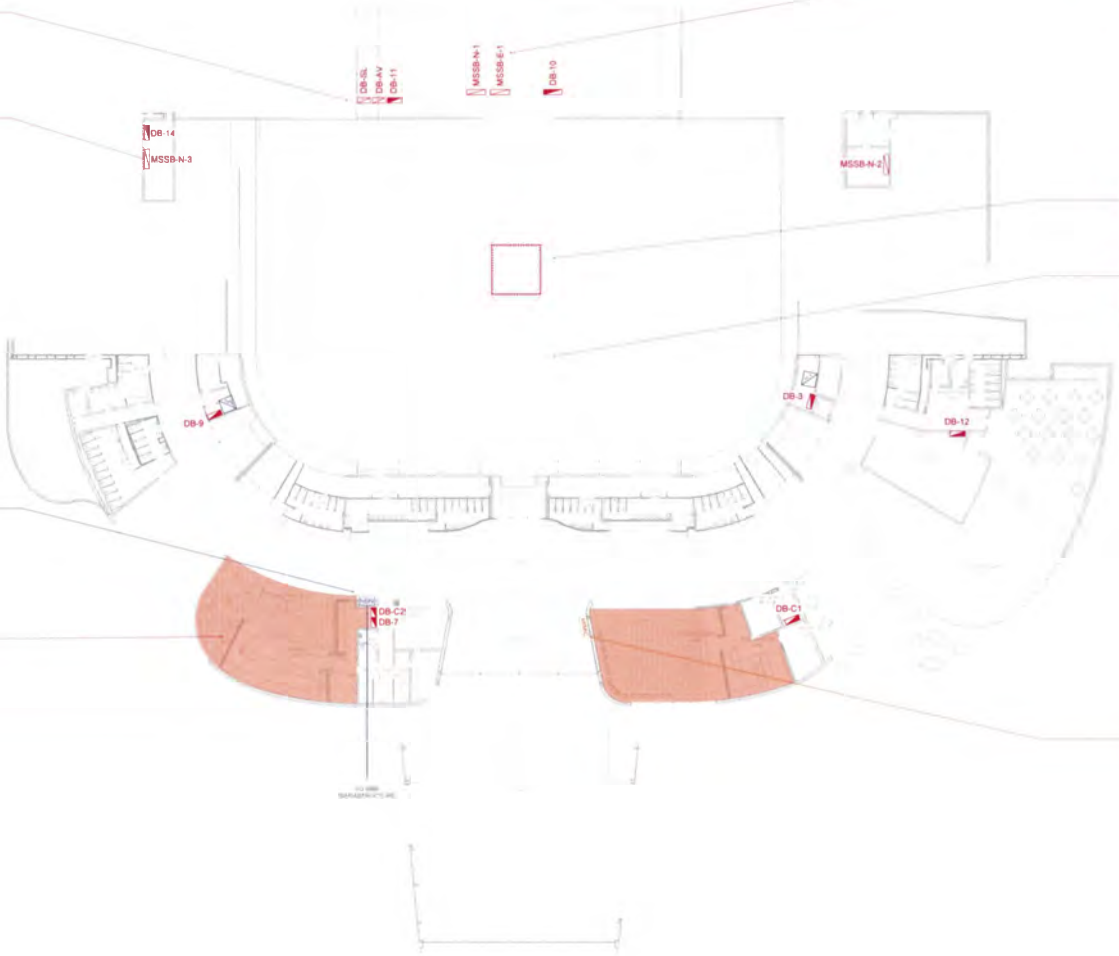
PROJECT: DEC	PROJECT NO: J19508SH
TITLE: Lower Ground Electrical	SHEET NO:
DRAWN BY: LJM	SCALE:
	DATE: 15/10

SENSITIVE AUDIO VISUAL EQUIPMENT SHALL BE SUPPLIED FROM DIFFERENT DISTRIBUTION BOARDS TO NOISY SPECIALIST LIGHTING EQUIPMENT

MECHANICAL SERVICES SWITCHBOARDS LOCATED THROUGHOUT BUILDING IN CLOSE PROXIMITY TO MECHANICAL PLANT. MECHANICAL SERVICES ARE SEPARATELY METERED TO OTHER EQUIPMENT IN ACCORDANCE WITH THE NCC AND BEST PRACTICE

NEW NBN FIBRES TO REPLACE EXISTING. FIBRES SHALL BE RETICULATED TO BUILDING VIA NEW AND EXISTING UNDERGROUND CONDUITS

CONCESSION AREA SWITCH BOARDS ARE SEPARATE TO HOUSE SWITCHBOARDS FOR ENERGY MONITORING PURPOSES



MECHANICAL SERVICES SWITCHBOARDS FOR ARENA SMOKE EXHAUST SYSTEM SHALL BE SUPPLIED FROM THE SAFETY SERVICES SECTION OF THE MAINS SWICTHBOARDS

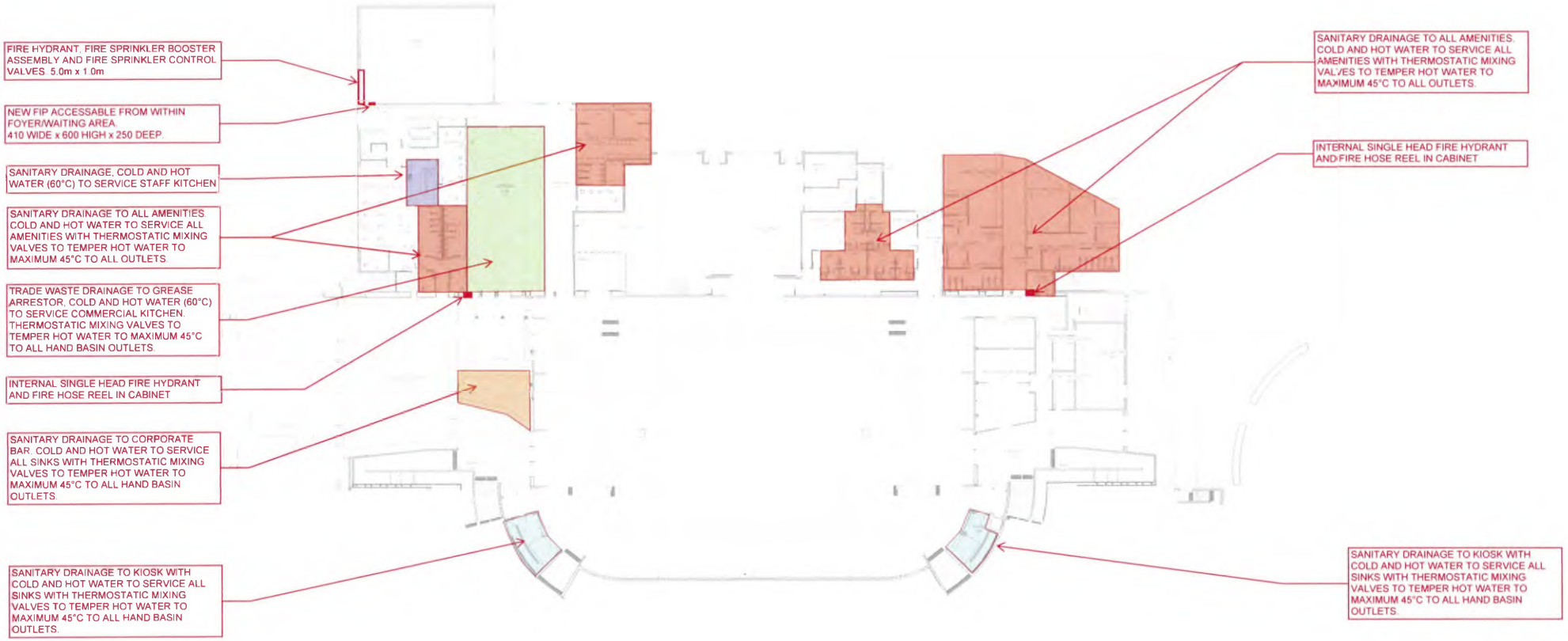
GAME AND ENTAINMENT CUBE SUSPENDED FROM ROOF STRUCTURE OVER CENTRE OF ARENA

EXISTING OVERHEAD GANTRY SHALL BE UTILISED FOR THE RETICULATION OF AUDIO VISUAL AND SPECIALIST LIGHTING EQUIPMENT AND CABLING

NEW MIMIC FIRE PANEL LOCATED WITHIN MAIN ENTRY AIRLOCK

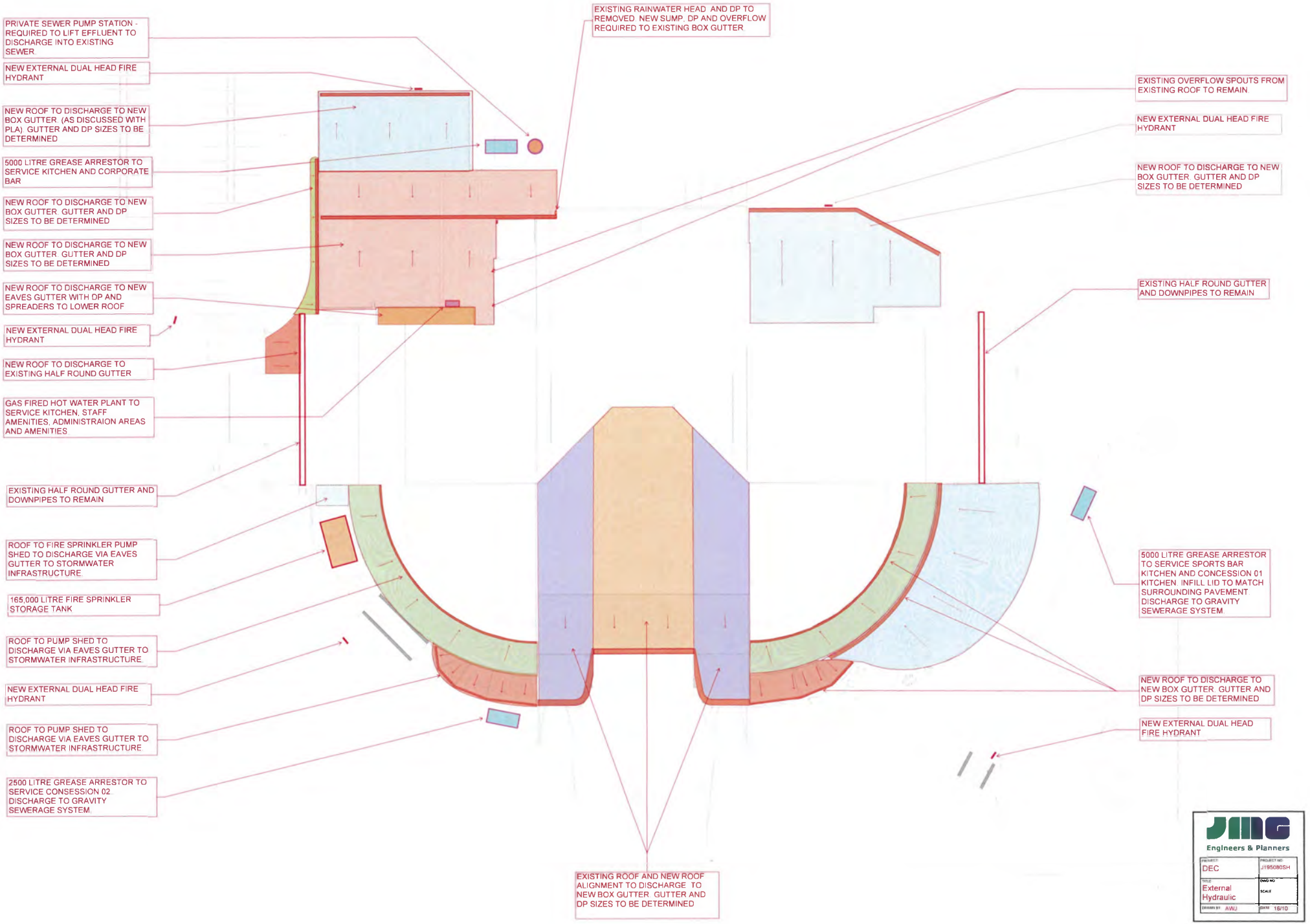
JMG
Engineers & Planners

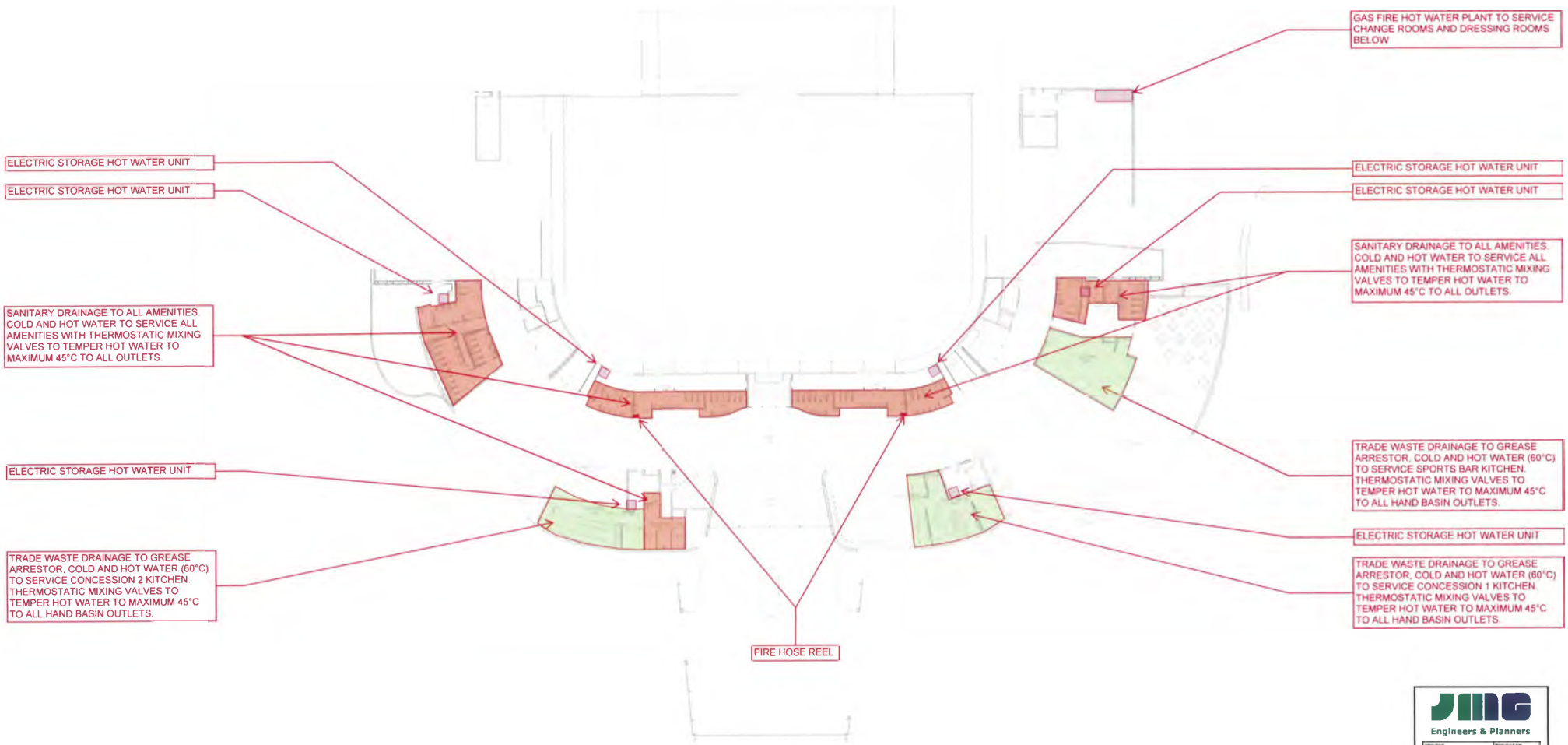
PROJECT: DEC	PROJECT NO: J190580DH
TITLE: Upper Ground Electrical	DWG NO:
DRAWN BY: LJM	SCALE:
	DATE: 16/10



JHG
Engineers & Planners

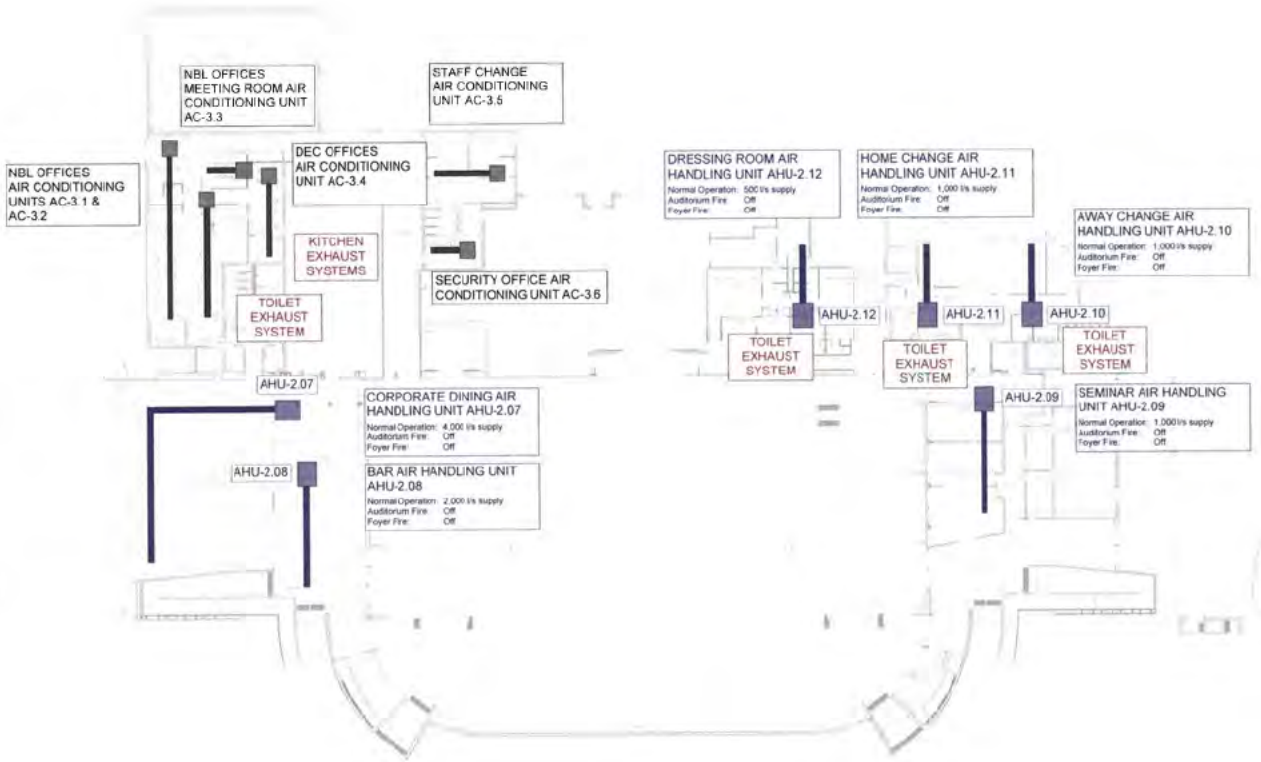
PROJECT: DEC	PROJECT NO: JH9508SH
TITLE: Lower Ground Hydraulic	DWG NO:
DRAWN BY: AW	SCALE:
	DATE: 16/10


PRIVATE SEWER PUMP STATION - REQUIRED TO LIFT EFFLUENT TO DISCHARGE INTO EXISTING SEWER.
NEW EXTERNAL DUAL HEAD FIRE HYDRANT
NEW ROOF TO DISCHARGE TO NEW BOX GUTTER. (AS DISCUSSED WITH PLA). GUTTER AND DP SIZES TO BE DETERMINED
5000 LITRE GREASE ARRESTOR TO SERVICE KITCHEN AND CORPORATE BAR
NEW ROOF TO DISCHARGE TO NEW BOX GUTTER. GUTTER AND DP SIZES TO BE DETERMINED
NEW ROOF TO DISCHARGE TO NEW BOX GUTTER. GUTTER AND DP SIZES TO BE DETERMINED
NEW ROOF TO DISCHARGE TO NEW EAVES GUTTER WITH DP AND SPREADERS TO LOWER ROOF
NEW EXTERNAL DUAL HEAD FIRE HYDRANT
NEW ROOF TO DISCHARGE TO EXISTING HALF ROUND GUTTER
GAS FIRED HOT WATER PLANT TO SERVICE KITCHEN, STAFF AMENITIES, ADMINISTRAION AREAS AND AMENITIES
EXISTING HALF ROUND GUTTER AND DOWNPIPES TO REMAIN
ROOF TO FIRE SPRINKLER PUMP SHED TO DISCHARGE VIA EAVES GUTTER TO STORMWATER INFRASTRUCTURE.
165,000 LITRE FIRE SPRINKLER STORAGE TANK
ROOF TO PUMP SHED TO DISCHARGE VIA EAVES GUTTER TO STORMWATER INFRASTRUCTURE.
NEW EXTERNAL DUAL HEAD FIRE HYDRANT
ROOF TO PUMP SHED TO DISCHARGE VIA EAVES GUTTER TO STORMWATER INFRASTRUCTURE.
2500 LITRE GREASE ARRESTOR TO SERVICE CONSESSION 02. DISCHARGE TO GRAVITY SEWERAGE SYSTEM.
EXISTING RAINWATER HEAD AND DP TO REMOVED. NEW SUMP, DP AND OVERFLOW REQUIRED TO EXISTING BOX GUTTER.
EXISTING ROOF AND NEW ROOF ALIGNMENT TO DISCHARGE TO NEW BOX GUTTER. GUTTER AND DP SIZES TO BE DETERMINED
EXISTING OVERFLOW SPOUTS FROM EXISTING ROOF TO REMAIN
NEW EXTERNAL DUAL HEAD FIRE HYDRANT
NEW ROOF TO DISCHARGE TO NEW BOX GUTTER. GUTTER AND DP SIZES TO BE DETERMINED
EXISTING HALF ROUND GUTTER AND DOWNPIPES TO REMAIN
5000 LITRE GREASE ARRESTOR TO SERVICE SPORTS BAR KITCHEN AND CONCESSION 01 KITCHEN. INFILL LID TO MATCH SURROUNDING PAVEMENT DISCHARGE TO GRAVITY SEWERAGE SYSTEM.
NEW ROOF TO DISCHARGE TO NEW BOX GUTTER. GUTTER AND DP SIZES TO BE DETERMINED
NEW EXTERNAL DUAL HEAD FIRE HYDRANT
JMG
Engineers & Planners
PROJECT: DEC
PROJECT NO: J195080SH
TITLE: External Hydraulic
DWG NO
SCALE
DRAWN BY: AWJ
DATE: 16/10



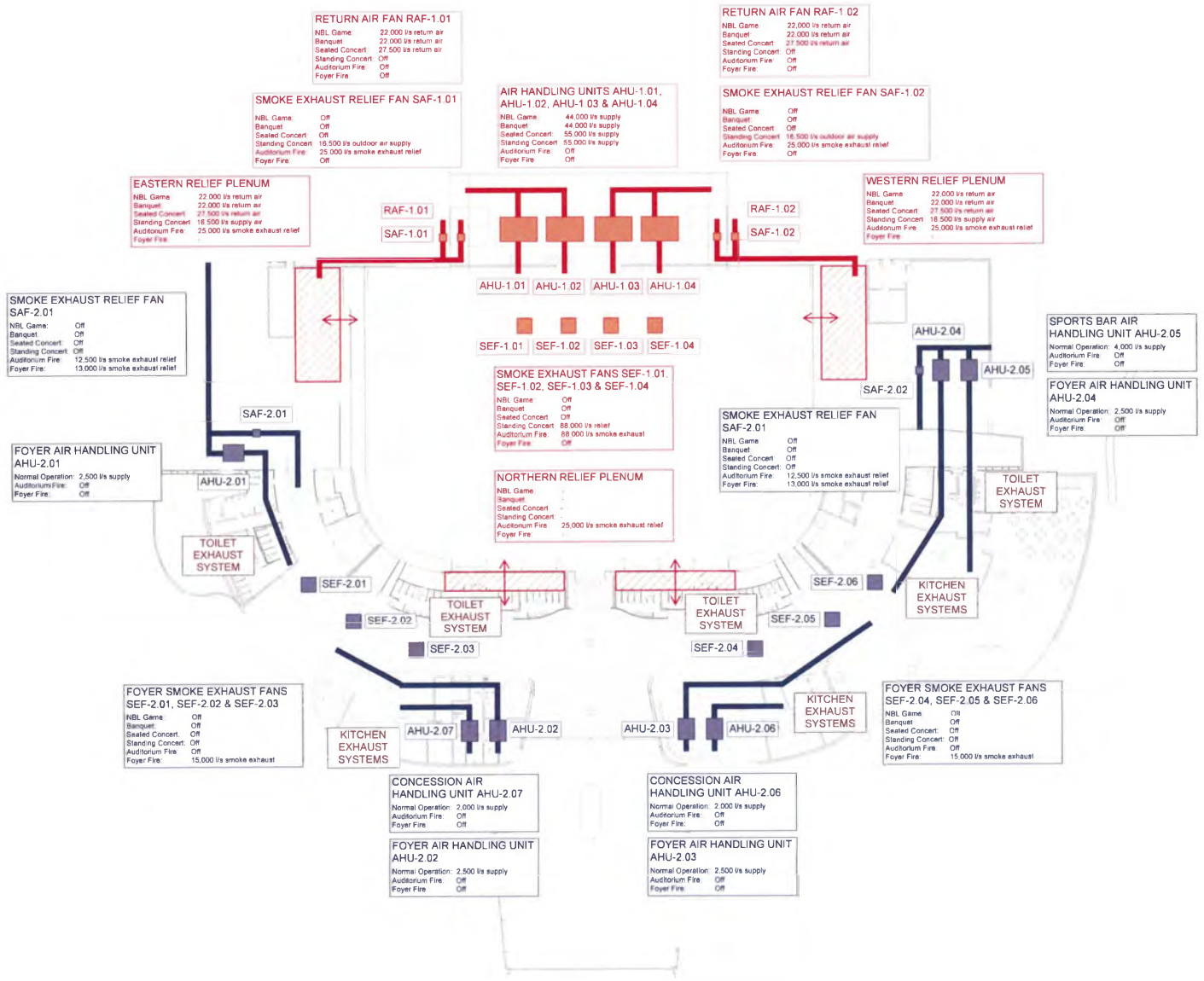
JMG
Engineers & Planners

PROJECT: DEC	PROJECT NO: J19508SH
TITLE: Upper Ground Hydraulic	DWG NO:
DRAWN BY: AWJ	SCALE:
	DATE: 16/10



JMG
Engineers & Planners

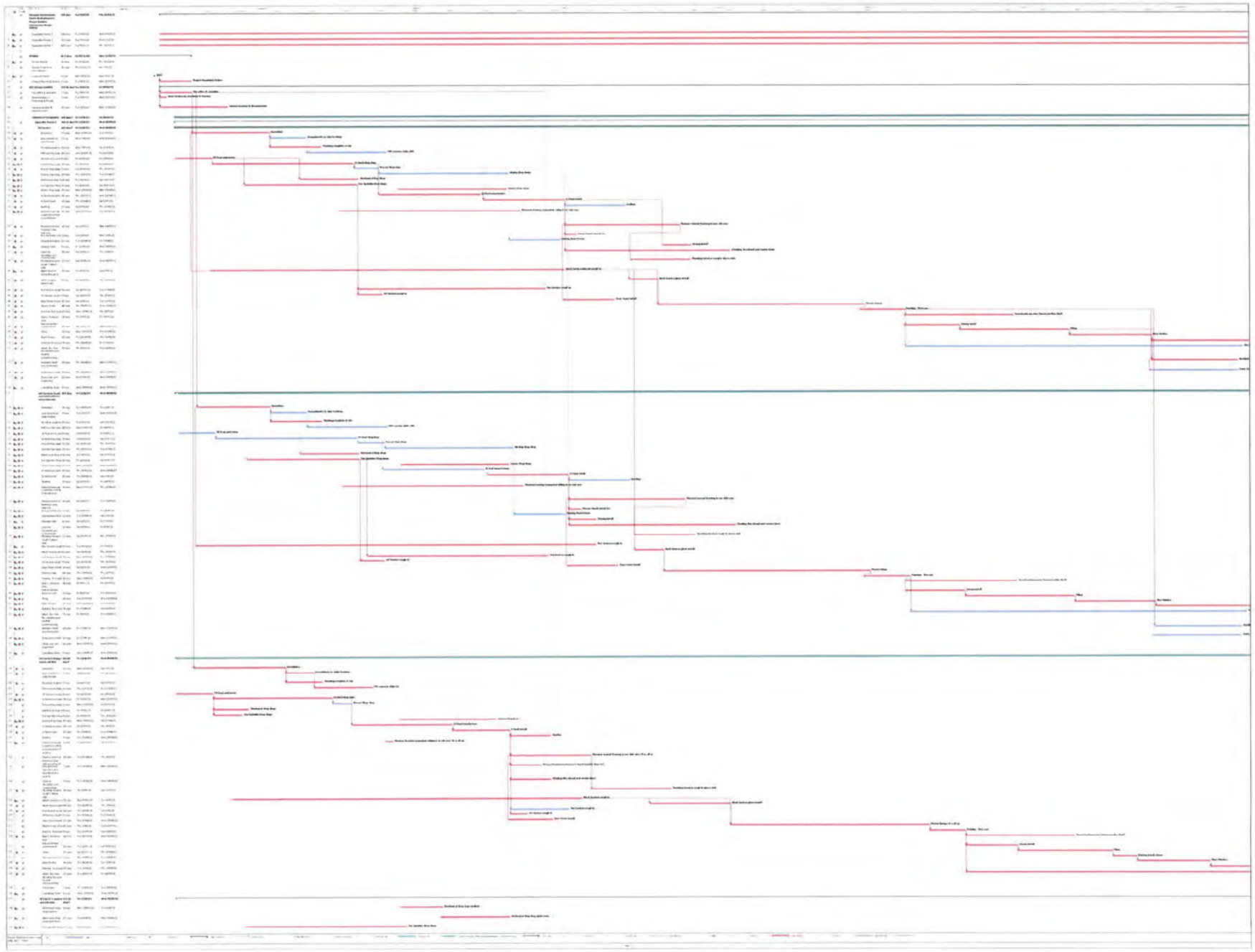
PROJECT: DEC	PROJECT NO: J19508/03H
TITLE: Lower Ground Mechanical	DWG NO:
DRAWN BY: NPS	SCALE:
	DATE: 18/10/

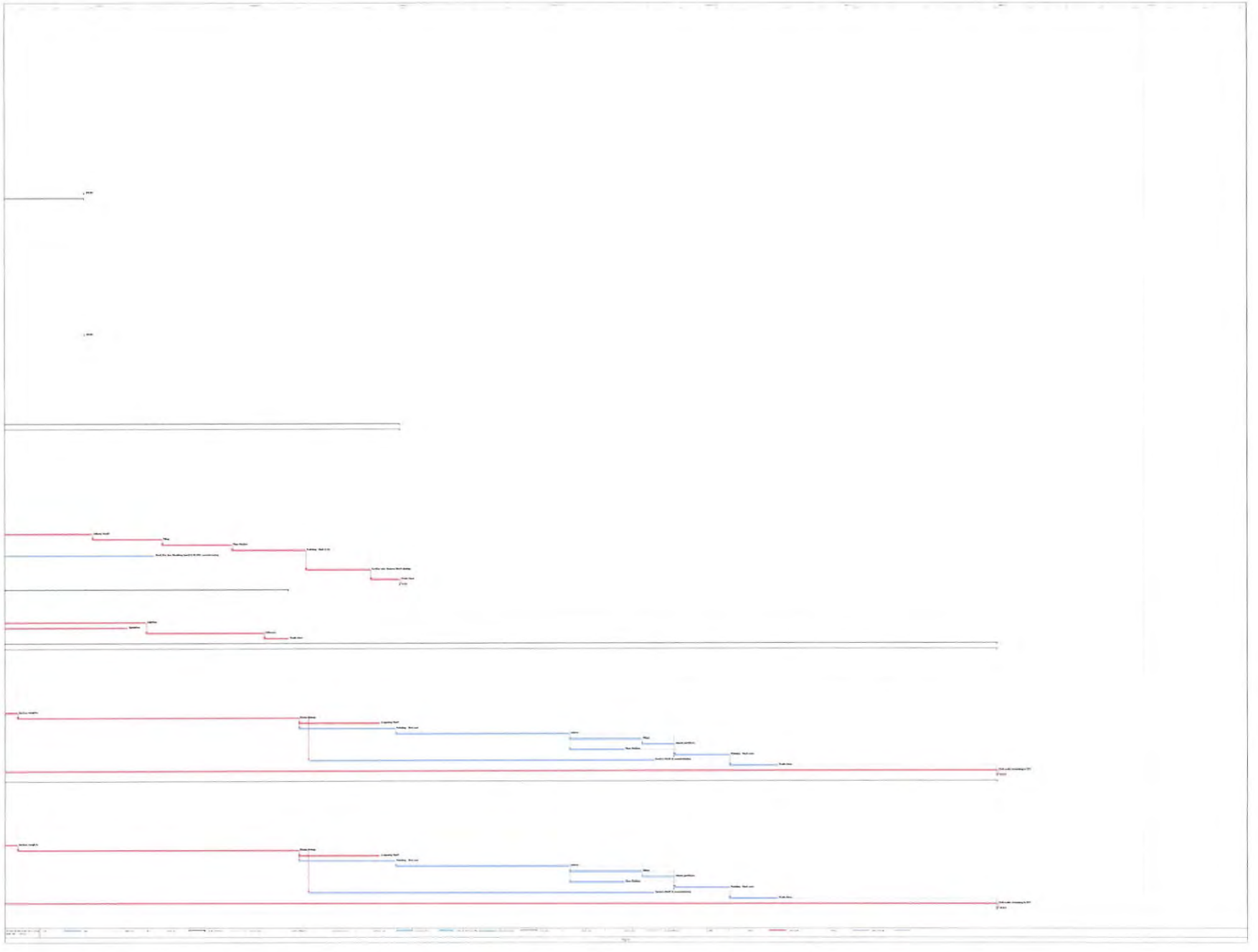


JMG
Engineers & Planners

PROJECT: DEC	PROJECT NO: J195080SH
TITLE: Upper Ground Mechanical	DWG NO:
DRAWN BY: NPS	SCALE:
	DATE: 16/10

Attachment 6: Project Construction Program





MSBA-Variation No. HCV 195 Roofing -Cladding replacement

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Derwent Entertainment Centre**	**231 days**	**Mon 4/04/22**	**Mon 13/03/23**
2		**Main Building Re-Roof**	**132 days**	**Wed 27/07/22**	**Fri 10/02/23**
3		Area 7 & 8 (Back of House	7 days	Wed 7/09/22	Thu 15/09/22
4		Area 9 (Back Curved Roof	30 days	Fri 16/09/22	Fri 28/10/22
5		Area 6 (North Section)	20 days	Mon 31/10/22	Fri 25/11/22
6		Area 11 (South Section)	20 days	Mon 28/11/22	Fri 6/01/23
7		Area 2 (Front Section)	25 days	Mon 9/01/23	Fri 10/02/23
8		Back of House Roof	8 days	Wed 27/07/22	Fri 5/08/22
9		Area 10 (Back of House)	8 days	Wed 27/07/22	Fri 5/08/22
10		**Tiers Re-Roof**	**102 days**	**Fri 29/04/22**	**Tue 20/09/22**
11	✓	Roof Coil delivery delay	12 days	Fri 29/04/22	Mon 16/05/22
12	✓	Sheet delivery to Hobart	10 days	Tue 17/05/22	Mon 30/05/22
13		Area 13 (West Tier)	20 days	Tue 31/05/22	Tue 28/06/22
14		Area 14 (West Tier)	20 days	Wed 29/06/22	Tue 26/07/22
15		Area 4 (North Tier)	20 days	Wed 27/07/22	Tue 23/08/22
16		Area 5 (North Tier)	20 days	Wed 24/08/22	Tue 20/09/22
17		**Re-Cladding**	**231 days**	**Mon 4/04/22**	**Mon 13/03/23**
18	✓	Sector 7	10 days	Mon 4/04/22	Tue 19/04/22
19	✓	Sheet delivery	3 days	Wed 20/04/22	Fri 22/04/22
20	✓	Covid Delay	10 days	Tue 26/04/22	Mon 9/05/22
21	✓	Sector 3	10 days	Tue 10/05/22	Mon 23/05/22
22		Sector 6 (Curve)	30 days	Tue 24/05/22	Tue 5/07/22
23		Sector 6 (Flat)	25 days	Wed 6/07/22	Tue 9/08/22
24		Sector 2 (Curved)	30 days	Wed 10/08/22	Tue 20/09/22
25		Sector 2 (Flat)	25 days	Wed 21/09/22	Wed 26/10/22
26		Back of House	15 days	Thu 27/10/22	Wed 16/11/22
27		Sector 4	38 days	Thu 17/11/22	Mon 23/01/23
28		Sector 5	35 days	Tue 24/01/23	Mon 13/03/23

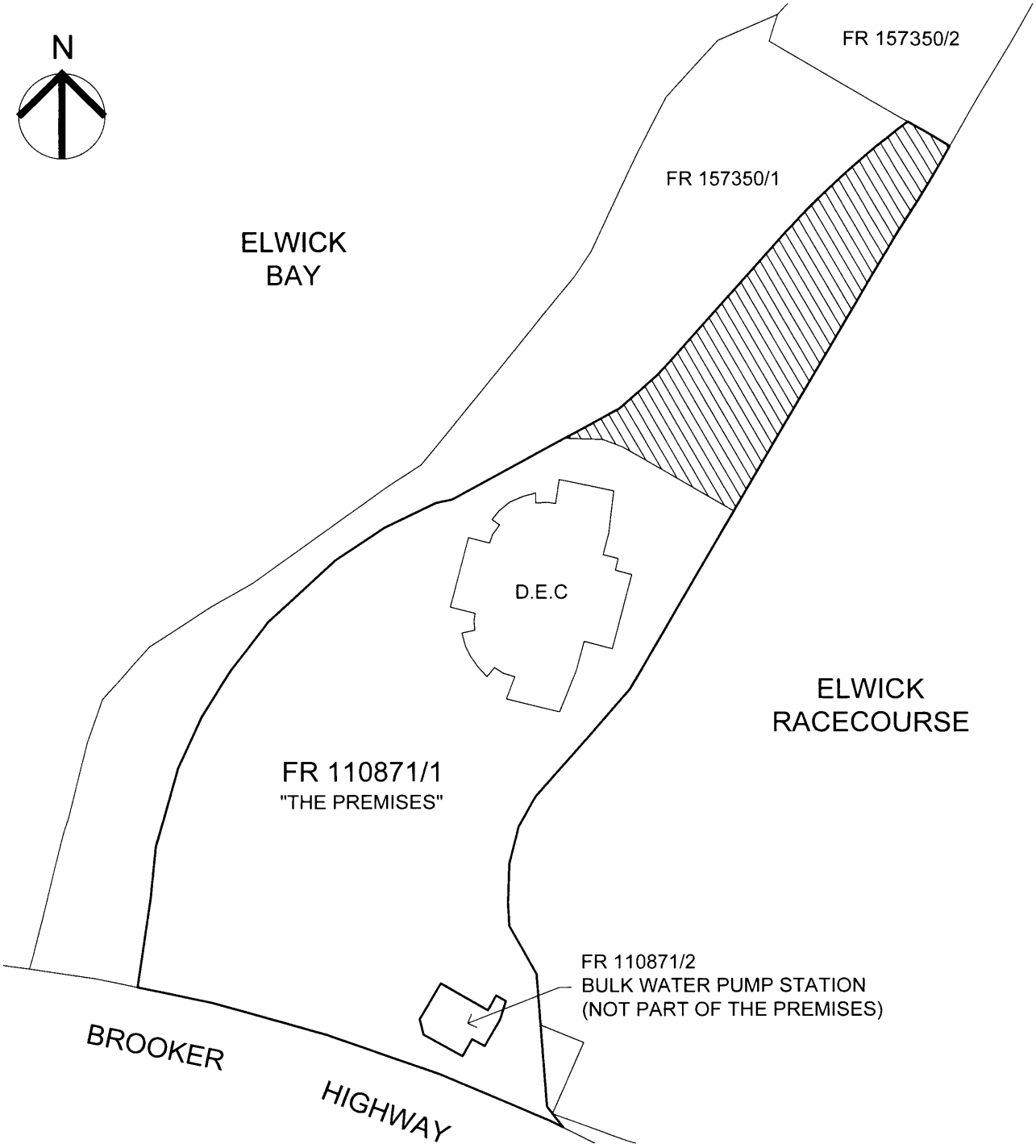
Project: Roofing Cladding prog
Date: Tue 26/07/22

Task	Inactive Task	Manual Summary Rollup	External Milestone
Split	Inactive Milestone	Manual Summary	Deadline
Milestone	Inactive Summary	Start-only	Progress
Summary	Manual Task	Finish-only	Manual Progress
Project Summary	Duration-only	External Tasks	

Attachment 7: Site reports

- JMG - Derwent Entertainment Centre Services Upgrade Estimates Report, October 2019
- JSA Consulting Engineers - Wilkinsons Point Proposed Rezoning Infrastructure Report, September 2019

Attachment 8: Building Licence Area



NOTES:
NO EASEMENTS HAVE BEEN SHOWN ON THIS PLAN FOR CLARITY. PLEASE REFER TO THE RELEVANT TITLES FOR MORE INFORMATION.
ALL AREAS ARE APPROXIMATE ONLY AND ARE SUBJECT TO FINAL SURVEY.

LEGEND

EXISTING TITLE BOUNDARY

SURROUNDING TITLE BOUNDARY

RESUMPTION AREA (AREA: 1.262ha)

0 20 40 60 80 100m

SCALE
1:3000@A4

PDA Surveyors incorporating WALTER SURVEYS
Surveying, Engineering & Planning
ABN 71 217 956 325
127 Bathurst Street
Hobart, Tasmania, 7000
www.pda.com.au
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au

DERWENT ENTERTAINMENT CENTRE (D.E.C)
PREMISES PLAN
601-601B BROOKER HIGHWAY, GLENORCHY
for DEPARTMENT OF STATE GROWTH

DATE 26 OCTOBER 2020

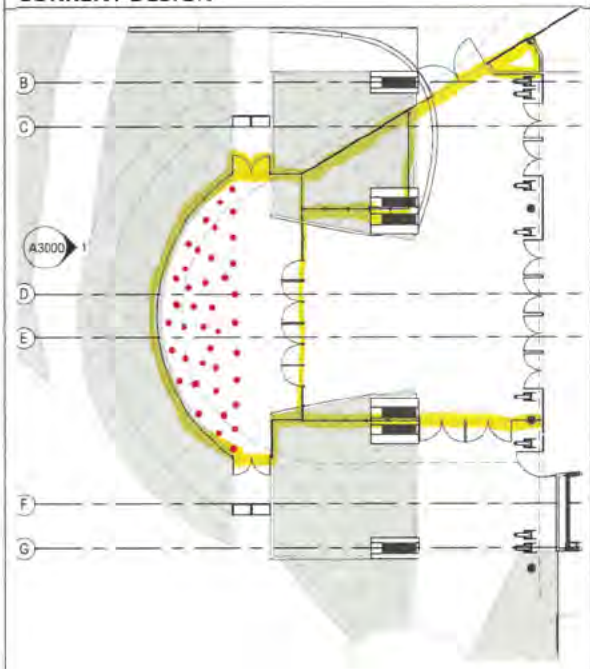
SCALE	PAPER
1:3000	(A4)
JOB NUMBER	DRAWING
46092MD - 2	

Attachment 9: Category 2 Project Works

Attachment 9: Category 2 Project Works

Corporate Area Expansion

The design of the Category 2 Project Works in the Preliminary Project Design Documentation for the Project Stage 2 allows to create an enclosed seating area attached to the corporate dining space, as follows.

CURRENT DESIGN	CATEGORY 2 WORKS
	• Extended paving area shown in red hatch • All walls and doors shaded in yellow (incl associated ground works) • The roof structure 3m's beyond the dining room doors • Additional services including lighting, feature lighting, TV and audio equipment, heating and cooling or gas supply. • Any BBQ's benches, upstand walls or fixed seating that exist in any part of the paved area. • Any loose FFE, joinery or Point of Sale equipment

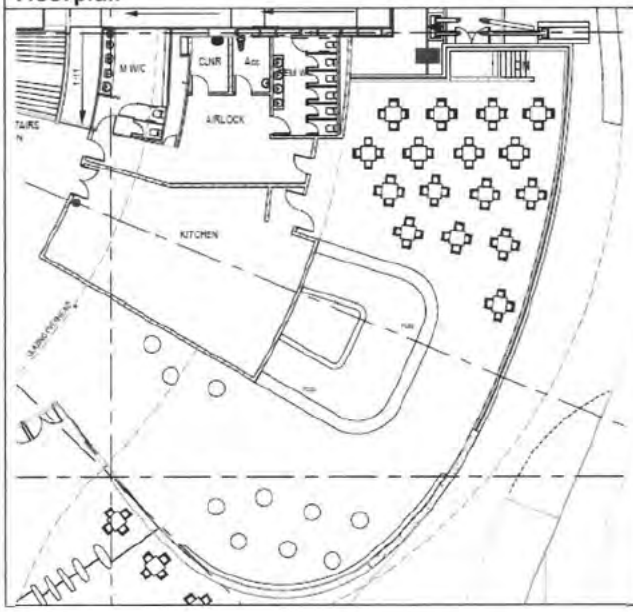
Enhanced Food and Beverage

The initial design of the Category 2 Project Works contemplated a lavish Sport Bar, complete with integrated dome seating, feature bar and wall to wall AV screens (**Enhanced F&B**) as follows.

Floorplan	Feature Bar and Wall to Wall AV
	

The design in the Preliminary Project Design Documentation set out in Attachment 5 to this document does not contemplate the Enhanced F&B works (whether as part of the Category 1 Project Works or Category 2 Project Works).

The design in the Preliminary Project Design Documentation contemplates the works identified in the right column of the table below, which works will form part of the Category 1 Project Works.

Floorplan	Inclusions
	• Centralised servery providing point of sale and food and drink ordering • Larger kitchen not dependant on commercial kitchen • Separate dining and stand up pre and post food and beverage outlet

Notwithstanding any other provision of this Agreement, the Developer may elect not proceed with any of the Category 2 Project Works. To the extent the Developer does elect to proceed with the Category 2 Project Works, the provisions of this Agreement will apply to them.

Attachment 10: Milestones

Milestone	Milestone Date	Maximum Milestone Payment
Stage 2B Practical Completion for Project Stage 2B1	29 September 2021	$39,000,000
Stage 2B Practical Completion for Project Stage 2B2	1 December 2021	$47,000,000
Project Practical Completion	Date for Project Practical Completion	100% of Contract Sum

Attachment 11: Crown's Requirements

The Tasmanian Government intends to redevelop the Derwent Entertainment Centre (DEC) for the purpose of transforming and upgrading the DEC into a contemporary entertainment and sporting facility. The purpose of this document is to identify the Government's vision for the facility to be considered and as part of the approval of the Stage 2 Works.

It is the Crown's expectation, acting reasonably, that the Project Design Documents will incorporate the following minimum requirements and objectives in the Project Works, to the greatest extent possible:

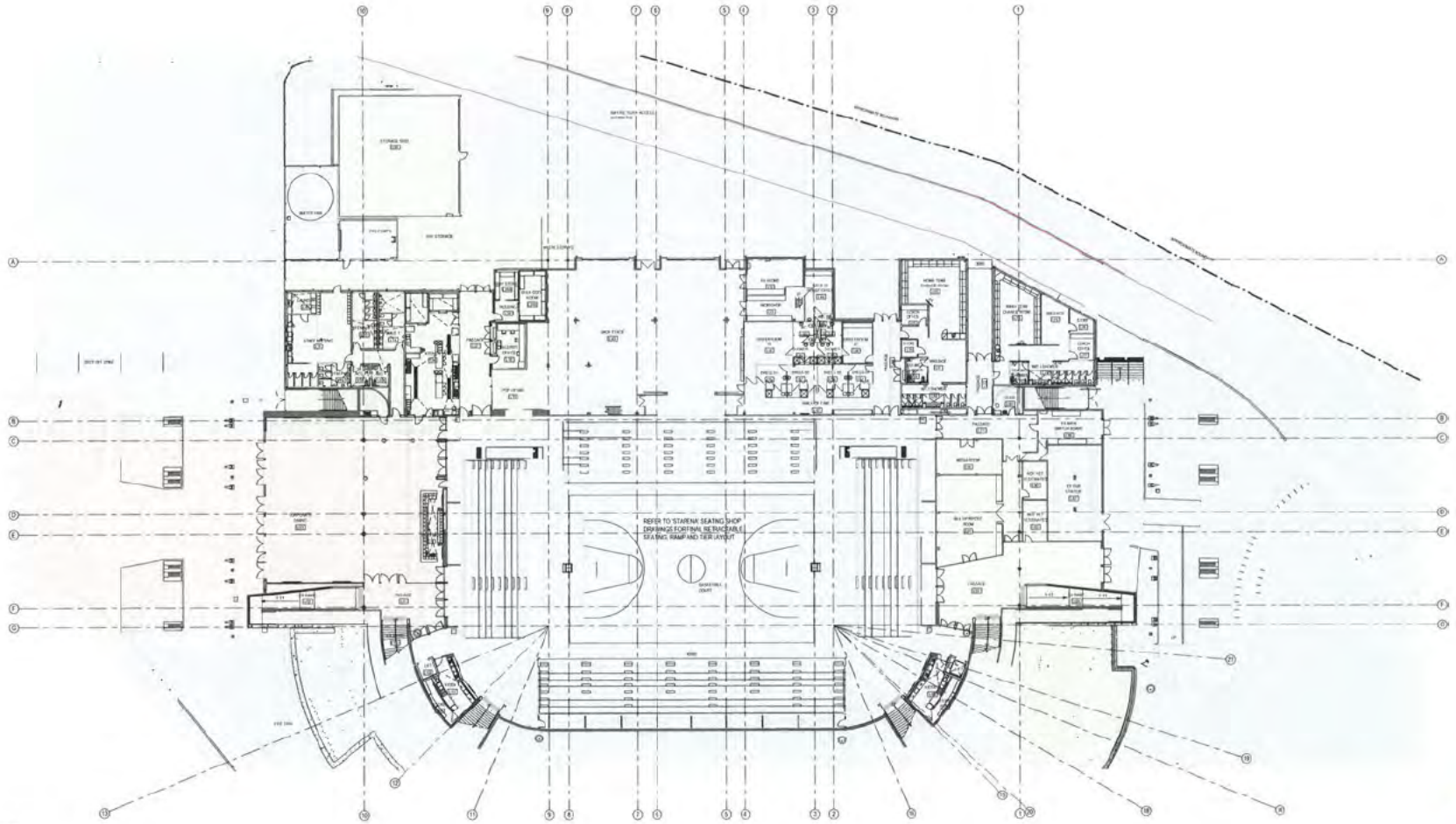
- The Redevelopment will deliver a high quality contemporary sport and entertainment venue with improved and increased functionality providing opportunities to host a variety of events, conventions and exhibitions, sporting tournaments (capable of being facilitated at the DEC), large-scale dinners and concerts that will aim to benefit the local residents of Glenorchy and the broader Tasmanian community.
- All design and performance solutions and fixture & fittings are to be designed and installed in a safe, compliant and fit-for-purpose nature such that the Crown's liability as building owner is limited and all reasonable risks are mitigated.
- Any performance solutions or deviations from any building codes or other regulatory requirements shall contain solutions that do not impose any materially increased or unreasonable liability on the Crown as building owner. The Crown will need to approve these.
- Ensure an appropriate Safety in Design process (consistent with the guidelines by Safe Work Australia) has been undertaken so that the design includes the integration of control measures in the design process to identify and eliminate or, if this is not reasonably practicable, minimise risks to health and safety throughout the life of the building, structures and equipment.
- The DEC will be redeveloped in a manner so that it can be accessed, understood and used to the greatest extent possible by people.
- The accessibility provisions including DDA are to include the following:
    - **External**
        - Construction of new access ramps, pathways, disabled car spaces and other required elements to provide compliant access consistent with all current building codes and regulations. Any proposed performance solutions are to be approved by the Crown.
    - **Internal**
        - Provision of 2 additional compliant passenger lifts.
        - Provision of a fully fitted out and compliant Adult Change Facility.
        - Toilet locations to be clearly visible and incorporated as part of the way-finding solution.

- All materials and finishes are to be of a "fit for purpose" nature and suitable for a contemporary sports and entertainment facility, having regard to the Project Budget. Materials are to be durable, resilient and provide appropriate performance ratings (such as slip resistance) as required to satisfy all regulatory and safety obligations. Materials and finishes should also not present sharp edges or protrusions whereby an unreasonable risk of injury may result to patrons circulating around the venue.
- Building Services to be installed and controlled in a manner that are consistent with standard contemporary and sustainable public facilities, having regard to the Project Budget.
- Provision of an Audio-Visual System that has the capacity and flexibility to service base requirements for a variety of sporting and non-sporting event modes and the other various activities to be undertaken within the venue (but may not satisfy all specific requirements of all hirers).
- Protective Security and Safety
    - Provision of a CCTV and Security System that provides appropriate coverage of internal areas and external areas at the immediate periphery of the DEC for the purposes of security risk mitigation and evidence should an incident or issue occur. CCTV recordings are to be available for a minimum of 14 days after recording in the event of such an accident, incident or other security matter occurs.
    - The provision of reasonable external personnel safety measures (achieved through landscaping and structural bollards) to prevent against vehicle borne attacks.
- Provision of appropriate and clear wayfinding throughout the building and external areas so that patrons, staff and other visitors shall be able to effortlessly navigate around the complex and locate amenities, seating and the like in an efficient manner.
- Provision of a suitable traffic management strategy and design that facilitates and allows for safe and efficient traffic flow both upon entering and exiting the complex and whilst navigating throughout the complex. Appropriate drop off/pick up, DDA, coach parking and provisions for delivery/BOH vehicles are to be provided to facilitate and accommodate for varying vehicle requirements and activities.
- Provision of a suitable and compliant Fire Engineering Strategy that is supported and endorsed by TasFire and approved by the Crown.

Attachment 12: Project Stage 2B Works

In the Staging Plan forming part of this Attachment 12:

- Project Stage 2B1 under this Agreement corresponds to the Project Works that relate to the area marked as "SP1";
- Project Stage 2B2 under this Agreement corresponds to the Project Works that relate to the area marked as "SP2"; and
- Project Stage 2B3 under this Agreement corresponds to the Project Works that relate to the area marked as "SP3"



1 LGL SP Diagram

PhilipLighten Architects

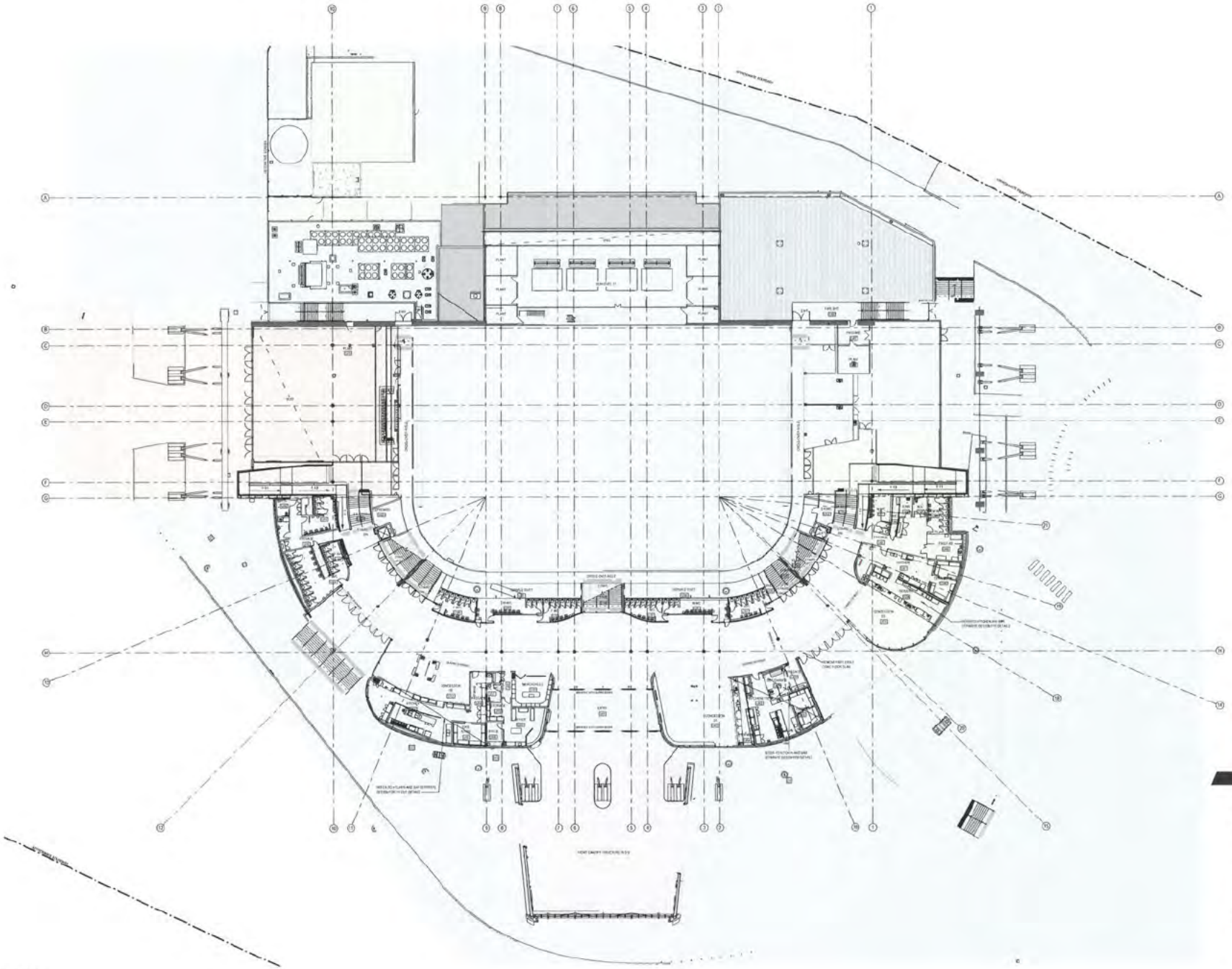
Issd	Description	Chkd	Date
B	ADDENDUM 2 DESIGN UPDATE		
A	TENDER ISSUE		

LG GROUP
COMBAT ENTERTAINMENT CENTRE
491 BRIDGE HWY, GLENROY VIC 3046

SEPARABLE PORTIONS - LG

DESIGN UPDATES

Drawn By: EM	Type: TD	Project Number:	
Scale: As Indicated @ A0	Date: 18.05.21	20.318	
Drawing No: A0650	Rev: B		



1 LOU_SP Diagram

PhilpLighton Architects

Rev	Description	Des	Date
A	ISSUED FOR PLANNING		13.05.21
B	DRAWING UPDATE		28.05.21
C	LOU INFORMATION		10.06.21

LK GROUP
DERWENT ENTERTAINMENT CENTRE
651 BRIDGEWAY, GLENORCHY TAS 7010

SEPARABLE PORTIONS - UD

DESIGN UPDATES

Drawing	DM	Paper	D
Scale	As indicated @ A2	Date	10.06.21
Drawing No.	A0851	Project Number	20.318
		Rev.	C

Attachment 13: Stage 2B Practical Completion

Stage	Stage 2B Practical Completion	Date for Stage 2B Practical Completion
Project Stage 2B1	Stage 2B Practical Completion for Project Stage 2B1 will occur when: (a) the area of the Project Site on which Project Stage 2B1 occurred ("**Project Stage 2B1 Area**") is substantially complete and fit for use and occupation (and the Project Stage 2B1 Area is fit for use, occupation and operation), with omissions and defects being limited to minor Defects: (i) the rectification of which will not materially affect the convenient use and enjoyment of the Project Stage 2B1 Area; and (ii) which do not cause any legal impediment to the use or occupation of any part of the Project Stage 2B1 Area; (b) there is no legal impediment to the occupation or use of the Project Stage 2B1 Area because of any Project Works; (c) the Developer has rectified to the reasonable satisfaction of the Crown all damage to the improvements within the Project Stage 2B1 Area caused by the carrying out of the Project Works for Project Stage 2B1 or any activity by the Developer or any Developer's Agent except where the non-rectification will not: (i) materially affect the convenient use and enjoyment of the Project Stage 2B1 Area; and (ii) cause any legal impediment to the use or occupation of any part of the Project Stage 2B1 Area; (d) all plant and equipment forming part of the Project Works for Project Stage 2B1	29 September 2021

		has been successfully tested and commissioned, and is fully operational; (e) all Hoardings have been removed from publicly accessible areas of the Project Stage 2B1 Area (other than Hoardings that relate to Project Stage 2B2 or Project Stage 2B3); (f) all building plant and equipment (including cranes, scaffolds and builder's sheds) has been removed from publicly accessible areas of the Project Stage 2B1 Area (other than building plant and equipment that relate to Project Stage 2B2 or Project Stage 2B3); (g) all building waste and demolition waste caused by the Project Works has been removed from publicly accessible parts of the Project Stage 2B1 Area and improvements; and (h) the Developer has delivered to the Crown all of the following documents: (i) all Approvals (including occupancy permits under the *Building Act 2000* (Tas)) required for the lawful use and occupation of all improvements on the Project Stage 2B1 Area; and (ii) the following certificates addressed, in each case to the Crown, and otherwise in a form and substance satisfactory to the Crown: (A) a certificate from the Developer's structural engineers stating that all structural Project Works for Project Stage 2B1 have been designed and constructed in conformity with all applicable Laws;	

	(B) a certificate from an accredited building surveyor (for the purposes of the *Building Act 2000* (Tas)) stating that the fire egress from the Project Stage 2B1 Area complies with all applicable Laws and provides a safe and efficient means of fire egress; and (C) a certificate from the Developer's services engineer stating that all Systems and Services forming part of the Project Works for Project Stage 2B2 have been: I. designed and constructed in conformity with all applicable Laws; and II successfully tested and commissioned, and are capable of being fully operational.	
Project Stage 2B2	Stage 2B Practical Completion for Project Stage 2B2 will occur when: (i) the area of the Project Site on which Project Stage 2B2 occurred ("**Project Stage 2B2 Area**") is substantially complete and fit for use and occupation (and the Project Stage 2B2 Area is fit for use, occupation and operation), with omissions and defects being limited to minor Defects: (i) the rectification of which will not materially affect the convenient use and enjoyment of the Project Stage 2B2 Area; and (ii) which do not cause any legal impediment to the use or occupation of any part of the Project Stage 2B2 Area;	1 December 2021

		(j) there is no legal impediment to the occupation or use of the Project Stage 2B2 Area because of any Project Works; (k) the Developer has rectified to the reasonable satisfaction of the Crown all damage to the improvements within the Project Stage 2B2 Area caused by the carrying out of the Project Works for Project Stage 2B2 or any activity by the Developer or any Developer's Agent except where the non-rectification will not: (i) materially affect the convenient use and enjoyment of the Project Stage 2B2 Area; and (ii) cause any legal impediment to the use or occupation of any part of the Project Stage 2B2 Area; (l) all plant and equipment forming part of the Project Works for Project Stage 2B2 has been successfully tested and commissioned, and is fully operational; (m) all Hoardings have been removed from publicly accessible areas of the Project Stage 2B2 Area (other than Hoardings that relate to Project Stage 2B3); (n) all building plant and equipment (including cranes, scaffolds and builder's sheds) has been removed from publicly accessible areas of the Project Stage 2B2 Area (other than building plant and equipment that relate to Project Stage 2B3); (o) all building waste and demolition waste caused by the Project Works has been removed from publicly accessible parts of the Project Stage 2B2 Area and improvements; and (p) the Developer has delivered to the Crown all of the following documents: (i) all Approvals (including occupancy permits under the *Building Act 2000* (Tas)) required for the lawful use and occupation of all improvements on the Project Stage 2B2 Area; and	

	(ii) the following certificates addressed, in each case to the Crown, and otherwise in a form and substance satisfactory to the Crown: (A) a certificate from the Developer's structural engineers stating that all structural Project Works for Project Stage 2B2 have been designed and constructed in conformity with all applicable Laws; (B) a certificate from an accredited building surveyor (for the purposes of the *Building Act 2000* (Tas)) stating that the fire egress from the Project Stage 2B2 Area complies with all applicable Laws and provides a safe and efficient means of fire egress; and (C) a certificate from the Developer's services engineer stating that all Systems and Services forming part of the Project Works for Project Stage 2B2 have been: I. designed and constructed in conformity with all applicable Laws; and II successfully tested and commissioned, and are capable of being fully operational.	
Project Stage 2B3 (equivalent to Project Practical Completion)	Stage 2B Practical Completion for Project Stage 2B3 will occur when: (a) the Project Works (other than for Project Stage 3) are substantially complete and fit for use and occupation (and the DEC is fit for use, occupation and operation),	31 March 2022

		with omissions and defects being limited to minor Defects: (i) the rectification of which will not materially affect the convenient use and enjoyment of the DEC; and (ii) which do not cause any legal impediment to the use or occupation of any part of the Project Land; (b) there is no legal impediment to the occupation or use of the DEC because of any Project Works (other than to the extent required as a result of the Project Works for Project Stage 3); (c) the Developer has rectified to the reasonable satisfaction of the Crown all damage to the improvements within the DEC caused by the carrying out of the Project Works or any activity by the Developer or any Developer's Agent except where the non-rectification (i) will not: (A) materially affect the convenient use and enjoyment of the DEC; and (B) cause any legal impediment to the use or occupation of any part of the Project Land; (ii) relates to that part of the DEC which are affected by the Project Works for Project Stage 3; (d) all plant and equipment forming part of the Project Works (other than the Project Works for Project Stage 3) has been successfully tested and commissioned, and is fully operational; (e) all Hoardings have been removed from publicly accessible areas of the Project Land (other than as required for the Project Works for Project Stage 3); (f) all building plant and equipment (including cranes, scaffolds and builder's sheds) has been removed from publicly accessible areas of the Project Site (other	

		than as required for the Project Works for Project Stage 3); (g) all building waste and demolition waste caused by the Project Works has been removed from publicly accessible parts of the Project Land and improvements (other than as resulting from the Project Works for Project Stage 3); and (h) the Developer has delivered to the Crown all of the following documents: (i) all Approvals (including occupancy permits under the *Building Act 2000* (Tas)) required for the lawful use and occupation of all improvements on the Project Land (other than the improvements related to the Project Works for Project Stage 3); and (ii) the following certificates addressed, in each case to the Crown, and otherwise in a form and substance satisfactory to the Crown: (A) a certificate from a registered land surveyor (within the meaning of the *Surveyors Act 2002* (Tas)) stating the Project Works constructed on the Project Land are wholly within the documented boundaries of the Project Land (except to the extent that the Planning Permit authorises any part of the Project Works to overhang a carriageway); (B) a certificate from the Developer's structural engineers stating that all structural Project Works (other than as the structural Project Works relate to Project Stage 3) have been designed and constructed in conformity with all applicable Laws;	

		(C) a certificate from an accredited building surveyor (for the purposes of the *Building Act 2000* (Tas)) stating that the fire egress from the DEC complies with all applicable Laws and provides a safe and efficient means of fire egress; and (D) a certificate from the Developer's services engineer stating that all Systems and Services forming part of the Project Works (other than the Project Works for Project Stage 3) have been: I. designed and constructed in conformity with all applicable Laws; and II successfully tested and commissioned, and are capable of being fully operational.	

Attachment 14: Project Stage 3 Works

1 Project Stage 3A

Project Stage 3A under this Agreement corresponds to the Project Works described in 20.318-T1: DEC Reroofing Architectural Specification.

2 Project Stage 3B

Project Stage 3B under this Agreement corresponds to the Project Works described in 20.318-T1: DEC Re-Cladding Architectural Specification.

Attachment 15: Stage 3 Practical Completion

Stage	Stage 3 Practical Completion	Date for Stage 3 Practical Completion
Project Stage 3A	Stage 3 Practical Completion for Project Stage 3A will occur when: (i) the area of the Project Site on which Project Stage 3A occurred ("**Project Stage 3A Area**") is substantially complete and fit for use and occupation (and the Project Stage 3A Area is fit for use, occupation and operation), with omissions and defects being limited to minor Defects: (i) the rectification of which will not materially affect the convenient use and enjoyment of the Project Stage 3A Area; and (ii) which do not cause any legal impediment to the use or occupation of any part of the Project Stage 3A Area; (j) there is no legal impediment to the occupation or use of the Project Stage 3A Area because of any Project Works; (k) the Developer has rectified to the reasonable satisfaction of the Crown all damage to the improvements within the Project Stage 3A Area caused by the carrying out of the Project Works for Project Stage 3A or any activity by the Developer or any Developer's Agent except where the non-rectification will not: (i) materially affect the convenient use and enjoyment of the Project Stage 3A Area; and (ii) cause any legal impediment to the use or occupation of any part of the Project Stage 3A Area; (l) all plant and equipment forming part of the Project Works for Project Stage 3A has been successfully tested and commissioned, and is fully operational; (m) all Hoardings have been removed from publicly accessible areas of the Project	13 March 2023

		Stage 3A Area (other than Hoardings that relate to Project Stage 3B); (n) all building plant and equipment (including cranes, scaffolds and builder's sheds) has been removed from publicly accessible areas of the Project Stage 3A Area (other than building plant and equipment that relate to Project Stage 3B); (o) all building waste and demolition waste caused by the Project Works has been removed from publicly accessible parts of the Project Stage 3A Area and improvements; and (p) the Developer has delivered to the Crown all of the following documents: (i) all Approvals (including occupancy permits under the *Building Act 2000* (Tas)) required for the lawful use and occupation of all improvements on the Project Stage 3A Area; and (ii) the following certificates addressed, in each case to the Crown, and otherwise in a form and substance satisfactory to the Crown: (A) a certificate from the Developer's structural engineers stating that all structural Project Works for Project Stage 3A have been designed and constructed in conformity with all applicable Laws; (B) a certificate from an accredited building surveyor (for the purposes of the *Building Act 2000* (Tas)) stating that the fire egress from the Project Stage 3A Area complies with all applicable Laws and provides a safe and efficient means of fire egress; and (C) a certificate from the Developer's services engineer stating that all	

		Systems and Services forming part of the Project Works for Project Stage 3A have been: I. designed and constructed in conformity with all applicable Laws; and II successfully tested and commissioned, and are capable of being fully operational.	
Project Stage 3B	Stage 3 Practical Completion for Project Stage 3B will occur when: (a) the area of the Project Site on which Project Stage 3B occurred ("**Project Stage 3B Area**") is substantially complete and fit for use and occupation (and the Project Stage 3B Area is fit for use, occupation and operation), with omissions and defects being limited to minor Defects: (i) the rectification of which will not materially affect the convenient use and enjoyment of the Project Stage 3B Area; and (ii) which do not cause any legal impediment to the use or occupation of any part of the Project Stage 3B Area; (b) there is no legal impediment to the occupation or use of the Project Stage 3B Area because of any Project Works; (c) the Developer has rectified to the reasonable satisfaction of the Crown all damage to the improvements within the Project Stage 3B Area caused by the carrying out of the Project Works for Project Stage 3B or any activity by the Developer or any Developer's Agent except where the non-rectification will not:		13 March 2023

		(i) materially affect the convenient use and enjoyment of the Project Stage 3B Area; and (ii) cause any legal impediment to the use or occupation of any part of the Project Stage 3B Area; (d) all plant and equipment forming part of the Project Works for Project Stage 3B has been successfully tested and commissioned, and is fully operational; (e) all Hoardings have been removed from publicly accessible areas of the Project Stage 3B Area (other than Hoardings that relate to Project Stage 3A); (f) all building plant and equipment (including cranes, scaffolds and builder's sheds) has been removed from publicly accessible areas of the Project Stage 3B Area (other than building plant and equipment that relate to Project Stage 3A); (g) all building waste and demolition waste caused by the Project Works has been removed from publicly accessible parts of the Project Stage 3B Area and improvements; and (h) the Developer has delivered to the Crown all of the following documents: (i) all Approvals (including occupancy permits under the *Building Act 2000* (Tas)) required for the lawful use and occupation of all improvements on the Project Stage 3B Area; and (ii) the following certificates addressed, in each case to the Crown, and otherwise in a form and substance satisfactory to the Crown: (A) a certificate from the Developer's structural engineers stating that all structural Project Works for Project Stage 3B have been designed and constructed in conformity with all applicable Laws;	

		(B) a certificate from an accredited building surveyor (for the purposes of the *Building Act 2000* (Tas)) stating that the fire egress from the Project Stage 3B Area complies with all applicable Laws and provides a safe and efficient means of fire egress; and (C) a certificate from the Developer's services engineer stating that all Systems and Services forming part of the Project Works for Project Stage 3B have been: I. designed and constructed in conformity with all applicable Laws; and II. successfully tested and commissioned, and are capable of being fully operational.	

Attachment 16: Project Design Documentation for the Project Stage 3

Derwent Entertainment Centre (MyState Arena)

Re Cladding

Architectural Specification

Philp Lighton Architects
Project Number: 20.318

Revision	Date	Approved by
T1 - Tender	28th September 2020	Andrew Floyd

PhilpLighton Architects

Philp Lighton Architects
ABN 82 009 515 182
65 Tamar Street Launceston
Telephone: 03 6331 2133
Email: launceston@philplighton.com.au

SPECIFICATION

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Background

The Derwent Entertainment Centre (DEC) is currently undertaking a major refurbishment.

The project is to be progressively handed back to the tenant for immediate occupancy

in 3 separate stages.

Stage 1- 29 September 2021, Stage 2- 1 December and Stage 3- 31 March 2022.

As a separate contract to the refurbishment, the existing external vertical cladding is to be progressively replaced with an aluminium cassette system. The system will match the wall panelling most recently installed.

The recladding work is to be undertaken to allow the DEC to continuously operate without interruption.

The existing cladding is a composite aluminium flat panel, the panel is not suitable for reuse and must be suitably disposed of. A record of this disposal is required to be submitted progressively as the project proceeds.

Should any wood products be identified in the existing wall build up, a request for instruction shall be issued for direction prior to proceeding.

The existing composite panel (to be removed as part of this contract) has been installed using the flat stick method directly onto vertical top hats. The top hats are to be reused; accordingly, the existing composite cladding shall be carefully removed to preserve the top hats and their fixings to the girts beyond.

The existing wall build up generally consists of a steel safety mesh fixed to girts at varying centres, a foil backed fibreglass blanket in the zone of the top hat and then the existing cladding.

Excepting in the specific locations documented, (where girts are to be strengthened) this wall build up is to be retained and protected.

A new water-resistant breathable membrane will be added over the face of the top hats, secured with the new cladding's fixing angles.

The cassette system shall be formed from Mondo Clad 3mm solid sheet, finish as scheduled, set out to Architect's drawings, all flat wall elevations to Mondo Clad standard details for routed joint panels for a 4-sided cassette.

Curved cassette wall elements shall be formed with 2 vertical folded cassette edges with a bonded Mondo Clad backing to form the horizontal joint. Refer Architectural details.

This contract will be responsible for the supply of all labour and materials to perform the contract including:

Dismantling and removal of composite cladding to approved disposal site.

Temporary roof protection and temporary water proofing

Supply of all labour and new materials.

Supply of access equipment scaffolding, cranage hoists, existing roof protection.

Compliance with all Work-Safe Tasmania standards

On site Co-ordination under the direction of Managing Contractor Vos Constructions

Attendance at co-ordination meetings with DEC management

Co-Ordination with roofing contractor

Co-ordination with Mechanical and electrical subcontractors moving building services such as grilles and aerials

Supervision of the works as they proceed

Attendance at regular co-ordination meetings

Assisting with the developing and meeting an agreed co-ordinated construction program.

The cladding contract shall be between Vos Construction& the successful cladding contractor.

Vos Construction shall take on the role of managing contractor.

By negotiation with the Vos Construction the builder's compound, toilets & crib rooms will be made available for the duration of the project.

Note The Tasmanian State Government has an interest in this project as the building owner as does the LK Property Group as the long- term tenant.

Philp Lighton Architects will administer the contract.

0171B GENERAL REQUIREMENTS

1 GENERAL

1.1 DESIGN

Design development
General: Develop the design beyond that documented, as required.

Design by contractor: If the contractor provides design, use only appropriately qualified persons and conform to statutory requirements.

Conflict with the documents: If it is believed that a conflict exists between statutory requirements and the documents, notify the contract administrator immediately and provide a recommendation to resolve the conflict.

1.2 PERFORMANCE

Corrosion resistance
General: Atmospheric corrosivity category as defined in AS 4312:

- Exterior atmospheric corrosivity category: C5
- Interior atmospheric corrosivity category: C5

This project is located in a SEVERE marine environment and is subject to a higher than normal risk of corrosion and related deterioration due to the related affects of seawater and wind. All materials, methods and workmanship, shall be durable and resist damage, deterioration or change of appearance due to corrosion related affects.
The work of each trade shall be warranted for the affects of corrosion and related affects.

Galvanizing
Severe conditions: Galvanize mild steel components (including fasteners) to AS/NZS 1214 or AS/NZS 4680 as appropriate, if:

- Exposed to weather.
- Embedded in masonry.
- Exposed to or in air spaces behind the external leaf of masonry walls.
- In contact with chemically treated timber, other than copper chrome arsenate (CCA).

Noise levels
General: Install systems to operate within the noise level limits, as documented for the contract design and documented equipment performance.

Structure
General: If required, provide structures, installations and components as follows:

- Fixed accessways: To AS 1657.
- Structural design actions: To the AS/NZS 1170 series.

1.3 PRECEDENCE

General
Order of precedence:

- The requirements of other worksections of the specification override conflicting requirements of this worksection.
- The requirements of worksections override conflicting requirements of their referenced documents. The requirements of the referenced documents are minimum requirements.

1.4 CROSS REFERENCES

General
Requirement: Conform to the following worksection(s):

- Entire Specification including schedules. To be read in conjunction with the Drawing Set.

Common requirements
Requirement: Conform to the following worksections:

- *0181 Adhesives, sealants and fasteners.*
- *0182 Fire-stopping.*
- *0183 Metals and prefinishes.*
- *0184 Termite management.*
- *0185 Timber products, finishes and treatment.*

Cross referencing styles
General: Within the text, titles are cross referenced using the following styles:

- Worksection titles are indicated by *Italicised* text.
- Subsection titles are indicated by **BOLD** text.
- Clause titles are indicated by **BOLD** text.
- Subclause titles are indicated by **Bold** text.

1.5 REFERENCED DOCUMENTS

General
Contractual relationships: Responsibilities and duties of the principal, contractor and contract administrator are not altered by requirements in the documents referenced in this specification.

Current editions: Use referenced documents which are the editions, with amendments, current 3 months before the closing date for tenders, except where other editions or amendments are required by statutory authorities.

European standards: Any national European Standard (e.g. BS EN or DIN EN) may be used in place of the equivalent referenced European Standard (EN).

1.6 INTERPRETATION

Documentation conventions
Imperative mood and streamlined language: The words shall or shall be are implied where a colon is used

following a keyword or within a sentence or sentence fragment.

Subject of sentences and phrases: Specification requirements are to be performed by the contractor, unless stated otherwise.

Abbreviations

General: For the purposes of this specification the following abbreviations apply:

- AS: Australian Standard.
- BCA: National Construction Code Series Volume One: Building Code of Australia Class 2 to 9 Buildings and Volume Two: Building Code of Australia Class 1 and Class 10 Buildings.
- EN: European Norm (European Standard).
- GRP: Glass Reinforced Plastic.
- IP: Ingress protection.
- NATA: National Association of Testing Authorities.
- NCC: National Construction Code.
- NZS: New Zealand Standard.
- PCA: National Construction Code Series Volume 3: Plumbing Code of Australia.
- PVC: Polyvinyl Chloride.
- PVC-U: Unplasticised Polyvinyl Chloride. Also known as UPVC.
- SDS: Safety data sheets.
- VOC: Volatile Organic Compound.
- WHS: Work Health and Safety.

Definitions

General: For the purposes of this specification, the following definitions apply:

- Access for maintenance: Includes access for maintenance, inspection, measurement, operation, adjustment, repair, replacement and other maintenance related tasks.
- Accessible, readily: Readily accessible, easily accessible, easy access and similar terms mean capable of being reached quickly and without climbing over or removing obstructions, using a movable ladder, and in any case not more than 2.0 m above the ground, floor or platform.
- Accredited Testing Laboratory:
  - An organisation accredited by the National Association of Testing Authorities (NATA) to test in the relevant field; or
  - An organisation outside of Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement; or
  - An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.
- Attendance: Attendance, provide attendance and similar expressions mean give assistance for examination and testing.
- Contract administrator: Has the same meaning as architect or superintendent and is the person appointed by the owner or principal under the contract.
- Contractor: Has the same meaning as builder and is the person or organisation bound to carry out and complete the work under the contract.
- Default: Specified value, product or installation method which is to be provided unless otherwise documented.
- Design life: The period of time for which it is assumed, in the design, that an asset will be able to perform its intended purpose with only anticipated maintenance but no major repair or replacement being necessary.
- Documented: Documented, as documented and similar terms mean contained in the contract documents.
- Economic life: The period of time from the acquisition of an asset to the time when the asset, while still physically capable of fulfilling its function and with only anticipated maintenance, ceases to be the lowest cost alternative for satisfying that function.
- Electricity distributor: Any person or organisation that provides electricity from an electricity distribution system to one or more electrical installations. Includes distributor, supply authority, network operator, local network service provider, electricity retailer or electricity entity, as may be appropriate in the relevant jurisdiction.
- Fire hazard properties: Terminology to BCA A5.5.
- Geotechnical site investigation: The process of evaluating the geotechnical characteristics of the site in the context of existing or proposed construction.
- Give notice: Give notice, submit, advise, inform and similar expressions mean give notice (submit, advise, inform) in writing to the contract administrator.
- High level interface: Systems transfer information in a digital format using an open system interface.
- Hot-dip galvanized: Zinc coated to AS/NZS 4680 after fabrication with coating thickness and mass to AS/NZS 4680 Table 1.
- Ingress protection: IP, IP code, IP rating and similar expression have the same meaning as IP Code in AS 60529.
- Joints:
  - Construction joint: A joint with continuous reinforcement provided to suit construction sequence.
  - Contraction joint: An opening control joint with a bond breaking coating separating the joint surfaces to allow independent and controlled contraction of different parts or components, induced by shrinkage, temperature changes or other causes. It may include unbound dowels to assist vertical deflection control.
  - Control joint: An unreinforced joint between or within discrete elements of construction which allows for relative movement of the elements.

  - Expansion joint: A closing control joint with the joint surfaces separated by a compressible filler to allow axial movement due to thermal expansion or contraction with changes in temperature or creep. It may include unbound dowels to assist vertical deflection control.
  - Sealant joint: A joint filled with a flexible synthetic compound which adheres to surfaces within the joint to prevent the passage of dust, moisture and gases.
  - Structural control joint: A control joint (contraction, expansion and isolation) in structural elements when used with applied material and finishes.
  - Substrate joint: A joint in the substrate which includes construction joints and joints between different materials.
  - Weakened plane joint: A contraction joint created by forming a groove, extending at least one quarter the depth of the section, either by using a grooving tool, by sawing, or by inserting a premoulded strip.
- Local authority (local council): A body established for the purposes of local government by or under a law applying in a state or territory.
- Low level interface: Systems transfer information via terminals and voltage free contacts.
- Manufacturer's recommendations: Recommendations, instructions, requirements, specifications (and similar expressions) provided in written or other form by the manufacturer and/or supplier relating to the suitability, use, installation, storage and/or handling of a product.
- Metallic-coated: Steel coated with zinc or aluminium-zinc alloy as follows:
  - Metallic-coated steel sheet: To AS 1397. Metal thicknesses specified are base metal thicknesses.
  - Ferrous open sections zinc coated an in-line process: To AS/NZS 4791.
  - Ferrous hollow sections zinc coated by a continuous or specialised process: To AS/NZS 4792.
- Network Utility Operator: The entity undertaking the piped distribution of drinking water or natural gas for supply or is the operator of a sewerage system or external stormwater drainage system.
- Obtain: Obtain, seek and similar expressions mean obtain (seek) in writing from the contract administrator.
- Pipe: Includes pipe and tube.
- Practical completion or defects free completion: The requirements for these stages of completion are defined in the relevant building contract for the project.
- Principal: Principal has the same meaning as owner, client and proprietor and is the party to whom the contractor is legally bound to construct the works.
- Professional engineer: As defined by the NCC.
- Proprietary: Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Prototype: A full size mock-up of components, systems or elements to demonstrate or test construction methods, junctions and finishes, and to define the level of quality.
- Provide: Provide and similar expressions mean supply and install and include development of the design beyond that documented.
- Record drawings: Record drawings has the same meaning as as-installed drawings, as-built drawings and work-as-executed drawings.
- Referenced documents: Standards and other documents whose requirements are included in this specification by reference.
- Required: Required by the contract documents, the local or statutory authorities.
- If required: A conditional specification term for work which may be shown in the documents or is a legislative requirement.
- Sample: A physical example that illustrates workmanship, materials or equipment, and establishes standards by which the work will be judged. It includes samples and sample panels.
- Statutory authority: A public sector entity created by legislation, that is, a specific law of the Commonwealth, State or Territory.
- Supply: Supply, furnish and similar expressions mean supply only.
- Tests – completion: Tests carried out on completed installations or systems and fully resolved before the date for practical completion, to demonstrate that the installation or system, including components, controls and equipment, operates correctly, safely and efficiently, and meets performance and other requirements. The superintendent may direct that completion tests be carried out after the date for practical completion.
- Tests – pre-completion: Tests carried out before completion tests, including:
  - Production: Tests carried out on a purchased item, before delivery to the site.
  - Progressive: Tests carried out during installation to demonstrate performance in conformance with this specification.
  - Site: Tests carried out on site.
  - Type: Tests carried out on an item identical with a production item, before delivery to the site.
- Tolerance: The permitted difference between the upper limit and the lower limit of dimension, value or quantity.
- Utility service provider: Includes organisations providing power, water, sewerage, gas and telecommunications services.
- Verification: Provision of evidence or proof that a performance requirement has been met or a default exists.

1.7 CONTRACT DOCUMENTS

Services diagrammatic layouts

General: Layouts of service lines, plant and equipment shown on the drawings are diagrammatic only, except where figured dimensions are provided or calculable.

Before commencing work:

- Obtain measurements and other necessary information.
- Coordinate the design and installation in conjunction with all trades.

Levels

General: Spot levels take precedence over contour lines and ground profile lines.

Drawings and manuals for existing services

Warranty: No warranty is given as to the completeness or accuracy of drawings and/or manuals of existing services.

1.8 SUBMISSIONS

Requirement

General: Submit the following:

- Authority approvals: Notes of meetings with authorities whose requirements apply to the work and evidence that notices, fees and permits have been sought and paid, that authority connections are complete and that statutory approvals by the authorities whose requirements apply to the work have been received.
- Building penetrations: Details of the methods to maintain the required structural, fire and other properties to **EXECUTION**, **BUILDING PENETRATIONS**.
- Certification: Certification of conformance to documented requirements, including certification that the plant and equipment submitted meets all requirements of the contract documents and that each installation is operating correctly.
- Design documentation: Design data and certification of proposed work, if required and as documented.
- Electronic facility and asset management information: For the whole of the work to **EXECUTION, ELECTRONIC FACILITY AND ASSET MANAGEMENT INFORMATION**.
- Execution details: Execution programs, schedules and details of proposed methods and equipment. For building services include the following:
  - Embedded services: Proposed method for embedding services in concrete walls or floors or chasing into concrete or masonry walls.
  - Fixing of services: Typical details of locations, types and methods of fixing services to the building structure.
  - Inaccessible services: If services will be enclosed and not accessible after completion, submit proposals for location of service runs and fittings.
- Fire performance: Evidence of conformity to requirement for combustibility, fire hazard properties and fire-resistance of building elements.
- Marking and labelling: Samples and schedules of proposed marking and labels to **EXECUTION, MARKING AND LABELLING.**
- Operation and maintenance manuals: For the whole of the work to **EXECUTION, OPERATION AND MAINTENANCE MANUALS**.
- Products: Products and materials data, including manufacturer's technical specifications and drawings, SDS for hazardous materials, type tests results, evidence of conformity to documented requirements, product certification, performance and rating tables, service connection requirements and installation and maintenance recommendations.
- Prototypes: Prototypes of components, systems or elements.
- Records: As-built documents, photographs, system diagrams, schedules and logbooks to **EXECUTION, RECORD DRAWINGS**.
- Samples: Representative of proposed products and materials and including proposals to incorporate samples into the works, if any to **EXECUTION, SAMPLES**.
- Shop drawings: To **EXECUTION, SHOP DRAWINGS**.
- Substitutions: To PRODUCTS**, GENERAL, Substitutions**.
- Tests:
  - Inspection and testing plan consistent with the construction program including details of test stages and procedures.
  - Test reports for testing performed under the contract.
- Warranties: To **EXECUTION, WARRANTIES**.

Contractor review: Before submissions, review each submission item, and check for coordination with other work of the contract and conformance to contract documents.

Submit to: Contract Administrator

Submission times

Default timing: Make submissions at least 15 working days before ordering products or starting installation of the respective portion of the works.

Submission response times: Allow in the construction program for at least the following times (days):

- Shop drawings: 15
- Samples and prototypes: 10
- Manufacturers' or suppliers' recommendations: 10
- Product data: 10

- Product/design substitution or modification: 10

Proposed products schedules: If major products are not specified as proprietary items, submit a schedule of those proposed for use within 3 weeks of site possession.

Identification
Requirement: Identify the project, contractor, subcontractor or supplier, manufacturer, applicable product, model number and options, as appropriate and include relevant contract document references.

Non-conformance: Identify proposals that do not conform with project requirements, and characteristics which may be detrimental to successful performance of the completed work.

Errors
Requirement: If a submission contains errors, make a new or amended submission as appropriate, indicating changes made since the previous submission.

Electronic submissions
Electronic copies file format: .pdf & .dwg

CAD file format: .dwg

Quantity: 1

Transmission medium: email/usb

Hard copy submissions
Hard copy quantity: 3 Copies

Standard contract drawing size: A0

1.9 INSPECTION

Notice
Concealment: If notice of inspection is required for parts of the works that are to be concealed, give notice when the inspection can be made before concealment.

Tests: Give notice of the time and place of documented tests.

Minimum notice: As documented in the **Notices schedule**.

Light levels
Lighting levels for inspection: To AS/NZS 1680.2.4.

Attendance
General: Provide attendance for documented inspections and tests.

2 PRODUCTS

2.1 MATERIALS AND COMPONENTS

Manufacturers' or suppliers' recommendations
General: Provide and select, if no selection is given, transport, deliver, store, handle, protect, finish, adjust and prepare for use the manufactured items to the manufacturers' or suppliers' recommendations.

Proprietary items/systems/assemblies: Assemble, install or fix to substrate to the manufacturers' or suppliers' recommendations.

Project modifications: Advise of activities that supplement, or are contrary to the manufacturers' or suppliers' recommendations.

Product identification
Sealed containers: If materials or products are supplied by the manufacturer in closed or sealed containers or packages, bring the materials or products to point of use in the original containers or packages.

Other products: Marked to show the following, as applicable:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.

Sources policy
General: A preference for Australian or New Zealand Goods

Consistency
General: For each material or product use the same source or manufacturer and provide consistent type, size, quality and appearance.

Prohibited materials
General: Do not provide the following:

- Materials, exceeding the limits of those listed, in the Safe Work Australia *Hazardous Chemical Information System* (HCIS) Workplace exposure standards.

Insulation blowing agents:

- Materials that use chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) in the manufacturing process.
- A blowing agent with a global warming potential (GWP) ≥ 140.

Substitutions
Identified proprietary items: Identification of a proprietary item does not necessarily imply exclusive

preference for the identified item, but indicates the necessary properties of the item.

Alternatives: If alternatives to the documented products, methods or systems are proposed, submit sufficient information to permit evaluation of the proposed alternatives, including the following:

- Evidence that the performance is equal to or greater than that specified.
- Evidence of conformity to a cited standard.
- Samples.
- Essential technical information, in English.
- Reasons for the proposed substitutions.
- Statement of the extent of revisions to the contract documents.
- Statement of the extent of revisions to the construction program.
- Statement of cost implications including costs outside the contract.
- Statement of consequent alterations to other parts of the works.

Availability: If the documented products or systems are unavailable within the time constraints of the construction program, submit evidence.

Criteria: If the substitution is for any reason other than unavailability, submit evidence that the substitution:

- Is of net enhanced value to the principal.
- Is consistent with the contract documents and is as effective as the identified item, detail or method.

3 EXECUTION

3.1 SAMPLES

General

Incorporation of samples: Only incorporate samples in the works which have been endorsed for inclusion. Do not incorporate other samples.

Retention of samples: Keep endorsed samples in good condition on site, until the date of practical completion.

Unincorporated samples: Remove on completion.

3.2 SHOP DRAWINGS

General

Documentation: Include dimensioned drawings showing details of the fabrication and installation of structural elements, building components, services and equipment, including relationship to building structure and other services, cable type and size, and marking details.

Diagrammatic layouts: Coordinate work shown diagrammatically in the contract documents, and prepare dimensioned set-out drawings.

Services coordination: Coordinate with other building and service elements. Show adjusted positions on the shop drawings.

Space requirements: Check space and access for maintenance requirements of equipment and services indicated diagrammatically in the contract documents.

Building work drawings for building services: On dimensioned drawings show the following:

- Access doors and panels.
- Conduits to be cast in slabs.
- Holding down bolts and other anchorage and/or fixings required complete with loads to be imposed on the structure during installation and operation.
- Openings, penetrations and block-outs.
- Sleeves.
- Plinths, kerbs and bases.
- Required external openings.

Submission medium: .pdf & CAD

Drawing size: A3-A0

CAD base drawings: 2D and 3D

Record drawings: Amend all documented shop drawings to include changes made during the progress of the work and up to the end of the defects liability period.

3.3 OFF-SITE DISPOSAL

Removal of material

General: Dispose of building waste material off site to the requirements of the relevant authorities.

3.4 WALL CHASING

Holes and chases

General: If holes and chases are required in masonry walls, make sure structural integrity of the wall is maintained. Do not chase walls with a fire-resistance level or an acoustic rating.

Parallel chases or recesses on opposite faces of a wall: Not closer than 600 mm to each other.

Chasing blockwork: Only chase core-filled hollow blocks or solid blocks which are not documented as structural.

Concrete blockwork chasing table

Block thickness (mm)	Maximum depth of chase (mm)
190	35

Block thickness (mm)	Maximum depth of chase (mm)
140	25
90	20

3.5 FIXING

General

Suitability: If equipment is not suitable for fixing to non-structural building elements, fix directly to structure and trim around penetrations in non-structural elements.

Fasteners

General: Use proprietary fasteners capable of transmitting the loads imposed, and sufficient for the rigidity of the assembly.

3.6 SERVICES CONNECTIONS

Connections

General: Connect to utility service provider services or service points. Excavate to locate and expose connection points. Reinstate the surfaces and facilities that have been disturbed.

Utility service provider requirements

General: If the utility service provider elects to perform or supply part of the works, make the necessary arrangements. Install equipment supplied, but not installed, by the utility service provider.

3.7 SERVICES INSTALLATION

General

Fixing: If non-structural building elements are not suitable for fixing services to, fix directly to structure and trim around penetrations in non-structural elements.

Installation: Install equipment and services as follows:

- Plumb and securely fixed.
- Allow for movement in both structure and services.
- Arrange services running together, parallel to each other and adjacent building elements.

Concealment: Conceal all cables, ducts, trays and pipes except where installed in plant spaces, ceiling spaces and riser cupboards or documented to be exposed. If alternative routes are available, do not locate on external walls.

Lifting: Provide heavy items of equipment with permanent fixtures for lifting to the manufacturer's recommendations.

Suspended ground floors: Keep all parts of services suspended under ground floors at least 150 mm clear of the ground surface. Make sure services do not impede access.

Dissimilar metals

Jointing: Join dissimilar metals with fittings of electrolytically compatible material.

Temporary capping

Pipe ends: During construction, protect open ends of pipe with metal or plastic covers or caps.

Piping

General: Install piping in straight lines at uniform grades without sags. Arrange to prevent air locks. Provide sufficient unions, flanges and isolating valves to allow removal of piping and fittings for maintenance or replacement of plant.

Spacing: Provide at least 25 mm clear between pipes and between pipes and building elements, additional to insulation.

Changes of direction: Provide as follows:

- If practicable, long radius elbows or bends and sets, and swept branch connections.
- If pipes are led up or along walls and then through to fixtures, provide elbows or short radius bends.
- Do not provide mitred fittings.

Vibration: Arrange and support piping to prevent vibration whilst permitting necessary movement. Minimise the number of joints.

Embedded pipes: Do not embed pipes that operate under pressure in concrete or surfacing material.

Valve groupings: If possible, locate valves in groups.

Pressure testing precautions: Isolate items not rated for the test pressure. Restrain pipes and equipment to prevent movement during pressure testing.

Support and structure

Requirement: Provide incidental supports and structures to suit the services.

Pipe support systems

General: Provide proprietary support systems of metallic-coated steel construction.

Vertical pipes: Provide anchors and guides to maintain long pipes in position, and supports designed for the mass of the pipe and its contents.

Saddles: Provide saddle supports only on DN 25 or smaller pipes.

Dissimilar metals: If pipe and support materials are dissimilar, provide industrial grade electrically non-conductive material securely bonded to the pipe to

separate them. Provide fasteners of electrolytically compatible material.

Uninsulated pipes: Clamp piping supports directly to pipes.

Insulated pipes:

- Spacers: Provide spacers at least as thick as the insulation between piping supports and pipes. Extend either side of the support by at least 20 mm.
- Spacer material: Rigid insulation material of sufficient strength to support the piping and suitable for the temperature application.

Support spacing: As follows:

- Cold and heated water pipes: To AS/NZS 3500.1 Table 5.6.4. Provide additional brackets, clips or hangers to prevent pipe movement caused by water pressure effects.
- Sanitary plumbing: To AS/NZS 3500.2 Table 10.2.1.
- Fuel gas: To AS/NZS 5601.1 Table 5.5.
- Other pipes: To AS/NZS 3500.1 Table 5.6.4.

Hanger size table

Nominal pipe size (DN)	Minimum hanger diameter for single hangers (mm)
50 maximum	9.5
65 to 90	12.7
100 to 125	15.8
150 to 200	19.0

Differential movement

General: If the geotechnical site investigation report predicts differential movements between buildings and the ground in which pipes or conduits are buried, provide control joints in the pipes or conduits, as follows:

- Arrangement: Arrange pipes and conduits to minimise the number of control joints.
- Magnitude: Accommodate the predicted movements.

3.8 BUILDING PENETRATIONS

Penetrations

Requirement: Maintain the required structural integrity, fire performance, waterproofing performance and other properties when penetrating or fixing to the following:

- Structural building elements including external walls, fire walls, fire doors and access panels, other tested and rated assemblies or elements, floor slabs and beams.
- Membrane elements including damp-proof courses, waterproofing membranes and roof coverings. If penetrating membranes, provide a waterproof seal between the membrane and the penetrating component.

Sealing

Fire-resisting building elements: Seal penetrations with a system conforming to AS 4072.1.

Non fire-resisting building elements: Seal penetrations around conduits and sleeves. Seal around cables within sleeves. If the building element is acoustically rated, maintain the rating.

Sleeves

General: If piping, cables or conduits penetrate building elements, provide metal or PVC-U sleeves formed from pipe sections as follows:

- Movement: Arrange to permit normal pipe or conduit movement.
- Diameter (for non fire-resisting building elements): Sufficient to provide a ring shaped space around the pipe or pipe insulation of at least 12 mm.
- Ferrous surfaces: Prime paint.
- Sealing: Seal between pipes or conduits and sleeves to prevent the entry of vermin.
- Terminations:
  - Cover plates fitted: Flush with the finished building surface.
  - Fire-resisting and acoustic rated building elements: 50 mm beyond finished building surface.
  - Floors draining to floor wastes: 50 mm above finished floor.
  - Other locations: 5 mm beyond finished building surface.
  - Termite management: To AS 3660.1.
- Thickness:
  - Metal: 1 mm or greater.
  - PVC-U: 3 mm or greater.

3.9 WATERPROOFING PENETRATIONS

Penetrations

Requirement: For the entire duration of the Roofing / Cladding contract, the contracted party shall be responsible for the waterproofing of their work area and associated abutting area to their work site potentially disturbed by the work.

Contractors are to make all allowances for suitable temporary protection of the works as the work progresses.

Contractors shall closely monitor the suitability of the weather to undertake recladding / roofing and allow sufficient time to install temporary protection in advance of a weather / rain event.

Should water enter the building an emergency response to halting that water ingress and an immediate water removal, drying and restitution of finishes to existing condition is required in this contract.

It is highly recommended contractors give consideration as to how they intend performing their contract works in the context that the building is occupied, has major events planned and water ingress is an unacceptable consequence.

3.10 CONCRETE PLINTHS

Construction

General: Provide concrete plinths as documented and under all equipment located on concrete floor slabs as follows:

- Surround: Galvanized steel, at least 75 mm high and 1.6 mm thick. Fix to the floor with masonry anchors. Fill with concrete.
- Height: 75 mm or greater, as documented.
- Reinforcement: Single layer of F62 fabric.
- Concrete: Grade N20.
- Finish: Steel float, flush with top edge of the surround.

3.11 PLANT AND EQUIPMENT

General

Location: Locate so failure of plant and equipment (including leaks) does not create a hazard for the building occupants and causes a minimum or no damage to the building, its finishes and contents including water sensitive equipment or finishes.

Safe tray and an overflow pipe: Provide to each tank, hot water heater and storage vessel.

3.12 ACCESS FOR MAINTENANCE

General

Requirement: Provide access for maintenance of plant and equipment.

Standards: Conform to the relevant requirements of AS 1657, AS/NZS 1892.1, AS 2865 and AS/NZS 3666.1.

Work Health and Safety: Conform to the requirements of the applicable Work Health and Safety regulations.

Protection from injury: Protect personnel from injury caused by contact with objects including those that are sharp, hot or protrude at low level.

Plant room flooring surfaces: R10 Slip resistance classification to AS 4586.

Trip hazards: Do not run small services including drains and conduits across floors where they may be a trip hazard.

Manufacturer's standard equipment: If necessary, modify manufacturer's standard equipment to provide the plant access documented.

Clearances

Minimum clearances for access: Conform to the following:

- Vertical clearance: ≥ 2100 mm, vertically above horizontal floors, ground and platforms.
- Horizontal clearance: Preferably ≥ 750 mm clear, but in no case less than 600 mm between equipment or between equipment and building features including walls.
- If tools are required to operate, adjust or remove equipment, provide sufficient space so the tools can be used in their normal manner and without requiring the user to employ undue or awkward force.
- Hinged or removable components: To the manufacturer's recommendations.
- Within plant items: Conform to the preceding requirements, and not less than the clearances recommended in BS 8313.

Elevated services other than in occupied areas

Access classifications:

- Access class A: Readily accessible. Provide clear and immediate access to and around plant items. If plant or equipment is located more than 2.0 m above the ground, floor or platform, provide a platform with handrails accessible by a stair, all to AS 1657.
- Access class B: If the plant item requiring access is located more than 2.0 m above the ground, floor or platform, provide a platform with handrails accessible by a non-vertical ladder, all to AS 1657.
- Access class C: Locate plant so temporary means of access conforming to Work health and Safety regulations can be provided.

Temporary means of access: Make sure there is adequate provision in place which is safe and effective.

Areas in which access is restricted to authorised maintenance personnel: Provide access as follows:

- Instruments, gauges and indicators (including warning and indicating lights) requiring inspection at any frequency: Readily accessible.
- Access required monthly or more frequently: Access class A.
- Access required between monthly and six monthly: Access class A or B.
- Access required less frequently than six monthly: Access class A, B or C.

Other areas: Provide access as follows:

- Locate to minimise inconvenience and disruption to building occupants or damage to the building structure or finishes.

- In suspended ceilings, locate items of equipment that require inspection and/or maintenance above tiled parts. If not possible, provide access panels where located above set plaster or other inaccessible ceilings. Arrange services and plant locations to reduce the number of access panels. Coordinate with other trades to use common access panels where feasible.
- Do not locate equipment requiring access above partitions.
- Instruments, gauges and other items requiring inspection at any frequency: Readily accessible.
- Labelling: If equipment is concealed in ceilings, provide marking to **MARKING AND LABELLING**, **Equipment concealed in ceilings**.

Facilities for equipment removal and replacement

Requirement: Provide facilities to permit removal from the building and replacement of plant and equipment, including space large enough to accommodate it and any required lifting and/or transportation equipment. Arrange plant so large and/or heavy items can be moved with the minimum changes of direction.

Removal of components: Allow sufficient space for removal and replacement of equipment components including air filters, tubes of shell and tube heat exchangers, removable heat exchanger bundles, coils and fan shafts. Provide access panels or doors large enough to permit the safe removal and replacement of components within air handling units.

Facilities for access

Equipment behind hinged doors: Provide doors opening at least 150°.

Equipment behind removable panels: Provide panels with quick release fasteners or captive metal thread screws.

Removable panels: Provide handles to permit easy and safe removal and replacement.

Insulated plant and services: If insulation must be removed to access plant and services for maintenance, arrange it to allow for removal and replacement without damage.

Piping

Requirement: Conform to the following:

- Provide access and clearance at fittings which require maintenance, inspection or servicing, including control valves and joints intended to permit pipe removal.
- Arrange piping so it does not interfere with the removal or servicing of associated equipment or valves or block access or ventilation openings.
- Preferably run piping, conduits, cable trays and ducts at high level and drop vertically to equipment.

Electrical equipment and controls

Electrical equipment: Provide clearances and access space to AS/NZS 3000.

Switchboards and electrical control equipment: Locate near the main entrance to plant space and with switchboards visible from the plant being operated.

Control panels: Locate near and visible from the plant being controlled.

3.13 VIBRATION SUPPRESSION

General

Requirement: Minimise the transmission of vibration from rotating or reciprocating equipment to other building elements.

Standard

Machinery noise and vibration: Vibration severity in Zone A to ISO 20816-1 and ISO 10816-3.

Speeds

General: If no maximum speed is prescribed, do not exceed 1500 r/min for direct driven equipment.

Connections

General: Provide flexible connections to rotating machinery and assemblies containing rotating machinery. Isolate pipes by incorporating sufficient flexibility into the pipework or by use of proprietary flexible pipe connections installed to prevent placing stress on pipes due to end reaction.

Inertia bases

General: If necessary to achieve the required level of vibration isolation, provide inertia bases having appropriate mass and to the following:

- Construction: Steel or steel-framed reinforced concrete. Position foundation bolts for equipment before pouring concrete.
- Supports: Support on vibration isolation mountings using height saving support brackets.

Vibration isolation mountings

General: Except for external equipment that is not connected to the structure of any building, support rotating or reciprocating equipment on mountings as follows:

- For static deflections < 15 mm: Single or double deflection neoprene in-shear mountings incorporating steel top and base plates and a tapped hole for bolting to equipment.
- For static deflections ≥ 15 mm: Spring mountings.

Selection: Provide mountings selected to achieve 95% isolation efficiency at the normal operating speeds of the equipment.

Installation: Set and adjust vibration isolation mounting supports to give clearance for free movement of the supports.

Spring mountings: Provide freestanding laterally stable springs as follows:

- Clearances: ≥ 12 mm between springs and other members such as bolts and housing.
- High frequency isolation: 5 mm neoprene acoustic isolation pads between baseplate and support.
- Levelling: Provide bolts and lock nuts.
- Minimum travel to solid: ≥ 150% of the designated minimum static deflection.
- Ratio of mean coil diameter to compressed length at the designated minimum static deflection: ≥ 0.8:1.
- Snubbing: Snub the springs to prevent bounce at start-up.
- Vertical resilient limit stops: To prevent spring extension when unloaded, to serve as blocking during erection and which remain out of contact during normal operation.

3.14 SEISMIC RESTRAINT OF NON-STRUCTURAL COMPONENTS

General

Earthquake design category: Refer to AS 1170.4 Section 5

Seismic restraint to AS 1170.4

3.15 FINISHES TO BUILDING SERVICES

General

Requirement: If exposed to view (including in plant rooms), paint building services and equipment.

Surfaces painted or finished off-site: Conform to *0183 Metals and prefinishes*.

Exceptions: Do not paint chromium or nickel plating, anodised aluminium, GRP, stainless steel, non-metallic flexible materials and normally lubricated machined surfaces. Surfaces with finishes applied off-site need not be re-painted on-site provided the corrosion resistance of the finish is not less than that of the respective finish documented.

Standard: Conform to the recommendations of AS/NZS 2311 Sections 3, 6 and 7 or AS 2312.1 Sections 6, 7 and 8, as applicable.

Inaccessible surfaces: If surfaces are inaccessible after installation, complete finish before installation.

Painting systems

New unpainted interior surfaces: To AS/NZS 2311 Table 5.1.

New unpainted exterior surfaces: To AS/NZS 2311 Table 5.2.

Paint application

Coats: Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Make sure each coat of paint or clear finish is uniform in colour, gloss, thickness and texture and free of runs, sags, blisters or other discontinuities.

Combinations: Do not combine paints from different manufacturers in a paint system.

Protection: Remove fixtures before starting to paint and refix in position undamaged when painting is complete.

Underground metal piping

Requirement: Provide corrosion protection for the following:

- Underground ferrous piping.
- Underground non-ferrous metal piping in corrosive environments.

Corrosion protection: Select from the following:

- Cathodic protection: Sacrificial anodes or impressed current. Incorporate a facility for periodic testing. Conform to the recommendations of AS 2832.1.
- Continuous wrapping using proprietary petroleum taping material.
- Impermeable flexible plastic coating.
- Sealed polyethylene sleeve.

Aggressive soils: If metallic piping or components are installed in chemically aggressive soil, provide additional protection as follows:

- Material: Continuous polyethylene sleeve to ASTM D1248 with a minimum thickness of 0.25 mm.
- Installation: Wrap or sleeve pipes and components. Tape joints between sections of polyethylene and between polyethylene and piping.

Low VOC emitting paints

Paint types: To the recommendations of AS/NZS 2311 Table 4.2.

Repairs to finishes

Requirement: Repair damaged finishes to restore their corrosion protection, appearance and service life.

3.16 MARKING AND LABELLING

General

Requirement: Mark and label services and equipment for identification purposes as follows:

- Locations exposed to weather: Provide durable materials.
- Pipes, conduits and ducts: To AS 1345 throughout its length, including in concealed spaces.
- Cables: Label to indicate the origin and destination of the cable.

Consistency: Label and mark equipment using a consistent scheme across all services elements of the project.

Asset management labels and tags: Refer to Tasmanian Government Asset Management Requirements

Label samples and schedules

Requirement: For each item or type of item, prepare a schedule of marking and labelling, including the following:

- A description of the item or type of item for identification.
- The proposed text for marking or labelling.
- The proposed location of the marking and labelling.

Submission timing: Before marking or labelling.

Electrical accessories

Circuit identification: Label isolating switches and outlets to identify circuit origin.

Operable devices

Requirement: Mark to identify the following:

- Controls.
- Indicators, gauges, meters.
- Isolating switches.

Equipment concealed in ceilings

Location: Provide a label on the ceiling, to indicate the location of each concealed item requiring access for routine inspection, maintenance and/or operation and as follows:

- Tiled ceilings, locate the label on the ceiling grid closest to the concealed item access point.
- Flush lined ceilings, locate adjacent to closest access panel.

Concealed equipment: Items to be labelled include the following:

- Fan coil units and terminal equipment (e.g. VAV terminals).
- Fire and smoke dampers.
- Isolating valves not directly connected to items otherwise labelled.
- Motorised dampers.

Wall mounted equipment in occupied areas

Location: Provide labels on wall mounted items in occupied areas including the following:

- Services control switches.
- Temperature and humidity sensors.

Points lists

Automatic control points: Provide plasticised, fade-free points lists for each automatic control panel and include terminal numbers, point addresses, short and long descriptors in the lists. Store in a pocket on the door of the panel.

Pressure vessels

General: Mount manufacturer's certificates in glazed frames on a wall next to the vessel.

Valves and pumps

General: Label to associate pumps with their starters and valves. Screw fix labels to body or attach label to valve handwheels with a key ring.

Underground services

Survey: Accurately record the routes of underground cables and pipes before backfilling. Include on the record drawings.

Records: Provide digital photographic records of underground cable and pipe routes before backfilling. Include in operation and maintenance manual.

Location marking: Accurately mark the location of underground cables and pipes with route markers consisting of a marker plate set flush in a concrete base, engraved to show the direction of the line and the name of the service.

Markers: Place markers at ground level at each joint, route junction, change of direction, termination and building entry point and in straight runs at intervals of not more than 100 m.

Marker bases: 200 mm diameter x 200 mm deep, minimum concrete.

Direction marking: Show the direction of the cable and pipe run by means of direction arrows on the marker plate. Indicate distance to the next marker.

Plates: Brass, aluminium or stainless steel with black filled engraved lettering, minimum size 75 x 75 x 1 mm thick.

Plate fixing: Waterproof adhesive and 4 brass or stainless steel countersunk screws.

Marker height: Set the marker plate flush with paved surfaces, and 25 mm above other surfaces.

Marker tape: Where electric bricks or covers are not provided over underground wiring, provide a 150 mm wide yellow or orange marker tape bearing the words WARNING – electric cable buried below, laid in the trench 150 mm below ground level.

Plastic pipe: Provide a detectable marker tape with trace wire to identify the route of buried piping. Terminate with 1000 mm coil in a readily accessible location. Tag to match the record drawings.

Labels and notices

Materials: Select from the following:

- Cast metal.
- For indoor applications only, engraved two-colour laminated plastic.
- Proprietary pre-printed self-adhesive flexible plastic labels with machine printed black lettering.
- Stainless steel or brass minimum 1 mm thick with black filled engraved lettering.

Emergency functions: To AS 1319.

Colours: Generally to AS 1345 as appropriate, otherwise black lettering on white background except as follows:

- Danger, warning labels: White lettering on red background.
- Main switch and caution labels: Red lettering on white background.

Edges: If labels exceed 1.5 mm thickness, radius or bevel the edges.

Labelling text and marking: To correspond to terminology and identifying number of the respective item as shown on the record drawings and documents and in operating and maintenance manuals.

Lettering heights:

- Danger, warning and caution notices: Minimum 10 mm for main heading, minimum 5 mm for remainder.
- Equipment labels within cabinets: Minimum 5 mm.
- Equipment nameplates: Minimum 40 mm.
- Identifying labels on outside of cabinets: Minimum 5 mm.
- Isolating switches: Minimum 5 mm.
- Switchboards, main assembly designation: Minimum 25 mm.
- Switchboards, outgoing functional units: Minimum 10 mm.
- Switchboards, sub assembly designations: Minimum 15 mm.
- Valves: Minimum 20 mm.
- Self-adhesive flexible plastic labels:
  - Labels less than 2000 mm above floor: 5 mm.
  - Labels minimum 2000 mm above floor: 10 mm.
  - Other locations: Minimum 5 mm.

Label locations: Locate labels so they are easily seen and are either attached to, below or next to the item being marked.

Fixing: Fix labels securely using screws, rivets, proprietary self-adhesive labels or double-sided adhesive tape and as follows:

- If labels are mounted in extruded aluminium sections, use rivets or countersunk screws to fix the extrusions.
- Use aluminium or monel rivets for aluminium labels.

Vapour barriers: Do not penetrate vapour barriers.

3.17 RECORD DRAWINGS

General

Requirement: Prepare record drawings showing the following:

- Installed locations of building elements, services, plant and equipment.
- Off-the-grid dimensions and depth if applicable.
- Any provisions for the future.

Recording, format and submission

Requirement: Record changes made during the progress of the works on a set of drawings kept on site for that specific purpose.

Drawing layout: Use the same borders and title block as the contract drawings.

Quantity and format: Conform to **SUBMISSIONS.**

Endorsement: Sign and date all record drawings.

Accuracy: If errors in, or omissions from, the record drawings are found, amend the drawings and re-issue in the quantity and format documented for **SUBMISSIONS.**

Date for submission: Not later than 2 weeks after the date for practical completion.

Services record drawings

General: To **General** and **Recording, format and submission** and the following:

- Extensions and/or changes to existing: If a drawing shows extensions and/or alterations to existing installations, include sufficient of the existing installation to make the drawing comprehensible without reference to drawings of the original installation.

- Detention: If on-site detention tanks or pondage are provided, include the volume required on the drawing and the permitted flow rate to the connected system.
- Domestic cold water or fire mains: Show the pressure available at the initial connection point and the pressure available at the most disadvantaged location on each major section of the works.
- Stormwater: If storm water pipes are shown, include the pipe size and pipe grade together with the maximum acceptable flow and the actual design flow.

Diagrams: Provide diagrammatic drawings of each system including the following:

- Controls.
- Piping including all valves and valve identification tags.
- Principal items of equipment.
- Single line wiring diagrams.
- Acoustic and thermal insulation.
- Access provisions and space allowances.
- Fasteners.
- Fixtures.
- Switchgear and control gear assembly circuit schedules including electrical service characteristics, controls and communications.
- Charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

CAD base drawings: CAD Files are provided for information purposes only.

Subsurface services: Record information on underground or submerged services to the documented quality level, conforming to AS 5488.

Subsurface services recording quality level: Land Survey all below ground services before covering including location and typical depth.

3.18 OPERATION AND MAINTENANCE MANUALS

General

Authors and compilers: Personnel experienced in the maintenance and operation of equipment and systems installed, and with editorial ability.

Referenced documents: If referenced documents or worksections require submissions of manuals, include corresponding material in the operation and maintenance manuals.

Subdivision: By installation or system, depending on project size.

Contents of manual

Table of contents: Include a table of contents in each volume. Title to match cover.

Table of amendments: Include a table of amendments.

Directory: Include names, addresses, email addresses and telephone and facsimile numbers of principal consultant, subconsultants, contractor, subcontractors and names of responsible parties.

Record drawings: Include complete set of record drawings, full size.

Drawings and technical data: Include as necessary for the efficient operation and maintenance of the installation.

Installation description: Include a general description of the installation.

Systems descriptions and performance: Include a technical description of the systems installed including design concepts embodied, the interrelation with other systems and the building and mode of operation, presented in a clear and concise format readily understandable by the principal's staff. Identify function, normal operating characteristics, safety features and limiting conditions.

Baseline data: To AS 1851, AS 1668.1, AS 1682.2 and AS 1670.1.

Commissioning results: Include for use as baseline data for system and equipment maintenance performance.

Fire systems and equipment: Include documentation to AS 1851, including the schedule of essential functionality and performance requirements.

Digital photographic records: Include records to **MARKING AND LABELLING, Underground services**.

Equipment descriptions:

- Name, address, email address and telephone and facsimile numbers of the manufacturer and supplier of items of equipment installed, together with catalogue list numbers.
- Schedules (system by system) of equipment, stating locations, duties, performance figures and dates of manufacture. Provide a unique code number cross-referenced to the record and diagrammatic drawings and schedules, including spare parts schedule, for each item of equipment installed. Equipment schedules in tabular form including the equipment designation used on the drawings, manufacturer's name and contact details, equipment name plate data, function of item, associated system and capacity data.

- Manufacturers' technical literature for equipment installed, assembled specifically for the project, excluding irrelevant matter. Mark each product data sheet to clearly identify specific products and component parts used in the installation, and data applicable to the installation.
- Supplements to product data to illustrate relations of component parts. Include typed text as necessary.

Certificates:

- Certificates from authorities.
- Copies of manufacturers' warranties.
- Product certification.
- Test certificates for each service installation and all equipment.
- Test reports.
- Test, balancing and commissioning reports.
- Control system testing and commissioning results.
- Warranties.

Trends: 7 day record of all trends at commissioning.

Operation procedures:

- Manufacturers' technical literature as appropriate.
- Safe starting up, running-in, operating and shutting down procedures for systems installed. Include logical step-by-step sequence of instructions for each procedure.
- Control sequences and flow diagrams for systems installed.
- Legend for colour-codes services.
- Schedules of fixed and variable equipment settings established during commissioning and maintenance.
- Procedures for seasonal changeovers.
- Warnings to operators.
- Recommendations for efficient plant operation.
- If the installation includes cooling towers, a water efficiency management plan.

Maintenance procedures:

- Detailed recommendations for periodic maintenance and procedures, including schedule of maintenance work with frequency and manufacturers' recommended tests.
- Manufacturer's technical literature as appropriate. Register with manufacturer as necessary. Retain copies delivered with equipment.
- Safe trouble-shooting, disassembly, repair and reassembly, cleaning, alignment and adjustment, balancing and checking procedures. Provide logical step-by-step sequence of instructions for each procedure.
- Schedule of spares, recommended to be held on site, for those items subject to wear or deterioration and that may involve the principal in extended deliveries when replacements are required. Include complete nomenclature and model numbers, and local sources of supply.
- Schedule of normal consumable items, local sources of supply, and expected replacement intervals up to a running time of 40 000 hours. Include lubrication schedules for equipment.
- Schedules for recording recommissioning data to identify changes in the system over time.
- Instructions for use of tools and testing equipment.
- Troubleshooting procedures.
- Emergency procedures, including telephone numbers for emergency services, and procedures for fault finding.
- Safety data sheets (SDS).
- Instructions and schedules conforming to AS 1851, AS/NZS 3666.2, AS/NZS 3666.3 and AS/NZS 3666.4.

Maintenance records:

- Prototype service records conforming to AS 1851 prepared to include project specific details.
- Prototype periodic maintenance records and report to AS/NZS 3666.2, AS/NZS 3666.3 and AS/NZS 3666.4 as appropriate, prepared to include project specific details.
- Hard copies: Binders to match the manuals, containing loose leaf log book pages designed for recording completion activities including operational and maintenance procedures, materials used, test results, comments for future maintenance actions and notes covering the condition of the installation. Include completed log book pages recording the operational and maintenance activities performed up to the date for practical completion.
- Number of pages: The greater of 100 pages or enough pages for the maintenance period and a further 12 months.

Emergency information: For each type of emergency, including fire, flood, gas leak, water leak, power failure, water failure, system or sub system failure, chemical release or spill, include the following:

- Emergency instructions.
- Emergency procedures including:
  - Instructions for stopping or isolating.
  - Shutdown procedures and sequences.
  - Instructions for actions outside the property.
  - Special operating instructions relevant to the emergency.
  - Contact details relevant to the emergency.

Emergency information manual

Form of emergency information: Provide one of the following:

- An index and coloured tabs identifying emergency information for each type of emergency within the Operation and maintenance manual.

- A separate Emergency manual containing copies of emergency information from the main Operation and maintenance manual.

Format – electronic copies

Scope: Provide the same material as documented for hardcopy in electronic format.

Quantity and format: Conform to **SUBMISSIONS , Electronic submissions**.

Printing: Except for drawings required in the **RECORD DRAWINGS** clause provide material that can be legibly printed on A4 size paper.

Format – hard copies

General: A4 size loose leaf, in commercial quality, 4 ring binders with hard covers, each indexed, divided and titled. Include the following features:

- Cover: Identify each binder with typed or printed title *OPERATION AND MAINTENANCE MANUAL*, to spine. Identify title of project, volume number, volume subject matter, and date of issue.
- Dividers: Durable divider for each separate element, with typed description of system and major equipment components. Clearly print short titles under laminated plastic tabs.
- Drawings: Fold drawings to A4 size with title visible, insert in plastic sleeves (one per drawing) and accommodate them in the binders.
- Pagination: Number pages.
- Ring size: 50 mm maximum, with compressor bars.
- Text: Manufacturers' printed data, including associated diagrams, or typewritten, single-sided on bond paper, in clear concise English.

Number of copies: 3.

Date for submission

Draft submission: The earlier of the following:

- 4 weeks before the date for practical completion.
- Commencement of training on services equipment.

Final submission: Within 2 weeks after practical completion.

3.19 CLEANING

Final cleaning

General: Before the date for practical completion, clean throughout, including all exterior and interior surfaces except those totally and permanently concealed from view.

Labels: Remove all labels not required for maintenance.

3.20 WARRANTIES

General

Requirement: If a warranty is documented, name the principal as warrantee. Register with manufacturers as necessary. Retain copies delivered with components and equipment.

Warranty period: Start warranty periods at acceptance of installation.

Approval of installer: If installation is not by manufacturer, and product warranty is conditional on the manufacturer's approval of the installer, submit the manufacturer's written approval of the installing firm.

Comply with the Projects Subcontractor Warranty Deed

(as per the Head Contract Annexure Part H)

a. Warranty to be in favour of both Principal and the Crown, jointly and severally
b. Warranty terms as per the Head Contract Annexure Part G:
    1. Roofing = 10 years
    2. Cladding = 10 years

3.21 PERIODIC MAINTENANCE OF SERVICES

General

Requirement: During the maintenance period, carry out periodic inspections and maintenance work as recommended by manufacturers of supplied equipment, and promptly rectify faults.

Emergencies: Attend emergency calls promptly.

Annual maintenance: Carry out recommended annual maintenance procedures before the end of the maintenance period.

Maintenance period: The greater of the defects liability period and the period documented in the **Maintenance requirements schedule**.

Maintenance program

General: Submit details of maintenance procedures and program, relating to installed plant and equipment, 6 weeks before the date for practical completion. Indicate dates of service visits. State contact telephone numbers of service operators and describe arrangements for emergency calls.

Maintenance records

General: Record in binders provided with the Operation and maintenance manuals.

Referenced documents: If referenced documents or technical worksections require that log books or records

be submitted, include this material in the maintenance records.

Certificates: Include test and approval certificates.

Service visits: Record comments on the functioning of the systems, work carried out, items requiring corrective action, adjustments made and name of service operator. On completion of the visit, obtain the signature of the principal's designated representative on the record of the work undertaken.

Site control

General: Report to the principal's designated representative on arriving at and before leaving the site.

3.22 POST-CONSTRUCTION MANDATORY INSPECTIONS AND MAINTENANCE

General

Requirement: For the duration of the defects liability period, provide inspections and maintenance of safety measures required by the following:

- AS 1851.
- Other statutory requirements applicable to the work.

Records: Provide mandatory records.

Certification: Certify that mandatory inspections and maintenance have been carried out and that the respective items conform to statutory requirements.

Annual inspection: Perform an annual inspection and maintenance immediately before the end of the defects liability period.

0181 ADHESIVES, SEALANTS AND FASTENERS

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide adhesives, sealants and fasteners, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Performance
Requirements: Conform to the following:

- Fitness for purpose: Capable of transmitting imposed loads, sufficient to maintain the rigidity of the assembly, or integrity of the joint.
- Finished surface: That will not cause discolouration.
- Compatibility: Compatible with the products to which they are applied.
- Sealant replacement: Capable of safe removal without compromising the application of the replacement sealant for future refurbishment.
- Movement: If an adhered or sealed joint is subject to movement, select a system certified to accommodate the projected movement under the conditions of service.
- Fasteners: Suitable for the particular use, capable of transmitting imposed loads and maintaining the rigidity of the assembly.

1.2 PRECEDENCE

General
Order of precedence:

- The requirements of other worksections of the specification override conflicting requirements of this worksection.
- The requirements of worksections override conflicting requirements of their referenced documents. The requirements of the referenced documents are minimum requirements.

1.3 CROSS REFERENCES

General
Requirement: Conform to the following:

- *0171 General requirements*.

1.4 SUBMISSIONS

Products and materials
Sealants: Submit technical data sheets.

Adhesives and sealants: Submit safety data sheets (SDS).

Samples
Visible joint sealants: Submit colour samples.

Tests
Site tests: Submit results as follows:

- Installed sealant tests: Required for all sealants.

Compatibility testing: Submit adhesion and compatibility testing data demonstrating that adhesive, sealant or fastener is compatible with materials to be fixed and is suitable for the project conditions.

Warranties
Manufacturer's warranty: Submit the manufacturer's published product warranties.

1.5 INSPECTION

Notice
Inspection: Give notice so that inspection may be made of prepared joints and penetrations for each sealant application included in the **Installed sealant tests schedule**.

2 PRODUCTS

2.1 ADHESIVES

Standards
Gypsum plaster adhesive: To AS 2753.

High strength adhesive tape
General description: A foam of cross linked polyethylene or closed cell acrylic coated both sides with a high performance acrylic adhesive system, encased in release liners of paper or polyester.

Product classification: Select tape to suit substrate as follows:

- Firm high strength foam tapes: For high energy surfaces including most bare metals such as stainless steel and aluminium.
- Conformable high strength foam: For the following:
  - Medium energy surfaces including many plastics and paints, and bare metals.
  - Lower energy surfaces including many plastics, most paints and powder coatings, and bare metals.

Thickness: Select the tape to make sure a mismatch between surfaces does not exceed half the tape thickness under the applied lamination pressure.

Total VOC limits
Requirement: Conform to the following:

- General purpose adhesives:
  South Coast Air Quality Management District Rul e 1168 (1/1/2023 VOC Limits)

- Structural glazing adhesive, timber flooring and laminate adhesives:
  South Coast Air Quality Management District Rul e 1168 (1/1/2023 VOC Limits)

2.2 SEALANTS

Standards

General: To ISO 11600.

External masonry joints

General: Provide sealant and bond breaking materials which are non-staining to masonry. Do not use bituminous materials with absorbent masonry units.

Bond breaking backing:

- Bond breaking materials: Non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: Closed-cell or impregnated, not water-absorbing.

Fire-resisting control joints

General: Provide sealant materials that maintain the nominated fire-resistance level (FRL).

- Fire-stopping: To AS 4072.1.

Lightweight building element joints

Joints subject to rapid changes of movement: Provide sealants that accommodate the movement of the contact materials.

Floor control joints

General: Provide trafficable sealants.

Bond breaking backing:

- Bond breaking materials: Non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: Closed-cell or impregnated, not water-absorbing.

Total VOC limits

Requirement: Conform to the following:

- Architectural sealants:
  South Coast Air Quality Management District Rul e 1168 (1/1/2023 VOC Limits)

2.3 FASTENERS

General

Masonry anchors: Proprietary expansion or bonded type anchors conforming to **SELECTIONS, ANCHORS**.

Plain washers: To AS 1237.1.

- Provide washers to the heads and nuts of bolts, and the nuts of coach bolts.

Plugs: Proprietary purpose-made plastic.

Stainless steel fasteners: To ASTM A240/A240M.

Steel nails: To AS 2334.

- Length: At least 2.5 times the thickness of the member being secured, and at least 4 times the thickness if the member is plywood or building board less than 10 mm thick.

Unified hexagon bolts, screws and nuts: To AS/NZS 2465.

Fasteners in CCA treated timber: Epoxy coated or stainless steel.

Bolts

Coach bolts: To AS/NZS 1390.

Hexagon bolts Grades A and B: To AS 1110.1.

Hexagon bolts Grade C: To AS 1111.1.

Corrosion resistance

Atmospheric corrosivity category: To *0171 General requirements*.

Steel products: Conform to the **Corrosion resistance table** or provide proprietary products with metallic and/or organic coatings of equivalent corrosion-resistance.

Corrosion resistance table

Atmospheric corrosivity category to AS 4312	Threaded fasteners and anchors		Powder actuated fasteners
	Material	Minimum local metallic coating thickness (µm)	Material
C5	Stainless steel 316	-	Stainless steel 316

For self-drilling screws in severe marine environments, consult the roofing/cladding manufacturer on the requirements for shank corrosion protection.

Finishes

Electroplating:

- Metric thread: To AS 1897.
- Imperial thread: To AS 4397.

Galvanizing:

- Threaded fasteners: To AS/NZS 1214.
- Other fasteners: To AS/NZS 4680.

Mild steel fasteners: Galvanize if:

- Embedded in masonry.
- In external timbers.
- In contact with chemically treated timber other than CCA treated timber.

Epoxy coated: CCA treated timber.

Nuts

Hexagon chamfered thin nuts Grades A and B: To AS 1112.4.

Hexagon nuts Grade C: To AS 1112.3.

Hexagon nuts Style 1 Grades A and B: To AS 1112.1.

Hexagon nuts Style 2 Grades A and B: To AS 1112.2.

Screws

Coach screws: To AS/NZS 1393.

Hexagon screws Grades A and B: To AS 1110.2.

Hexagon screws Grade C: To AS 1111.2.

Hexagon socket screws: To AS 1420.

Self-drilling screws: To AS 3566.1.

Self-tapping screws:

- Crossed recessed countersunk (flat – common head style): To AS/NZS 4407.
- Crossed recessed pan: To AS/NZS 4406.
- Crossed recessed raised countersunk (oval): To AS/NZS 4408.
- Hexagon: To AS/NZS 4402.
- Hexagon flange: To AS/NZS 4410.
- Hexagon washer: To AS/NZS 4409.
- Slotted countersunk (flat – common head style): To AS/NZS 4404.
- Slotted pan: To AS/NZS 4403.
- Slotted raised countersunk (oval – common head style): To AS/NZS 4405.

Blind rivets

Description: Expanding end type with snap mandrel.

Type: Closed end for external application, open end for internal application.

End material:

- Aluminium base alloy for metallic-coated or prepainted steel.
- Stainless steel for stainless steel sheet.
- Copper for copper sheet.

Size:

- For sheet metal to sheet metal: 3 mm.
- For sheet metal to supports, brackets and rolled steel angles: 4.8 mm.

3 EXECUTION

3.1 ADHESIVES

General

Requirement: Install to the manufacturer's recommendations.

Preparation

Substrates: Conform to the following:

- Remove any deposit or finish which may impair adhesion.
- If framed or discontinuous, provide support members in full lengths without splicing.
- If solid or continuous, remove excessive projections.
- If previously painted, remove cracked or flaking paint and lightly sand the surface.

Contact adhesive

Precautions: Do not use contact adhesive if:

- A substrate is polystyrene foam.
- A PVC substrate may allow plasticiser migration.
- The adhesive solvent can discolour the finished surface.
- Dispersal of the adhesive solvent is impaired.

Two-way method: Immediately after application, press firmly to transfer adhesive and then pull both surfaces apart. Allow to tack off and then reposition and press firmly together. Tap areas in contact with a hammer and padded block.

One-way method: Immediately after application, bring substrates together and maintain maximum surface contact for 24 hours by clamps, nails or screws as appropriate. If highly stressed, employ permanent mechanical fasteners.

High strength adhesive tape

Preparation:

- Non-porous surfaces: Clean with surface cleaning solvents such as isopropyl alcohol/water, wash down and allow to dry.
- Porous surfaces: Prime the surface with a contact adhesive compatible with the tape adhesive system.

Application to copper, brass, plasticised vinyl and hydrophilic surfaces such as glass and ceramics in a high humidity environment: Conform to manufacturer's recommendations.

Applied lamination pressure: Make sure the tape experiences 100 kPa.

Application temperature: Generally above 10°C and to the manufacturer's recommendations.

Completion: Do not apply loads to the assembly for 72 hours at 21°C.

3.2 JOINT SEALING

General
Requirement: Install to the manufacturer's recommendations.

Joint preparation
Cleaning: Cut flush joint surface protrusions and rectify if required. Mechanically clean joint surfaces free of any deposit or finish which may impair adhesion of the sealant. Immediately before sealant application, remove loose particles from the joint, using oil-free compressed air.

Bond breaking: Install bond breaking backing material.

Taping: Protect the surface on each side of the joint using 50 mm wide masking tape or equivalent means. On completion of sealant application, remove the tape and remove any stains or marks from adjacent surfaces.

Primer: Apply the recommended primer to the surfaces in contact with sealant materials.

Sealant joint proportions
General weatherproofing joints (width:depth):

- 1:1 for joint widths less than 12 mm.
- 2:1 for joint widths greater than 12 mm.

Sealant application
General: Apply the sealant to dry joint surfaces using a pneumatic applicator gun. Make sure the sealant completely fills the joint to the required depth, provides good contact with the full depth of the sides of the joint and traps no air in the joint. Do not apply the sealant outside the recommended working time for the material or the primer.

Weather conditions
Two pack polyurethanes: Do not apply the sealant if ambient conditions are outside the following:

- Temperature: Less than 5°C or greater than 40°C.
- Humidity: To the manufacturer's recommendations.

Joint finish
General: Force the sealant into the joint and finish with a smooth, slightly concave surface using a tool designed for the purpose.

Excess sealant: Remove from adjoining surfaces using cleaning material nominated by the sealant manufacturer.

Protection
General: Protect the joint from inclement weather during the setting or curing period of the material.

Rectification
General: Cut out and remove damaged portion of joint sealant and reinstall so repaired area is indistinguishable from undamaged portion.

3.3 TESTING

Installed sealant tests
Sampling: For each sealant test, take 3 samples of installed and cured sealant, each at least 50 mm long, from completed joints.

Reinstatement: Repair-as-new the joints from which the samples were taken.

3.4 FASTENERS

General
Requirement: Install to the manufacturer's recommendations.

Fastening to wood and steel
Timber substrates: To AS 1720.1 Section 4.

Self-drilling screws: To AS 3566.1 for timber and steel substrates.

Masonry anchors
Installation: To the manufacturer's recommendations.

0183B METALS AND PREFINISHES

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirements: Provide metal and prefinishes, as documented.

Metals and Prefinishes, shall be corrosion resistant or protective coated to prevent corrosion.

Performance

Requirement: Provide metals in sections of strength and stiffness suited to their required function, finish and method of fabrication.

1.2 PRECEDENCE

General

Order of precedence:

- The requirements of other worksections of the specification override conflicting requirements of this worksection.
- The requirements of worksections override conflicting requirements of their referenced documents. The requirements of the referenced documents are minimum requirements.

1.3 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements.*

1.4 SUBMISSIONS

Samples

General: Submit samples of the following:

- All decorative metals noted within the internal materials schedule
- Stainless steel: One sample of every documented surface finish.
- Anodising: One sample of every colour and finishing option.

2 PRODUCTS

2.1 METALS

Coated steel

Electrogalvanized (zinc) coating on ferrous hollow and open sections: To AS 4750.

Metallic-coated: Steel coated with zinc or aluminium-zinc alloy as follows:

- Ferrous open sections by an in-line process: To AS/NZS 4791.
- Ferrous hollow sections by a continuous or specialised process: To AS/NZS 4792.
- Metallic-coated steel sheet: To AS 1397. Metal thicknesses specified are base metal thicknesses.

Steel wire: To AS/NZS 4534.

Stainless steel

Bars: To ASTM A276/A276M.

Plate, sheet and strip: To ASTM A240/A240M.

Welded pipe (plumbing applications): To AS 1769.

Welded pipe (round, square, rectangular): To ASTM A554.

3 EXECUTION

3.1 GENERAL

Metal separation

Incompatible sheet metals: Prevent direct contact between incompatible metals. Provide separation by one of the following:

- Apply an anti-corrosion low moisture transmission coating such as alkyd zinc phosphate primer or aluminium pigmented bituminous paint to contact surfaces.
- Insert a concealed, non-metallic separation layer such as polyethylene film, adhesive tape, neoprene, nylon or bituminous felt.

Incompatible fixings: Do not use.

Incompatible service pipes: Install lagging or grommets. Do not use absorbent, fibrous or paper products.

Brazing

General: Make sure brazed joints have sufficient lap to provide a mechanically sound joint.

Butt joints: Do not use butt jointing for joints subject to load. If butt joints are used, do not rely on the filler metal fillet only.

Filler metal: To AS/NZS 1167.1.

Finishing

Visible joints: Finish visible joints made by welding, brazing or soldering using methods appropriate to the class of work (including grinding or buffing) before further treatment such as painting, galvanizing or electroplating. Make sure self-finished metals are without surface colour variations after jointing.

Preparation

General: Before applying decorative or protective prefinishes to metal components, complete welding, cutting, drilling and other fabrication, and prepare the surface using a suitable method.

Standard: To AS 1627 series.

Priming steel surfaces: If site painting is documented to otherwise uncoated mild steel or similar surfaces, prime as follows:

- After fabrication and before delivery to the works.
- After installation, repair damaged priming and complete the coverage to unprimed surfaces.

Welding

Aluminium: To AS 1665.

Stainless steel: To AS/NZS 1554.6.

Steel: To AS/NZS 1554.1.

3.2 STAINLESS STEEL FINISHES

General

Requirement: Provide a surface finish to match the approved sample.

Post-assembly pre-treatment

Heat discolouration: Remove by pickling.

Welds: Grind excess material, brush, and polish to match the pre-assembly finish.

Post-assembly finish

Electropolish finish for external installations: Provide an electro-chemical process to stainless steel type 316.

Brushed electropolish finish: Conform to the following:

- Pre-assembly finish: No. 4 brushed finish.
- Post-assembly finish: Provide an electro-chemical processed finish to achieve a No. 7 to No. 8 brushed finish.

Mirror electropolish finish:

- Pre-assembly finish: Mill finish 2B or mirror polished finish.
- Post-assembly finish: Provide an electro-chemical processed finish to achieve a No. 8 mirror like finish.

Completion

Cleaning: Clean and rinse to an acid free condition and allow to dry. Do not use carbon steel abrasives or materials containing chloride.

Protection: Secure packaging or strippable plastic sheet.

3.3 ELECTROPLATING

Electroplated coatings

Chromium on metals: To AS 1192.

- Service condition number: At least 2.

Nickel on metals: To AS 1192.

- Service condition number: At least 2.

Zinc on iron or steel: To AS 1789.

3.4 ANODISING

General

Standard: To AS 1231.

Thickness grade: To AS 1231 Table H1.

Sample

General: Provide a finish to match the sample in terms of colour and finishing options.

3.5 PREPAINTING

Air-drying enamel

Application: Spray or brush.

Finish: Full gloss.

General use:

- Primer: Two-pack epoxy primer to AS/NZS 3750.13.
- Top coats: 2 coats to AS 3730.6.

Oil resistant use:

- Primer: Two-pack epoxy primer to AS/NZS 3750.13.
- Top coats: 2 coats to AS/NZS 3750.22.

Equipment paint system

Description: Brush or spray application using paint as follows:

- Full gloss enamel finish coats, oil and petrol resistant: To AS/NZS 3750.22, two coats.
- Prime coat to metal surfaces generally: To AS/NZS 3750.19 or AS/NZS 3750.20.
- Prime coat to zinc-coated steel: To AS 3730.15 or AS/NZS 3750.16.
- Undercoat: To AS/NZS 3750.21.

Prepainted metal products

Standard: To AS/NZS 2728.

Product finish: Colorbond Ultra (by Blue Scope)

Dulux: Duratec powdercoat

Fielders: Prepainted Marine Grade Aluminium complying with AS/NZS 2728:2103

Product type as noted in AS/NZS 2728: Not lower than the type appropriate to the atmospheric corrosivity category.

Two-pack liquid coating

Application: Spray.

Finish: Full gloss.

Primer: Two pack epoxy primer to AS/NZS 3750.13.

Topcoat:

- Internal use: Proprietary polyurethane or epoxy acrylic system.
- External use: Proprietary polyurethane system.

3.6 COMPLETION

Damage

Damaged prefinishes: Remove and replace items, including damage caused by unauthorised site cutting or drilling.

Repair

Metallic-coated sheet: If repair is required to metallic-coated sheet or electrogalvanizing on inline galvanized steel products, clean the affected area and apply a two-pack organic primer to AS/NZS 3750.9.

0202 DEMOLITION (INTERIOR AND ALTERATIONS)

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Carry out demolition, as documented.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements.*

1.3 STANDARDS

General

Demolition: To AS 2601.

1.4 INTERPRETATION

Definitions

For the purposes of this worksection, the following definitions apply:

- Demolition: The complete or partial dismantling of a building or structure, by pre-planned and controlled methods or procedures.
- Dilapidation record: The photographic or video and written record of the condition of the portion of the existing building retained, adjacent buildings, and other relevant structures or facilities, before the start of demolition work.
- Recover: The disconnection and removal of an item in a manner to allow re-installation.

1.5 SUBMISSIONS

Authority approvals

Evidence of compliance: Before starting demolition, submit evidence of the following:

- Requirements of authorities relating to the work under the contract have been obtained.
- A permit to demolish has been obtained from the appropriate authority.
- A scaffold permit has been obtained from the appropriate authority (if scaffolding is proposed to be used).
- Certification that each person having access to the construction site has completed site-specific WHS induction training.
- Precautions necessary for protection of persons and property have been taken and suitable protective and safety devices have been provided to the approval of the relevant authority.
- Treatment for rodent infestation has been carried out and a certificate has been obtained from the appropriate authority.
- Fees and other costs have been paid.

Execution details

Requirement: Submit the following, as documented:

- Hazardous Substances Management Plan.
- Investigation and work plan.

Off-site disposal locations: Submit details of the proposed locations for the disposal of material required to be removed from the site, and evidence of conformance with the requirements of relevant authorities.

Cladding is not available for recycling and must be disposed of to a certified disposal site

Dilapidation record:

- Before demolition: Submit to each owner of each adjacent property, a copy of the part of the record relating to that property and obtain their written agreement to the contents.
- Rectification work: Submit written acceptance of rectification works from the owner of each adjoining property affected.

Tests

Requirement: Submit test results of compliance tests for building service components to be re-used.

1.6 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Services before disconnection or diversion.
- Contents of building before starting demolition.
- Site after removal of demolished materials.
- Services after reconnection or diversion.

2 PRODUCTS

2.1 DEMOLISHED MATERIALS

Demolished material classes table

Class	Requirement	Ownership
Recovered items for re-use in the works	Recover without damage items identified in the **Recovered items for re-use in the works schedule**	Principal/proprietor
Demolished material for recycling off-site	Demolish and deliver for recycling material identified in the **Demolished material for recycling off-site schedule**	Contractor

Class	Requirement	Ownership
Demolish for removal	Remove from the site demolished materials identified in the **Demolish for removal schedule**. Do not burn or bury on site Transit: Prevent spillage of demolishing materials in transit	Contractor

3 EXECUTION

3.1 HAZARDOUS SUBSTANCES

Identified hazardous substances
Register: Hazardous substances have been identified as present on site and a Hazardous substances register has been prepared.

Availability: Included with the tender documents.

Audit
Requirement: Prepare a Hazardous Substances Management Plan to AS 2601 clause 1.6.1. Include the following:

- Asbestos or material containing asbestos.
- Flammable or explosive liquids or gases.
- Toxic, infective or contaminated materials.
- Radiation or radioactive materials.
- Noxious or explosive chemicals.
- Tanks or other containers which have been used for storage of explosive, toxic, infective or contaminated substances.

Removal of hazardous substances
Standard: To AS 2601 clause 1.6.2.

Procedure for asbestos removal: If removal of asbestos or of material containing asbestos is required, see the WHS authority's Code of Practice applicable to the state and *How to safely remove asbestos* by Safe Work Australia

3.2 INVESTIGATION AND WORK PLAN

General
Requirement: Before demolition or stripping work, prepare the work plan to AS 2601 Section 2. Include the check list items appropriate to the project from AS 2601 Appendix A, and the following:

- Locations and details of service deviations and terminations.
- If the demolition program results in components temporarily cantilevered, provide a certificate from a professional engineer.
- Proposals for the safe use of mobile plant on suspended structural members including provisions for the protection of lower floors in the event of structural failure.
- Wheel loads of tipping or loading vehicles.

3.3 SUPPORT

Temporary support
General: If temporary support is required, certification for its design and installation is required from a professional engineer engaged by the contractor.

Existing buildings: Until permanent support is provided, provide temporary support for sections of existing buildings which are to be altered and which normally rely for support on work to be demolished.

3.4 PROTECTION

Encroachment
General: Prevent the encroachment of demolished materials onto adjoining property, including public places.

Dust protection
General: Provide dustproof screens, bulkheads and covers to protect existing finishes and the immediate environment from dust and debris.

Security
General: If an internal wall is opened for alterations, provide security against unauthorised entry.

Temporary screens
General: Fill the whole of designated temporary openings or other spaces using dustproof and weatherproof temporary screens, fixed securely to the existing structure, and installed to shed water to avoid damage to retained existing elements or adjacent structures and contents.

Type: Timber framed screens sheeted with 12 mm plywood and painted. Seal the junctions between the screens and the openings.

Temporary access
General: If required, provide a substantial temporary doorset fitted with a rim deadlock, and remove on completion of demolition.

3.5 DEMOLITION – BUILDING WORKS

Concrete slabs
General: Using a diamond saw, neatly cut back or trim to new alignment with a clean true face existing concrete

slabs to be partially demolished or penetrated. Do not overcut at corners.

3.6 DEMOLITION – BUILDING SERVICES

General
Requirement: Decommission, isolate, demolish and remove from the site all equipment and associated components that become redundant as a result of the demolition.

Breaking down: Disassemble or cut up equipment where necessary to allow removal.

Demolition of refrigeration systems
Standard: To AS/NZS 5149.4.

Components for re-use
General: Before returning to service, clean components and test for conformance to Australian Standards, as required.

3.7 COMPLETION

Notice of completion
General: Give at least 5 working days' notice of completion of demolition so that adjacent structures may be inspected following completion of demolition.

Reinstatement
Assessment of damage: Use the dilapidation record to assess the damage and rectification work arising from the demolition work.

Rectification: Repair damage arising out of demolition work. Obtain written acceptance from the owner of each adjoining property of the completeness and standard of the rectification work.

Temporary support
General: Remove at completion of demolition.

4 SELECTIONS

4.1 DEMOLITION

Recovered items for re-use in the works schedule

Item	Location for re-use
Mechanical & electrical services , grilles vent pipes, downpipes Roof safety equipment , roof ladders	Hand to Builder / Client for modification / reinstallation where required

Demolish for removal schedule

Item
Existing Wall cladding
Existing Roof Cladding
Existing Gutters Sumps and Flashings

0341P LYSAGHT PURLINS AND GIRTS IN STRUCTURAL STEELWORK

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide LYSAGHT purlins and girts and structural steelwork, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Performance

Construction category to AS/NZS 5131: Refer to Structural Engineer

Adjoining elements: Provide for the fixing of adjoining building elements that are to be connected to or supported on the structural steel.

1.2 COMPANY CONTACTS

Lysaght technical contacts

Enquiries: www.lysaght.com/contact-us.

1.3 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.
- *0344 Steel – hot-dip galvanized coatings*.
- *0345 Steel – protective paint coatings*.
- *0346 Structural fire protection systems*.

1.4 STANDARDS

General

Materials and design: To AS 4100.

Materials and design of cold-formed decking, purlins and girts: To AS/NZS 4600.

Composite steel-concrete construction including profiled steel sheeting and shear connectors: To AS/NZS 2327.

Fabrication and erection: To AS/NZS 5131.

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Lysaght Zeds, Cees, SupaZeds® and SupaCees®: professionals.lysaght.com

Permalite Aluminium Zeds and Cees: permalite.com.au

1.6 INTERPRETATION

Abbreviations

General: For the purposes of this worksection the following abbreviations apply:

- AESS: Architecturally Exposed Structural Steelwork.
- CC: Construction Category.
- NDE: Non-Destructive Examination.

Definitions

General: For the purposes of this worksection the definitions given in AS/NZS 5131 and the following apply:

- Cee: A single web C shaped roll-formed purlin/girt with equal sized lipped flanges.
- Permalite: Roll-formed marine grade aluminium alloy 5052 H36.
- SupaCee®: A C shaped purlin/girt with a longitudinally stiffened web and equal sized stiffened lipped flanges.
- SupaZed®: A Z shaped purlin/girt with a longitudinally stiffened web and unequal opposite facing stiffened lipped flanges, which allow for lapping.
- Zed: A single web Z shaped purlin/girt with unequal opposite facing lipped flanges, which allow for lapping.

1.7 TOLERANCES

General

Requirement: To AS/NZS 5131 Section 12 and Appendix F.

Tolerance class: 1.

AESS: To the **AESS schedule**.

1.8 SUBMISSIONS

Fabrication details

Distortions: Submit proposals for the following:

- Preventing or minimising distortion of galvanized components, welded components or welded and galvanized components.
- Restoration to the designed shape.

Identification marks: If members and/or connections will be exposed to view, submit details of proposed marking.

Program: Submit a fabrication program showing the proposed sequence of operations and time required.

Execution details

Anchor bolts: If anchor bolts do not meet documented location tolerances, submit proposals for rectification before proceeding.

Bolting connections: For connections not documented, submit proposals.

Bolt tensioning procedure: Submit details of procedure, equipment to be used and calibration of the process.

Site base plate holing: If hand cutting of bolt holes in column base plates is required, submit details.

Purlins and girts: If purlins and girts support components other than roofing or cladding, submit details.

Site modifications: Submit details of proposed on-site modifications or rectifications to any steel member, connection component, mechanical fastener, weld or corrosion protection.

Splices: If variations to documented splice locations or additional splices are proposed, submit details.

Temporary connections or attachments: If not documented, submit details.

Undocumented weld types: Submit proposals for weld type and electrodes.

Welding plan: Submit a welding plan to AS/NZS 5131 clause 7.2.

Work method statement: Before any erection work commences, submit a work method statement to AS/NZS 5131 clause 11.2.3.

Products and materials

Steel members and sections: Submit test reports or test certificates conforming to AS 4100 clause 2.2.2.

Bolts, nuts and washers: Submit test reports or test certificates conforming to AS/NZS 1252.1 Section 6.

Verification testing of bolt assemblies: Submit test reports or certificates conforming to AS/NZS 1252.2 Section 2, together with the Supplier Declaration of Conformity (SDoC).

Anchor bolts: If anchors, other than those documented, are required or proposed for supporting or fixing structural steel, submit evidence of the anchor capacity to carry the load.

Substitution: If alternative sections or connections are proposed, submit details.

Records

Survey: Submit survey of erected structural steel to verify components have been installed as documented.

Drawings: Submit as-built structural drawings, upon completion.

Samples

AESS: Submit samples of AESS to the **AESS schedule**.

Special finishes: Submit samples of finished steel to the **Special finishes schedule**.

Minimum sample size: 0.1 m^2.

Shop detail documentation

General: Submit shop detail documentation to a scale that best describes the detail, conforming to AS/NZS 5131 clause 4.4.

Drawing format: PDF

Review of shop detail documentation: Contractor / Superintendent

Subcontractors

General: Submit names and contact details of proposed fabricator, detailer and installer.

Responsibilities: Submit names and contact details corresponding to the person/organisation assigned responsibility to the items listed in AS/NZS 5131 Table B3.

Tests

Site tests: Submit results, as follows:

- Bars and sections: Non-destructive tests.
- Plates: Ultrasonic tests.
- Welds: Non-destructive examinations.

Warranties

Purlins and girts: On completion, submit the Lysaght published product warranties.

1.9 INSPECTION

Notice – off-site

Inspection: Give notice so that inspection may be made of the following:

- Materials including welding consumables before fabrication.
- Testing of welding procedures and welder qualification tests.
- Commencement of shop fabrication.
- Commencement of welding.
- Complete penetration butt welds before the placement of root runs.
- High-strength bolt tensioning (when completed off-site).
- Completion of fabrication before surface preparation.
- Surface preparation before protective coating.
- Completion of protective coating before delivery to site.

Notice – on-site

Inspection: Give notice so that inspection may be made of the following:

- Steelwork on-site before erection.

- Anchor bolts in position before casting in.
- Steelwork and column bases erected on site, before grouting, encasing, site protective coating or cladding.
- Tensioning of bolts in categories 8.8/TB, 8.8/TF, 10.9/TB and 10.9/TF.
- Reinforcement and formwork in place before any encasement.
- Completed grouting, encasement, fire protection or site applied protective coating.

2 PRODUCTS

2.1 GENERAL

Product substitution
Other products: Conform to PRODUCTS, **GENERAL, Substitutions** in *0171 General requirements*.

Materials
Requirement: To AS/NZS 5131 Section 5.

Storage and handling
Purlins and girts: If not required for immediate use, stack and cover bundled sections, raised off the ground and on a slight slope so that water can drain away. Do not leave bundled sections of Permalite purlins and girts or accessories exposed for any period as water staining may occur between any aluminium surfaces in contact with each other.

Requirement: Pack, support, transport and handle members and components without overstressing, deforming or damaging them or their protective coating.

Damaged items: Rectify or replace. Do not assemble into the structure without approval.

Protection: Wrap or otherwise protect members or components to prevent damage to surface finishes during handling and erection.

Storage: Store off the ground.

Lifting points: Do not allow steel slings to come into direct contact with coated steelwork.

Purchasing and traceability
Purchasing documentation and procedure: To AS/NZS 5131 clause 4.6.

Level of traceability: To AS/NZS 5131 clause 5.2.3 and the types defined in AS/NZS 5131 clause 4.7.

2.2 STRUCTURAL STEEL

Steel members and sections steel grade table

Type of steel	Minimum grade
Hot-rolled sections to AS/NZS 3679.1 and SA TS 102	300
Welded sections to AS/NZS 3679.2	300
Hot-rolled plates, floor plates and slabs to AS/NZS 3678 and SA TS 102	250
Hot-rolled flat products to AS/NZS 1594	HA300
Hollow sections to AS/NZS 1163 and SA TS 102: Circular sections less than 166 mm nominal outside diameter	C250
Hollow sections to AS/NZS 1163 and SA TS 102: Sections other than circular sections less than 166 mm nominal outside diameter	C350
Lysaght purlins and girts to AS 1397	G450, Z350 or Z450
Permalite purlins and girts to AS/NZS 1664.1 (MPa)	179

Certification
Steel: Minimum requirements for test and inspection certificates, to the following:

- Hot-rolled bars or sections: To AS/NZS 3679.1 clause 11.2.4.
- Welded I sections: To AS/NZS 3679.2 clause 11.2.4.
- Hot-rolled plate: To AS/NZS 3678 clause 11.2.4.
- Cold-formed hollow sections: To AS/NZS 1163 clause 11.2.4.

Testing
Requirement: To the **Non-destructive testing of bars and sections schedule**.

Ultrasonic testing of plates
Quality level to AS 1710: L1

2.3 PURLINS AND GIRTS

General
Material selection and design: To Lysaght's recommendations with material selection aligned to environmental exposure conditions.

Selection: To the **Lysaght purlins and girts schedule**.

Lysaght steel
Material: GALVASPAN® high tensile steel.

Zinc coating class: Z450

Permalite aluminium
Material: Light-weight corrosion resistant marine grade aluminium alloy 5052 H36.

2.4 PURLIN BRIDGING AND ACCESSORIES

General
Material: Use materials and corrosion protection compatible with the documented purlins and girts.

Bridging: Required as documented, to control lateral deflection and twist of the purlins and girts.

HOOK-LOK® II bridging
Suitability: For use with Lysaght Zeds®, Cees, SupaZeds® and SupaCees® ranging from 100 mm to 250 mm in depth.

Series 300 and 350 bridging
Suitability: For use with Lysaght Zeds, Cees, SupaZeds® and SupaCees® 300 mm and 350 mm in depth.

EZY-LOK™ bridging
Suitability: For use with Lysaght SZ175 and SZ225 and Permalite aluminium Zeds and Cees ranging from 100 mm to 250 mm in depth. For depths over 250 mm a C15025 aluminium channel with bolted ends is used.

2.5 MECHANICAL FASTENERS

Standards
Bolts: To AS 1110.1, AS 1111.1 and AS/NZS 1252.1.

Nuts: To AS 1112.1, AS 1112.2, AS 1112.3, AS 1112.4 and AS/NZS 1252.1.

Bolting category
Requirement: To the **Bolting category schedule**.

Certification
High-strength bolt assemblies: Minimum requirements for test reports, to AS/NZS 1252.1 clause 6.4.2.

Finish
Bolts, nuts and washers: Hot-dip galvanized to AS/NZS 1214, corrosion-free, and in serviceable condition.

Lysaght purlin bolts
Description: Coated steel bolts with integral washers on both the head and nut for use with Lysaght purlins and girts. M12 x 30 mm available in grade 4.6 and 8.8.
M16 x 45 mm available in grade 4.6 and 8.8.

Permalite purlin bolts
Description: Grade A4-70 316 stainless steel bolts for use with Permalite aluminium purlins and girts.
M12 x 40 mm and M16 x 40 mm available, both coated with a 15-25 micron fluro-polymer coating.

Anchor bolts
Hexagonal bolts: To AS 1111.1.

Hexagonal nuts: To AS 1112.3.

Plain washers: To AS 1237.1.

Requirement: Provide each anchor bolt with 2 nuts and 2 oversize washers with sufficient thread for the levelling nut and washer to set below the base plate.

Mechanical and chemical anchors: To AS 5216, installed to manufacturer's recommendations.

- Product: Contractor performance selection
- Proof testing of mechanical anchors: Test to AS5216 Appendix A

2.6 OTHER MATERIALS

Welding consumables
Requirement: To the relevant part of the AS/NZS 1554 series.

Studs and shear connectors
Requirement: To AS/NZS 5131 clause 5.6.

Grout
Requirement: To AS/NZS 5131 clause 5.8.

3 EXECUTION

3.1 PREPARATION, ASSEMBLY AND FABRICATION

Identification
Traceability: To AS/NZS 5131 clause 5.2.3.

Marking: Provide marks or other means of identifying each member compatible with the finish, for setting out, locating, erecting and connecting the steelwork to the marking plans.

Hard stamping to AS/NZS 5131

High-strength bolting: If the work includes more than one bolting category, mark high-strength structural bolted connections with a 75 mm wide flash of colour, clear of holes.

Cold-formed members: Clearly mark material thickness.

Monorail beams: Identify and mark rated capacity in conformance with AS 1418.18 clause 5.12.6.

Natural beam camber
General: If steel beams have a natural camber, within the straightness tolerance, fabricate the steelwork element with the camber up.

Cutting
Shearing: Do not shear edges in areas designated as yielding regions for seismic design to AS 4100 earthquake design categories D and E.

Shaping
Requirement: Where forming, shaping or correcting distorted members, avoid damage and conform to AS/NZS 5131 clause 6.6.

Holing
Slotted holes: Do not use slotted holes for connections, other than those documented.

Finish for pinned connections: Pins and holes shall be finished so that the forces are distributed evenly to the joint plies.

Tolerances
Measurement: Check tolerances by measurement after fabrication and application of corrosion protection.

3.2 WELDING

General
Requirements: To AS/NZS 5131 Section 7.

Standard: To AS/NZS 1554.1.

Weld category
Weld categories not documented: Category GP.

Weld type
Weld type not documented: Submit proposals for weld type and electrodes.

Stress relief treatment
Type:

Non-destructive weld examination (NDE)
Requirement: To AS/NZS 5131 clause 13.6.2.

Non-visual NDE: By a third party testing authority.

Repairs: Repair welds revealed as faulty by NDE and repeat the examination.

Site welds
Completion: Weld only when correct alignment and preset or camber have been achieved.

3.3 MECHANICAL FASTENING

Connection contact surfaces
General: To AS/NZS 5131 clause 8.4.1.

Bolting categories 8.8/TF and 10.9/TF: Clean, as rolled and free from applied finishes.

Washers
Requirement: Place one washer under the part rotated during tightening process (nut or bolt head).

Method of tensioning TB and TF bolting categories
8.8/TB and 8.8/TF: Use part-turn method or a direct tension indicator device.

10.9/TB and 10.9/TF: Use a direct tension indicator device.

Permanent bolting
Completion: Bolt only when correct alignment and preset or camber has been achieved.

Purlin bolts
Requirement: Tighten all purlin bolts snug-tight to AS/NZS 5131 clause 8.3.

3.4 SURFACE PREPARATION AND TREATMENT

General
Requirement: Conform to *0344 Steel – hot-dip galvanized coatings* and/or *0345 Steel – protective paint coatings*, as appropriate.

3.5 SPECIAL FINISHES

General
Requirement: Apply special finishes to the **Special finishes schedule**.

3.6 METAL SPRAYING

General
Standard: To ISO 2063.2.

Requirement: Apply sprayed metal finishes to the **Metal spray schedule**.

Process: Electric arc.

Application: Apply the coating as soon as possible after blasting.

3.7 FIRE PROTECTION COATINGS

General
Requirement: Apply fire protection to structural steelwork to *0346 Structural fire protection systems*.

3.8 ARCHITECTURALLY EXPOSED STRUCTURAL STEELWORK

General
Requirement: Provide AESS to AS/NZS 5131 Section 10 and the **AESS schedule**.

AESS category
AESS category to AS/NZS 5131 clause 10.2: AESS 4

Fabrication
Additional requirements: To AS/NZS 5131 clause 10.4.

Corners and edges: Grind smooth sharp, marred, or roughened corners and edges.

Rough surfaces: Deburr and ground smooth.

Erection
Additional requirements: To AS/NZS 5131 clause 10.5.

3.9 ERECTION

General
Execution: Make sure every part of the structure has sufficient design capacity and is stable under construction loads produced by the construction procedure.

Temporary work
General: Provide all necessary temporary bracing or propping.

Temporary connections: Detail required cleats, if not shown on shop detail documentation.

Temporary members: If temporary members are required, fix so as not to weaken or deface permanent steelwork.

Anchor bolts
General: For each group of anchor bolts, provide a template with set-out lines clearly marked for positioning the bolts when casting in.

Beam camber
Requirement: If beam elements have a camber (natural or induced), erect them with the camber up.

Site work
General: Other than work shown on the shop detail documentation as site work, do not fabricate, modify or weld structural steel on-site.

Purlins
Trimming members: Provide to support edges of roof sheeting along hips, valleys and roof penetrations.

Movements
General: Allow for thermal movements during erection.

Grouting at supports
Preparation: Before grouting steelwork supported by concrete or masonry, set steelwork on packing or wedges.

- Permanent packing or wedges: Form with solid steel or grout of similar strength to the permanent grout.
- Temporary packing or wedges: Remove before completion of grouting.

Timing: Grout at supports before constructing supported floors, walls and roofing.

Temperature: Do not grout if the temperature of the base plate or the footing surface exceeds 35°C.

Drifting
Limitation: Use drifting only to bring members into position, without enlarging holes or distorting components.

3.10 REPAIRS

General
Requirement: Repair finishes to restore the full integrity of any coating.

3.11 COMPLETION

Tolerances
Conformance: After completing erection, verify conformance with AS/NZS 5131 Section 12 and Appendix F.

Temporary connections
General: Remove temporary cleats on completion and restore the surface.

0345B STEEL – PROTECTIVE PAINT COATINGS

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide protective paint coatings for the protection of steel products and structural steelwork against interior and exterior atmospheric corrosion, as documented.

Performance

Requirement: Control atmospheric corrosion to structural steelwork and steel products until the first scheduled maintenance.

Period from application to first scheduled maintenance: Refer to protective coatings warranty (25 Years)

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements.*

1.3 STANDARDS

General

Surface preparation and coating: To AS/NZS 5131 Section 9 and the recommendations of AS 2312.1.

1.4 INTERPRETATION

Abbreviations

General: For the purposes of this worksection the following abbreviations apply:

- DFT: Dry Film Thickness.
- ITP: Inspection and Test Plan.
- MIO: Micaceous Iron Oxide.
- PDS: Product Data Sheet.
- SDS: Safety Data Sheet.
- µm: Micron (10^{-6}m).

Definitions

General: For the purposes of this worksection the definitions given in AS/NZS 2310 and the following apply:

- Coating contractor: The protective coatings application contractor conducting the on- or off-site coating application works.
- Coating manufacturer: The supplier and/or manufacturer of the protective coating materials used.
- Inspection and test plans (ITP): A series of formal inspection and test plans, prepared by the coating contractor to reflect the specific inspection and testing that will be carried out on the surface preparation, coating application and the record keeping tasks to be undertaken.

1.5 SUBMISSIONS

Execution details

Detailing features: If design and fabrication features of the items to be coated may lead to difficulties, identify these and submit details for improvement.

Repair of damaged coating: If the protective coating is damaged, submit a coating repair proposal, based on the coating manufacturer's recommendations for reinstating the corrosion protection function of the system.

Reinstatement: If final coat varies from the submitted sample, submit proposals for reinstatement of the visible final coating system.

Samples

Painting and coating colour: Submit a 400 x 400 mm sample of the finished product for each coating system.

Retention: Retain samples for comparison during application.

Subcontractors

General: Submit names and contact details of proposed suppliers and applicators.

Requirement: Submit proof of currency of the applicator's environmental operating licence.

Substrate acceptance: Submit evidence of applicator's acceptance of the coating substrate before starting installation.

Warranties

General: Submit details of the proposed warranty terms, form and period.

1.6 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Items after fabrication, before commencing surface cleaning and preparation.
- Surfaces after preparation, before application of first coating.
- Coating stages:
  - . After application of primer or seal coats.
  - . After application of each subsequent coat.
- Repair of coating damage: Exposure of corrosion pitting or significant metal loss by blasting process.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Requirement: Handle, store, mix and apply all protective coatings in conformance with the manufacturer's recommendations.

Original containers: Deliver coating products to site in manufacturer's labelled and sealed containers.

Ambient temperature range for storage: 3°C to 30°C, or to manufacturer's recommendations.

Sunlight: Protect coating materials from direct sunlight before mixing or adding the converter (catalyst).

Use-by-date: Use products with limited shelf life before their use-by-date, unless written authorisation from the coating manufacturer's technical services section is provided.

Proprietary products
Requirement: Provide all products from the one manufacturer's supply.

Product data sheets (PDS): Keep on site copies of all relevant manufacturer's PDS.

Safety data sheets (SDS): Keep on site copies of all relevant manufacturer's SDS.

Recording: To AS/NZS 5131 clause 9.9.5.

3 EXECUTION

3.1 GENERAL

Product warnings
Requirement: Conform to the SDS.

Surroundings
Protection: Prevent the release of abrasives, overspray or paint waste debris into the air, ground or to any watercourse. Prevent damage to other assets, services or equipment.

Reinstatement: Repair and/or clean affected surrounding areas.

Working area
General: Perform all painting under cover and/or protected from rain, condensation, dew, excessive wind, overspray or wind-blown dust.

Period: Continue protection where any of these conditions exist until the coating is no longer affected.

3.2 SURFACE PREPARATION

General
Requirement: Conform to AS/NZS 5131 clauses 9.3, 9.4 and 9.5.

Galvanized, aluminium and zinc primed surfaces
Requirement: Remove grease, oil and other solvent-soluble contaminants to AS 1627.1. Allow to dry and immediately proceed with the next operation.

Galvanized and aluminium surfaces: Abrade surfaces to a medium coarse type finish to provide an adhesion key.

Zinc primed surfaces: If present, remove zinc salts from zinc primers.

Treatment of welds
Requirement: Clean welds to remove roughness, using power tools to AS 1627.2. Remove filings by vacuuming or compressed air.

Temporary welds: Grind flush any temporary welds.

Porous, skip or stitch welds: Not permitted.

Site welding: If possible, avoid site welding. If on site welding is required, prepare and treat the weld to AS/NZS 5131 clause 9.12.2.

Shop priming
Requirement: Dust off and apply a coat of primer in conformance with the manufacturer's recommendations.

Site coating
General: High pressure wash down all surfaces with clean water. Lightly sand down primer/intermediate coats, which have been shop applied, before site application of next coat.

3.3 PREPARATION ASSESSMENT

General
Conformance: Assess all surfaces of each steel member for conformance with the documented preparation requirements.

Abrasive blast cleaning
Assessment: To AS 1627.4 and AS 1627.9.

Mechanical cleaning
Assessment: To AS 1627.9.

Surface profile
General: To AS 3894.5 Method A.

Surface dust from abrasion
General: To AS 3894.6 Method C.

3.4 COATING APPLICATION

General
Requirement: Conform to AS/NZS 5131 clause 9.9 and the PDS.

Painting and coating colour: Verify all project finish colours with the retained samples.

Final surface preparation or coating application
Limits: If the environmental/climatic/substrate conditions listed in AS/NZS 5131 clause 9.9.10 and the following are present do not apply coating:

- Ambient air temperature below 5°C or above 40°C.
- Substrate temperature below 5°C or above 35°C.
- Full prime coat application cannot be carried out before the specified cleanliness of the surface deteriorates.
- Surface preparation standard has not been achieved.
- Time between final surface preparation and the commencement of coating has exceeded 4 hours.
- Visual tarnishing or black spots develop on the surface of the steel.

Exception: Preliminary blast or other surface preparations may be performed in conditions that are outside the limits, providing the final surface preparation and all coating applications are undertaken under the limit conditions.

Pre-coating: Before the spray application of each coating, stripe coat by brush method all edges, welds, seams, rivets, bolts, boltholes (including slots) and difficult to spray areas. Prime the underlying surfaces of replacement bolting, washers and nuts before installation.

Procedure: Conform to the coating order shown in **SELECTIONS, PROTECTIVE PAINT COATING SYSTEMS**.

Subsequent coats: Before applying any subsequent coating layer, make sure the surface condition of the preceding coat conforms to **SELECTIONS,**

PROTECTIVE PAINT COATING SYSTEMS and is clean and free from defects.

3.5 PROTECTION

Contamination

Surfaces: Prevent contamination of coated surface, which are not yet dry, from blasting dust, abrasive or surface preparation debris and any other foreign matter.

Post application care

General: Protect the coating against physical, chemical, or atmospheric damage until all components are fully cured.

Care: Stack and handle all coated items using fabric slings or padded chains. Use soft packaging, carpet strips or other deformable materials between all coated items.

Water ponding: Stack coated items to prevent water ponding.

3.6 COATING REPAIR

Repair of coating damage

Preparation: Feather back by hand or machine sanding all leading edges of intact coating adjacent to the repair, to remove any sharp edge.

Surface contamination: Remove by dusting or blowing down before applying the first coat of paint.

Sequence: Apply the repair coating in the same sequence and manner as the original coating.

Areas damaged without exposing the primer: Wash with a proprietary detergent solution, rinse with clean water and abrade so that edges of sound paint are feathered. Coat the area with the appropriate intermediate and finishing coat materials.

Areas damaged exposing the primer or steel surface: Blast clean to the original standard. Prepare at least 50 mm into the sound coating and to a further feathering zone of approximately 50 mm. Recoat with the documented system to restore the film thickness and integrity over the whole prepared surface including the feathered zone.

Aesthetic reinstatement: If required, repaint to a physical or discernible boundary line.

Defects: If corrosion pitting or areas of significant metal loss and defects are exposed by the blasting process, advise for inspection and have areas passed as being fit for service before proceeding with the coating system.

Timing: Apply the protective coating system within 4 hours of blast cleaning or in any case before visual tarnishing of the steel occurs.

3.7 COMPLETION

General

Joints: On completion, seal all joints and mating surfaces with a compatible polyurethane sealant.

Warranties

Requirement: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the supplier and the applicator.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: As offered by the supplier.

4 SELECTIONS

4.1 PROTECTIVE PAINT COATING SYSTEMS

Location	Primer	Second Coat	Colour
External Steelwork	Refer to Sherwin Williams Specification	Refer to Sherwin Williams Specification	To Be Confirmed

0421 ROOFING – COMBINED

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide a roofing system and associated work, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Ambient climatic conditions
Design rainfall intensity (mm/h) to AS/NZS 3500.3: Refer to Hydraulic Engineers Drawings

Location exposure severity
Exposure severity category: Very Severe

Roof access
Type: Refer to 0193 Building Access Safety Systems

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:

- *0171 General requirements.*

1.3 TOLERANCES

Sheet metal roofing
Supporting members: To AS 1562.1 clause 4.2.3.

1.4 SUBMISSIONS

Certification
Design of glazed roofing: Submit an engineer's certificate confirming conformance to AS 1288.

Operation and maintenance manuals
On completion: Submit a manual of recommendations from the roofing manufacturer or supplier for the maintenance of the roofing system including, frequency of inspection and recommended methods of access, inspection, cleaning, repair and replacement.

Products and materials
Type tests: As appropriate for the project, submit evidence of conformity to the following:

- Metal roofing generally: Roof sheeting and fastenings to AS 1562.1 clause 5.4 for resistance to concentrated load and AS 1562.1 clause 5.5 for resistance to wind pressure.
- Metal roofing in cyclonic regions to AS/NZS 1170.2: Roof sheeting and fastenings to AS 1562.1 clause 5.6.
- Plastic sheet roofing: Roofing and fastenings to AS 1562.3 Section 5 for resistance to wind forces and resistance to impact.

Samples
Requirement: Submit samples of the following, showing the range of variation available:

- Trims and accessories with a colour finish.
- Seamed sheet metal roofing:
  - Custom profiled flashings and cappings.
  - Pre-weathered finish to sheet metal.
  - Sealants.

Shop drawings
General: Submit shop drawings to a scale.

Subcontractors
Installer experience: Submit evidence of experience with non-ferrous, shingle and shake or slate roofing installation.

Warranties
Roofing materials: Submit the manufacturer's published product warranties.

1.5 INSPECTION

Notice
Inspection: Give notice so that inspection may be made of the following:

- Roof supports.
- The parts of the roofing, sarking, vapour barrier, insulation and roof plumbing installation before covering up or concealing.

2 PRODUCTS

2.1 GENERAL

Storage and handling
Storage: Store roofing materials, as follows:

- Metal roofing materials: Away from uncured concrete and masonry, on a level base and not in contact with other materials that cause staining, denting or other surface damage.
- Shingles and shakes: Under cover and clear of the ground, to the manufacturer's recommendations, protected from damage and weather.

Handling: Handle metal roofing materials, as follows:

- Use gloves when handling precoated metal roofing material.
- Use soft soled shoes when fixing or working on roofs.
- Protect edges and surfaces from damage. Do not drag sheets across each other or over other materials.

Safety mesh
Standard: To AS/NZS 4389. Provide Under new transparent roofing typically.

2.2 PROFILED SHEET METAL ROOFING

Standards
Design and materials: To AS 1562.1.

Fasteners
Prefinished exposed fasteners: Finish with an oven baked polymer coating to match the roofing material.

Fastenings to timber battens: Fastenings long enough to penetrate the thickness of the batten without piercing the underside.

Profiled fillers
Type: Purpose-made closed cell polyethylene foam profiled to match the roofing profile.

Location: Provide profiled fillers under flashings to the following:

- Ridges.
- Eaves.
- Lapped joints in roof sheeting.

Insulation spacers
Description: Proprietary spacer system to prevent excessive compression of insulation between roof sheeting and framing.

2.3 SEAMED SHEET METAL ROOFING

General
Description: Sheet metal roll formed into pan profiles, laid with seamed joints on flush finished, continuous plywood sheeting over an underlayer and separation layer.

Plywood sheeting
Standard: To AS/NZS 2269.0:

- Surface grade: DD.
- Bond: Type A.
- Formaldehyde emission class: E_1.

Thickness: 19 mm.

Identification: Sheets labelled under the authority of a recognised certification scheme to *0185 Timber products, finishes and treatment.*

Underlayer
Description: Self-adhesive, rubberised asphalt/polyethylene waterproofing membrane.

Separation layer
Description: Fire-resisting mat of a nylon core of fused entangled filaments.

Components
Solder (tin/lead): 40/60 soft solder.

Flux: Z-04-S.

Sealant: 100% natural cure non-acid based silicone rubber to match roofing.

Fasteners: Starter clips, fixing clips and fastenings to the roofing system supplier's recommendations.

2.4 ROOF PLUMBING

General
Description: Flashings, cappings, gutters, rainheads, outlets, downpipes and accessories necessary to complete the roofing system.

Flashing and capping: Notched to match profile of roof sheeting.

Matching fascia/barge capping: If the selected eaves gutter is a proprietary high front pattern forming part of a combined system of gutter, fascia and barge, provide matching proprietary fascias and barge cappings to roof verges and edges.

Standards
Roof drainage: To AS/NZS 3500.3.

Metal rainwater goods: To AS/NZS 2179.1.

Flashings and cappings: To AS/NZS 2904.

2.5 ROOF HATCHES

General
Description: A proprietary roof hatch system including framing, fixing, trim, seals, accessories and flashings.

2.6 ROOF VENTILATORS

General
Description: A proprietary roof ventilator system including framing, fixing, trim, seals, accessories and flashings.

2.7 ROOF PLANT ACCESS

Walkways
Description: A proprietary roof walkway system including fixings.

3 EXECUTION

3.1 INSTALLATION

Protection
General: Keep the roofing and rainwater system free of debris and loose material during construction.

Thermal movement
Requirement: Allow for thermal movement in the roof installation and the structure, including movement in joints and fastenings.

Pan type sheets
Removal: Install sheets so that individual sheets can be removed without damage.

Curved corrugated sheet
General: Form by rolling from material recommended for curving or bullnosing. Minimise crimping or creasing across the face of the sheet. Trim off crimped or creased edges and ends.

Metal separation
Requirement: Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by one of the following methods:

- Applying an anti-corrosion, low moisture transmission coating to contact surfaces.
- Inserting a separation layer.

3.2 PROFILED SHEET METAL ROOFING

Installation
Standard: To AS 1562.1.

Setout: Laying of sheet metal roofing to proceed in a direction from the leeward to the windward side of the prevailing wind.

Fastener type, size, corrosion resistance class, and spacing: To the sheet metal roofing manufacturer's recommendations.

Swarf: Remove swarf and other debris as soon as it is deposited.

Accessories: Provide accessories with the same finish as roofing sheets to complete the roofing installation.

Ridges and eaves
Sheet ends: Treat as follows:

- Project sheets 50 mm into gutters.
- Close off ribs at bottom of sheets using mechanical means or with purpose-made fillers or end caps.
- Turn pans of sheets up at tops and down into gutters by mechanical means.
- Provide pre-cut notched eaves flashing and bird proofing if required.
- Close off ridges with purpose-made ridge fillers of closed cell polyethylene foam.

Ridge and barge
Capping: Finish off along ridge and verge lines with purpose-made ridge capping or barge rolls.

Sprung curved ridge
General: Lay the roofing sheets in single lengths from eaves to eaves by naturally curving the sheets over the ridge.

Ridge: Seal side laps at the ridge and extend the sealant to the point where the roof pitch equals the recommended pitch of the roofing profile.

End laps
General: If end laps are unavoidable, and the sheet profile is not suitable for interlocking or contact end laps, construct a stepped type lap.

3.3 SEAMED SHEET METAL ROOFING

Plywood sheeting
Installation: Lay the length of the sheets at right angles to the supports.

End joints: Stagger the end joints and locate centrally over framing members.

Edge support: If panels are not tongue and grooved, provide noggings or trimmer joists to support the edges.

Fixing, 300 mm centres to each support:

- Timber: Adhesive and nail.
- Steel: Metal-coated, self-drilling/tapping screws with the heads finishing below the surface.

Control joints: 12 mm gap at abutting building elements.

Fabrication
Requirement: Factory fabricate roofing trays.

Minimum bending radius: 1.75 mm.

Fixing
Method: Fix pans to the plywood sheeting with concealed clips at 250 mm maximum centres.

Seams
Roof pitch < 25°: Double standing seam.

Walls and roof pitches > 25°: Roll cap seam.

Method: Mechanically form and welt seal in situ using a self-propelled seaming machine, to stand 25 mm high on completion. Dress seams flat at gutters, ridges and hips, and fold both pan and seam down into gutters and up to form stop ends at ridges and hips.

Ridge and hip capping
Installation: Lock welt to the upturn of the roofing.

3.4 ROOF PLUMBING

Jointing sheet metal rainwater goods

Butt joints: Make joints over a backing strip of the same material.

Soldered joints: Do not solder aluminium or aluminium/zinc-coated steel.

Sealing: Seal fasteners and mechanically fastened joints. Fill the holes of blind rivets with silicone sealant.

Flashings

Installation: Flash roof junctions, upstands, abutments and projections through the roof. Preform to required shapes if possible. Notch, scribe, flute or dress down as necessary to follow the profile of adjacent surfaces. Mitre angles and lap joints 150 mm in running lengths. Provide matching expansion joints at 6 m maximum intervals.

Upstands: Flash projections above or through the roof with two part flashings, consisting of a base flashing and a cover flashing, with at least 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Large penetrations in low pitch roofs: Extend the base flashing over the roofing ribs to the ridge to prevent ponding behind the penetrating element.

Wall abutments: Where a roof abuts a wall, provide as follows:

- In masonry walls, planked cladding or concrete: Step in courses to the roof slope. Interleave with damp proof course, if any.
- Raking in masonry: Build into the full width of the outer leaf. Turn up within cavity, slope inward across the cavity and fix to or build into the inner leaf at least 75 mm above the roofing line.
- Raking in concrete: Turn 25 mm into joints or grooves, wedge at 200 mm centres with compatible material and point up.

Fixing to pipes: Solder or seal with neutral cured silicone rubber and either of the following:

- Secure with a clamping ring.
- Provide a proprietary flexible clamping shoe with attached metal surround flashing.

Gutters

Gutter and sump support: Provide framing and lining to support valley gutters, box gutters and sumps. Line the whole area under the gutters and sumps.

Support: Steel framing

Lining: Lysaght Spandek, Colorbond Ultra

Box gutter: Prefabricate box gutters to the required section and shape. Form stop ends, downpipe nozzles, bends and returns. Dress downpipe nozzles into outlets.

- Hail guards: Install grating over the whole of the box gutter, over all box gutter sumps and over the edges of roofing sheeting entering box gutters.
- Overflows: Provide overflows to prevent back-flooding. Size to pass 100% of the design rainfall. Discharge overflows in visible locations and so water does not enter the building or cause damage to the building.
- Sumps: Minimum 150 mm deep and the full width of the box gutter.

Valley gutters: Profile to suit the valley boarding. Turn back both edges 180 x 6 mm radius. Nail or screw to the valley boarding at the top end to prevent the gutter creeping downwards.

Expansion joints in guttering longer than 30 m: Provide as follows:

- Type: Proprietary System

Gratings: Install removable gratings over rainheads and sumps.

Leaf guard location: All gutters

External downpipes

General: Prefabricate downpipes to the required section and shape where possible. Connect heads to gutter outlets and, if applicable, connect feet to rainwater drains.

Access cover: Provide a removable watertight access cover at the foot of each downpipe stack.

Downpipe support: Provide supports and fixings for downpipes.

Internal downpipes

Access: Provide access openings as follows:

- At each junction and bend.
- At the foot of each stack.
- At every second floor level.

Acoustic insulation: Mineral fibre pipe insulation 50 mm thick, spirally bound on with 1.5 mm wire at 150 mm pitch.

Building in: If pipes are built into masonry or concrete, spiral wrap the pipe (and insulation, if any) with building paper.

Rainwater disposal

System: See hydraulic / civil engineers drawings.

3.5 PLASTIC SHEET ROOFING

Installation

Standard: To AS 1562.3.

Fixing: Roofing screws with neoprene washers in oversized holes. Consult the manufacturer.

Fixing to timber: 30 mm minimum penetration.

3.6 COMPLETION

Reinstatement

Extent: Repair or replace damage to the roofing and rainwater system. If the work cannot be repaired satisfactorily, replace the whole area affected.

Touch up: If it is necessary to touch up minor damage to prepainted metal roofing, do not use spray paints.

Cleaning

Roofing and rainwater drainage system: Remove debris, metal swarf, solder, sealants and unused materials.

Exposed metal surfaces: Clean surfaces of substances that interfere with uniform weathering or oxidisation.

Roof plumbing: Clean out spoutings, gutters and rainwater pipes after completion of roof installation.

Warranties

Requirement: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the supplier and installer.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: As offered by the supplier/manufacturer.

4 SELECTIONS

Refer to drawings and roofing suppliers specifications

Derwent Entertainment Centre
601 Brooker Highway
Glenorchy
TAS 7010
Australia

PhilpLighton Architects Pty Ltd
65 Tamar Street
Launceston
TAS 7250
Australia
T: 03 6331 2133
E: [redacted]
W: www.philplighton.com.au

Standard Specification Derwent Entertainment Centre

23 September 2021
Reference: Derwent Entertainment Centre
Document No: Phi-Derwe-Glenorchy
Revision: 1

1. Scope

This specification applies to the supply, delivery, erection and fixing of Fielders FreeForm® sheeting and accessories including fasteners, moldings, flashing, roofing ventilation shown on the Drawings and/or as necessary for completion of the Works.

2. General requirements

2.1 Standards

Unless noted otherwise, all Works shall be performed in accordance with the relevant Australian Standard or International Standard in the absence of an Australian Standard, including those listed in Table 2-1.

Table 2-1 Primary Reference Standards

Standard	Title
AS 1562.1	Design and Installation of Sheet Roof and Wall Cladding
AS 1170.2	Structural Design, Wind Actions
AS 4040.0	Methods of Testing Sheet Roof and Wall Cladding
AS 4040.1	

Table 2-2 Secondary Reference Standards

Standard	Link
Published Design	https://specifying.fielders.com.au/freeform/
Installation Guide	https://specifying.fielders.com.au/freeform/installation-guide.pdf

2.2 Test Requirements

Sheeting materials, flashing and fasteners to be installed under this Contract must be certified or type tested as having capacity for concentrated, static and fatigue loads in accordance with AS 1562 based on the following conditions:

A concentrated load of 100 kg; and wind pressures derived in accordance with AS 1170 Part 2 for an average recurrence interval of 3 years, Cyclonic - Region C, 1.5 Terrain Category.

Testing is required from a NATA registered facility to demonstrate that each type and thickness of material together with the fasteners is capable of withstanding the applicable loads from the most extreme combination of wind pressure and purlin/girt spacing shown on the Drawings.

Roof sheeting to have tested capacities using the Low-High-Low Cyclonic testing methodology in accordance with the Building Code of Australia.

2.3 Weatherproofing

The whole of the cladding system shall be made weatherproof. Flashings, moldings, sealants and other accessories necessary to achieve this shall be supplied and installed in accordance with the cladding manufacturer's recommendations.

3. Quality control

An accredited Quality Control System in accordance with ISO 9001 shall be implemented for cladding on the project. Inspection and Test Plans (ITPs) shall be submitted to PhilpLighton Architects Pty Ltd for review and acceptance prior to procuring sheeting and associated materials.

4. Roofing

4.1 Pre-Painted Aluminum sheeting

Sheeting shall be high strength marine grade aluminum alloy 5251 or 5052 (H38 temper) in accordance with AS 1734, to minimum thickness of 0.9mm BMT.

Fielders FreeForm® cladding at 400mm cover, shall be sprung curved on site to match design curvature, unless noted otherwise.

Sheeting shall be installed in accordance with the manufacturer's recommendations and with the longer trough dimensions as pans against supporting steelwork and concealed fixings under the shorter crests.

The surface finish of aluminum sheeting and flashing shall be pre-painted as specified in the section referring to pre-painted finish to aluminum sheeting and flashing.

4.2 Pre-painted finish to aluminum sheeting and flashing

The sheet shall be pre-painted as per BlueScope standard pre-painted Aluminum specification in Glacier White™.

The paint shall be continuously roller coated to the pre-treated strip and cured by baking or stoving as recommended by the coating manufacturer.

The minimum dry film thickness of the finished coating shall be 25 microns and the finished surface shall be commercially smooth and free from flaw lines, streaks, blisters or other surface imperfections.

The pre-painted finish specified above shall apply equally to flashings, corner molds, barge molds and the like in the above-mentioned areas.

4.3 Flashings and accessories

Flashings shall be neatly scribed fully down into the profile of the sheeting and secured in accordance with the requirements of the design criteria but of a standard not less than that shown on the Drawings.

Notwithstanding the details of various flashings shown on the Drawings, the CONTRACTOR shall check these details and satisfy itself of their suitability to provide weatherproof joints or provide alternative flashing details, subject to acceptance by the OWNER, necessary to satisfy this requirement. Where laps occur in flashings, appropriate Neutral Cure Silicone sealant shall be used to seal the joint effectively.

Unless shown otherwise on the Drawings, flashing and other accessories shall be factory fabricated from 0.9mm minimum base metal thickness, and of the same finish as the external surface of the adjacent sheeting.

4.4 Gutters and downpipes

Gutters, downpipes and other rainwater goods shall be in accordance with AS 2179 and AS 2180.

Gutters, downpipes and accessories shall be factory designed and fabricated from the same material grade as the sheeting, and of the same finish to the external surface of the adjacent wall or eaves cladding.

Minimum thickness for external gutters and downpipes shall be 0.9mm. Minimum thickness for box gutters shall be 1.2mm. Box Gutters shall be designed and installed in accordance with AS/NZS3500.3:2003, AS/NZS 2179.1:1994, HB114:1998 and be fully supported as per manufacturer's recommendations.

Gutters and downpipes shall be supplied to site as single units. Joints are not permitted in spans less than stock lengths.

Gutters shall be supported at a maximum of 1200 mm centres and shall be suitably sloped to ensure that ponding of water does not occur under any circumstances minimum fall 1:200.

The downpipes shall be supported at ground level and securely fixed to the walls.

4.5 Fasteners

Complete details of fastener types and spacing for structures shall be submitted to the OWNER prior to commencing installation. These details shall be prepared by the cladding installer so as to be capable of withstanding wind pressures and test requirements specified in Section 2.2.

Fasteners shall be fixed in accordance with the manufacturer's recommendations for the site.

The fasteners shall be designed so that the enclosed area is waterproof under all temperatures, wind and other conditions reasonably anticipated at the site and for associated movements of the cladding.

They shall be manufactured from Grade 304 stainless steel and shall be installed with isolation media so as not to induce electrolytic action with either the aluminum cladding or structural steel framing.

Table 9-1 Use of Fasteners

Use	**Fastener**
Clips / Towers - Structural Connection of sheeting to Building	Clips shall be Supplied by the Cladding manufacturer and shall be cast aluminum CA401 Alloy F1 Temper. Clips shall be isolated from Steel structural members via PVC isolation tape of a min thickness of 250microns.
Clip / Towers -fixing screws	12g - 14 x 20 304ss Self drilling Hex screw with Neo Seal
Flashings to Sheeting	12g - 11 x 20 304ss stitching Hex screw with 16mm

	bonded aluminum washer

5. Handling and storage

Sheeting shall be kept dry in transit and on site to prevent water and/or condensation being trapped between adjacent surfaces. No stained or damaged sheeting shall be built into the finished work. Packs of sheet standing on site shall be stored clear of ground. Sheets shall be handled using clean dry gloves.

Given the outdoor nature of roofing and walling erection it is recommended that suitable precautions be taken to prevent personal sun damage. It has been found that sunscreens containing semi-conducting metal oxides such as titanium dioxide (TiO2) and zinc oxide (ZnO) can accelerate the degradation of organic materials, including paint systems. For personal safety, and to protect the surface of Fielders FreeForm®, it is recommended to:

- Wear clean, dry, cut-resistant gloves that are suitable for the task;
- Take suitable precautions against personal sun damage; and
- Prevent contact of the painted surface with sunscreens that contain titanium dioxide (TiO2) and zinc oxide (ZnO).

6. Installation

Consideration shall be given to the timing of installation of cladding relative to that of the supporting structure to avoid distortion of the sheeting and/or fixings or otherwise compromising the integrity of the cladding system.

Where required, due allowance shall be made for scaffolding and staging to carry out the work in a safe and workmanlike manner.

Work shall be erected plumb, level and square and in proper alignment and relationship to work of other trades. Sheet profiles shall not to be distorted or spread during fixing, and centre lines of sheet laps must be maintained at the nominated cover width. Scalloped accessories are to be fixed at the time and as part of the operation of fixing the sheet. The whole of the Works shall be erected and fixed in accordance with the manufacturer's recommendations so that there will be no objectionable distortion or stressing of the fastening from thermal movement or other causes. Sheeting, flashings, moldings and accessories shall be securely fixed in position and the whole of the work shall be weatherproof and bird proof on completion.

Fastening holes must be drilled square to the work to ensure correct sealing and weather tightness.

Holes are to be drilled using non-burring drills and not punched through the sheet.

Any cutting required shall be done in such a manner so as to avoid distortion of the sheeting. To ensure accurate fitting of facias, scalloped flashings and eaves filler strips, each are to be fixed at the same time and as part of the operation of fixing sheeting.

Corner molds, barge molds and the like shall be fastened to each sheeting support member through crests of the sheeting, and at a maximum spacing of every rib between supporting members.

Partially fixed and unfixed sheets shall be secured from being blown away at all times.

7. Isolation of aluminum and steel/timber

Where aluminum sheeting or edge angles are to be in contact with painted or galvanised steel surfaces, a suitable isolating medium shall be provided between the two metals. This shall be a PVC tape with a minimum thickness of 250 microns or Tremco Alta 300-40 isolation tape, or approved equivalent, applied in accordance with the manufacturer's recommendations.

This isolation methodology should also be used when aluminum is to be in direct contact with timber products.

8. Ventilation

8.1 Roof ventilators

Roof ventilators shall be manufactured from the same material as the roof cladding and shall be designed suitable for installation adopting the design wind velocity specified in Section 2.2.

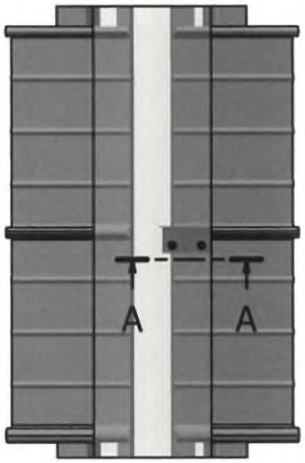
Roof ventilators shall be installed in accordance with the manufacturer's recommendations and shall be bird proof and weatherproof upon completion of installation.

8. Cleaning up

The roof shall be swept clean of debris (nuts, screws, cuttings, fillings etc.) using a soft broom on completion of fixings. Rubbish and debris including off-cuts, loose fastenings, broken drills and the like shall be removed from the site prior to completion of the Works.

All drill filings shall be removed, including those on purlins, in gutters and any other part of the roofing structure.

DO NOT SCALE - DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE



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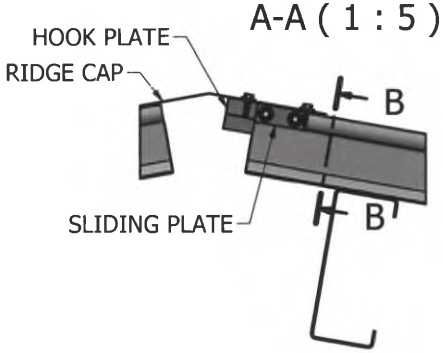

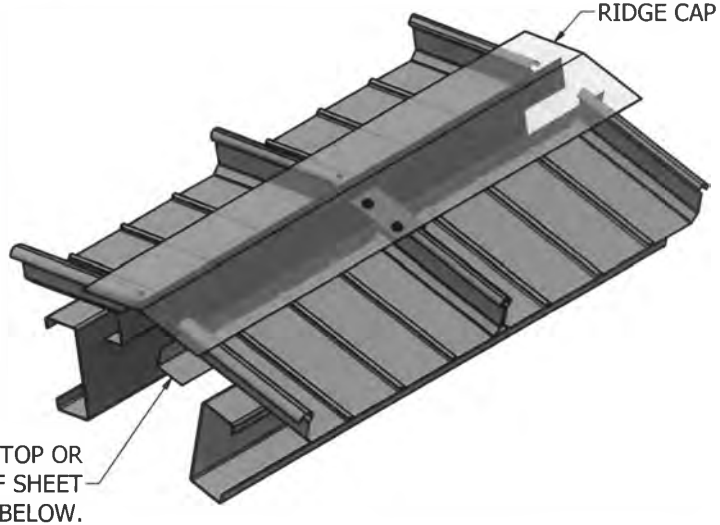

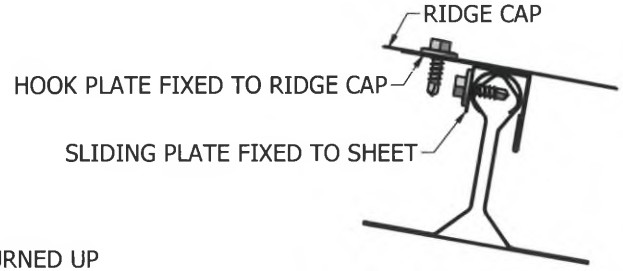

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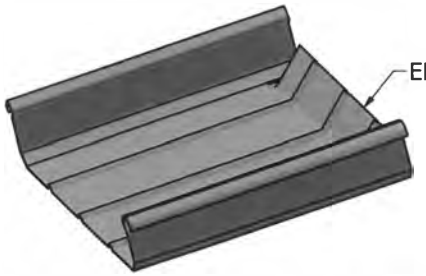
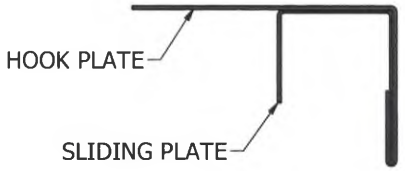




DETAIL VIEW
SCALE 1:1

NOTE: SAMPLE ONLY, ACTUAL SIZES, SPACING AND FIXINGS TO BE VERIFIED BY A STRUCTURAL ENGINEER.

ISSUE	REVISION DESCRIPTION	DRAWN	DATE
A	END TURNED UP OPTION ADDED	T.W	23/09/21

TOLERANCES
UNLES OTHERWISE STATED
0 DEC ± 1.0
1 DEC ± 0.5
2 DEC ± 0.1
HOLES + 0.5 - 0.0

	NAME	DATE
DRAWN	T.W	15/10/2015
CHECKED	N.J	16/04/2019
APPROVED	N.J	16/04/2019

FIELDERS
FINISH ON TOP
213 RAILWAY TCE
KESWICK TERMINAL SA 5035
Ph: 08 8292 3611
Fax: 08 8292 3626

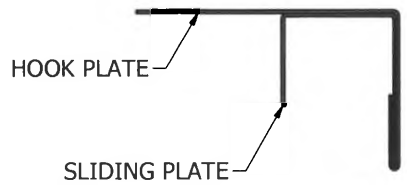
MATERIAL
COLOUR
FINISH

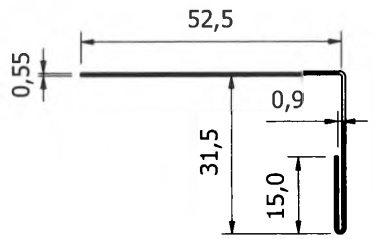
DESCRIPTION
FREEFORM SLIDING BRACKET

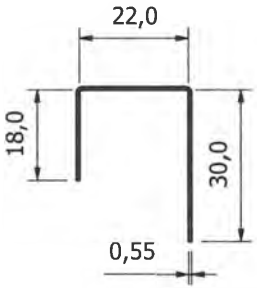
SCALE @ A3
1:10
SHEET
1 OF 2

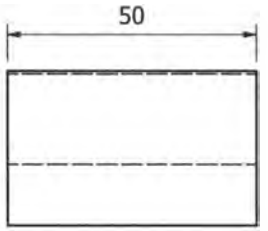
DWG NO
ACC19002

DO NOT SCALE - DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE









NOTE: SAMPLE ONLY, ACTUAL SIZES, SPACING AND FIXINGS TO BE VERIFIED BY A STRUCTURAL ENGINEER.

ISSUE	REVISION DESCRIPTION	DRAWN	DATE

TOLERANCES
UNLES OTHERWISE STATED
0 DEC ± 1.0
1 DEC ± 0.5
2 DEC ± 0.1
HOLES + 0.5 - 0.0

	NAME	DATE
DRAWN	T.W	15/10/2015
CHECKED	N.J	16/04/2019
APPROVED	N.J	16/04/2019

FIELDERS
FINISH ON TOP
213 RAILWAY TCE
KESWICK TERMINAL SA 5035
Ph: 08 8292 3611
Fax: 08 8292 3626

MATERIAL
COLOUR
FINISH

DESCRIPTION
FREEFORM SLIDING BRACKET

SCALE @ A3
1:10
SHEET
2 OF 2

DWG NO
ACC19002

FreeForm™ Installation Guide

1.1 INTRODUCTION

FreeForm™ is engineered for ultimate design flexibility in varying construction applications from single skin roof applications, vertical walls, conical tapered roofing and built up roof system applications. Available in both COLORBOND® steel and aluminium finishes, Fielders has the ability to roll the material onsite to any length or size using the Fielders Mobile Mill® roll former.

FreeForm™ panels accommodate the most complex roof configurations including curved surfaces allowing smooth transitions between roof planes and between the roof and other building elements

The unique tapering can be done from our standard 400mm profile and reduce to 220mm. This allows curved buildings like sports stadia to be accommodated with ease.

Our products are engineered to perform according to our specifications only if they are used in the appropriate conditions and installed to the recommendations in this manual and our other publications. Where we recommend use of third party materials, ensure you check the qualities and capabilities of those products with the relevant manufacturer before use.

The FreeForm™ concealed fix, standing seam system is a roofing system with an innovative architectural appearance. Its flexible design combines with G300 COLORBOND® steel from BlueScope Steel or 5251 H38 marine grade aluminium to provide outstanding watertightness, durability and stunning aesthetics. A variety of end panels and ridge covers cap off the most complex roof designs.

Benefits

The benefits of FreeForm™ cladding include:

- A concealed fixing system that requires no piercing fasteners and helps provide watertightness and superior resistance to wind uplift and harsh corrosive environments.
- It is available in tapered and curved shapes to meet the most challenging design conditions providing unparalleled design freedom.
- The ability to rollform on-site to allow for long continuous roof lines eliminating concerns regarding transportability of sheet lengths.
- Innovative clip system provides superior resistance to wind uplift whilst readily allowing for thermal expansion of long roof runs.
- Wide pans with distinctive ribs not only provide for a dynamic aesthetic but allow for roof pitches as low as 1.5 degrees with excellent water carrying capacity.

Sheeting

Whilst the standard FreeForm™ cover width is 400mm, FreeForm™ is able to be tapered down to 220mm or expanded out to maximum 480mm cover width for special designs. FreeForm™ can be manufactured in a range to meet the most irregular shapes required.

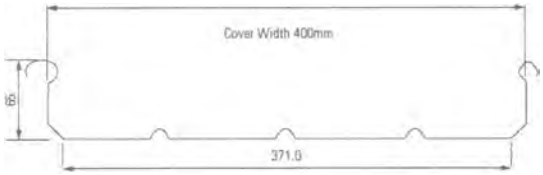
Fixings

FreeForm™ fixing towers are cast from CA401-F1 structural grade aluminium. Clips sit flat on the purlin. If insulation is required we recommend the use of the J-Clip roof-raiser system.

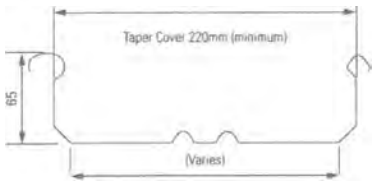
The shape of the fixing tower has been carefully designed to maximise strength, in both outward (wind uplift) and inward load forces. The head of the fixing tower accurately matches the FreeForm™ sheeting, to ensure the sheets slide freely during thermal movement.

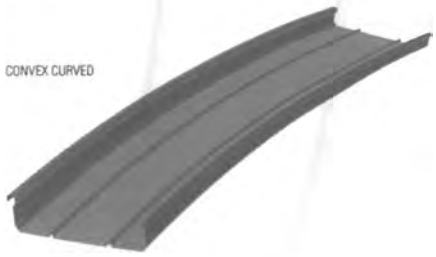
Fixing towers are affixed to the structure with Glass 5 (for FreeForm™ steel) or 304SS (for FreeForm™ Aluminium) screws to ensure maximum performance in corrosive environments.

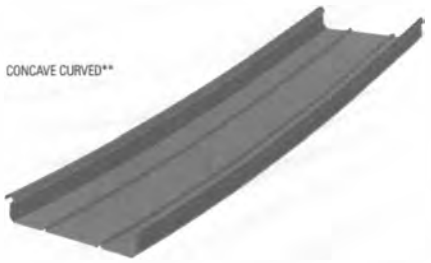
FreeForm™ 400 profile (2 or 3 Swage)



FreeForm™ 220-400 Taper profile (2 Swage)







**Please note. Concave can be sprung to a limit of 80m. Crank curving not available with concave applications.

1.2 MATERIAL SPECIFICATION

Table 1.1

Material	Yield (MPA)
Next generation ZINCALUME® steel aluminium/zinc/magnesium alloy coated steel complies with AS 1397:2011 G300, AM125 (300 MPa minimum yield stress, 125g/m² minimum coating mass).	300
COLORBOND® steel is pre-painted steel for exterior roofing and walling. It is the most widely used. The painting complies with AS/NZS 2728:2013 and the steel base is an aluminium / zinc alloy-coated steel complying with AS 1397:2011. Minimum yield strengths for the FreeForm™ range is G300 (300 MPa). Minimum coating mass is AM100 (100g/m²) plus paint coating mass.	300
COLORBOND® Metallic steel is pre-painted steel for superior aesthetic qualities displaying a metallic sheen. Minimum coating mass is AM100 (100g/m²) plus paint coating mass.	300
COLORBOND® Matt steel is pre-painted steel offering a softer look in neutral tones for a sophisticated design statement. Minimum Coating mass is AM100 (110g/m²) plus paint coating mass.	300
COLORBOND® Ultra steel is pre-painted steel for severe coastal or industrial environments (generally within about 100m - 200m of the source). The painting complies with AS/NZS 2728:2013 and the steel base is an aluminium/zinc alloy-coated steel complying with AS 1397:2011. Minimum coating mass is AM150 (150g/m²) plus paint coating mass.	300
Aluminium Mill finish Marine Grade Aluminium alloy 5251 / 5052 H38 Temper is suitable for severe coastal or industrial environments (generally within 0m - 500m of the source).	260/270
Prepainted Marine Grade Aluminium alloy 5251 / 5052 H38 Temper is suitable for severe coastal or industrial environments (generally within 0m - 500m of the source) The painting complies with AS/NZS 2728:2013.	260/270

Table 1.2 Minimum Radius for Curving

		Min Radii (m)		
				
Smooth Pre Curve	**BMT**	**Convex**	**Concave**	**Max Support C/C (m)**
"G300 ZINCALUME® steel or COLORBOND® steel"	0.55	6	8	1.5
	0.75	8	10	1.8
Pre-painted Marine Grade 5251 H38 Aluminium	0.9	2	8	1.5
	1.2	4	12	1.8
Crank Curve	**BMT**	**Convex**	**Concave**	**Max Support C/C (m)**
"G300 ZINCALUME® steel or COLORBOND® steel"	0.55	2	1	1.5
	0.75	3	2	1.8
Pre-painted Marine Grade 5251 H38 Aluminium	0.9	2	1	1.5
	1.2	3	2	1.8
Spring Curve	**BMT**	**Convex**	**Concave**	**Max Support C/C (m)**
"G300 ZINCALUME® steel or COLORBOND® steel"	0.55	80	90	1.5
	0.75	90	100	1.8
Pre-painted Marine Grade 5251 H38 Aluminium	0.9	45	50	1.6
	1.2	50	55	1.8

Thermal Expansion

Long continuous sheet lengths require careful consideration of thermal behaviour. The FreeForm™ system considers this movement by allowing the FreeForm™ profile to slide freely over the fixing tower system. This eliminates thermal buckling of the cladding profile. Due care should be given to the seaming process during installation, as movement of the system is dependent on accurate seam control. Attention should also be given to transverse flashings/ penetrations to ensure longitudinal movement is not negatively affected. The changes in length depend on the material type, and its corresponding coefficient.

The change in length can be calculated using the following equation:

EL(mm) = Length (m) x TC x CO

Where:
EL = increase in length (mm)
Length = original length (m)
TC = change in temperature (C°)
CO = For Aluminium the expansion co-efficient is 0.024
For Steel the expansion coefficient is 0.013

Careful detailing is required for long lengths to avoid leaks.

1.3 INSTALLATION PROCESS

Fixing towers are screw fixed to supporting purlins with selfdrilling 12-14 x 25 Screw. For Steel applications this should have a min class 5 protective coating. For aluminum applications these should be 304 grade Stainless Steel. Where possible, the direction of installation should be toward the prevailing weather conditions. This ensures that the overlap locates on the leeward side.

Lateral Spacing of the Fixing Towers

Lateral spacing of the fixing towers depends on the FreeForm™ profile being used. For best results fixing towers should be spaced with a cover width plus 2.0mm. For example for standard straight FreeForm™ 400mm cover, the fixing tower spacing is ideally at 402mm. For curved roofs, increase the spacing an extra 3-5mm depending on the radius of the FreeForm™ sheeting.

Longitudinal Spacing of Fixing Towers

Longitudinal spacing of fixing towers (or cladding span) is determined using the load capacity FreeForm™ tables included in this manual. Careful consideration should be given to areas of the structure which experience high localised loads e.g. edges of the building. It is common to reduce spacing's of fixing towers in this area. To ensure adequate thermal movement of the system is maintained, lateral spacing of fixing towers must be carefully aligned longitudinally during installation.

Flashing Fixing Details

Flashings are screw-fixed to the FreeForm™ sliding bracket assembly with 12x20 stitching screws for steel applications this should have a min class 5 protective coating. For aluminum applications these should be 304 grade Stainless Steel at each rib transversely or at max. 500mm c/c longitudinally as per Figure 1.9.

Timber and Metal Compatibility

Under no circumstances should steel, lead, copper, brass, or copper alloys be placed in contact with Aluminium, ZINCALUME® steel or COLORBOND® steel.

Care must be taken to avoid contact with building materials such as unseasoned or chemically treated timber, lime cement, concrete, mortar or plaster during construction and to provide impermeable barriers against long term contact.

If there are doubts about the compatibility of other products being used, seek advice from our technical representative. See tables 1.3 and 1.4 for direct contact and rainwater discharge compatibility issues.

General Installation Process

NOTE: This procedure provides an overview of some the main steps involved to install a FreeForm™ roof. Each roof is different and careful consideration should be given to the project specific work method before commencing work on site. This document does not replace a SWMS or risk assessment for the process. It is intended as a guide to assist in the installation of this specialised product.

Step 1

Lay first sheet onto roof and align edge with end of building.

Step 2

Install clips into under lap rib (diamond formed edge) beside each purlin. When clips are in place they can be slid along the sheet to line up accurately with the purlin.

To insert the clip hold it horizontal to the sheet with the top under the lip. Rotate the clip applying pressure to the base until it 'clips' into place and is vertical as shown in the photos.

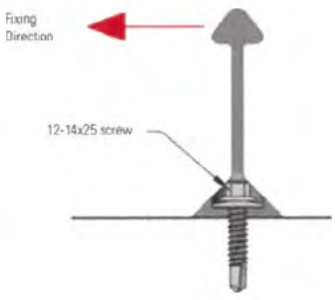
Step 3

Line clip up with the purlin ready to secure it into position.

Step 4

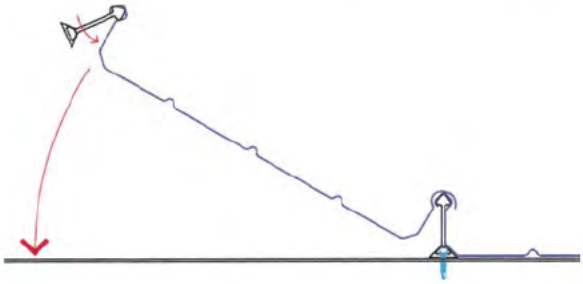
Screw clip to purlin with appropriate tek screws. A longer (150mm) hex head driver bit will assist here to clear the top of the sheet.

FreeForm™ fixing clips are screwed into the purlins oriented to allow for the desired direction of the ribs.



Step 5

The male and female ribs on the clips are fixed by overlapping the female rib over the male rib of the previous sheet.



Lift next sheet onto roof and place next to installed sheet.

Lift sheet up to 45° to hold 'over' (radius formed edge of sheet) above the top of under.

Several people spread along the length of the sheet may be required to help align it.

The sheet shown in the photo above is not properly engaged. The over needs to cover the under completely with the edge of the over touching the vertical face of the previous sheet.

Step 6

Rotate the sheet down to horizontal which will engage the over completely over the under.

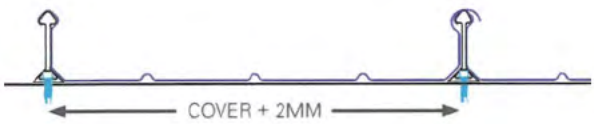


Figure 1.7: Lateral spacing of the fixing towers.

Figure 1.8: FreeForm™ detail of lap before seaming.

Step 7

Align the end of the sheet.

Step 8

Using the manual large hand crimpers, crimp the end 150mm of the seam.

Step 9

Split the electric seamer by lowering the side locking bar and pulling both sides of the tool apart. Place the seamer over the roof seam joint with the front set of rollers over the section of the seam that was manually crimped.

Step 10

Close up the electric seamer with the side locking bar. It may need to be rolled back or forth on the roof to engage the gears connected to the rollers.

Step 11

Ensure the trigger on the seamer is not locked in. Connect the extension cable supplied with the machine to a 240V power outlet. Connect the seamer to the extension cord and secure in place with the locking plug.

Step 12

Turn the power on and the extension lead switch on. Using the trigger on the seamer 'jog' it along 500mm of the seam to ensure it is engaged and seaming. Release the trigger.

Step 13

Turn the power off at the extension lead switch and lock in the trigger switch on the tool.

The seamer can now be controlled with the extension lead switch. Watch to ensure the lead doesn't get caught on anything or run over by the seamer.

Step 14

When seaming is completed correctly the edge of the material on the over should be pushed right in and touching the vertical section of the previous sheet.

Table 1.3: Compatibility of direct contact between metals or alloys

Roof Drainage System Components and Any Cladding Material	Accessories or Fastener or (Upper Surface)								
	ZINCALUME® steel	Galvanised steel	Zinc	COLORBOND® steel Including Ultra, Metallic and Matt	COLORBOND® Stainless	Stainless Steel [3]	Aluminium Alloys	Copper & Copper Alloys [1]	Lead
Aluminium Alloys	No [4]	No	Yes	No	No	Yes	Yes	No	No
ZINCALUME® steel [4]	Yes	Yes	Yes	Yes	No	No	No	No	No
Galvanised steel [4]	Yes	Yes	Yes	Yes	No	No	No	No	No
Zinc	Yes	Yes	Yes	Yes	No	No	Yes	No	No
COLORBOND® steel (Plus Ultra, Metallic & Matt)	Yes	Yes	Yes	No	No	No	No	No	No
COLORBOND® Stainless steel	No	No	No	No	Yes	Yes	No	No	No
Stainless steel	No	No	No	No	Yes	Yes	No	No	No
Copper and Copper Alloys [1]	No	No	No	No	No	No	No	Yes	No
Lead	No	No	No	No	No	No	No	Yes	Yes

(1) Monel - copper/nickel alloy. (2) For further guidance refer to AS/NZS 3500.3:2003. (3) Fixings only. (4) Our experience is that these materials are not compatible in extremely corrosive environments, so our advice differs from AS/NZS 3500.3:2003

Table 1.4: Acceptability of drainage from an upper surface to a lower metal surface

Lower Roof Drainage System Material	Upper Cladding or Roof Drainage System Material									
	ZINCALUME® steel	Galvanised steel	Zinc	COLORBOND® steel Including Ultra, Metallic and Matt	COLORBOND® Stainless steel	Stainless Steel	Aluminium Alloys	Copper & Copper Alloys [1]	Lead	Glazed Tiles, Glass and Plastic
Aluminium Alloys	No	No	Yes [3]	Yes	Yes	Yes	Yes	No	No	Yes
ZINCALUME® steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes(3)	No	No	Yes
Galvanised steel [4]	No	Yes	Yes	No	No	No	No	No	Yes	No
Zinc	No	Yes	Yes	No	No	No	No	No	Yes	No
COLORBOND® steel (Plus Ultra, Metallic & Matt)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
COLORBOND® Stainless steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Stainless steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Copper and Copper Alloys [1]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(1) Monel - copper/nickel alloy. (2) For further guidance refer to AS/NZS 3500.3:2003. (3) Our experience is that these materials are not compatible in extremely corrosive environments, so our advice differs from AS/NZS 3500.3:2003

1.4 FLASHINGS

Purpose of Flashing

Flashings are not only required to provide weather-resistance to the many junctions on a roof or wall structure, but are also a very visible part of the roof and wall cladding design, and perform an important role in the aesthetic appearance of the building. The following sections should be considered as a guide only. For a comprehensive account of flashing guidelines, refer to HB39-1997.

Similar methods of flashing are used for different cladding profiles. You can adapt the principles to suit your application. In all cases it is important to have ample cover provided by the flashing and proper turn-up of the cladding underneath. Be careful when moving between supports. Do not walk on the ridge immediately adjacent to flashings or translucent sheeting. Walk at least one pan away.

All flashings must be designed to prevent ponding of water or build-up of debris. Flashings must be designed to provide weather-resistance for the roof or wall cladding without reliance on sealant as the prime means of providing weather-resistance.

Flashing Materials

It is very important that flashings be made from materials that are compatible with the cladding (see Dissimilar Metals Tables 1.3 and 1.4). Flashings should conform to AS/NZS 2179.1:1994. Materials for flashings are available in the full range of material specification

Roof Flashing

The correct installation of flashings to seal the roof perimeters or penetrations is essential to the security and weather tightness of the roof. Consideration should be given to movement between the roof and building walls and to length expansion of flashings.

Allowance needs to be made for expansion and contraction of long runs of roof sheets to ensure that flashings do not constrain this movement or are strained by movement. To this end FreeForm™ flashing sliding brackets should be used as per Figure 1.11 to 1.14.

Fielders is able to supply a range of flashings which are provided to the same metal specification as the roofing sheet.

Figure 1.11: Barge flashing

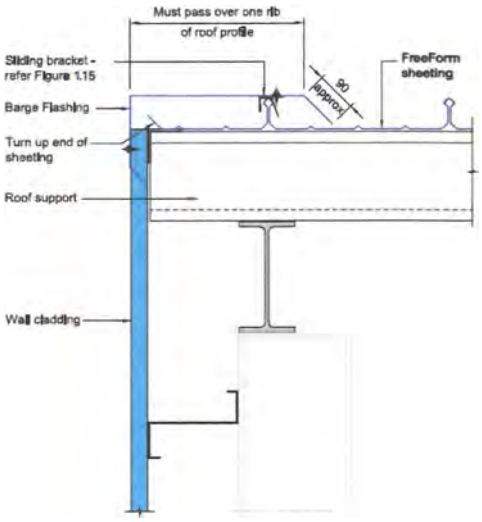
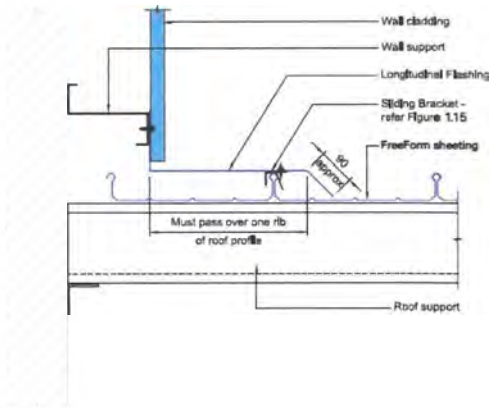


Figure 1.12: Longitudinal flashing



Barge and Longitudinal Flashings

The installation of these flashing types must make allowance for movement between the roof sheeting and the wall parallel to the edge of the sheeting. To accommodate this thermal movement, Fielders recommend the use of a sliding bracket.

Barge and longitudinal flashings are made to suit the cladding profile. They should have an edge turned down to dip into the pan or valley. The minimum recommended cover of longitudinal flashings over cladding should be taken from AS/NZS 3500.3:2015.

Refer Figures 1.11 and 1.12 for further details on these flashing types and the sliding bracket.

Transverse Flashings

Transverse flashings run across the pans or valleys. They usually have a stiffening lip, along the lower edge, which is turned-down to dip into the pan or valley. To maximise weatherproofing, the bent lip is fashioned to fit the profile. The turn-down for transverse flashings can be fashioned to fit the profile by scribing to match the FreeForm™ profile.

Flashing Cover

Fielders can produce a range of flashings to suit your needs and design (hip, barge, apron). To increase weather-resistance, Fielders recommends you maximise the overlap between flashings and cladding.

Fixing of Flashings

Longitudinal flashings shall be fastened at maximum 500mm centres. Transverse flashings shall be fastened in accordance with AS/NZS 3500.3:2015.

Flashing Laps

A lap is that part of a flashing that overlaps or covers any portion of the same shaped component, and is variously described as an end lap, overlap or underlap.

Laps should comply with the following criteria:

- an overlap must run in the same direction as the water i.e. downhill;
- an overlap must run over not under;
- an overlap must be across the fall or at a shallow angle;
- water must flow over a lap not into it;
- a lap must be self-draining and not rely solely on sealant;
- a lap must be mechanically fixed;
- a lap must have a minimum of width of 150mm;

* a lap should be sealed with a recommended sealant and fastened.

Figure 1.13: Ridge Capping

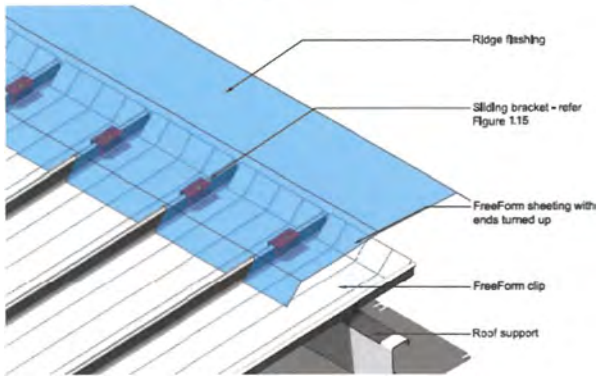


Figure 1.14: Transverse Flashing

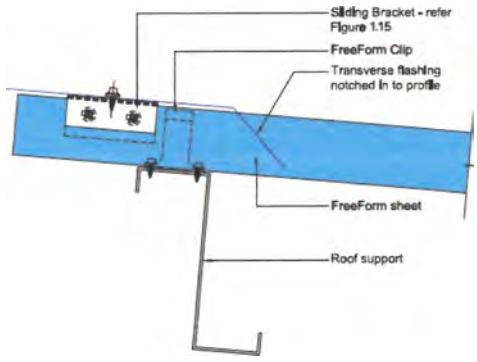


Figure 1.15: Sliding Bracket Detail

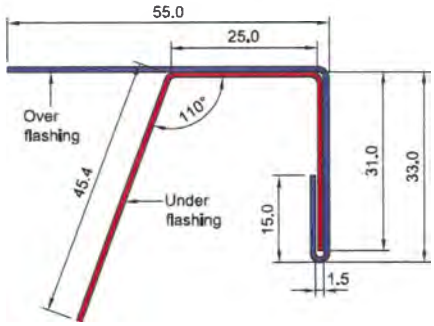
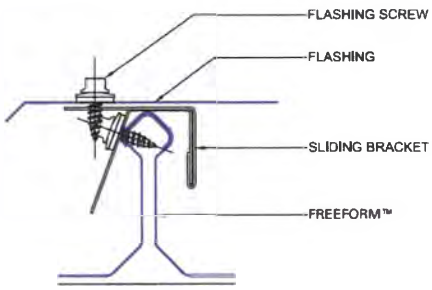


Figure 1.16: Sliding Clip Fixing Detail



BLUESCOPE CONTACTS

Brett Aldridge – Structural Engineer

Bluescope Building Components

brett.aldridge@bluescope.com

0447 138 965

Marko Zele – Business Development Manager – Victoria & Tasmania

Bluescope Building Components

marko.zele@bluescopesteel.com

0457 598 150

Carl Bowey – Engineering & Mobile Mill Manager

Fielders

cbowey@fielders.com.au

0400 408 579

Liam Thompson - Regional Manager - Tasmania

Lysaght

Liam.thompson@lysaght.com

0408514845

Ray Morgan – Major Projects Manager

Fielders

rmorgan@fielders.com.au

0419 578 262

0431 CLADDING – COMBINED

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide lightweight external wall cladding and associated work, including removal of existing cladding as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Location exposure severity
Exposure severity category: Very Severe

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:

- *0171 General requirements.*

1.3 TOLERANCES

Permitted deviations
Profiled metal sheet cladding: To AS 1562.1 clause 4.2.3.

Flat sheet and panel cladding: To the manufacturer's recommendations.

Structural steelwork for wall panels: ± 5 mm between bearing planes of adjacent supports.

1.4 SUBMISSIONS

Fire performance
Combustibility: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Combustibility**.

Fire hazard properties: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Fire hazard properties**.

Fire-resistance level: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Fire-resistance of building elements**.

Operation and maintenance manuals
General: Submit manufacturer's published use, care and maintenance requirements.

Products and materials
Type tests: As appropriate for the project, submit evidence of conformity to the following:

- Metal cladding generally: Cladding and fastenings to AS 1562.1 clause 5.5 for resistance to wind pressures.
- Metal cladding in cyclonic regions to AS/NZS 1170.2: Cladding and fastenings to AS 1562.1 clause 5.6.
  - Air infiltration test to AS/NZS 4284 clause 8.4 for test pressures of ± 150 Pa or ± 300 Pa as documented.
  - Water penetration test by static pressure to AS/NZS 4284 clause 8.5 at test pressure of 300 Pa.
  - Water penetration test by cyclic pressure to AS/NZS 4284 clause 8.6 at test pressure of 600 Pa.

Prototypes
General: Erect a prototype of each panel type, including at least one example of each component in the system to verify selections submitted as samples, to demonstrate aesthetic effects, to set quality standards for materials and execution and to verify performance, including wind loading.

Inclusions:

- Typical components, attachments to building structure and methods of installation.
- Window & Grille opening with cladding panel, trim and returns.
- Sealant filled joint.

Samples
Finish: Submit samples of the cladding material showing the range of variation available.

Shop drawings
Submit shop drawings to a scale that best describes the detail, showing the following:

- Dimensioned elevations of all elements.
- Details of construction, connections and all support systems.
- Dimensions of all typical elements and of any special sizes and shapes.
- Provision for the exclusion and/or drainage of moisture.
- Jointing details and method of fixing between individual elements and between this installation and adjacent work, including adjustment.
- Sealant types and full size sections of all sealant-filled joints and backing rods.
- Provision for thermal movement.
- Provision for movement under seismic and wind loads.
- Sequence of installation.
- Co-ordination requirements with other work.
- Schedule of materials, finishes, componentry, hardware and fittings.

Subcontractors
General: Submit names and contact details of proposed suppliers and installers.

Warranties
Cladding materials: Submit the manufacturer's product warranties.

1.5 INSPECTION

Notice
Inspection: Give notice so that inspection may be made of the following:

- Workshop assemblies before delivery to the site.
- Framing, sarking, vapour barrier and insulation before covering up or concealing.
- Completion of a prototype.

2 PRODUCTS

2.1 GENERAL

Storage and handling
Requirement: Store and handle materials to the manufacturer's recommendations and the following:

- Protect materials including edges and surfaces from damage.
- Keep dry and unexposed to weather.
- Do not drag sheets or panels across each other or over other materials.
- Sheeting: Stack flat and off the ground on at least 3 evenly placed bearers.
- Store metal materials away from uncured concrete and masonry on a level base.
- Do not store metal materials in contact with other materials which may cause staining, denting or other surface damage.
- Use gloves when handling precoated metal cladding material.

Components
Fasteners and ties: Type, size, corrosion resistance class and spacing to the cladding manufacturer's recommendations.

Flashings: To AS/NZS 2904.

2.2 FIRE PERFORMANCE

Combustibility
Cladding: Tested to AS 1530.1.

Fire hazard properties
Group number: To AS 5637.1.

Bonded laminated materials: Tested to AS/NZS 1530.3. Fire hazard indices, as follows:

- Spread of Flame Index: 0.
- Smoke-Developed Index: ≤ 3.

Insulation materials: Tested to AS/NZS 1530.3. Fire hazard indices as follows:

- Spread-of-Flame Index: ≤ 9.
- Smoke-Developed Index: ≤ 8 if Spread-of-Flame Index > 5.

Fire-resistance of building elements
Fire-resistance level: Tested to AS 1530.4.

2.3 ALUMINIUM PANELS

General
Requirement: Proprietary prefinished solid aluminium panel.

Refer to MONDOCLAD Fixed watertight cladding specification attached to specification July 2021

2.4 PROFILED SHEET METAL

3 EXECUTION

3.1 PREPARATION

Substrates or framing
Requirement: Before fixing cladding, check the fixing and alignment of substrates or framing and adjust if required. Remove any residue / glue or projection to obtain alignment and close fit.

Flexible underlay: Check that the underlay is restrained.

3.2 INSTALLATION

General
Fixing method: As documented or to one of the following fixing methods to the manufacturer's recommendations:

- Steel framing: Screw.
- Minimum penetration for profiled metal sheets:

Defective components: Do not install component parts which are defective, including warped, bowed, dented, abraded or broken members.

Damaged parts: Remove and replace damaged members during installation.

Accessories and trim
Requirement: Provide accessories and trim required to complete the watertight installation, and as documented constructed from Mondo Clad 3mm aluminium powder coted flashings and 1.2 mm aluminium colorbond flashing only where out of view below parapet heights

Corner flashing Finish off at corners with purpose-made folded cassette flashing. Layout of joints to approval.

Metal separation
Requirement: Prevent direct contact between incompatible metals, and between green hardwood or

chemically treated timber and aluminium or coated steel, by either of the following methods:

- Apply an anti-corrosion, low moisture transmission coating to contact surfaces.
- Insert a separation layer.

Incompatible metal fixings: Do not use.

Proprietary systems or products

Product fixing: Fix proprietary systems to the manufacturer's recommendations.

3.3 ALUMINIUM CLADDING

General

- Refer to 0432 MONDOCLAD Fixed watertight cladding specification
- .

4 SELECTIONS

Product : Mondo Clad

3mm Solid Aluminium

Colour Halo

Pattern : Joint pattern as per set out drawings .

Flat panels to be a 4 sided cassette

Curved cassette panels are to be 2 sided (Vertical sides folded).

All in accordance with manufacturers written instructions.

Generally allow to reuse existing top hat sections from previous installation except as noted.

Allow to remove small sections of glue from top hats , reinstall insulation that has become loose following removal of existing cladding.

Retain existing cladding in place .

Seek instruction should the wall build up including safety mesh, sarking insulation or top hats are damaged in advance of being opened up for recladding.

Where noted- Wall type 2 install additional top hat sections Stramit top hat battens TH64075

Install vapour permeable membrane

Equally spaced Matching black mastic joints to manufacturers written instruction.

Cassette units to be prepared using routed joint system

Refer to Drawings.

DESIGNER SPECIFICATION FOR MONDOCLAD
Aluminium Solid Aluminium Panel Cladding System
Fixed Watertight Cassette Panel System - 3mm thick

---

1. SCOPE OF WORK

The scope of work includes the design, supply fabrication and installation of MondoClad solid aluminium panel cladding, complete with all necessary sub-structures, anchors, hardware and fittings to provide a total installation, fully in conformity with the requirements and intent of the drawings and specification herein.

The cladding system shall be installed complete with matching copings, flashings etc. by an approved cladding specialist subcontractor in accordance with the supplier's recommendations.

2. DESIGN CONCEPT

The proposed MondoClad panel cladding shall be based on a watertight cassette panel system and divided into individual panels as indicated on architectural drawings.

A typical panel shall be fitted with extruded aluminium angle brackets. Such brackets shall be positioned in such a manner that brackets attached to adjacent panels shall overlap.

Fastening of panels shall take place and be concealed within the panel joints through the overlapping angle brackets into furring channels behind.

A construction joint of 12mm minimum shall be provided between cladding elements to cater for easy panel installation. All fixing and joint details shall be designed to provide for the expected thermal and structural movements.

To conceal fixings and form a watertight seal, seal construction joint with a suitable silicone or polyurethane sealant over a closed cell foam backing rod. Sealant applied to be of a type in accordance with sealant supplier's recommendations.

Horizontal cladding areas ideally should have a slope of 1:15 (4° approx) and to prevent staining should slope away from visible vertical facade areas.

3. DESIGN CRITERIA

All MondoClad solid aluminium panel cladding shall be so designed to meet or exceed specified performances required for the prevailing local weather conditions.

DESIGNER SPECIFICATION FOR MONDOCLAD
Aluminium Solid Aluminium Panel Cladding System
Fixed Watertight Cassette Panel System - 3mm thick

3.1. Design Wind Loading : _____ kPa positive and negative
No cladding element shall sustain permanent deformation or failure under loading equivalent 1.5 times the design wind pressure specified.

3.2. Deflection

Deflection of any aluminium frame shall not exceed 1/150 of the clear span.

3.3. Expansion and Contraction

The cladding shall be so fabricated and erected as to provide for all expansion and contraction of the components. Any temperature change due to climatic conditions shall not cause harmful buckling, opening of joints, undue stress on fastening and anchors, noise of any kind or other defects.

4. MATERIAL AND FINISHES

4.1. Cladding Material

All cladding shall be 3.0mm thick MondoClad solid aluminium panel, ASTM Alloy 5052 H32

(a)	Thickness:	3.0mm
(b)	Mechanical Properties:	Tensile strength ≥ 215 MPa
		0.2% proof stress > 160 MPa
		Elongation 7%
		Modulus of Elasticity 69.3 GPa
(c)	Sound:	Absorption Factor NCR-0.05
		Reflection 95%
(d)	Rigidity (E x I)	: 0.240 kNm2/m
(e)	Panel weight	: 8.31kg/m2

(f) Finish
The external cladding panel surface shall be factory prefinished by the supplier with a Fluoropolymer coating of either PVDF or FEVE or combination of both applied through a "REVERSE ROLLER COATING" process. Total dry-film thickness of the coating shall be 30 microns minimum consisting of a chromate conversion coating, an inhibitive primer and a top coat. The coated surface shall comply strictly with:

- AAMA 2605-13

The finished surface shall be factory protected with a self-adhesive peel-off foil, tested to withstand at least 3 months exposure to local weather conditions without losing the original peel-off characteristic or causing stains or other damages.

Application of the Fluoropolymer coating system by means of spray coating before or after forming and shaping of the cladding elements shall not be permitted.

The reverse side of the cladding panel surface facing the wall shall be in mill finish and line marked with the brand, colour and date of manufacture.

(g) Colour/Gloss : As per MondoClad® standard colour chart

4.2 The MondoClad Solid Aluminium shall be tested in accordance with Australian Standards listed below.

Test	Description	Result
AS 1530.1	Methods for fire tests on building materials, components and structures Combustibility test for materials	Passed
AS 1530.3	Simultaneous determination of Ignitibility, Flame Propagation, Heat Release and Smoke Release"	Ignitability Index 0 Flame Propagation 0 Heat Release 0 Smoke Release 0-1

4.3. Aluminium extrusions
Non visible extrusion shall be of aluminium alloy AA 6060-T5 in mill finish.

4.4. Fixings

(a) Fasteners, including concealed screws, nuts, bolts and other items required for connecting aluminium to aluminium or aluminium to steel shall be in

accordance with AS 3566.2 and of a type to suit its application and exposure conditions.

Class 1 and 2: Internal applications.

Class 3: External applications, moderate industrial and marine applications.
Class 4: Severe marine applications

(b) All fixing anchors, brackets and similar attachments used in the erections, shall be of aluminium, non-magnetic stainless steel, zinc coated steel, or hot dip zinc galvanised steel.

(c) Other fixing options should be discussed with a qualified professional.

4.5. Dissimilar Materials

It is advisable where two surfaces of dissimilar material come into contact, such surfaces shall be insulated with a layer of PVC or Polyethylene tape. This option should be discussed with a qualified professional

5. FABRICATION

5.1. All cladding panels shall be factory fabricated and assembled in compliance with the supplier's Data Sheets and to the best standard of workmanship under experienced factory supervision and control.

5.2. All panels shall be cut and routed using equipment and tools recommended and approved by the panel supplier. After folding into cassettes, an extruded aluminium profile shall be fixed to the minimum 20mm deep return bend.

Fixings shall be properly positioned so that the edge of the fixing hole is no closer than 10mm from the edge of the MondoClad panel and the distance between fixings shall not exceed 500mm.

5.3. If reinforcement of the panel is required please seek the advice of a qualified professional.

5.4. Each panel shall be marked on the reverse side for easy identification of size and location.

5.5. Finished panels shall be stored and transported to site in vertical position, face-to-face resp. back-to-back, with adequate protection to prevent scratches and dents.

5.6 The factory applied protective peel-off foil shall only be removed after the panels have been installed on site.

6. INSTALLATION

6.1 Panels shall be stored on site in vertical position, face-to face resp. back-to back-, with adequate protection to prevent scratches and dents.

6.2 Any component parts which are observed to be defective in any way, including warped, bowed, dented, abraded and broken members must not be installed. Member or parts which have been damaged during installation or thereafter before the time of final acceptance shall be removed and replaced.

6.3 No cutting, trimming, welding or brazing of any component parts during erection, in any manner which would damage the finish, decrease the strength or result in a visual imperfection or failure in performance shall be executed during erection. Component parts which require alteration shall be returned to shop for fabrication, if necessary replaced with new parts.

6.4 Anchorage of the cladding structure to the building structure shall be by approved methods in strict accordance to the specification and approved shop and/or erection drawing. Supporting brackets shall be so designed as to provide three-dimensional adjustments and accurate location of cladding components.

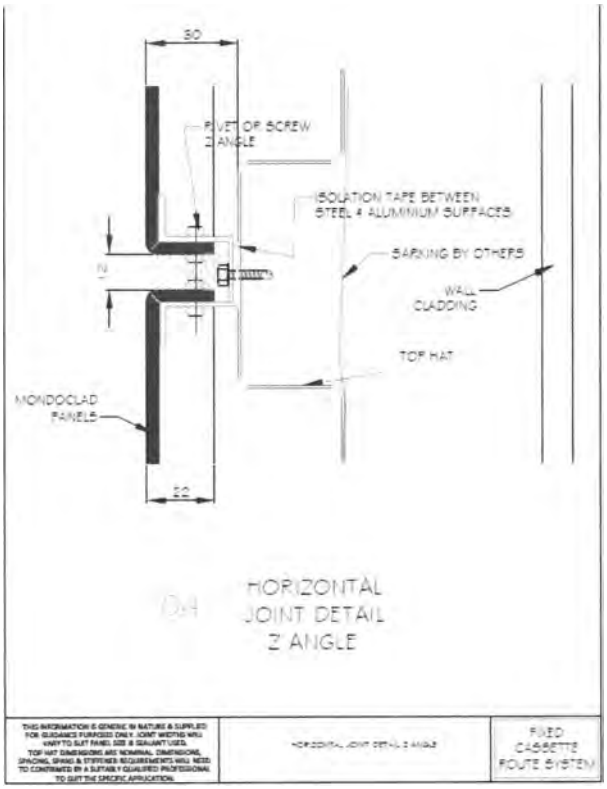
6.5 All component parts shall be installed level, true to line with uniform joints and reveals.

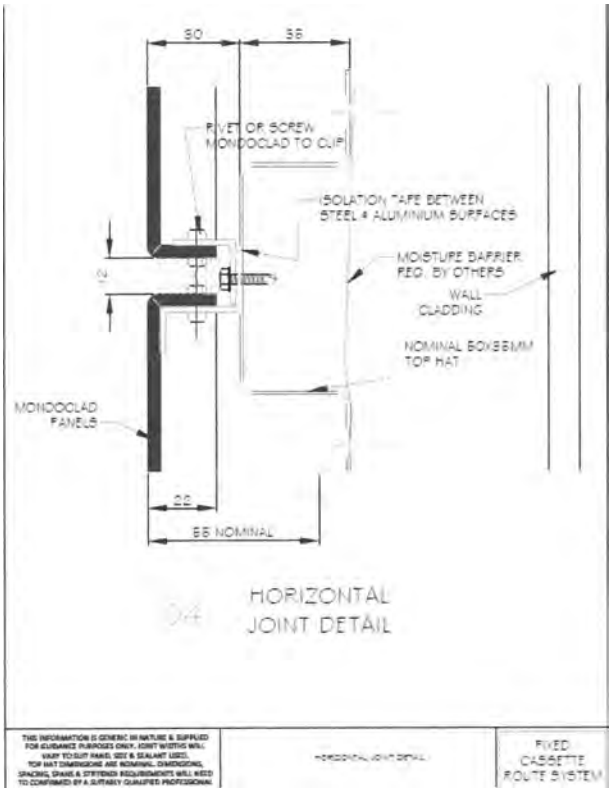
6.6 Cladding panels shall be left protected by the factory applied peel-off foil as long as possible. Under no circumstances shall the peel-off foil on individual panels be partially removed and left exposed to weathering.

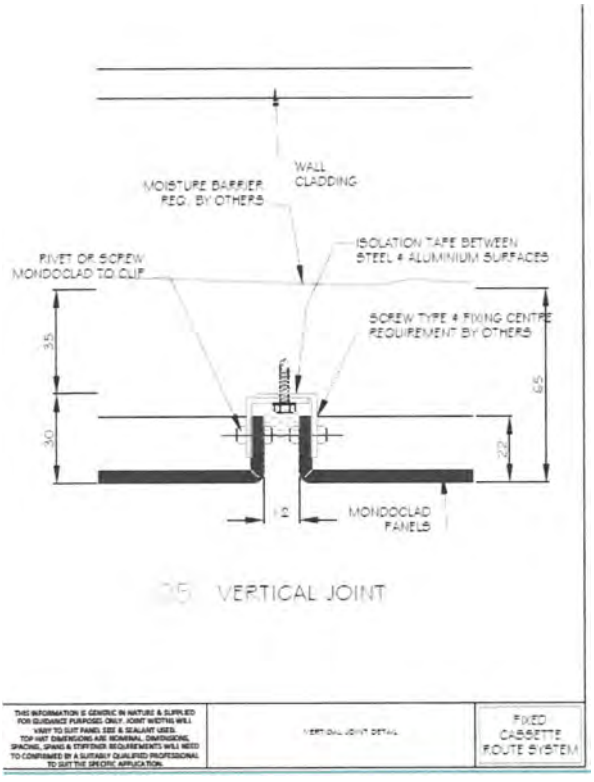
6.7 Before handing over of the completed cladding, all peel-off foil shall be removed. Panels which were exposed to weathering without peel-off foil shall be cleaned in accordance with supplier's recommendation.

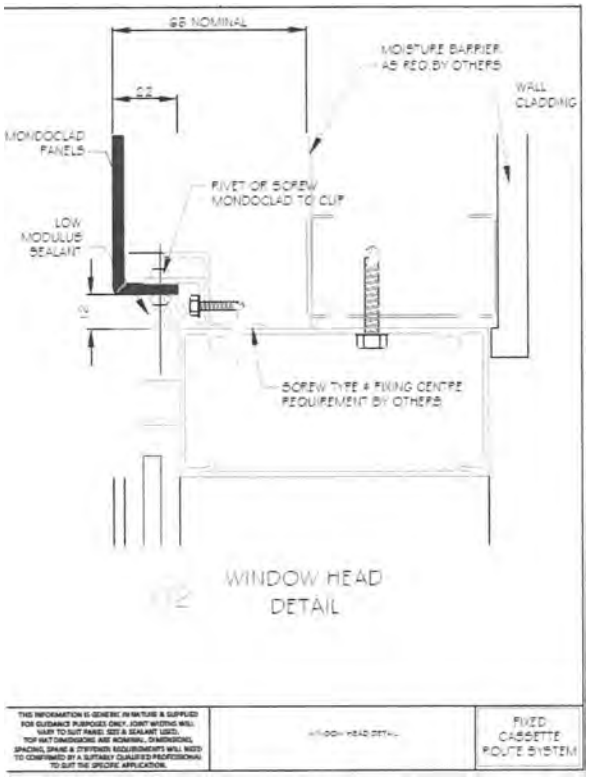
MondoClad™

FIXING SYSTEMS – ROUTED









MondoClad™

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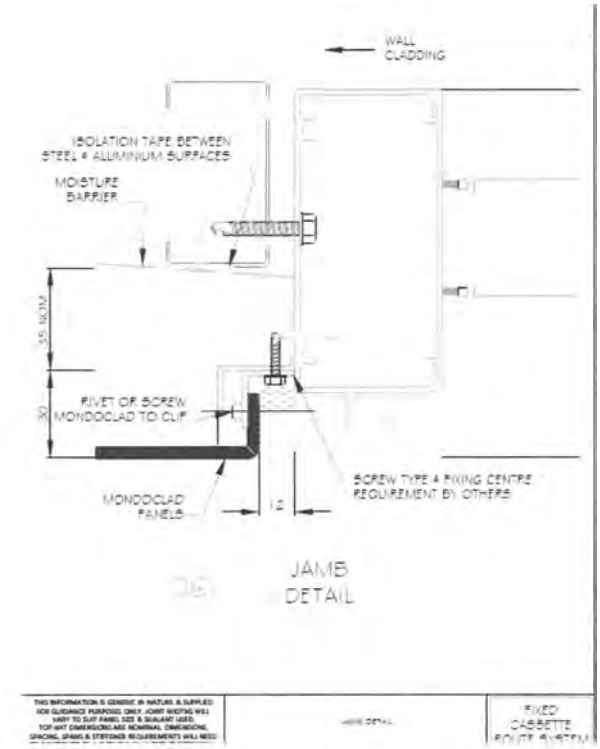
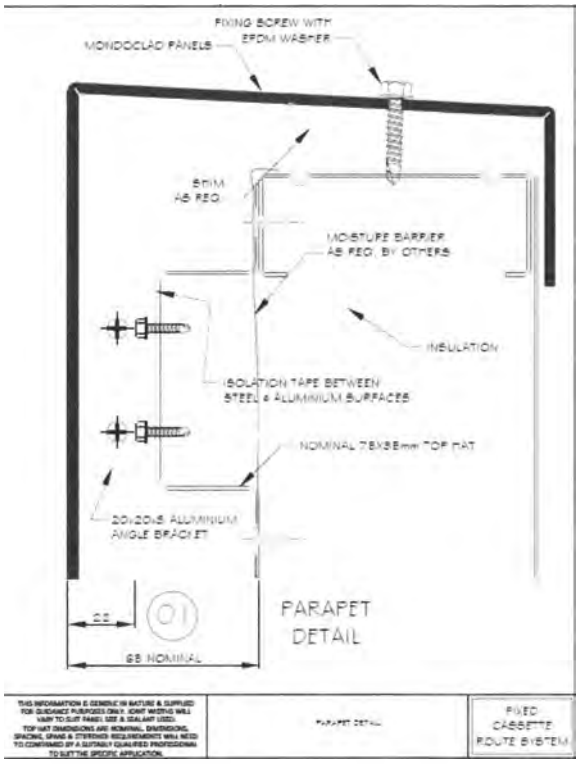
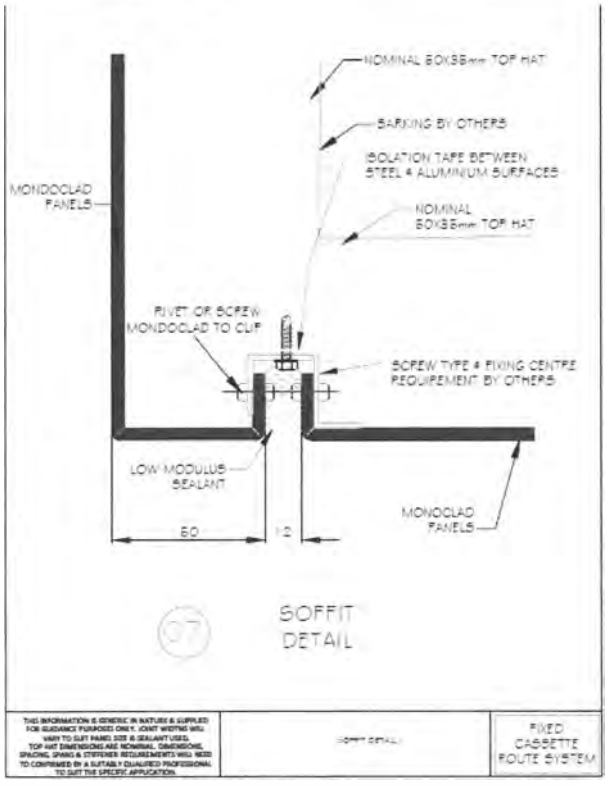
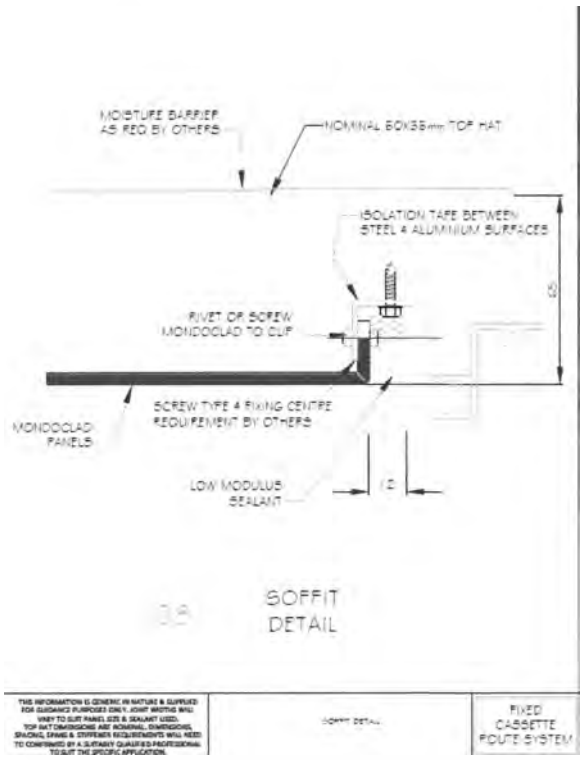


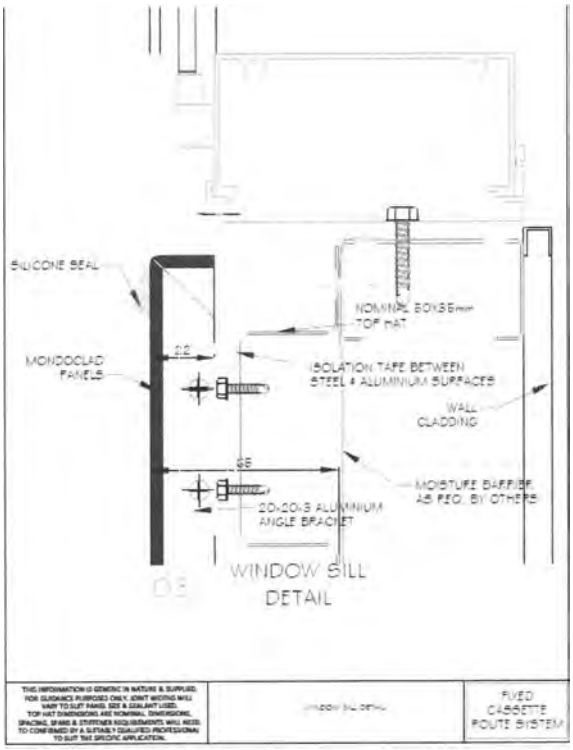






MondoClad™

FIXING SYSTEMS – ROUTED



0471 THERMAL INSULATION AND PLIABLE MEMBRANES

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide thermal insulation and pliable membrane systems, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Performance

Requirements:

- Complete for their function.
- Conforming to the detail and location drawings.
- Firmly fixed in position.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.

1.3 INTERPRETATION

Abbreviations

General: For the purposes of this worksection, the following abbreviations apply:

- IRMA: Inverted roof membrane assembly.
- PMR: Protected membrane roof.

Definitions

General: For the purposes of this worksection the following definitions apply:

- Bio-soluble: A product that dissolves in bodily fluids and is quickly cleared from the lungs.
- Fibre batts: Flexible insulation supplied as factory cut pieces and composed of mineral wool (glass and rock fibre) or polyester fibre.
- Fire hazard properties: Terminology to BCA A5.5.
- Pliable building membrane: To AS/NZS 4200.1 and equivalent to sarking-type materials as defined in the NCC.
- Thermal insulation terminology: To AS/NZS 4859.1.
- Vapour permeable (breathable) membrane: A flexible membrane material, normally used for secondary waterproofing that allows for the transmission of water vapour.

1.4 SUBMISSIONS

Fire performance

Fire hazard properties: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Fire hazard properties**.

Products and materials

Thermal insulation properties: Submit evidence of conformity to AS/NZS 4859.1 and AS/NZS 4859.2.

Warranties

Manufacturer's published product warranties: Submit on completion.

1.5 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the installed pliable membrane and insulation before covered up or concealed.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Labelling: Deliver mineral wool products to site in packaging with third party mark of conformity indicating product is bio-soluble and not listed as hazardous material in the Safe Work Australia Hazardous Chemical Information System (HCIS).

2.2 FIRE PERFORMANCE

Fire hazard properties

Insulation materials: Tested to AS/NZS 1530.3. Fire hazard indices as follows:

- Spread-of-Flame Index: ≤ 9.
- Smoke-Developed Index: ≤ 8 if Spread-of-Flame Index > 5.

Materials with reflective facing: Tested to AS/NZS 1530.3 and the recommendations of Appendix A6.

Pliable membranes: Flammability Index ≤ 5 tested to AS 1530.2.

2.3 INSULATION AND PLIABLE MEMBRANE MATERIALS

General

Mineral wool insulation: Bio-soluble and not listed as a hazardous material in the Safe Work Australia Hazardous Chemical Information System (HCIS).

Insulation

Standard: Thermal insulation materials to AS/NZS 4859.1:

- Cellulosic fibre (loose fill): To AS/NZS 4859.1 Section 4.

- Wool: To AS/NZS 4859.1 Section 5.
- Polyester (compressible): To AS/NZS 4859.1 Section 6.
- Mineral wool blankets and cut pieces (compressible): To AS/NZS 4859.1 Section 7.
- Rigid cellular foam insulation (EPS, PF, PIR, PUR and XPS): To AS/NZS 4859.1 Section 8.
- IR reflective (formed shapes and compressible with one or more external IR reflective surfaces): To AS/NZS 4859.1 Section 9.

Polyurethane (rigid cellular RC/PUR): To AS 1366.1.

Polyisocyanurate (rigid cellular RC/PIR): To AS 1366.2.

Polystyrene (moulded rigid cellular RC/PS-M): To AS 1366.3.

Polystyrene (extruded rigid cellular RC/PS-E): To AS 1366.4.

Polyurethane (sprayed): To AS 1366.1 Table 2.

Wet processed fibreboard (softboard): To AS/NZS 1859.4.

Pliable building membranes
Standard: To AS/NZS 4200.1.

Vapour barrier:

- Vapour control classification: Class 1.

Sarking membrane (other than walls and gables):

- Water control classification: Water barrier.

Vapour permeable (breathable) membrane: Minimum class 4.

Fasteners and supports
General: Metallic-coated steel.

Mesh support to roof insulation
Welded safety mesh: To AS/NZS 4389.

3 EXECUTION

3.1 GENERAL

Bulk insulation
Requirement: To AS 3999 and BCA J1.2. or BCA 3.12.1.1, as appropriate.

Installation: Firmly butt together fibre blankets or batts, with no gaps except as follows:

- Access openings and vents: Do not obstruct.
- Light fittings: To AS/NZS 3000 clause 4.5.
- Electrical cables: To AS 3999 clause 2.6.

Glass Wool and Rock Wool insulation: Conform to the *ICANZ Industry code of practice for the safe use of glass wool and rock wool insulation*.

Pliable building membrane
Installation: To AS 4200.2 and BCA J1.2 or BCA 3.12.1.1, as appropriate.

3.2 WALLS

Framed walls – thermal break strips
Product type: Proprietary item.

Application: To steel framing with lightweight external cladding.

R-Value: ≥ 0.2.

Screw fixing: Button head screws at 1 m centres.

Adhesive fixing: Wallboard adhesive walnuts at 1 m centres.

Framed walls – bulk insulation
Product type: Fibre batts.

Installation: Friction fit between framing members. If other support is not provided, staple nylon twine to the framing and stretch tight.

Masonry veneer cavity walls
Product: Rigid cellular insulation board.

Application: To steel or timber framing.

Installation: Horizontally with the tongue to the top edge, pushed over prefixed wall ties and held firmly against the wall frame. Keep boards clean and dry and free from mortar and grout. Do not bridge the cavity.

Fixing: Hex head screws at 450 mm centres.

Flashings: Install flashings before installing insulation panels. Prevent entry of water behind the insulation boards.

Full masonry cavity walls – inside cavity
Product: Rigid cellular insulation board.

Application: To the external face of the inner masonry leaf.

Installation: Horizontally with the tongue to the top edge and firmly against the inner masonry skin. Keep boards clean and dry and free from mortar and grout. Do not bridge the cavity.

Fixing: Proprietary plastic clips on pre-installed wall ties.

Flashings: Install flashings before installing insulation panels. Prevent entry of water behind the insulation boards.

Full masonry cavity walls – internal face
Product type: Rigid cellular extruded boards.

Application: To the internal face of internal masonry leaf.

Preparation of substrates: Conform to the following:

- Remove any deposit or finish which may impair adhesion.
- Remove excessive projections and fill voids and hollows with plaster.
- Maximum surface deviation from a 2400 mm straightedge: 6 mm.

Substrate correction: Skim plaster.

Installation: Apply boards horizontally with staggered vertical joints, all close butted and without crushing.

Fixing: Proprietary adhesive compatible with the insulation. Apply sufficient pressure to evenly distribute adhesive.

Vapour permeable (breathable) membrane
Application: Provide a vapour permeable membrane behind external facing material which does not provide permanent weatherproofing or which may be subject to condensation forming on the internal face, including the following:

- Boards or planks fixed vertically or diagonally.
- Boards or planks fixed in exposed locations where wind driven rain can penetrate the joints.
- Unpainted or unsealed cladding.
- Masonry veneer.

Installation: Run the vapour permeable membrane horizontally on the outer face of external wall framing, over the flashing, from the bottom plate up. Pull taut over the framing and fix to framing members. Seal across the wall cavity at the top.

Horizontal laps: At least 150 mm wide, lapped to make sure water is shed to the outer face of the membrane.

End or vertical overlaps laps: At least 150 mm wide made over framing.

Openings: Run the vapour permeable membrane over the openings and leave covered until windows and doors are installed. Cut the membrane on a 45° diagonal from each corner of the opening, fold the flaps inside and fix to the inside frame of the opening. If the membrane is used to provide a continuous air tight layer, seal all joints with pressure sensitive adhesive tape.

Fixing: Install as follows:

- Timber frames: Metallic-coated clouts, 20 mm long 6 to 8 mm staples or punched multi-point metallic-coated steel brads.
- Steel or aluminium frames: Hex head screws, with either 20 mm diameter washers or through hardboard strips.
- Plywood: Alternatives:
  - Metallic-coated clouts, 20 mm long 6 to 8 mm staples or punched multi-point metallic-coated steel brads at minimum 300 mm centres.
  - Water based contact adhesive with a 50% adhesive cover.

3.3 ROOFS

General
Location: The whole of the roof area including skylight shaft walls, except the following:

- Eaves, overhangs, skylights, vents and openings.
- Roofs to outbuildings, garages, and semi-enclosed spaces such as verandahs, porches and carports.

Mesh support to roof insulation
Locations: Provide support to the following:

- Sarking, vapour barrier or reflective thermal insulation membranes laid over roof framing members which are spaced at more than 900 mm centres.
- Blanket type thermal insulation laid over roof framing members as sound insulation to metal roofing.

Installing welded safety mesh: To AS/NZS 4389.

Pliable building membranes
Sarking membrane:

- Location: Provide sarking under tile and shingle roofing.

Vapour barrier:

- Installation: Lay over the roof framing with sufficient sag to allow the bulk insulation to achieve its full thickness. Overlap all edges 150 mm and seal all joints with pressure sensitive adhesive tape.

Metal roofs – thermal break strips
Product type: Proprietary item.

Application: To steel framing supporting metal sheet roof cladding.

R-Value: ≥ 0.2.

Metal roofs – bulk insulation
Product: Fibre blankets or batts.

Installation:

- Batts: Fit tightly between framing members.
- Blanket for sound insulation: Install over the roof framing, reflective thermal insulation (if any), and mesh support, so that the blanket is in continuous contact with the underside of the metal roofing sheets.
- Combined blanket and reflective insulation: Lay facing reflective insulation face downwards over safety mesh.

Waterproof membrane roofs – IRMA/PMR types

Product type: Rigid cellular extruded sheets.

Preparation: Make sure membrane is clean and free of loose material.

Separation layer: Lay over membrane with edges lapped 300 mm and turned up at upstands and penetrations.

Installation: Lay insulation boards in brick pattern with shiplap edges pushed together firmly, cut neatly around penetrations and extend up upstands.

Cathedral ceiling insulation – metal roofing and roofing tiles

Product type: Rigid cellular extruded sheets.

Application: Over ceiling lining that has been fixed to rafters.

Installation: Lay insulation boards with their long edges at right angles to the rafters and with the tongue pointing up the slope. Start laying at eaves and progress towards the ridge. Secure temporarily by occasional nailing to the rafters, the permanent fixing is provided by the nails used to secure the counter battens to the rafters. Cut boards and tightly fit to abutments and penetrations. Seal gaps with polyurethane foam.

Ceiling insulation – bulk insulation

Product type:

- Framed ceilings: Fibre batts.
- Suspended ceiling: Fibre blanket.

Application: Over ceiling lining.

Installation:

- Batts: Fit tightly between framing members.
- Blankets: Butt joint and lay over ceiling panels or lining.

4 SELECTIONS

Refer to Drawings

Derwent Entertainment Centre (MyState Arena)

Reroofing

Architectural Specification

Philp Lighton Architects
Project Number: 20.318

Revision	Date	Approved by
T1 - Tender	28th September 2020	Andrew Floyd

PhilpLighton Architects

Philp Lighton Architects
ABN 82 009 515 182
65 Tamar Street Launceston
Telephone: 03 6331 2133
Email: launceston@philplighton.com.au

SPECIFICATION

TABLE OF CONTENTS

Derwent Entertainment Centre Re- Roofing Contract

Background

The Derwent Entertainment Centre (DEC) is currently undertaking a major refurbishment.

The project is to be progressively handed back to the tenant for immediate occupancy

in 3 separate stages.

Stage 1- 29 September 2021, Stage 2- 1 December and Stage 3- 31 March 2022.

As a separate contract to the refurbishment, the existing roof is to be progressively replaced with an aluminium standing seam roof. The material and profile specified provide a very high performance roof capable of being installed at a low pitch, can be sprung curved and supplied in long lengths. It is also lighter than the existing roof.

The reroofing work is to be undertaken in such a way as to allow the DEC to continuously operate without interruption.

The existing roof build up generally consists of a steel truss roof frame, steel purlins, both Z & C of various sizes, safety mesh fixed to the purlins, a foil backed fibreglass blanket and trim wall cladding.

This build up is to be maintained and protected throughout the project. Excepting in the specific locations documented, (where girts are to be strengthened) this roof build up is to be retained and protected.

Roof area 1 will be replaced with 0.9 Freeform. This roof has more recently been replaced with Spandek.

Roof Area 1 has a roof access to that shall be retained and flashings upgraded (this contract)

Roof area 1 will be incorporated into roof's 2,6,9,11

Roof area 2 ,6 and 11 will be re-roofed with 0.9 Freeform sprung curved from the ridge of the roof between grids D &E to the outside edge of the roof in 1 length (Hip ridge layout/ arrangement will be retained All new capping's (bigger aluminium).

Roof area 9 will be re roofed with 0.9mm Roll formed freeform material.

Area 7 and 8 will be replaced with 0.9 Freeform, note these 2 roofs will be reset to new slope and falls, new & reset purlins

Area 10 will be replaced with 0.9 Freeform

Area 4 and 5 and 13and 14 will be replaced with 0.9 Freeform utilising the Freeform taper profile.

The taper profile will eliminate the requirement for multiple ridge capping

Areas 3 and 12 have more recently been replaced with a steel Kliplok roof. The roof pitches are steeper than adjacent roofs. These 2 roofs are to be retained.

All existing box gutters are to be replaced. Generally, all box gutter sumps shall be increased in depth All sumps will be provided with overflows.

Height safety Management will be provided as a separate contract by Vos Construction. A drawing is included for information of what is intended.

Some portions of the roof will require purlin strengthening, refer drawings for location and extent

Make all necessary allowances to make good any damage to the roof build up as the work progresses.

All new componentry shall colour match the existing components, ie, exposed purlins, ceiling foil linings

This contract will be responsible for the supply of all labour and materials to perform the contract including:

Dismantling and removal of roofing to approved disposal site.

Temporary roof / wall protection and temporary water proofing

Supply of all labour and new materials.

Supply of access equipment scaffolding, cranage hoists, existing roof protection.

Compliance with all Work-Safe Tasmania standards

On site Co-ordination under the direction of Managing Contractor Vos Constructions

Attendance at co-ordination meetings with DEC management

Co-Ordination with roofing contractor

Co-ordination with Mechanical and electrical subcontractors moving building services such as grilles and aerials

Supervision of the works as they proceed

Attendance at regular co-ordination meetings

Assisting with the developing and meeting an agreed co-ordinated construction program.

The roofing contract shall be between Vos Construction& the successful roofing contractor.

Vos Construction shall take on the role of managing contractor.

By negotiation with the Vos Construction the builder's compound, toilets & crib rooms will be made available for the duration of the project.

A contract to replace large portions of the DEC external linings will run concurrently with this contract.

The sequence the various cladding/ roofing works are to be performed is yet to be determined & will be informed by contractor submissions.

It is a requirement of this contract to work in very close contact with the builder and the cladding contractor who may or may not be the same firm to ensure the project is delivered to the highest standard progressively and in the timeliest manner.

Note The Tasmanian State Government has an interest in this project as the building owner as does the LK Property Group as the long- term tenant.

Philp Lighton Architects will administer the contract.

0171B GENERAL REQUIREMENTS

1 GENERAL

1.1 DESIGN

Design development
General: Develop the design beyond that documented, as required.

Design by contractor: If the contractor provides design, use only appropriately qualified persons and conform to statutory requirements.

Conflict with the documents: If it is believed that a conflict exists between statutory requirements and the documents, notify the contract administrator immediately and provide a recommendation to resolve the conflict.

1.2 PERFORMANCE

Corrosion resistance
General: Atmospheric corrosivity category as defined in AS 4312:

- Exterior atmospheric corrosivity category: C5
- Interior atmospheric corrosivity category: C5

This project is located in a SEVERE marine environment and is subject to a higher than normal risk of corrosion and related deterioration due to the related affects of seawater and wind. All materials, methods and workmanship, shall be durable and resist damage, deterioration or change of appearance due to corrosion related affects.
The work of each trade shall be warranted for the affects of corrosion and related affects.

Galvanizing
Severe conditions: Galvanize mild steel components (including fasteners) to AS/NZS 1214 or AS/NZS 4680 as appropriate, if:

- Exposed to weather.
- Embedded in masonry.
- Exposed to or in air spaces behind the external leaf of masonry walls.
- In contact with chemically treated timber, other than copper chrome arsenate (CCA).

Noise levels
General: Install systems to operate within the noise level limits, as documented for the contract design and documented equipment performance.

Structure
General: If required, provide structures, installations and components as follows:

- Fixed accessways: To AS 1657.
- Structural design actions: To the AS/NZS 1170 series.

1.3 PRECEDENCE

General
Order of precedence:

- The requirements of other worksections of the specification override conflicting requirements of this worksection.
- The requirements of worksections override conflicting requirements of their referenced documents. The requirements of the referenced documents are minimum requirements.

1.4 CROSS REFERENCES

General
Requirement: Conform to the following worksection(s):

- Entire Specification including schedules. To be read in conjunction with the Drawing Set.

Common requirements
Requirement: Conform to the following worksections:

- *0181 Adhesives, sealants and fasteners.*
- *0182 Fire-stopping.*
- *0183 Metals and prefinishes.*
- *0184 Termite management.*
- *0185 Timber products, finishes and treatment.*

Cross referencing styles
General: Within the text, titles are cross referenced using the following styles:

- Worksection titles are indicated by *Italicised* text.
- Subsection titles are indicated by **BOLD** text.
- Clause titles are indicated by **BOLD** text.
- Subclause titles are indicated by **Bold** text.

1.5 REFERENCED DOCUMENTS

General
Contractual relationships: Responsibilities and duties of the principal, contractor and contract administrator are not altered by requirements in the documents referenced in this specification.

Current editions: Use referenced documents which are the editions, with amendments, current 3 months before the closing date for tenders, except where other editions or amendments are required by statutory authorities.

European standards: Any national European Standard (e.g. BS EN or DIN EN) may be used in place of the equivalent referenced European Standard (EN).

1.6 INTERPRETATION

Documentation conventions
Imperative mood and streamlined language: The words shall or shall be are implied where a colon is used

following a keyword or within a sentence or sentence fragment.

Subject of sentences and phrases: Specification requirements are to be performed by the contractor, unless stated otherwise.

Abbreviations

General: For the purposes of this specification the following abbreviations apply:

- AS: Australian Standard.
- BCA: National Construction Code Series Volume One: Building Code of Australia Class 2 to 9 Buildings and Volume Two: Building Code of Australia Class 1 and Class 10 Buildings.
- EN: European Norm (European Standard).
- GRP: Glass Reinforced Plastic.
- IP: Ingress protection.
- NATA: National Association of Testing Authorities.
- NCC: National Construction Code.
- NZS: New Zealand Standard.
- PCA: National Construction Code Series Volume 3: Plumbing Code of Australia.
- PVC: Polyvinyl Chloride.
- PVC-U: Unplasticised Polyvinyl Chloride. Also known as UPVC.
- SDS: Safety data sheets.
- VOC: Volatile Organic Compound.
- WHS: Work Health and Safety.

Definitions

General: For the purposes of this specification, the following definitions apply:

- Access for maintenance: Includes access for maintenance, inspection, measurement, operation, adjustment, repair, replacement and other maintenance related tasks.
- Accessible, readily: Readily accessible, easily accessible, easy access and similar terms mean capable of being reached quickly and without climbing over or removing obstructions, using a movable ladder, and in any case not more than 2.0 m above the ground, floor or platform.
- Accredited Testing Laboratory:
  - An organisation accredited by the National Association of Testing Authorities (NATA) to test in the relevant field; or
  - An organisation outside of Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement; or
  - An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.
- Attendance: Attendance, provide attendance and similar expressions mean give assistance for examination and testing.
- Contract administrator: Has the same meaning as architect or superintendent and is the person appointed by the owner or principal under the contract.
- Contractor: Has the same meaning as builder and is the person or organisation bound to carry out and complete the work under the contract.
- Default: Specified value, product or installation method which is to be provided unless otherwise documented.
- Design life: The period of time for which it is assumed, in the design, that an asset will be able to perform its intended purpose with only anticipated maintenance but no major repair or replacement being necessary.
- Documented: Documented, as documented and similar terms mean contained in the contract documents.
- Economic life: The period of time from the acquisition of an asset to the time when the asset, while still physically capable of fulfilling its function and with only anticipated maintenance, ceases to be the lowest cost alternative for satisfying that function.
- Electricity distributor: Any person or organisation that provides electricity from an electricity distribution system to one or more electrical installations. Includes distributor, supply authority, network operator, local network service provider, electricity retailer or electricity entity, as may be appropriate in the relevant jurisdiction.
- Fire hazard properties: Terminology to BCA A5.5.
- Geotechnical site investigation: The process of evaluating the geotechnical characteristics of the site in the context of existing or proposed construction.
- Give notice: Give notice, submit, advise, inform and similar expressions mean give notice (submit, advise, inform) in writing to the contract administrator.
- High level interface: Systems transfer information in a digital format using an open system interface.
- Hot-dip galvanized: Zinc coated to AS/NZS 4680 after fabrication with coating thickness and mass to AS/NZS 4680 Table 1.
- Ingress protection: IP, IP code, IP rating and similar expression have the same meaning as IP Code in AS 60529.
- Joints:
  - Construction joint: A joint with continuous reinforcement provided to suit construction sequence.
  - Contraction joint: An opening control joint with a bond breaking coating separating the joint surfaces to allow independent and controlled contraction of different parts or components, induced by shrinkage, temperature changes or other causes. It may include unbound dowels to assist vertical deflection control.
  - Control joint: An unreinforced joint between or within discrete elements of construction which allows for relative movement of the elements.

  - Expansion joint: A closing control joint with the joint surfaces separated by a compressible filler to allow axial movement due to thermal expansion or contraction with changes in temperature or creep. It may include unbound dowels to assist vertical deflection control.
  - Sealant joint: A joint filled with a flexible synthetic compound which adheres to surfaces within the joint to prevent the passage of dust, moisture and gases.
  - Structural control joint: A control joint (contraction, expansion and isolation) in structural elements when used with applied material and finishes.
  - Substrate joint: A joint in the substrate which includes construction joints and joints between different materials.
  - Weakened plane joint: A contraction joint created by forming a groove, extending at least one quarter the depth of the section, either by using a grooving tool, by sawing, or by inserting a premoulded strip.
- Local authority (local council): A body established for the purposes of local government by or under a law applying in a state or territory.
- Low level interface: Systems transfer information via terminals and voltage free contacts.
- Manufacturer's recommendations: Recommendations, instructions, requirements, specifications (and similar expressions) provided in written or other form by the manufacturer and/or supplier relating to the suitability, use, installation, storage and/or handling of a product.
- Metallic-coated: Steel coated with zinc or aluminium-zinc alloy as follows:
  - Metallic-coated steel sheet: To AS 1397. Metal thicknesses specified are base metal thicknesses.
  - Ferrous open sections zinc coated an in-line process: To AS/NZS 4791.
  - Ferrous hollow sections zinc coated by a continuous or specialised process: To AS/NZS 4792.
- Network Utility Operator: The entity undertaking the piped distribution of drinking water or natural gas for supply or is the operator of a sewerage system or external stormwater drainage system.
- Obtain: Obtain, seek and similar expressions mean obtain (seek) in writing from the contract administrator.
- Pipe: Includes pipe and tube.
- Practical completion or defects free completion: The requirements for these stages of completion are defined in the relevant building contract for the project.
- Principal: Principal has the same meaning as owner, client and proprietor and is the party to whom the contractor is legally bound to construct the works.
- Professional engineer: As defined by the NCC.
- Proprietary: Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Prototype: A full size mock-up of components, systems or elements to demonstrate or test construction methods, junctions and finishes, and to define the level of quality.
- Provide: Provide and similar expressions mean supply and install and include development of the design beyond that documented.
- Record drawings: Record drawings has the same meaning as as-installed drawings, as-built drawings and work-as-executed drawings.
- Referenced documents: Standards and other documents whose requirements are included in this specification by reference.
- Required: Required by the contract documents, the local or statutory authorities.
- If required: A conditional specification term for work which may be shown in the documents or is a legislative requirement.
- Sample: A physical example that illustrates workmanship, materials or equipment, and establishes standards by which the work will be judged. It includes samples and sample panels.
- Statutory authority: A public sector entity created by legislation, that is, a specific law of the Commonwealth, State or Territory.
- Supply: Supply, furnish and similar expressions mean supply only.
- Tests – completion: Tests carried out on completed installations or systems and fully resolved before the date for practical completion, to demonstrate that the installation or system, including components, controls and equipment, operates correctly, safely and efficiently, and meets performance and other requirements. The superintendent may direct that completion tests be carried out after the date for practical completion.
- Tests – pre-completion: Tests carried out before completion tests, including:
  - Production: Tests carried out on a purchased item, before delivery to the site.
  - Progressive: Tests carried out during installation to demonstrate performance in conformance with this specification.
  - Site: Tests carried out on site.
  - Type: Tests carried out on an item identical with a production item, before delivery to the site.
- Tolerance: The permitted difference between the upper limit and the lower limit of dimension, value or quantity.
- Utility service provider: Includes organisations providing power, water, sewerage, gas and telecommunications services.
- Verification: Provision of evidence or proof that a performance requirement has been met or a default exists.

1.7 CONTRACT DOCUMENTS

Services diagrammatic layouts

General: Layouts of service lines, plant and equipment shown on the drawings are diagrammatic only, except where figured dimensions are provided or calculable.

Before commencing work:

- Obtain measurements and other necessary information.
- Coordinate the design and installation in conjunction with all trades.

Levels

General: Spot levels take precedence over contour lines and ground profile lines.

Drawings and manuals for existing services

Warranty: No warranty is given as to the completeness or accuracy of drawings and/or manuals of existing services.

1.8 SUBMISSIONS

Requirement

General: Submit the following:

- Authority approvals: Notes of meetings with authorities whose requirements apply to the work and evidence that notices, fees and permits have been sought and paid, that authority connections are complete and that statutory approvals by the authorities whose requirements apply to the work have been received.
- Building penetrations: Details of the methods to maintain the required structural, fire and other properties to **EXECUTION**, **BUILDING PENETRATIONS**.
- Certification: Certification of conformance to documented requirements, including certification that the plant and equipment submitted meets all requirements of the contract documents and that each installation is operating correctly.
- Design documentation: Design data and certification of proposed work, if required and as documented.
- Electronic facility and asset management information: For the whole of the work to **EXECUTION, ELECTRONIC FACILITY AND ASSET MANAGEMENT INFORMATION**.
- Execution details: Execution programs, schedules and details of proposed methods and equipment. For building services include the following:
  - Embedded services: Proposed method for embedding services in concrete walls or floors or chasing into concrete or masonry walls.
  - Fixing of services: Typical details of locations, types and methods of fixing services to the building structure.
  - Inaccessible services: If services will be enclosed and not accessible after completion, submit proposals for location of service runs and fittings.
- Fire performance: Evidence of conformity to requirement for combustibility, fire hazard properties and fire-resistance of building elements.
- Marking and labelling: Samples and schedules of proposed marking and labels to **EXECUTION**, **MARKING AND LABELLING.**
- Operation and maintenance manuals: For the whole of the work to **EXECUTION**, **OPERATION AND MAINTENANCE MANUALS**.
- Products: Products and materials data, including manufacturer's technical specifications and drawings, SDS for hazardous materials, type tests results, evidence of conformity to documented requirements, product certification, performance and rating tables, service connection requirements and installation and maintenance recommendations.
- Prototypes: Prototypes of components, systems or elements.
- Records: As-built documents, photographs, system diagrams, schedules and logbooks to **EXECUTION**, **RECORD DRAWINGS**.
- Samples: Representative of proposed products and materials and including proposals to incorporate samples into the works, if any to **EXECUTION**, **SAMPLES**.
- Shop drawings: To **EXECUTION**, **SHOP DRAWINGS**.
- Substitutions: To PRODUCTS**, GENERAL, Substitutions**.
- Tests:
  - Inspection and testing plan consistent with the construction program including details of test stages and procedures.
  - Test reports for testing performed under the contract.
- Warranties: To **EXECUTION**, **WARRANTIES**.

Contractor review: Before submissions, review each submission item, and check for coordination with other work of the contract and conformance to contract documents.

Submit to: Contract Administrator

Submission times

Default timing: Make submissions at least 15 working days before ordering products or starting installation of the respective portion of the works.

Submission response times: Allow in the construction program for at least the following times (days):

- Shop drawings: 15
- Samples and prototypes: 10
- Manufacturers' or suppliers' recommendations: 10
- Product data: 10

- Product/design substitution or modification: 10

Proposed products schedules: If major products are not specified as proprietary items, submit a schedule of those proposed for use within 3 weeks of site possession.

Identification
Requirement: Identify the project, contractor, subcontractor or supplier, manufacturer, applicable product, model number and options, as appropriate and include relevant contract document references.

Non-conformance: Identify proposals that do not conform with project requirements, and characteristics which may be detrimental to successful performance of the completed work.

Errors
Requirement: If a submission contains errors, make a new or amended submission as appropriate, indicating changes made since the previous submission.

Electronic submissions
Electronic copies file format: .pdf & .dwg

CAD file format: .dwg

Quantity: 1

Transmission medium: email/usb

Hard copy submissions
Hard copy quantity: 3 Copies

Standard contract drawing size: A0

1.9 INSPECTION

Notice
Concealment: If notice of inspection is required for parts of the works that are to be concealed, give notice when the inspection can be made before concealment.

Tests: Give notice of the time and place of documented tests.

Minimum notice: As documented in the **Notices schedule**.

Light levels
Lighting levels for inspection: To AS/NZS 1680.2.4.

Attendance
General: Provide attendance for documented inspections and tests.

2 PRODUCTS

2.1 MATERIALS AND COMPONENTS

Manufacturers' or suppliers' recommendations
General: Provide and select, if no selection is given, transport, deliver, store, handle, protect, finish, adjust and prepare for use the manufactured items to the manufacturers' or suppliers' recommendations.

Proprietary items/systems/assemblies: Assemble, install or fix to substrate to the manufacturers' or suppliers' recommendations.

Project modifications: Advise of activities that supplement, or are contrary to the manufacturers' or suppliers' recommendations.

Product identification
Sealed containers: If materials or products are supplied by the manufacturer in closed or sealed containers or packages, bring the materials or products to point of use in the original containers or packages.

Other products: Marked to show the following, as applicable:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.

Sources policy
General: A preference for Australian or New Zealand Goods

Consistency
General: For each material or product use the same source or manufacturer and provide consistent type, size, quality and appearance.

Prohibited materials
General: Do not provide the following:

- Materials, exceeding the limits of those listed, in the Safe Work Australia *Hazardous Chemical Information System* (HCIS) Workplace exposure standards.

Insulation blowing agents:

- Materials that use chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) in the manufacturing process.
- A blowing agent with a global warming potential (GWP) ≥ 140.

Substitutions
Identified proprietary items: Identification of a proprietary item does not necessarily imply exclusive

preference for the identified item, but indicates the necessary properties of the item.

Alternatives: If alternatives to the documented products, methods or systems are proposed, submit sufficient information to permit evaluation of the proposed alternatives, including the following:

- Evidence that the performance is equal to or greater than that specified.
- Evidence of conformity to a cited standard.
- Samples.
- Essential technical information, in English.
- Reasons for the proposed substitutions.
- Statement of the extent of revisions to the contract documents.
- Statement of the extent of revisions to the construction program.
- Statement of cost implications including costs outside the contract.
- Statement of consequent alterations to other parts of the works.

Availability: If the documented products or systems are unavailable within the time constraints of the construction program, submit evidence.

Criteria: If the substitution is for any reason other than unavailability, submit evidence that the substitution:

- Is of net enhanced value to the principal.
- Is consistent with the contract documents and is as effective as the identified item, detail or method.

3 EXECUTION

3.1 SAMPLES

General

Incorporation of samples: Only incorporate samples in the works which have been endorsed for inclusion. Do not incorporate other samples.

Retention of samples: Keep endorsed samples in good condition on site, until the date of practical completion.

Unincorporated samples: Remove on completion.

3.2 SHOP DRAWINGS

General

Documentation: Include dimensioned drawings showing details of the fabrication and installation of structural elements, building components, services and equipment, including relationship to building structure and other services, cable type and size, and marking details.

Diagrammatic layouts: Coordinate work shown diagrammatically in the contract documents, and prepare dimensioned set-out drawings.

Services coordination: Coordinate with other building and service elements. Show adjusted positions on the shop drawings.

Space requirements: Check space and access for maintenance requirements of equipment and services indicated diagrammatically in the contract documents.

Building work drawings for building services: On dimensioned drawings show the following:

- Access doors and panels.
- Conduits to be cast in slabs.
- Holding down bolts and other anchorage and/or fixings required complete with loads to be imposed on the structure during installation and operation.
- Openings, penetrations and block-outs.
- Sleeves.
- Plinths, kerbs and bases.
- Required external openings.

Submission medium: .pdf & CAD

Drawing size: A3-A0

CAD base drawings: 2D and 3D

Record drawings: Amend all documented shop drawings to include changes made during the progress of the work and up to the end of the defects liability period.

3.3 OFF-SITE DISPOSAL

Removal of material

General: Dispose of building waste material off site to the requirements of the relevant authorities.

3.4 WALL CHASING

Holes and chases

General: If holes and chases are required in masonry walls, make sure structural integrity of the wall is maintained. Do not chase walls with a fire-resistance level or an acoustic rating.

Parallel chases or recesses on opposite faces of a wall: Not closer than 600 mm to each other.

Chasing blockwork: Only chase core-filled hollow blocks or solid blocks which are not documented as structural.

Concrete blockwork chasing table

Block thickness (mm)	Maximum depth of chase (mm)
190	35

Block thickness (mm)	Maximum depth of chase (mm)
140	25
90	20

3.5 FIXING

General

Suitability: If equipment is not suitable for fixing to non-structural building elements, fix directly to structure and trim around penetrations in non-structural elements.

Fasteners

General: Use proprietary fasteners capable of transmitting the loads imposed, and sufficient for the rigidity of the assembly.

3.6 SERVICES CONNECTIONS

Connections

General: Connect to utility service provider services or service points. Excavate to locate and expose connection points. Reinstate the surfaces and facilities that have been disturbed.

Utility service provider requirements

General: If the utility service provider elects to perform or supply part of the works, make the necessary arrangements. Install equipment supplied, but not installed, by the utility service provider.

3.7 SERVICES INSTALLATION

General

Fixing: If non-structural building elements are not suitable for fixing services to, fix directly to structure and trim around penetrations in non-structural elements.

Installation: Install equipment and services as follows:

- Plumb and securely fixed.
- Allow for movement in both structure and services.
- Arrange services running together, parallel to each other and adjacent building elements.

Concealment: Conceal all cables, ducts, trays and pipes except where installed in plant spaces, ceiling spaces and riser cupboards or documented to be exposed. If alternative routes are available, do not locate on external walls.

Lifting: Provide heavy items of equipment with permanent fixtures for lifting to the manufacturer's recommendations.

Suspended ground floors: Keep all parts of services suspended under ground floors at least 150 mm clear of the ground surface. Make sure services do not impede access.

Dissimilar metals

Jointing: Join dissimilar metals with fittings of electrolytically compatible material.

Temporary capping

Pipe ends: During construction, protect open ends of pipe with metal or plastic covers or caps.

Piping

General: Install piping in straight lines at uniform grades without sags. Arrange to prevent air locks. Provide sufficient unions, flanges and isolating valves to allow removal of piping and fittings for maintenance or replacement of plant.

Spacing: Provide at least 25 mm clear between pipes and between pipes and building elements, additional to insulation.

Changes of direction: Provide as follows:

- If practicable, long radius elbows or bends and sets, and swept branch connections.
- If pipes are led up or along walls and then through to fixtures, provide elbows or short radius bends.
- Do not provide mitred fittings.

Vibration: Arrange and support piping to prevent vibration whilst permitting necessary movement. Minimise the number of joints.

Embedded pipes: Do not embed pipes that operate under pressure in concrete or surfacing material.

Valve groupings: If possible, locate valves in groups.

Pressure testing precautions: Isolate items not rated for the test pressure. Restrain pipes and equipment to prevent movement during pressure testing.

Support and structure

Requirement: Provide incidental supports and structures to suit the services.

Pipe support systems

General: Provide proprietary support systems of metallic-coated steel construction.

Vertical pipes: Provide anchors and guides to maintain long pipes in position, and supports designed for the mass of the pipe and its contents.

Saddles: Provide saddle supports only on DN 25 or smaller pipes.

Dissimilar metals: If pipe and support materials are dissimilar, provide industrial grade electrically non-conductive material securely bonded to the pipe to

separate them. Provide fasteners of electrolytically compatible material.

Uninsulated pipes: Clamp piping supports directly to pipes.

Insulated pipes:

- Spacers: Provide spacers at least as thick as the insulation between piping supports and pipes. Extend either side of the support by at least 20 mm.
- Spacer material: Rigid insulation material of sufficient strength to support the piping and suitable for the temperature application.

Support spacing: As follows:

- Cold and heated water pipes: To AS/NZS 3500.1 Table 5.6.4. Provide additional brackets, clips or hangers to prevent pipe movement caused by water pressure effects.
- Sanitary plumbing: To AS/NZS 3500.2 Table 10.2.1.
- Fuel gas: To AS/NZS 5601.1 Table 5.5.
- Other pipes: To AS/NZS 3500.1 Table 5.6.4.

Hanger size table

Nominal pipe size (DN)	Minimum hanger diameter for single hangers (mm)
50 maximum	9.5
65 to 90	12.7
100 to 125	15.8
150 to 200	19.0

Differential movement

General: If the geotechnical site investigation report predicts differential movements between buildings and the ground in which pipes or conduits are buried, provide control joints in the pipes or conduits, as follows:

- Arrangement: Arrange pipes and conduits to minimise the number of control joints.
- Magnitude: Accommodate the predicted movements.

3.8 BUILDING PENETRATIONS

Penetrations

Requirement: Maintain the required structural integrity, fire performance, waterproofing performance and other properties when penetrating or fixing to the following:

- Structural building elements including external walls, fire walls, fire doors and access panels, other tested and rated assemblies or elements, floor slabs and beams.
- Membrane elements including damp-proof courses, waterproofing membranes and roof coverings. If penetrating membranes, provide a waterproof seal between the membrane and the penetrating component.

Sealing

Fire-resisting building elements: Seal penetrations with a system conforming to AS 4072.1.

Non fire-resisting building elements: Seal penetrations around conduits and sleeves. Seal around cables within sleeves. If the building element is acoustically rated, maintain the rating.

Sleeves

General: If piping, cables or conduits penetrate building elements, provide metal or PVC-U sleeves formed from pipe sections as follows:

- Movement: Arrange to permit normal pipe or conduit movement.
- Diameter (for non fire-resisting building elements): Sufficient to provide a ring shaped space around the pipe or pipe insulation of at least 12 mm.
- Ferrous surfaces: Prime paint.
- Sealing: Seal between pipes or conduits and sleeves to prevent the entry of vermin.
- Terminations:
  - Cover plates fitted: Flush with the finished building surface.
  - Fire-resisting and acoustic rated building elements: 50 mm beyond finished building surface.
  - Floors draining to floor wastes: 50 mm above finished floor.
  - Other locations: 5 mm beyond finished building surface.
  - Termite management: To AS 3660.1.
- Thickness:
  - Metal: 1 mm or greater.
  - PVC-U: 3 mm or greater.

3.9 WATERPROOFING PENETRATIONS

Penetrations

Requirement: For the entire duration of the Roofing / Cladding contract, the contracted party shall be responsible for the waterproofing of their work area and associated abutting area to their work site potentially disturbed by the work.

Contractors are to make all allowances for suitable temporary protection of the works as the work progresses.

Contractors shall closely monitor the suitability of the weather to undertake recladding / roofing and allow sufficient time to install temporary protection in advance of a weather / rain event.

Should water enter the building an emergency response to halting that water ingress and an immediate water removal, drying and restitution of finishes to existing condition is required in this contract.

It is highly recommended contractors give consideration as to how they intend performing their contract works in the context that the building is occupied, has major events planned and water ingress is an unacceptable consequence.

3.10 CONCRETE PLINTHS

Construction

General: Provide concrete plinths as documented and under all equipment located on concrete floor slabs as follows:

- Surround: Galvanized steel, at least 75 mm high and 1.6 mm thick. Fix to the floor with masonry anchors. Fill with concrete.
- Height: 75 mm or greater, as documented.
- Reinforcement: Single layer of F62 fabric.
- Concrete: Grade N20.
- Finish: Steel float, flush with top edge of the surround.

3.11 PLANT AND EQUIPMENT

General

Location: Locate so failure of plant and equipment (including leaks) does not create a hazard for the building occupants and causes a minimum or no damage to the building, its finishes and contents including water sensitive equipment or finishes.

Safe tray and an overflow pipe: Provide to each tank, hot water heater and storage vessel.

3.12 ACCESS FOR MAINTENANCE

General

Requirement: Provide access for maintenance of plant and equipment.

Standards: Conform to the relevant requirements of AS 1657, AS/NZS 1892.1, AS 2865 and AS/NZS 3666.1.

Work Health and Safety: Conform to the requirements of the applicable Work Health and Safety regulations.

Protection from injury: Protect personnel from injury caused by contact with objects including those that are sharp, hot or protrude at low level.

Plant room flooring surfaces: R10 Slip resistance classification to AS 4586.

Trip hazards: Do not run small services including drains and conduits across floors where they may be a trip hazard.

Manufacturer's standard equipment: If necessary, modify manufacturer's standard equipment to provide the plant access documented.

Clearances

Minimum clearances for access: Conform to the following:

- Vertical clearance: ≥ 2100 mm, vertically above horizontal floors, ground and platforms.
- Horizontal clearance: Preferably ≥ 750 mm clear, but in no case less than 600 mm between equipment or between equipment and building features including walls.
- If tools are required to operate, adjust or remove equipment, provide sufficient space so the tools can be used in their normal manner and without requiring the user to employ undue or awkward force.
- Hinged or removable components: To the manufacturer's recommendations.
- Within plant items: Conform to the preceding requirements, and not less than the clearances recommended in BS 8313.

Elevated services other than in occupied areas

Access classifications:

- Access class A: Readily accessible. Provide clear and immediate access to and around plant items. If plant or equipment is located more than 2.0 m above the ground, floor or platform, provide a platform with handrails accessible by a stair, all to AS 1657.
- Access class B: If the plant item requiring access is located more than 2.0 m above the ground, floor or platform, provide a platform with handrails accessible by a non-vertical ladder, all to AS 1657.
- Access class C: Locate plant so temporary means of access conforming to Work health and Safety regulations can be provided.

Temporary means of access: Make sure there is adequate provision in place which is safe and effective.

Areas in which access is restricted to authorised maintenance personnel: Provide access as follows:

- Instruments, gauges and indicators (including warning and indicating lights) requiring inspection at any frequency: Readily accessible.
- Access required monthly or more frequently: Access class A.
- Access required between monthly and six monthly: Access class A or B.
- Access required less frequently than six monthly: Access class A, B or C.

Other areas: Provide access as follows:

- Locate to minimise inconvenience and disruption to building occupants or damage to the building structure or finishes.

- In suspended ceilings, locate items of equipment that require inspection and/or maintenance above tiled parts. If not possible, provide access panels where located above set plaster or other inaccessible ceilings. Arrange services and plant locations to reduce the number of access panels. Coordinate with other trades to use common access panels where feasible.
- Do not locate equipment requiring access above partitions.
- Instruments, gauges and other items requiring inspection at any frequency: Readily accessible.
- Labelling: If equipment is concealed in ceilings, provide marking to **MARKING AND LABELLING, Equipment concealed in ceilings**.

Facilities for equipment removal and replacement

Requirement: Provide facilities to permit removal from the building and replacement of plant and equipment, including space large enough to accommodate it and any required lifting and/or transportation equipment. Arrange plant so large and/or heavy items can be moved with the minimum changes of direction.

Removal of components: Allow sufficient space for removal and replacement of equipment components including air filters, tubes of shell and tube heat exchangers, removable heat exchanger bundles, coils and fan shafts. Provide access panels or doors large enough to permit the safe removal and replacement of components within air handling units.

Facilities for access

Equipment behind hinged doors: Provide doors opening at least 150°.

Equipment behind removable panels: Provide panels with quick release fasteners or captive metal thread screws.

Removable panels: Provide handles to permit easy and safe removal and replacement.

Insulated plant and services: If insulation must be removed to access plant and services for maintenance, arrange it to allow for removal and replacement without damage.

Piping

Requirement: Conform to the following:

- Provide access and clearance at fittings which require maintenance, inspection or servicing, including control valves and joints intended to permit pipe removal.
- Arrange piping so it does not interfere with the removal or servicing of associated equipment or valves or block access or ventilation openings.
- Preferably run piping, conduits, cable trays and ducts at high level and drop vertically to equipment.

Electrical equipment and controls

Electrical equipment: Provide clearances and access space to AS/NZS 3000.

Switchboards and electrical control equipment: Locate near the main entrance to plant space and with switchboards visible from the plant being operated.

Control panels: Locate near and visible from the plant being controlled.

3.13 VIBRATION SUPPRESSION

General

Requirement: Minimise the transmission of vibration from rotating or reciprocating equipment to other building elements.

Standard

Machinery noise and vibration: Vibration severity in Zone A to ISO 20816-1 and ISO 10816-3.

Speeds

General: If no maximum speed is prescribed, do not exceed 1500 r/min for direct driven equipment.

Connections

General: Provide flexible connections to rotating machinery and assemblies containing rotating machinery. Isolate pipes by incorporating sufficient flexibility into the pipework or by use of proprietary flexible pipe connections installed to prevent placing stress on pipes due to end reaction.

Inertia bases

General: If necessary to achieve the required level of vibration isolation, provide inertia bases having appropriate mass and to the following:

- Construction: Steel or steel-framed reinforced concrete. Position foundation bolts for equipment before pouring concrete.
- Supports: Support on vibration isolation mountings using height saving support brackets.

Vibration isolation mountings

General: Except for external equipment that is not connected to the structure of any building, support rotating or reciprocating equipment on mountings as follows:

- For static deflections < 15 mm: Single or double deflection neoprene in-shear mountings incorporating steel top and base plates and a tapped hole for bolting to equipment.
- For static deflections ≥ 15 mm: Spring mountings.

Selection: Provide mountings selected to achieve 95% isolation efficiency at the normal operating speeds of the equipment.

Installation: Set and adjust vibration isolation mounting supports to give clearance for free movement of the supports.

Spring mountings: Provide freestanding laterally stable springs as follows:

- Clearances: ≥ 12 mm between springs and other members such as bolts and housing.
- High frequency isolation: 5 mm neoprene acoustic isolation pads between baseplate and support.
- Levelling: Provide bolts and lock nuts.
- Minimum travel to solid: ≥ 150% of the designated minimum static deflection.
- Ratio of mean coil diameter to compressed length at the designated minimum static deflection: ≥ 0.8:1.
- Snubbing: Snub the springs to prevent bounce at start-up.
- Vertical resilient limit stops: To prevent spring extension when unloaded, to serve as blocking during erection and which remain out of contact during normal operation.

3.14 SEISMIC RESTRAINT OF NON-STRUCTURAL COMPONENTS

General

Earthquake design category: Refer to AS 1170.4 Section 5

Seismic restraint to AS 1170.4

3.15 FINISHES TO BUILDING SERVICES

General

Requirement: If exposed to view (including in plant rooms), paint building services and equipment.

Surfaces painted or finished off-site: Conform to *0183 Metals and prefinishes*.

Exceptions: Do not paint chromium or nickel plating, anodised aluminium, GRP, stainless steel, non-metallic flexible materials and normally lubricated machined surfaces. Surfaces with finishes applied off-site need not be re-painted on-site provided the corrosion resistance of the finish is not less than that of the respective finish documented.

Standard: Conform to the recommendations of AS/NZS 2311 Sections 3, 6 and 7 or AS 2312.1 Sections 6, 7 and 8, as applicable.

Inaccessible surfaces: If surfaces are inaccessible after installation, complete finish before installation.

Painting systems

New unpainted interior surfaces: To AS/NZS 2311 Table 5.1.

New unpainted exterior surfaces: To AS/NZS 2311 Table 5.2.

Paint application

Coats: Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Make sure each coat of paint or clear finish is uniform in colour, gloss, thickness and texture and free of runs, sags, blisters or other discontinuities.

Combinations: Do not combine paints from different manufacturers in a paint system.

Protection: Remove fixtures before starting to paint and refix in position undamaged when painting is complete.

Underground metal piping

Requirement: Provide corrosion protection for the following:

- Underground ferrous piping.
- Underground non-ferrous metal piping in corrosive environments.

Corrosion protection: Select from the following:

- Cathodic protection: Sacrificial anodes or impressed current. Incorporate a facility for periodic testing. Conform to the recommendations of AS 2832.1.
- Continuous wrapping using proprietary petroleum taping material.
- Impermeable flexible plastic coating.
- Sealed polyethylene sleeve.

Aggressive soils: If metallic piping or components are installed in chemically aggressive soil, provide additional protection as follows:

- Material: Continuous polyethylene sleeve to ASTM D1248 with a minimum thickness of 0.25 mm.
- Installation: Wrap or sleeve pipes and components. Tape joints between sections of polyethylene and between polyethylene and piping.

Low VOC emitting paints

Paint types: To the recommendations of AS/NZS 2311 Table 4.2.

Repairs to finishes

Requirement: Repair damaged finishes to restore their corrosion protection, appearance and service life.

3.16 MARKING AND LABELLING

General

Requirement: Mark and label services and equipment for identification purposes as follows:

- Locations exposed to weather: Provide durable materials.
- Pipes, conduits and ducts: To AS 1345 throughout its length, including in concealed spaces.
- Cables: Label to indicate the origin and destination of the cable.

Consistency: Label and mark equipment using a consistent scheme across all services elements of the project.

Asset management labels and tags: Refer to Tasmanian Government Asset Management Requirements

Label samples and schedules

Requirement: For each item or type of item, prepare a schedule of marking and labelling, including the following:

- A description of the item or type of item for identification.
- The proposed text for marking or labelling.
- The proposed location of the marking and labelling.

Submission timing: Before marking or labelling.

Electrical accessories

Circuit identification: Label isolating switches and outlets to identify circuit origin.

Operable devices

Requirement: Mark to identify the following:

- Controls.
- Indicators, gauges, meters.
- Isolating switches.

Equipment concealed in ceilings

Location: Provide a label on the ceiling, to indicate the location of each concealed item requiring access for routine inspection, maintenance and/or operation and as follows:

- Tiled ceilings, locate the label on the ceiling grid closest to the concealed item access point.
- Flush lined ceilings, locate adjacent to closest access panel.

Concealed equipment: Items to be labelled include the following:

- Fan coil units and terminal equipment (e.g. VAV terminals).
- Fire and smoke dampers.
- Isolating valves not directly connected to items otherwise labelled.
- Motorised dampers.

Wall mounted equipment in occupied areas

Location: Provide labels on wall mounted items in occupied areas including the following:

- Services control switches.
- Temperature and humidity sensors.

Points lists

Automatic control points: Provide plasticised, fade-free points lists for each automatic control panel and include terminal numbers, point addresses, short and long descriptors in the lists. Store in a pocket on the door of the panel.

Pressure vessels

General: Mount manufacturer's certificates in glazed frames on a wall next to the vessel.

Valves and pumps

General: Label to associate pumps with their starters and valves. Screw fix labels to body or attach label to valve handwheels with a key ring.

Underground services

Survey: Accurately record the routes of underground cables and pipes before backfilling. Include on the record drawings.

Records: Provide digital photographic records of underground cable and pipe routes before backfilling. Include in operation and maintenance manual.

Location marking: Accurately mark the location of underground cables and pipes with route markers consisting of a marker plate set flush in a concrete base, engraved to show the direction of the line and the name of the service.

Markers: Place markers at ground level at each joint, route junction, change of direction, termination and building entry point and in straight runs at intervals of not more than 100 m.

Marker bases: 200 mm diameter x 200 mm deep, minimum concrete.

Direction marking: Show the direction of the cable and pipe run by means of direction arrows on the marker plate. Indicate distance to the next marker.

Plates: Brass, aluminium or stainless steel with black filled engraved lettering, minimum size 75 x 75 x 1 mm thick.

Plate fixing: Waterproof adhesive and 4 brass or stainless steel countersunk screws.

Marker height: Set the marker plate flush with paved surfaces, and 25 mm above other surfaces.

Marker tape: Where electric bricks or covers are not provided over underground wiring, provide a 150 mm wide yellow or orange marker tape bearing the words WARNING – electric cable buried below, laid in the trench 150 mm below ground level.

Plastic pipe: Provide a detectable marker tape with trace wire to identify the route of buried piping. Terminate with 1000 mm coil in a readily accessible location. Tag to match the record drawings.

Labels and notices

Materials: Select from the following:

- Cast metal.
- For indoor applications only, engraved two-colour laminated plastic.
- Proprietary pre-printed self-adhesive flexible plastic labels with machine printed black lettering.
- Stainless steel or brass minimum 1 mm thick with black filled engraved lettering.

Emergency functions: To AS 1319.

Colours: Generally to AS 1345 as appropriate, otherwise black lettering on white background except as follows:

- Danger, warning labels: White lettering on red background.
- Main switch and caution labels: Red lettering on white background.

Edges: If labels exceed 1.5 mm thickness, radius or bevel the edges.

Labelling text and marking: To correspond to terminology and identifying number of the respective item as shown on the record drawings and documents and in operating and maintenance manuals.

Lettering heights:

- Danger, warning and caution notices: Minimum 10 mm for main heading, minimum 5 mm for remainder.
- Equipment labels within cabinets: Minimum 5 mm.
- Equipment nameplates: Minimum 40 mm.
- Identifying labels on outside of cabinets: Minimum 5 mm.
- Isolating switches: Minimum 5 mm.
- Switchboards, main assembly designation: Minimum 25 mm.
- Switchboards, outgoing functional units: Minimum 10 mm.
- Switchboards, sub assembly designations: Minimum 15 mm.
- Valves: Minimum 20 mm.
- Self-adhesive flexible plastic labels:
  - Labels less than 2000 mm above floor: 5 mm.
  - Labels minimum 2000 mm above floor: 10 mm.
  - Other locations: Minimum 5 mm.

Label locations: Locate labels so they are easily seen and are either attached to, below or next to the item being marked.

Fixing: Fix labels securely using screws, rivets, proprietary self-adhesive labels or double-sided adhesive tape and as follows:

- If labels are mounted in extruded aluminium sections, use rivets or countersunk screws to fix the extrusions.
- Use aluminium or monel rivets for aluminium labels.

Vapour barriers: Do not penetrate vapour barriers.

3.17 RECORD DRAWINGS

General

Requirement: Prepare record drawings showing the following:

- Installed locations of building elements, services, plant and equipment.
- Off-the-grid dimensions and depth if applicable.
- Any provisions for the future.

Recording, format and submission

Requirement: Record changes made during the progress of the works on a set of drawings kept on site for that specific purpose.

Drawing layout: Use the same borders and title block as the contract drawings.

Quantity and format: Conform to **SUBMISSIONS.**

Endorsement: Sign and date all record drawings.

Accuracy: If errors in, or omissions from, the record drawings are found, amend the drawings and re-issue in the quantity and format documented for **SUBMISSIONS.**

Date for submission: Not later than 2 weeks after the date for practical completion.

Services record drawings

General: To **General** and **Recording, format and submission** and the following:

- Extensions and/or changes to existing: If a drawing shows extensions and/or alterations to existing installations, include sufficient of the existing installation to make the drawing comprehensible without reference to drawings of the original installation.

- Detention: If on-site detention tanks or pondage are provided, include the volume required on the drawing and the permitted flow rate to the connected system.
- Domestic cold water or fire mains: Show the pressure available at the initial connection point and the pressure available at the most disadvantaged location on each major section of the works.
- Stormwater: If storm water pipes are shown, include the pipe size and pipe grade together with the maximum acceptable flow and the actual design flow.

Diagrams: Provide diagrammatic drawings of each system including the following:

- Controls.
- Piping including all valves and valve identification tags.
- Principal items of equipment.
- Single line wiring diagrams.
- Acoustic and thermal insulation.
- Access provisions and space allowances.
- Fasteners.
- Fixtures.
- Switchgear and control gear assembly circuit schedules including electrical service characteristics, controls and communications.
- Charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

CAD base drawings: CAD Files are provided for information purposes only.

Subsurface services: Record information on underground or submerged services to the documented quality level, conforming to AS 5488.

Subsurface services recording quality level: Land Survey all below ground services before covering including location and typical depth.

3.18 OPERATION AND MAINTENANCE MANUALS

General

Authors and compilers: Personnel experienced in the maintenance and operation of equipment and systems installed, and with editorial ability.

Referenced documents: If referenced documents or worksections require submissions of manuals, include corresponding material in the operation and maintenance manuals.

Subdivision: By installation or system, depending on project size.

Contents of manual

Table of contents: Include a table of contents in each volume. Title to match cover.

Table of amendments: Include a table of amendments.

Directory: Include names, addresses, email addresses and telephone and facsimile numbers of principal consultant, subconsultants, contractor, subcontractors and names of responsible parties.

Record drawings: Include complete set of record drawings, full size.

Drawings and technical data: Include as necessary for the efficient operation and maintenance of the installation.

Installation description: Include a general description of the installation.

Systems descriptions and performance: Include a technical description of the systems installed including design concepts embodied, the interrelation with other systems and the building and mode of operation, presented in a clear and concise format readily understandable by the principal's staff. Identify function, normal operating characteristics, safety features and limiting conditions.

Baseline data: To AS 1851, AS 1668.1, AS 1682.2 and AS 1670.1.

Commissioning results: Include for use as baseline data for system and equipment maintenance performance.

Fire systems and equipment: Include documentation to AS 1851, including the schedule of essential functionality and performance requirements.

Digital photographic records: Include records to **MARKING AND LABELLING, Underground services**.

Equipment descriptions:

- Name, address, email address and telephone and facsimile numbers of the manufacturer and supplier of items of equipment installed, together with catalogue list numbers.
- Schedules (system by system) of equipment, stating locations, duties, performance figures and dates of manufacture. Provide a unique code number cross-referenced to the record and diagrammatic drawings and schedules, including spare parts schedule, for each item of equipment installed. Equipment schedules in tabular form including the equipment designation used on the drawings, manufacturer's name and contact details, equipment name plate data, function of item, associated system and capacity data.

- Manufacturers' technical literature for equipment installed, assembled specifically for the project, excluding irrelevant matter. Mark each product data sheet to clearly identify specific products and component parts used in the installation, and data applicable to the installation.
- Supplements to product data to illustrate relations of component parts. Include typed text as necessary.

Certificates:

- Certificates from authorities.
- Copies of manufacturers' warranties.
- Product certification.
- Test certificates for each service installation and all equipment.
- Test reports.
- Test, balancing and commissioning reports.
- Control system testing and commissioning results.
- Warranties.

Trends: 7 day record of all trends at commissioning.

Operation procedures:

- Manufacturers' technical literature as appropriate.
- Safe starting up, running-in, operating and shutting down procedures for systems installed. Include logical step-by-step sequence of instructions for each procedure.
- Control sequences and flow diagrams for systems installed.
- Legend for colour-codes services.
- Schedules of fixed and variable equipment settings established during commissioning and maintenance.
- Procedures for seasonal changeovers.
- Warnings to operators.
- Recommendations for efficient plant operation.
- If the installation includes cooling towers, a water efficiency management plan.

Maintenance procedures:

- Detailed recommendations for periodic maintenance and procedures, including schedule of maintenance work with frequency and manufacturers' recommended tests.
- Manufacturer's technical literature as appropriate. Register with manufacturer as necessary. Retain copies delivered with equipment.
- Safe trouble-shooting, disassembly, repair and reassembly, cleaning, alignment and adjustment, balancing and checking procedures. Provide logical step-by-step sequence of instructions for each procedure.
- Schedule of spares, recommended to be held on site, for those items subject to wear or deterioration and that may involve the principal in extended deliveries when replacements are required. Include complete nomenclature and model numbers, and local sources of supply.
- Schedule of normal consumable items, local sources of supply, and expected replacement intervals up to a running time of 40 000 hours. Include lubrication schedules for equipment.
- Schedules for recording recommissioning data to identify changes in the system over time.
- Instructions for use of tools and testing equipment.
- Troubleshooting procedures.
- Emergency procedures, including telephone numbers for emergency services, and procedures for fault finding.
- Safety data sheets (SDS).
- Instructions and schedules conforming to AS 1851, AS/NZS 3666.2, AS/NZS 3666.3 and AS/NZS 3666.4.

Maintenance records:

- Prototype service records conforming to AS 1851 prepared to include project specific details.
- Prototype periodic maintenance records and report to AS/NZS 3666.2, AS/NZS 3666.3 and AS/NZS 3666.4 as appropriate, prepared to include project specific details.
- Hard copies: Binders to match the manuals, containing loose leaf log book pages designed for recording completion activities including operational and maintenance procedures, materials used, test results, comments for future maintenance actions and notes covering the condition of the installation. Include completed log book pages recording the operational and maintenance activities performed up to the date for practical completion.
- Number of pages: The greater of 100 pages or enough pages for the maintenance period and a further 12 months.

Emergency information: For each type of emergency, including fire, flood, gas leak, water leak, power failure, water failure, system or sub system failure, chemical release or spill, include the following:

- Emergency instructions.
- Emergency procedures including:
  - Instructions for stopping or isolating.
  - Shutdown procedures and sequences.
  - Instructions for actions outside the property.
  - Special operating instructions relevant to the emergency.
  - Contact details relevant to the emergency.

Emergency information manual

Form of emergency information: Provide one of the following:

- An index and coloured tabs identifying emergency information for each type of emergency within the Operation and maintenance manual.

- A separate Emergency manual containing copies of emergency information from the main Operation and maintenance manual.

Format – electronic copies

Scope: Provide the same material as documented for hardcopy in electronic format.

Quantity and format: Conform to **SUBMISSIONS , Electronic submissions**.

Printing: Except for drawings required in the **RECORD DRAWINGS** clause provide material that can be legibly printed on A4 size paper.

Format – hard copies

General: A4 size loose leaf, in commercial quality, 4 ring binders with hard covers, each indexed, divided and titled. Include the following features:

- Cover: Identify each binder with typed or printed title *OPERATION AND MAINTENANCE MANUAL*, to spine. Identify title of project, volume number, volume subject matter, and date of issue.
- Dividers: Durable divider for each separate element, with typed description of system and major equipment components. Clearly print short titles under laminated plastic tabs.
- Drawings: Fold drawings to A4 size with title visible, insert in plastic sleeves (one per drawing) and accommodate them in the binders.
- Pagination: Number pages.
- Ring size: 50 mm maximum, with compressor bars.
- Text: Manufacturers' printed data, including associated diagrams, or typewritten, single-sided on bond paper, in clear concise English.

Number of copies: 3.

Date for submission

Draft submission: The earlier of the following:

- 4 weeks before the date for practical completion.
- Commencement of training on services equipment.

Final submission: Within 2 weeks after practical completion.

3.19 CLEANING

Final cleaning

General: Before the date for practical completion, clean throughout, including all exterior and interior surfaces except those totally and permanently concealed from view.

Labels: Remove all labels not required for maintenance.

3.20 WARRANTIES

General

Requirement: If a warranty is documented, name the principal as warrantee. Register with manufacturers as necessary. Retain copies delivered with components and equipment.

Warranty period: Start warranty periods at acceptance of installation.

Approval of installer: If installation is not by manufacturer, and product warranty is conditional on the manufacturer's approval of the installer, submit the manufacturer's written approval of the installing firm.

Comply with the Projects Subcontractor Warranty Deed

(as per the Head Contract Annexure Part H)

a. Warranty to be in favour of both Principal and the Crown, jointly and severally
b. Warranty terms as per the Head Contract Annexure Part G:
    1. Roofing = 10 years
    2. Cladding = 10 years

3.21 PERIODIC MAINTENANCE OF SERVICES

General

Requirement: During the maintenance period, carry out periodic inspections and maintenance work as recommended by manufacturers of supplied equipment, and promptly rectify faults.

Emergencies: Attend emergency calls promptly.

Annual maintenance: Carry out recommended annual maintenance procedures before the end of the maintenance period.

Maintenance period: The greater of the defects liability period and the period documented in the **Maintenance requirements schedule**.

Maintenance program

General: Submit details of maintenance procedures and program, relating to installed plant and equipment, 6 weeks before the date for practical completion. Indicate dates of service visits. State contact telephone numbers of service operators and describe arrangements for emergency calls.

Maintenance records

General: Record in binders provided with the Operation and maintenance manuals.

Referenced documents: If referenced documents or technical worksections require that log books or records

be submitted, include this material in the maintenance records.

Certificates: Include test and approval certificates.

Service visits: Record comments on the functioning of the systems, work carried out, items requiring corrective action, adjustments made and name of service operator. On completion of the visit, obtain the signature of the principal's designated representative on the record of the work undertaken.

Site control

General: Report to the principal's designated representative on arriving at and before leaving the site.

3.22 POST-CONSTRUCTION MANDATORY INSPECTIONS AND MAINTENANCE

General

Requirement: For the duration of the defects liability period, provide inspections and maintenance of safety measures required by the following:

- AS 1851.
- Other statutory requirements applicable to the work.

Records: Provide mandatory records.

Certification: Certify that mandatory inspections and maintenance have been carried out and that the respective items conform to statutory requirements.

Annual inspection: Perform an annual inspection and maintenance immediately before the end of the defects liability period.

0181 ADHESIVES, SEALANTS AND FASTENERS

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide adhesives, sealants and fasteners, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Performance
Requirements: Conform to the following:

- Fitness for purpose: Capable of transmitting imposed loads, sufficient to maintain the rigidity of the assembly, or integrity of the joint.
- Finished surface: That will not cause discolouration.
- Compatibility: Compatible with the products to which they are applied.
- Sealant replacement: Capable of safe removal without compromising the application of the replacement sealant for future refurbishment.
- Movement: If an adhered or sealed joint is subject to movement, select a system certified to accommodate the projected movement under the conditions of service.
- Fasteners: Suitable for the particular use, capable of transmitting imposed loads and maintaining the rigidity of the assembly.

1.2 PRECEDENCE

General
Order of precedence:

- The requirements of other worksections of the specification override conflicting requirements of this worksection.
- The requirements of worksections override conflicting requirements of their referenced documents. The requirements of the referenced documents are minimum requirements.

1.3 CROSS REFERENCES

General
Requirement: Conform to the following:

- *0171 General requirements*.

1.4 SUBMISSIONS

Products and materials
Sealants: Submit technical data sheets.

Adhesives and sealants: Submit safety data sheets (SDS).

Samples
Visible joint sealants: Submit colour samples.

Tests
Site tests: Submit results as follows:

- Installed sealant tests: Required for all sealants.

Compatibility testing: Submit adhesion and compatibility testing data demonstrating that adhesive, sealant or fastener is compatible with materials to be fixed and is suitable for the project conditions.

Warranties
Manufacturer's warranty: Submit the manufacturer's published product warranties.

1.5 INSPECTION

Notice
Inspection: Give notice so that inspection may be made of prepared joints and penetrations for each sealant application included in the **Installed sealant tests schedule**.

2 PRODUCTS

2.1 ADHESIVES

Standards
Gypsum plaster adhesive: To AS 2753.

High strength adhesive tape
General description: A foam of cross linked polyethylene or closed cell acrylic coated both sides with a high performance acrylic adhesive system, encased in release liners of paper or polyester.

Product classification: Select tape to suit substrate as follows:

- Firm high strength foam tapes: For high energy surfaces including most bare metals such as stainless steel and aluminium.
- Conformable high strength foam: For the following:
  - Medium energy surfaces including many plastics and paints, and bare metals.
  - Lower energy surfaces including many plastics, most paints and powder coatings, and bare metals.

Thickness: Select the tape to make sure a mismatch between surfaces does not exceed half the tape thickness under the applied lamination pressure.

Total VOC limits
Requirement: Conform to the following:

- General purpose adhesives:
  South Coast Air Quality Management District Rul e 1168 (1/1/2023 VOC Limits)

- Structural glazing adhesive, timber flooring and laminate adhesives:
  South Coast Air Quality Management District Rul e 1168 (1/1/2023 VOC Limits)

2.2 SEALANTS

Standards
General: To ISO 11600.

External masonry joints
General: Provide sealant and bond breaking materials which are non-staining to masonry. Do not use bituminous materials with absorbent masonry units.

Bond breaking backing:

- Bond breaking materials: Non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: Closed-cell or impregnated, not water-absorbing.

Fire-resisting control joints
General: Provide sealant materials that maintain the nominated fire-resistance level (FRL).

- Fire-stopping: To AS 4072.1.

Lightweight building element joints
Joints subject to rapid changes of movement: Provide sealants that accommodate the movement of the contact materials.

Floor control joints
General: Provide trafficable sealants.

Bond breaking backing:

- Bond breaking materials: Non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: Closed-cell or impregnated, not water-absorbing.

Total VOC limits
Requirement: Conform to the following:

- Architectural sealants:
  South Coast Air Quality Management District Rul e 1168 (1/1/2023 VOC Limits)

2.3 FASTENERS

General
Masonry anchors: Proprietary expansion or bonded type anchors conforming to **SELECTIONS, ANCHORS**.

Plain washers: To AS 1237.1.

- Provide washers to the heads and nuts of bolts, and the nuts of coach bolts.

Plugs: Proprietary purpose-made plastic.

Stainless steel fasteners: To ASTM A240/A240M.

Steel nails: To AS 2334.

- Length: At least 2.5 times the thickness of the member being secured, and at least 4 times the thickness if the member is plywood or building board less than 10 mm thick.

Unified hexagon bolts, screws and nuts: To AS/NZS 2465.

Fasteners in CCA treated timber: Epoxy coated or stainless steel.

Bolts
Coach bolts: To AS/NZS 1390.

Hexagon bolts Grades A and B: To AS 1110.1.

Hexagon bolts Grade C: To AS 1111.1.

Corrosion resistance
Atmospheric corrosivity category: To *0171 General requirements*.

Steel products: Conform to the **Corrosion resistance table** or provide proprietary products with metallic and/or organic coatings of equivalent corrosion-resistance.

Corrosion resistance table

Atmospheric corrosivity category to AS 4312	Threaded fasteners and anchors		Powder actuated fasteners
	Material	Minimum local metallic coating thickness (µm)	Material
C5	Stainless steel 316	-	Stainless steel 316

For self-drilling screws in severe marine environments, consult the roofing/cladding manufacturer on the requirements for shank corrosion protection.

Finishes
Electroplating:

- Metric thread: To AS 1897.
- Imperial thread: To AS 4397.

Galvanizing:

- Threaded fasteners: To AS/NZS 1214.
- Other fasteners: To AS/NZS 4680.

Mild steel fasteners: Galvanize if:

- Embedded in masonry.
- In external timbers.
- In contact with chemically treated timber other than CCA treated timber.

Epoxy coated: CCA treated timber.

Nuts

Hexagon chamfered thin nuts Grades A and B: To AS 1112.4.

Hexagon nuts Grade C: To AS 1112.3.

Hexagon nuts Style 1 Grades A and B: To AS 1112.1.

Hexagon nuts Style 2 Grades A and B: To AS 1112.2.

Screws

Coach screws: To AS/NZS 1393.

Hexagon screws Grades A and B: To AS 1110.2.

Hexagon screws Grade C: To AS 1111.2.

Hexagon socket screws: To AS 1420.

Self-drilling screws: To AS 3566.1.

Self-tapping screws:

- Crossed recessed countersunk (flat – common head style): To AS/NZS 4407.
- Crossed recessed pan: To AS/NZS 4406.
- Crossed recessed raised countersunk (oval): To AS/NZS 4408.
- Hexagon: To AS/NZS 4402.
- Hexagon flange: To AS/NZS 4410.
- Hexagon washer: To AS/NZS 4409.
- Slotted countersunk (flat – common head style): To AS/NZS 4404.
- Slotted pan: To AS/NZS 4403.
- Slotted raised countersunk (oval – common head style): To AS/NZS 4405.

Blind rivets

Description: Expanding end type with snap mandrel.

Type: Closed end for external application, open end for internal application.

End material:

- Aluminium base alloy for metallic-coated or prepainted steel.
- Stainless steel for stainless steel sheet.
- Copper for copper sheet.

Size:

- For sheet metal to sheet metal: 3 mm.
- For sheet metal to supports, brackets and rolled steel angles: 4.8 mm.

3 EXECUTION

3.1 ADHESIVES

General

Requirement: Install to the manufacturer's recommendations.

Preparation

Substrates: Conform to the following:

- Remove any deposit or finish which may impair adhesion.
- If framed or discontinuous, provide support members in full lengths without splicing.
- If solid or continuous, remove excessive projections.
- If previously painted, remove cracked or flaking paint and lightly sand the surface.

Contact adhesive

Precautions: Do not use contact adhesive if:

- A substrate is polystyrene foam.
- A PVC substrate may allow plasticiser migration.
- The adhesive solvent can discolour the finished surface.
- Dispersal of the adhesive solvent is impaired.

Two-way method: Immediately after application, press firmly to transfer adhesive and then pull both surfaces apart. Allow to tack off and then reposition and press firmly together. Tap areas in contact with a hammer and padded block.

One-way method: Immediately after application, bring substrates together and maintain maximum surface contact for 24 hours by clamps, nails or screws as appropriate. If highly stressed, employ permanent mechanical fasteners.

High strength adhesive tape

Preparation:

- Non-porous surfaces: Clean with surface cleaning solvents such as isopropyl alcohol/water, wash down and allow to dry.
- Porous surfaces: Prime the surface with a contact adhesive compatible with the tape adhesive system.

Application to copper, brass, plasticised vinyl and hydrophilic surfaces such as glass and ceramics in a high humidity environment: Conform to manufacturer's recommendations.

Applied lamination pressure: Make sure the tape experiences 100 kPa.

Application temperature: Generally above 10°C and to the manufacturer's recommendations.

Completion: Do not apply loads to the assembly for 72 hours at 21°C.

3.2 JOINT SEALING

General
Requirement: Install to the manufacturer's recommendations.

Joint preparation
Cleaning: Cut flush joint surface protrusions and rectify if required. Mechanically clean joint surfaces free of any deposit or finish which may impair adhesion of the sealant. Immediately before sealant application, remove loose particles from the joint, using oil-free compressed air.

Bond breaking: Install bond breaking backing material.

Taping: Protect the surface on each side of the joint using 50 mm wide masking tape or equivalent means. On completion of sealant application, remove the tape and remove any stains or marks from adjacent surfaces.

Primer: Apply the recommended primer to the surfaces in contact with sealant materials.

Sealant joint proportions
General weatherproofing joints (width:depth):

- 1:1 for joint widths less than 12 mm.
- 2:1 for joint widths greater than 12 mm.

Sealant application
General: Apply the sealant to dry joint surfaces using a pneumatic applicator gun. Make sure the sealant completely fills the joint to the required depth, provides good contact with the full depth of the sides of the joint and traps no air in the joint. Do not apply the sealant outside the recommended working time for the material or the primer.

Weather conditions
Two pack polyurethanes: Do not apply the sealant if ambient conditions are outside the following:

- Temperature: Less than 5°C or greater than 40°C.
- Humidity: To the manufacturer's recommendations.

Joint finish
General: Force the sealant into the joint and finish with a smooth, slightly concave surface using a tool designed for the purpose.

Excess sealant: Remove from adjoining surfaces using cleaning material nominated by the sealant manufacturer.

Protection
General: Protect the joint from inclement weather during the setting or curing period of the material.

Rectification
General: Cut out and remove damaged portion of joint sealant and reinstall so repaired area is indistinguishable from undamaged portion.

3.3 TESTING

Installed sealant tests
Sampling: For each sealant test, take 3 samples of installed and cured sealant, each at least 50 mm long, from completed joints.

Reinstatement: Repair-as-new the joints from which the samples were taken.

3.4 FASTENERS

General
Requirement: Install to the manufacturer's recommendations.

Fastening to wood and steel
Timber substrates: To AS 1720.1 Section 4.

Self-drilling screws: To AS 3566.1 for timber and steel substrates.

Masonry anchors
Installation: To the manufacturer's recommendations.

0183B METALS AND PREFINISHES

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirements: Provide metal and prefinishes, as documented.

Metals and Prefinishes, shall be corrosion resistant or protective coated to prevent corrosion.

Performance

Requirement: Provide metals in sections of strength and stiffness suited to their required function, finish and method of fabrication.

1.2 PRECEDENCE

General

Order of precedence:

- The requirements of other worksections of the specification override conflicting requirements of this worksection.
- The requirements of worksections override conflicting requirements of their referenced documents. The requirements of the referenced documents are minimum requirements.

1.3 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements.*

1.4 SUBMISSIONS

Samples

General: Submit samples of the following:

- All decorative metals noted within the internal materials schedule
- Stainless steel: One sample of every documented surface finish.
- Anodising: One sample of every colour and finishing option.

2 PRODUCTS

2.1 METALS

Coated steel

Electrogalvanized (zinc) coating on ferrous hollow and open sections: To AS 4750.

Metallic-coated: Steel coated with zinc or aluminium-zinc alloy as follows:

- Ferrous open sections by an in-line process: To AS/NZS 4791.
- Ferrous hollow sections by a continuous or specialised process: To AS/NZS 4792.
- Metallic-coated steel sheet: To AS 1397. Metal thicknesses specified are base metal thicknesses.

Steel wire: To AS/NZS 4534.

Stainless steel

Bars: To ASTM A276/A276M.

Plate, sheet and strip: To ASTM A240/A240M.

Welded pipe (plumbing applications): To AS 1769.

Welded pipe (round, square, rectangular): To ASTM A554.

3 EXECUTION

3.1 GENERAL

Metal separation

Incompatible sheet metals: Prevent direct contact between incompatible metals. Provide separation by one of the following:

- Apply an anti-corrosion low moisture transmission coating such as alkyd zinc phosphate primer or aluminium pigmented bituminous paint to contact surfaces.
- Insert a concealed, non-metallic separation layer such as polyethylene film, adhesive tape, neoprene, nylon or bituminous felt.

Incompatible fixings: Do not use.

Incompatible service pipes: Install lagging or grommets. Do not use absorbent, fibrous or paper products.

Brazing

General: Make sure brazed joints have sufficient lap to provide a mechanically sound joint.

Butt joints: Do not use butt jointing for joints subject to load. If butt joints are used, do not rely on the filler metal fillet only.

Filler metal: To AS/NZS 1167.1.

Finishing

Visible joints: Finish visible joints made by welding, brazing or soldering using methods appropriate to the class of work (including grinding or buffing) before further treatment such as painting, galvanizing or electroplating. Make sure self-finished metals are without surface colour variations after jointing.

Preparation

General: Before applying decorative or protective prefinishes to metal components, complete welding, cutting, drilling and other fabrication, and prepare the surface using a suitable method.

Standard: To AS 1627 series.

Priming steel surfaces: If site painting is documented to otherwise uncoated mild steel or similar surfaces, prime as follows:

- After fabrication and before delivery to the works.
- After installation, repair damaged priming and complete the coverage to unprimed surfaces.

Welding

Aluminium: To AS 1665.

Stainless steel: To AS/NZS 1554.6.

Steel: To AS/NZS 1554.1.

3.2 STAINLESS STEEL FINISHES

General

Requirement: Provide a surface finish to match the approved sample.

Post-assembly pre-treatment

Heat discolouration: Remove by pickling.

Welds: Grind excess material, brush, and polish to match the pre-assembly finish.

Post-assembly finish

Electropolish finish for external installations: Provide an electro-chemical process to stainless steel type 316.

Brushed electropolish finish: Conform to the following:

- Pre-assembly finish: No. 4 brushed finish.
- Post-assembly finish: Provide an electro-chemical processed finish to achieve a No. 7 to No. 8 brushed finish.

Mirror electropolish finish:

- Pre-assembly finish: Mill finish 2B or mirror polished finish.
- Post-assembly finish: Provide an electro-chemical processed finish to achieve a No. 8 mirror like finish.

Completion

Cleaning: Clean and rinse to an acid free condition and allow to dry. Do not use carbon steel abrasives or materials containing chloride.

Protection: Secure packaging or strippable plastic sheet.

3.3 ELECTROPLATING

Electroplated coatings

Chromium on metals: To AS 1192.

- Service condition number: At least 2.

Nickel on metals: To AS 1192.

- Service condition number: At least 2.

Zinc on iron or steel: To AS 1789.

3.4 ANODISING

General

Standard: To AS 1231.

Thickness grade: To AS 1231 Table H1.

Sample

General: Provide a finish to match the sample in terms of colour and finishing options.

3.5 PREPAINTING

Air-drying enamel

Application: Spray or brush.

Finish: Full gloss.

General use:

- Primer: Two-pack epoxy primer to AS/NZS 3750.13.
- Top coats: 2 coats to AS 3730.6.

Oil resistant use:

- Primer: Two-pack epoxy primer to AS/NZS 3750.13.
- Top coats: 2 coats to AS/NZS 3750.22.

Equipment paint system

Description: Brush or spray application using paint as follows:

- Full gloss enamel finish coats, oil and petrol resistant: To AS/NZS 3750.22, two coats.
- Prime coat to metal surfaces generally: To AS/NZS 3750.19 or AS/NZS 3750.20.
- Prime coat to zinc-coated steel: To AS 3730.15 or AS/NZS 3750.16.
- Undercoat: To AS/NZS 3750.21.

Prepainted metal products

Standard: To AS/NZS 2728.

Product finish: Colorbond Ultra (by Blue Scope)

Dulux: Duratec powdercoat

Fielders: Prepainted Marine Grade Aluminium complying with AS/NZS 2728:2103

Product type as noted in AS/NZS 2728: Not lower than the type appropriate to the atmospheric corrosivity category.

Two-pack liquid coating

Application: Spray.

Finish: Full gloss.

Primer: Two pack epoxy primer to AS/NZS 3750.13.

Topcoat:

- Internal use: Proprietary polyurethane or epoxy acrylic system.
- External use: Proprietary polyurethane system.

3.6 COMPLETION

Damage

Damaged prefinishes: Remove and replace items, including damage caused by unauthorised site cutting or drilling.

Repair

Metallic-coated sheet: If repair is required to metallic-coated sheet or electrogalvanizing on inline galvanized steel products, clean the affected area and apply a two-pack organic primer to AS/NZS 3750.9.

0202 DEMOLITION (INTERIOR AND ALTERATIONS)

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Carry out demolition, as documented.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements.*

1.3 STANDARDS

General

Demolition: To AS 2601.

1.4 INTERPRETATION

Definitions

For the purposes of this worksection, the following definitions apply:

- Demolition: The complete or partial dismantling of a building or structure, by pre-planned and controlled methods or procedures.
- Dilapidation record: The photographic or video and written record of the condition of the portion of the existing building retained, adjacent buildings, and other relevant structures or facilities, before the start of demolition work.
- Recover: The disconnection and removal of an item in a manner to allow re-installation.

1.5 SUBMISSIONS

Authority approvals

Evidence of compliance: Before starting demolition, submit evidence of the following:

- Requirements of authorities relating to the work under the contract have been obtained.
- A permit to demolish has been obtained from the appropriate authority.
- A scaffold permit has been obtained from the appropriate authority (if scaffolding is proposed to be used).
- Certification that each person having access to the construction site has completed site-specific WHS induction training.
- Precautions necessary for protection of persons and property have been taken and suitable protective and safety devices have been provided to the approval of the relevant authority.
- Treatment for rodent infestation has been carried out and a certificate has been obtained from the appropriate authority.
- Fees and other costs have been paid.

Execution details

Requirement: Submit the following, as documented:

- Hazardous Substances Management Plan.
- Investigation and work plan.

Off-site disposal locations: Submit details of the proposed locations for the disposal of material required to be removed from the site, and evidence of conformance with the requirements of relevant authorities.

Cladding is not available for recycling and must be disposed of to a certified disposal site

Dilapidation record:

- Before demolition: Submit to each owner of each adjacent property, a copy of the part of the record relating to that property and obtain their written agreement to the contents.
- Rectification work: Submit written acceptance of rectification works from the owner of each adjoining property affected.

Tests

Requirement: Submit test results of compliance tests for building service components to be re-used.

1.6 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Services before disconnection or diversion.
- Contents of building before starting demolition.
- Site after removal of demolished materials.
- Services after reconnection or diversion.

2 PRODUCTS

2.1 DEMOLISHED MATERIALS

Demolished material classes table

Class	Requirement	Ownership
Recovered items for re-use in the works	Recover without damage items identified in the **Recovered items for re-use in the works schedule**	Principal/proprietor
Demolished material for recycling off-site	Demolish and deliver for recycling material identified in the **Demolished material for recycling off-site schedule**	Contractor

Class	Requirement	Ownership
Demolish for removal	Remove from the site demolished materials identified in the **Demolish for removal schedule**. Do not burn or bury on site Transit: Prevent spillage of demolishing materials in transit	Contractor

3 EXECUTION

3.1 HAZARDOUS SUBSTANCES

Identified hazardous substances
Register: Hazardous substances have been identified as present on site and a Hazardous substances register has been prepared.

Availability: Included with the tender documents.

Audit
Requirement: Prepare a Hazardous Substances Management Plan to AS 2601 clause 1.6.1. Include the following:

- Asbestos or material containing asbestos.
- Flammable or explosive liquids or gases.
- Toxic, infective or contaminated materials.
- Radiation or radioactive materials.
- Noxious or explosive chemicals.
- Tanks or other containers which have been used for storage of explosive, toxic, infective or contaminated substances.

Removal of hazardous substances
Standard: To AS 2601 clause 1.6.2.

Procedure for asbestos removal: If removal of asbestos or of material containing asbestos is required, see the WHS authority's Code of Practice applicable to the state and *How to safely remove asbestos* by Safe Work Australia

3.2 INVESTIGATION AND WORK PLAN

General
Requirement: Before demolition or stripping work, prepare the work plan to AS 2601 Section 2. Include the check list items appropriate to the project from AS 2601 Appendix A, and the following:

- Locations and details of service deviations and terminations.
- If the demolition program results in components temporarily cantilevered, provide a certificate from a professional engineer.
- Proposals for the safe use of mobile plant on suspended structural members including provisions for the protection of lower floors in the event of structural failure.
- Wheel loads of tipping or loading vehicles.

3.3 SUPPORT

Temporary support
General: If temporary support is required, certification for its design and installation is required from a professional engineer engaged by the contractor.

Existing buildings: Until permanent support is provided, provide temporary support for sections of existing buildings which are to be altered and which normally rely for support on work to be demolished.

3.4 PROTECTION

Encroachment
General: Prevent the encroachment of demolished materials onto adjoining property, including public places.

Dust protection
General: Provide dustproof screens, bulkheads and covers to protect existing finishes and the immediate environment from dust and debris.

Security
General: If an internal wall is opened for alterations, provide security against unauthorised entry.

Temporary screens
General: Fill the whole of designated temporary openings or other spaces using dustproof and weatherproof temporary screens, fixed securely to the existing structure, and installed to shed water to avoid damage to retained existing elements or adjacent structures and contents.

Type: Timber framed screens sheeted with 12 mm plywood and painted. Seal the junctions between the screens and the openings.

Temporary access
General: If required, provide a substantial temporary doorset fitted with a rim deadlock, and remove on completion of demolition.

3.5 DEMOLITION – BUILDING WORKS

Concrete slabs
General: Using a diamond saw, neatly cut back or trim to new alignment with a clean true face existing concrete

slabs to be partially demolished or penetrated. Do not overcut at corners.

3.6 DEMOLITION – BUILDING SERVICES

General
Requirement: Decommission, isolate, demolish and remove from the site all equipment and associated components that become redundant as a result of the demolition.

Breaking down: Disassemble or cut up equipment where necessary to allow removal.

Demolition of refrigeration systems
Standard: To AS/NZS 5149.4.

Components for re-use
General: Before returning to service, clean components and test for conformance to Australian Standards, as required.

3.7 COMPLETION

Notice of completion
General: Give at least 5 working days' notice of completion of demolition so that adjacent structures may be inspected following completion of demolition.

Reinstatement
Assessment of damage: Use the dilapidation record to assess the damage and rectification work arising from the demolition work.

Rectification: Repair damage arising out of demolition work. Obtain written acceptance from the owner of each adjoining property of the completeness and standard of the rectification work.

Temporary support
General: Remove at completion of demolition.

4 SELECTIONS

4.1 DEMOLITION

Recovered items for re-use in the works schedule

Item	Location for re-use
Mechanical & electrical services , grilles vent pipes, downpipes Roof safety equipment , roof ladders	Hand to Builder / Client for modification / reinstallation where required

Demolish for removal schedule

Item
Existing Wall cladding
Existing Roof Cladding
Existing Gutters Sumps and Flashings

0341P LYSAGHT PURLINS AND GIRTS IN STRUCTURAL STEELWORK

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide LYSAGHT purlins and girts and structural steelwork, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Performance

Construction category to AS/NZS 5131: Refer to Structural Engineer

Adjoining elements: Provide for the fixing of adjoining building elements that are to be connected to or supported on the structural steel.

1.2 COMPANY CONTACTS

Lysaght technical contacts

Enquiries: www.lysaght.com/contact-us.

1.3 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements.*
- *0344 Steel – hot-dip galvanized coatings.*
- *0345 Steel – protective paint coatings.*
- *0346 Structural fire protection systems.*

1.4 STANDARDS

General

Materials and design: To AS 4100.

Materials and design of cold-formed decking, purlins and girts: To AS/NZS 4600.

Composite steel-concrete construction including profiled steel sheeting and shear connectors: To AS/NZS 2327.

Fabrication and erection: To AS/NZS 5131.

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Lysaght Zeds, Cees, SupaZeds® and SupaCees®: professionals.lysaght.com

Permalite Aluminium Zeds and Cees: permalite.com.au

1.6 INTERPRETATION

Abbreviations

General: For the purposes of this worksection the following abbreviations apply:

- AESS: Architecturally Exposed Structural Steelwork.
- CC: Construction Category.
- NDE: Non-Destructive Examination.

Definitions

General: For the purposes of this worksection the definitions given in AS/NZS 5131 and the following apply:

- Cee: A single web C shaped roll-formed purlin/girt with equal sized lipped flanges.
- Permalite: Roll-formed marine grade aluminium alloy 5052 H36.
- SupaCee®: A C shaped purlin/girt with a longitudinally stiffened web and equal sized stiffened lipped flanges.
- SupaZed®: A Z shaped purlin/girt with a longitudinally stiffened web and unequal opposite facing stiffened lipped flanges, which allow for lapping.
- Zed: A single web Z shaped purlin/girt with unequal opposite facing lipped flanges, which allow for lapping.

1.7 TOLERANCES

General

Requirement: To AS/NZS 5131 Section 12 and Appendix F.

Tolerance class: 1.

AESS: To the **AESS schedule**.

1.8 SUBMISSIONS

Fabrication details

Distortions: Submit proposals for the following:

- Preventing or minimising distortion of galvanized components, welded components or welded and galvanized components.
- Restoration to the designed shape.

Identification marks: If members and/or connections will be exposed to view, submit details of proposed marking.

Program: Submit a fabrication program showing the proposed sequence of operations and time required.

Execution details

Anchor bolts: If anchor bolts do not meet documented location tolerances, submit proposals for rectification before proceeding.

Bolting connections: For connections not documented, submit proposals.

Bolt tensioning procedure: Submit details of procedure, equipment to be used and calibration of the process.

Site base plate holing: If hand cutting of bolt holes in column base plates is required, submit details.

Purlins and girts: If purlins and girts support components other than roofing or cladding, submit details.

Site modifications: Submit details of proposed on-site modifications or rectifications to any steel member, connection component, mechanical fastener, weld or corrosion protection.

Splices: If variations to documented splice locations or additional splices are proposed, submit details.

Temporary connections or attachments: If not documented, submit details.

Undocumented weld types: Submit proposals for weld type and electrodes.

Welding plan: Submit a welding plan to AS/NZS 5131 clause 7.2.

Work method statement: Before any erection work commences, submit a work method statement to AS/NZS 5131 clause 11.2.3.

Products and materials

Steel members and sections: Submit test reports or test certificates conforming to AS 4100 clause 2.2.2.

Bolts, nuts and washers: Submit test reports or test certificates conforming to AS/NZS 1252.1 Section 6.

Verification testing of bolt assemblies: Submit test reports or certificates conforming to AS/NZS 1252.2 Section 2, together with the Supplier Declaration of Conformity (SDoC).

Anchor bolts: If anchors, other than those documented, are required or proposed for supporting or fixing structural steel, submit evidence of the anchor capacity to carry the load.

Substitution: If alternative sections or connections are proposed, submit details.

Records

Survey: Submit survey of erected structural steel to verify components have been installed as documented.

Drawings: Submit as-built structural drawings, upon completion.

Samples

AESS: Submit samples of AESS to the **AESS schedule**.

Special finishes: Submit samples of finished steel to the **Special finishes schedule**.

Minimum sample size: 0.1 m^2.

Shop detail documentation

General: Submit shop detail documentation to a scale that best describes the detail, conforming to AS/NZS 5131 clause 4.4.

Drawing format: PDF

Review of shop detail documentation: Contractor / Superintendent

Subcontractors

General: Submit names and contact details of proposed fabricator, detailer and installer.

Responsibilities: Submit names and contact details corresponding to the person/organisation assigned responsibility to the items listed in AS/NZS 5131 Table B3.

Tests

Site tests: Submit results, as follows:

- Bars and sections: Non-destructive tests.
- Plates: Ultrasonic tests.
- Welds: Non-destructive examinations.

Warranties

Purlins and girts: On completion, submit the Lysaght published product warranties.

1.9 INSPECTION

Notice – off-site

Inspection: Give notice so that inspection may be made of the following:

- Materials including welding consumables before fabrication.
- Testing of welding procedures and welder qualification tests.
- Commencement of shop fabrication.
- Commencement of welding.
- Complete penetration butt welds before the placement of root runs.
- High-strength bolt tensioning (when completed off-site).
- Completion of fabrication before surface preparation.
- Surface preparation before protective coating.
- Completion of protective coating before delivery to site.

Notice – on-site

Inspection: Give notice so that inspection may be made of the following:

- Steelwork on-site before erection.

- Anchor bolts in position before casting in.
- Steelwork and column bases erected on site, before grouting, encasing, site protective coating or cladding.
- Tensioning of bolts in categories 8.8/TB, 8.8/TF, 10.9/TB and 10.9/TF.
- Reinforcement and formwork in place before any encasement.
- Completed grouting, encasement, fire protection or site applied protective coating.

2 PRODUCTS

2.1 GENERAL

Product substitution
Other products: Conform to PRODUCTS, **GENERAL**, **Substitutions** in *0171 General requirements*.

Materials
Requirement: To AS/NZS 5131 Section 5.

Storage and handling
Purlins and girts: If not required for immediate use, stack and cover bundled sections, raised off the ground and on a slight slope so that water can drain away. Do not leave bundled sections of Permalite purlins and girts or accessories exposed for any period as water staining may occur between any aluminium surfaces in contact with each other.

Requirement: Pack, support, transport and handle members and components without overstressing, deforming or damaging them or their protective coating.

Damaged items: Rectify or replace. Do not assemble into the structure without approval.

Protection: Wrap or otherwise protect members or components to prevent damage to surface finishes during handling and erection.

Storage: Store off the ground.

Lifting points: Do not allow steel slings to come into direct contact with coated steelwork.

Purchasing and traceability
Purchasing documentation and procedure: To AS/NZS 5131 clause 4.6.

Level of traceability: To AS/NZS 5131 clause 5.2.3 and the types defined in AS/NZS 5131 clause 4.7.

2.2 STRUCTURAL STEEL

Steel members and sections steel grade table

Type of steel	Minimum grade
Hot-rolled sections to AS/NZS 3679.1 and SA TS 102	300
Welded sections to AS/NZS 3679.2	300
Hot-rolled plates, floor plates and slabs to AS/NZS 3678 and SA TS 102	250
Hot-rolled flat products to AS/NZS 1594	HA300
Hollow sections to AS/NZS 1163 and SA TS 102: Circular sections less than 166 mm nominal outside diameter	C250
Hollow sections to AS/NZS 1163 and SA TS 102: Sections other than circular sections less than 166 mm nominal outside diameter	C350
Lysaght purlins and girts to AS 1397	G450, Z350 or Z450
Permalite purlins and girts to AS/NZS 1664.1 (MPa)	179

Certification
Steel: Minimum requirements for test and inspection certificates, to the following:

- Hot-rolled bars or sections: To AS/NZS 3679.1 clause 11.2.4.
- Welded I sections: To AS/NZS 3679.2 clause 11.2.4.
- Hot-rolled plate: To AS/NZS 3678 clause 11.2.4.
- Cold-formed hollow sections: To AS/NZS 1163 clause 11.2.4.

Testing
Requirement: To the **Non-destructive testing of bars and sections schedule**.

Ultrasonic testing of plates
Quality level to AS 1710: L1

2.3 PURLINS AND GIRTS

General
Material selection and design: To Lysaght's recommendations with material selection aligned to environmental exposure conditions.

Selection: To the **Lysaght purlins and girts schedule**.

Lysaght steel
Material: GALVASPAN® high tensile steel.

Zinc coating class: Z450

Permalite aluminium
Material: Light-weight corrosion resistant marine grade aluminium alloy 5052 H36.

2.4 PURLIN BRIDGING AND ACCESSORIES

General
Material: Use materials and corrosion protection compatible with the documented purlins and girts.

Bridging: Required as documented, to control lateral deflection and twist of the purlins and girts.

HOOK-LOK® II bridging
Suitability: For use with Lysaght Zeds®, Cees, SupaZeds® and SupaCees® ranging from 100 mm to 250 mm in depth.

Series 300 and 350 bridging
Suitability: For use with Lysaght Zeds, Cees, SupaZeds® and SupaCees® 300 mm and 350 mm in depth.

EZY-LOK™ bridging
Suitability: For use with Lysaght SZ175 and SZ225 and Permalite aluminium Zeds and Cees ranging from 100 mm to 250 mm in depth. For depths over 250 mm a C15025 aluminium channel with bolted ends is used.

2.5 MECHANICAL FASTENERS

Standards
Bolts: To AS 1110.1, AS 1111.1 and AS/NZS 1252.1.

Nuts: To AS 1112.1, AS 1112.2, AS 1112.3, AS 1112.4 and AS/NZS 1252.1.

Bolting category
Requirement: To the **Bolting category schedule**.

Certification
High-strength bolt assemblies: Minimum requirements for test reports, to AS/NZS 1252.1 clause 6.4.2.

Finish
Bolts, nuts and washers: Hot-dip galvanized to AS/NZS 1214, corrosion-free, and in serviceable condition.

Lysaght purlin bolts
Description: Coated steel bolts with integral washers on both the head and nut for use with Lysaght purlins and girts. M12 x 30 mm available in grade 4.6 and 8.8. M16 x 45 mm available in grade 4.6 and 8.8.

Permalite purlin bolts
Description: Grade A4-70 316 stainless steel bolts for use with Permalite aluminium purlins and girts. M12 x 40 mm and M16 x 40 mm available, both coated with a 15-25 micron fluro-polymer coating.

Anchor bolts
Hexagonal bolts: To AS 1111.1.

Hexagonal nuts: To AS 1112.3.

Plain washers: To AS 1237.1.

Requirement: Provide each anchor bolt with 2 nuts and 2 oversize washers with sufficient thread for the levelling nut and washer to set below the base plate.

Mechanical and chemical anchors: To AS 5216, installed to manufacturer's recommendations.

- Product: Contractor performance selection
- Proof testing of mechanical anchors: Test to AS5216 Appendix A

2.6 OTHER MATERIALS

Welding consumables
Requirement: To the relevant part of the AS/NZS 1554 series.

Studs and shear connectors
Requirement: To AS/NZS 5131 clause 5.6.

Grout
Requirement: To AS/NZS 5131 clause 5.8.

3 EXECUTION

3.1 PREPARATION, ASSEMBLY AND FABRICATION

Identification
Traceability: To AS/NZS 5131 clause 5.2.3.

Marking: Provide marks or other means of identifying each member compatible with the finish, for setting out, locating, erecting and connecting the steelwork to the marking plans.

Hard stamping to AS/NZS 5131

High-strength bolting: If the work includes more than one bolting category, mark high-strength structural bolted connections with a 75 mm wide flash of colour, clear of holes.

Cold-formed members: Clearly mark material thickness.

Monorail beams: Identify and mark rated capacity in conformance with AS 1418.18 clause 5.12.6.

Natural beam camber
General: If steel beams have a natural camber, within the straightness tolerance, fabricate the steelwork element with the camber up.

Cutting
Shearing: Do not shear edges in areas designated as yielding regions for seismic design to AS 4100 earthquake design categories D and E.

Shaping
Requirement: Where forming, shaping or correcting distorted members, avoid damage and conform to AS/NZS 5131 clause 6.6.

Holing
Slotted holes: Do not use slotted holes for connections, other than those documented.

Finish for pinned connections: Pins and holes shall be finished so that the forces are distributed evenly to the joint plies.

Tolerances
Measurement: Check tolerances by measurement after fabrication and application of corrosion protection.

3.2 WELDING

General
Requirements: To AS/NZS 5131 Section 7.

Standard: To AS/NZS 1554.1.

Weld category
Weld categories not documented: Category GP.

Weld type
Weld type not documented: Submit proposals for weld type and electrodes.

Stress relief treatment
Type:

Non-destructive weld examination (NDE)
Requirement: To AS/NZS 5131 clause 13.6.2.

Non-visual NDE: By a third party testing authority.

Repairs: Repair welds revealed as faulty by NDE and repeat the examination.

Site welds
Completion: Weld only when correct alignment and preset or camber have been achieved.

3.3 MECHANICAL FASTENING

Connection contact surfaces
General: To AS/NZS 5131 clause 8.4.1.

Bolting categories 8.8/TF and 10.9/TF: Clean, as rolled and free from applied finishes.

Washers
Requirement: Place one washer under the part rotated during tightening process (nut or bolt head).

Method of tensioning TB and TF bolting categories
8.8/TB and 8.8/TF: Use part-turn method or a direct tension indicator device.

10.9/TB and 10.9/TF: Use a direct tension indicator device.

Permanent bolting
Completion: Bolt only when correct alignment and preset or camber has been achieved.

Purlin bolts
Requirement: Tighten all purlin bolts snug-tight to AS/NZS 5131 clause 8.3.

3.4 SURFACE PREPARATION AND TREATMENT

General
Requirement: Conform to *0344 Steel – hot-dip galvanized coatings* and/or *0345 Steel – protective paint coatings*, as appropriate.

3.5 SPECIAL FINISHES

General
Requirement: Apply special finishes to the **Special finishes schedule**.

3.6 METAL SPRAYING

General
Standard: To ISO 2063.2.

Requirement: Apply sprayed metal finishes to the **Metal spray schedule**.

Process: Electric arc.

Application: Apply the coating as soon as possible after blasting.

3.7 FIRE PROTECTION COATINGS

General
Requirement: Apply fire protection to structural steelwork to *0346 Structural fire protection systems*.

3.8 ARCHITECTURALLY EXPOSED STRUCTURAL STEELWORK

General
Requirement: Provide AESS to AS/NZS 5131 Section 10 and the **AESS schedule**.

AESS category
AESS category to AS/NZS 5131 clause 10.2: AESS 4

Fabrication
Additional requirements: To AS/NZS 5131 clause 10.4.

Corners and edges: Grind smooth sharp, marred, or roughened corners and edges.

Rough surfaces: Deburr and ground smooth.

Erection
Additional requirements: To AS/NZS 5131 clause 10.5.

3.9 ERECTION

General
Execution: Make sure every part of the structure has sufficient design capacity and is stable under construction loads produced by the construction procedure.

Temporary work
General: Provide all necessary temporary bracing or propping.

Temporary connections: Detail required cleats, if not shown on shop detail documentation.

Temporary members: If temporary members are required, fix so as not to weaken or deface permanent steelwork.

Anchor bolts
General: For each group of anchor bolts, provide a template with set-out lines clearly marked for positioning the bolts when casting in.

Beam camber
Requirement: If beam elements have a camber (natural or induced), erect them with the camber up.

Site work
General: Other than work shown on the shop detail documentation as site work, do not fabricate, modify or weld structural steel on-site.

Purlins
Trimming members: Provide to support edges of roof sheeting along hips, valleys and roof penetrations.

Movements
General: Allow for thermal movements during erection.

Grouting at supports
Preparation: Before grouting steelwork supported by concrete or masonry, set steelwork on packing or wedges.

- Permanent packing or wedges: Form with solid steel or grout of similar strength to the permanent grout.
- Temporary packing or wedges: Remove before completion of grouting.

Timing: Grout at supports before constructing supported floors, walls and roofing.

Temperature: Do not grout if the temperature of the base plate or the footing surface exceeds 35°C.

Drifting
Limitation: Use drifting only to bring members into position, without enlarging holes or distorting components.

3.10 REPAIRS

General
Requirement: Repair finishes to restore the full integrity of any coating.

3.11 COMPLETION

Tolerances
Conformance: After completing erection, verify conformance with AS/NZS 5131 Section 12 and Appendix F.

Temporary connections
General: Remove temporary cleats on completion and restore the surface.

0345B STEEL – PROTECTIVE PAINT COATINGS

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide protective paint coatings for the protection of steel products and structural steelwork against interior and exterior atmospheric corrosion, as documented.

Performance

Requirement: Control atmospheric corrosion to structural steelwork and steel products until the first scheduled maintenance.

Period from application to first scheduled maintenance: Refer to protective coatings warranty (25 Years)

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.

1.3 STANDARDS

General

Surface preparation and coating: To AS/NZS 5131 Section 9 and the recommendations of AS 2312.1.

1.4 INTERPRETATION

Abbreviations

General: For the purposes of this worksection the following abbreviations apply:

- DFT: Dry Film Thickness.
- ITP: Inspection and Test Plan.
- MIO: Micaceous Iron Oxide.
- PDS: Product Data Sheet.
- SDS: Safety Data Sheet.
- µm: Micron (10^{-6}m).

Definitions

General: For the purposes of this worksection the definitions given in AS/NZS 2310 and the following apply:

- Coating contractor: The protective coatings application contractor conducting the on- or off-site coating application works.
- Coating manufacturer: The supplier and/or manufacturer of the protective coating materials used.
- Inspection and test plans (ITP): A series of formal inspection and test plans, prepared by the coating contractor to reflect the specific inspection and testing that will be carried out on the surface preparation, coating application and the record keeping tasks to be undertaken.

1.5 SUBMISSIONS

Execution details

Detailing features: If design and fabrication features of the items to be coated may lead to difficulties, identify these and submit details for improvement.

Repair of damaged coating: If the protective coating is damaged, submit a coating repair proposal, based on the coating manufacturer's recommendations for reinstating the corrosion protection function of the system.

Reinstatement: If final coat varies from the submitted sample, submit proposals for reinstatement of the visible final coating system.

Samples

Painting and coating colour: Submit a 400 x 400 mm sample of the finished product for each coating system.

Retention: Retain samples for comparison during application.

Subcontractors

General: Submit names and contact details of proposed suppliers and applicators.

Requirement: Submit proof of currency of the applicator's environmental operating licence.

Substrate acceptance: Submit evidence of applicator's acceptance of the coating substrate before starting installation.

Warranties

General: Submit details of the proposed warranty terms, form and period.

1.6 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Items after fabrication, before commencing surface cleaning and preparation.
- Surfaces after preparation, before application of first coating.
- Coating stages:
  - After application of primer or seal coats.
  - After application of each subsequent coat.
- Repair of coating damage: Exposure of corrosion pitting or significant metal loss by blasting process.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Requirement: Handle, store, mix and apply all protective coatings in conformance with the manufacturer's recommendations.

Original containers: Deliver coating products to site in manufacturer's labelled and sealed containers.

Ambient temperature range for storage: 3°C to 30°C, or to manufacturer's recommendations.

Sunlight: Protect coating materials from direct sunlight before mixing or adding the converter (catalyst).

Use-by-date: Use products with limited shelf life before their use-by-date, unless written authorisation from the coating manufacturer's technical services section is provided.

Proprietary products
Requirement: Provide all products from the one manufacturer's supply.

Product data sheets (PDS): Keep on site copies of all relevant manufacturer's PDS.

Safety data sheets (SDS): Keep on site copies of all relevant manufacturer's SDS.

Recording: To AS/NZS 5131 clause 9.9.5.

3 EXECUTION

3.1 GENERAL

Product warnings
Requirement: Conform to the SDS.

Surroundings
Protection: Prevent the release of abrasives, overspray or paint waste debris into the air, ground or to any watercourse. Prevent damage to other assets, services or equipment.

Reinstatement: Repair and/or clean affected surrounding areas.

Working area
General: Perform all painting under cover and/or protected from rain, condensation, dew, excessive wind, overspray or wind-blown dust.

Period: Continue protection where any of these conditions exist until the coating is no longer affected.

3.2 SURFACE PREPARATION

General
Requirement: Conform to AS/NZS 5131 clauses 9.3, 9.4 and 9.5.

Galvanized, aluminium and zinc primed surfaces
Requirement: Remove grease, oil and other solvent-soluble contaminants to AS 1627.1. Allow to dry and immediately proceed with the next operation.

Galvanized and aluminium surfaces: Abrade surfaces to a medium coarse type finish to provide an adhesion key.

Zinc primed surfaces: If present, remove zinc salts from zinc primers.

Treatment of welds
Requirement: Clean welds to remove roughness, using power tools to AS 1627.2. Remove filings by vacuuming or compressed air.

Temporary welds: Grind flush any temporary welds.

Porous, skip or stitch welds: Not permitted.

Site welding: If possible, avoid site welding. If on site welding is required, prepare and treat the weld to AS/NZS 5131 clause 9.12.2.

Shop priming
Requirement: Dust off and apply a coat of primer in conformance with the manufacturer's recommendations.

Site coating
General: High pressure wash down all surfaces with clean water. Lightly sand down primer/intermediate coats, which have been shop applied, before site application of next coat.

3.3 PREPARATION ASSESSMENT

General
Conformance: Assess all surfaces of each steel member for conformance with the documented preparation requirements.

Abrasive blast cleaning
Assessment: To AS 1627.4 and AS 1627.9.

Mechanical cleaning
Assessment: To AS 1627.9.

Surface profile
General: To AS 3894.5 Method A.

Surface dust from abrasion
General: To AS 3894.6 Method C.

3.4 COATING APPLICATION

General
Requirement: Conform to AS/NZS 5131 clause 9.9 and the PDS.

Painting and coating colour: Verify all project finish colours with the retained samples.

Final surface preparation or coating application
Limits: If the environmental/climatic/substrate conditions listed in AS/NZS 5131 clause 9.9.10 and the following are present do not apply coating:

- Ambient air temperature below 5°C or above 40°C.
- Substrate temperature below 5°C or above 35°C.
- Full prime coat application cannot be carried out before the specified cleanliness of the surface deteriorates.
- Surface preparation standard has not been achieved.
- Time between final surface preparation and the commencement of coating has exceeded 4 hours.
- Visual tarnishing or black spots develop on the surface of the steel.

Exception: Preliminary blast or other surface preparations may be performed in conditions that are outside the limits, providing the final surface preparation and all coating applications are undertaken under the limit conditions.

Pre-coating: Before the spray application of each coating, stripe coat by brush method all edges, welds, seams, rivets, bolts, boltholes (including slots) and difficult to spray areas. Prime the underlying surfaces of replacement bolting, washers and nuts before installation.

Procedure: Conform to the coating order shown in **SELECTIONS, PROTECTIVE PAINT COATING SYSTEMS**.

Subsequent coats: Before applying any subsequent coating layer, make sure the surface condition of the preceding coat conforms to **SELECTIONS,**

PROTECTIVE PAINT COATING SYSTEMS and is clean and free from defects.

3.5 PROTECTION

Contamination

Surfaces: Prevent contamination of coated surface, which are not yet dry, from blasting dust, abrasive or surface preparation debris and any other foreign matter.

Post application care

General: Protect the coating against physical, chemical, or atmospheric damage until all components are fully cured.

Care: Stack and handle all coated items using fabric slings or padded chains. Use soft packaging, carpet strips or other deformable materials between all coated items.

Water ponding: Stack coated items to prevent water ponding.

3.6 COATING REPAIR

Repair of coating damage

Preparation: Feather back by hand or machine sanding all leading edges of intact coating adjacent to the repair, to remove any sharp edge.

Surface contamination: Remove by dusting or blowing down before applying the first coat of paint.

Sequence: Apply the repair coating in the same sequence and manner as the original coating.

Areas damaged without exposing the primer: Wash with a proprietary detergent solution, rinse with clean water and abrade so that edges of sound paint are feathered. Coat the area with the appropriate intermediate and finishing coat materials.

Areas damaged exposing the primer or steel surface: Blast clean to the original standard. Prepare at least 50 mm into the sound coating and to a further feathering zone of approximately 50 mm. Recoat with the documented system to restore the film thickness and integrity over the whole prepared surface including the feathered zone.

Aesthetic reinstatement: If required, repaint to a physical or discernible boundary line.

Defects: If corrosion pitting or areas of significant metal loss and defects are exposed by the blasting process, advise for inspection and have areas passed as being fit for service before proceeding with the coating system.

Timing: Apply the protective coating system within 4 hours of blast cleaning or in any case before visual tarnishing of the steel occurs.

3.7 COMPLETION

General

Joints: On completion, seal all joints and mating surfaces with a compatible polyurethane sealant.

Warranties

Requirement: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the supplier and the applicator.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: As offered by the supplier.

4 SELECTIONS

4.1 PROTECTIVE PAINT COATING SYSTEMS

Location	Primer	Second Coat	Colour
External Steelwork	Refer to Sherwin Williams Specification	Refer to Sherwin Williams Specification	To Be Confirmed

0421 ROOFING – COMBINED

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide a roofing system and associated work, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Ambient climatic conditions
Design rainfall intensity (mm/h) to AS/NZS 3500.3: Refer to Hydraulic Engineers Drawings

Location exposure severity
Exposure severity category: Very Severe

Roof access
Type: Refer to 0193 Building Access Safety Systems

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:

- *0171 General requirements.*

1.3 TOLERANCES

Sheet metal roofing
Supporting members: To AS 1562.1 clause 4.2.3.

1.4 SUBMISSIONS

Certification
Design of glazed roofing: Submit an engineer's certificate confirming conformance to AS 1288.

Operation and maintenance manuals
On completion: Submit a manual of recommendations from the roofing manufacturer or supplier for the maintenance of the roofing system including, frequency of inspection and recommended methods of access, inspection, cleaning, repair and replacement.

Products and materials
Type tests: As appropriate for the project, submit evidence of conformity to the following:

- Metal roofing generally: Roof sheeting and fastenings to AS 1562.1 clause 5.4 for resistance to concentrated load and AS 1562.1 clause 5.5 for resistance to wind pressure.
- Metal roofing in cyclonic regions to AS/NZS 1170.2: Roof sheeting and fastenings to AS 1562.1 clause 5.6.
- Plastic sheet roofing: Roofing and fastenings to AS 1562.3 Section 5 for resistance to wind forces and resistance to impact.

Samples
Requirement: Submit samples of the following, showing the range of variation available:

- Trims and accessories with a colour finish.
- Seamed sheet metal roofing:
  - Custom profiled flashings and cappings.
  - Pre-weathered finish to sheet metal.
  - Sealants.

Shop drawings
General: Submit shop drawings to a scale.

Subcontractors
Installer experience: Submit evidence of experience with non-ferrous, shingle and shake or slate roofing installation.

Warranties
Roofing materials: Submit the manufacturer's published product warranties.

1.5 INSPECTION

Notice
Inspection: Give notice so that inspection may be made of the following:

- Roof supports.
- The parts of the roofing, sarking, vapour barrier, insulation and roof plumbing installation before covering up or concealing.

2 PRODUCTS

2.1 GENERAL

Storage and handling
Storage: Store roofing materials, as follows:

- Metal roofing materials: Away from uncured concrete and masonry, on a level base and not in contact with other materials that cause staining, denting or other surface damage.
- Shingles and shakes: Under cover and clear of the ground, to the manufacturer's recommendations, protected from damage and weather.

Handling: Handle metal roofing materials, as follows:

- Use gloves when handling precoated metal roofing material.
- Use soft soled shoes when fixing or working on roofs.
- Protect edges and surfaces from damage. Do not drag sheets across each other or over other materials.

Safety mesh
Standard: To AS/NZS 4389. Provide Under new transparent roofing typically.

2.2 PROFILED SHEET METAL ROOFING

Standards
Design and materials: To AS 1562.1.

Fasteners
Prefinished exposed fasteners: Finish with an oven baked polymer coating to match the roofing material.

Fastenings to timber battens: Fastenings long enough to penetrate the thickness of the batten without piercing the underside.

Profiled fillers
Type: Purpose-made closed cell polyethylene foam profiled to match the roofing profile.

Location: Provide profiled fillers under flashings to the following:

- Ridges.
- Eaves.
- Lapped joints in roof sheeting.

Insulation spacers
Description: Proprietary spacer system to prevent excessive compression of insulation between roof sheeting and framing.

2.3 SEAMED SHEET METAL ROOFING

General
Description: Sheet metal roll formed into pan profiles, laid with seamed joints on flush finished, continuous plywood sheeting over an underlayer and separation layer.

Plywood sheeting
Standard: To AS/NZS 2269.0:

- Surface grade: DD.
- Bond: Type A.
- Formaldehyde emission class: E_1.

Thickness: 19 mm.

Identification: Sheets labelled under the authority of a recognised certification scheme to *0185 Timber products, finishes and treatment.*

Underlayer
Description: Self-adhesive, rubberised asphalt/polyethylene waterproofing membrane.

Separation layer
Description: Fire-resisting mat of a nylon core of fused entangled filaments.

Components
Solder (tin/lead): 40/60 soft solder.

Flux: Z-04-S.

Sealant: 100% natural cure non-acid based silicone rubber to match roofing.

Fasteners: Starter clips, fixing clips and fastenings to the roofing system supplier's recommendations.

2.4 ROOF PLUMBING

General
Description: Flashings, cappings, gutters, rainheads, outlets, downpipes and accessories necessary to complete the roofing system.

Flashing and capping: Notched to match profile of roof sheeting.

Matching fascia/barge capping: If the selected eaves gutter is a proprietary high front pattern forming part of a combined system of gutter, fascia and barge, provide matching proprietary fascias and barge cappings to roof verges and edges.

Standards
Roof drainage: To AS/NZS 3500.3.

Metal rainwater goods: To AS/NZS 2179.1.

Flashings and cappings: To AS/NZS 2904.

2.5 ROOF HATCHES

General
Description: A proprietary roof hatch system including framing, fixing, trim, seals, accessories and flashings.

2.6 ROOF VENTILATORS

General
Description: A proprietary roof ventilator system including framing, fixing, trim, seals, accessories and flashings.

2.7 ROOF PLANT ACCESS

Walkways
Description: A proprietary roof walkway system including fixings.

3 EXECUTION

3.1 INSTALLATION

Protection
General: Keep the roofing and rainwater system free of debris and loose material during construction.

Thermal movement
Requirement: Allow for thermal movement in the roof installation and the structure, including movement in joints and fastenings.

Pan type sheets
Removal: Install sheets so that individual sheets can be removed without damage.

Curved corrugated sheet
General: Form by rolling from material recommended for curving or bullnosing. Minimise crimping or creasing across the face of the sheet. Trim off crimped or creased edges and ends.

Metal separation
Requirement: Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by one of the following methods:

- Applying an anti-corrosion, low moisture transmission coating to contact surfaces.
- Inserting a separation layer.

3.2 PROFILED SHEET METAL ROOFING

Installation
Standard: To AS 1562.1.

Setout: Laying of sheet metal roofing to proceed in a direction from the leeward to the windward side of the prevailing wind.

Fastener type, size, corrosion resistance class, and spacing: To the sheet metal roofing manufacturer's recommendations.

Swarf: Remove swarf and other debris as soon as it is deposited.

Accessories: Provide accessories with the same finish as roofing sheets to complete the roofing installation.

Ridges and eaves
Sheet ends: Treat as follows:

- Project sheets 50 mm into gutters.
- Close off ribs at bottom of sheets using mechanical means or with purpose-made fillers or end caps.
- Turn pans of sheets up at tops and down into gutters by mechanical means.
- Provide pre-cut notched eaves flashing and bird proofing if required.
- Close off ridges with purpose-made ridge fillers of closed cell polyethylene foam.

Ridge and barge
Capping: Finish off along ridge and verge lines with purpose-made ridge capping or barge rolls.

Sprung curved ridge
General: Lay the roofing sheets in single lengths from eaves to eaves by naturally curving the sheets over the ridge.

Ridge: Seal side laps at the ridge and extend the sealant to the point where the roof pitch equals the recommended pitch of the roofing profile.

End laps
General: If end laps are unavoidable, and the sheet profile is not suitable for interlocking or contact end laps, construct a stepped type lap.

3.3 SEAMED SHEET METAL ROOFING

Plywood sheeting
Installation: Lay the length of the sheets at right angles to the supports.

End joints: Stagger the end joints and locate centrally over framing members.

Edge support: If panels are not tongue and grooved, provide noggings or trimmer joists to support the edges.

Fixing, 300 mm centres to each support:

- Timber: Adhesive and nail.
- Steel: Metal-coated, self-drilling/tapping screws with the heads finishing below the surface.

Control joints: 12 mm gap at abutting building elements.

Fabrication
Requirement: Factory fabricate roofing trays.

Minimum bending radius: 1.75 mm.

Fixing
Method: Fix pans to the plywood sheeting with concealed clips at 250 mm maximum centres.

Seams
Roof pitch < 25°: Double standing seam.

Walls and roof pitches > 25°: Roll cap seam.

Method: Mechanically form and welt seal in situ using a self-propelled seaming machine, to stand 25 mm high on completion. Dress seams flat at gutters, ridges and hips, and fold both pan and seam down into gutters and up to form stop ends at ridges and hips.

Ridge and hip capping
Installation: Lock welt to the upturn of the roofing.

3.4 ROOF PLUMBING

Jointing sheet metal rainwater goods

Butt joints: Make joints over a backing strip of the same material.

Soldered joints: Do not solder aluminium or aluminium/zinc-coated steel.

Sealing: Seal fasteners and mechanically fastened joints. Fill the holes of blind rivets with silicone sealant.

Flashings

Installation: Flash roof junctions, upstands, abutments and projections through the roof. Preform to required shapes if possible. Notch, scribe, flute or dress down as necessary to follow the profile of adjacent surfaces. Mitre angles and lap joints 150 mm in running lengths. Provide matching expansion joints at 6 m maximum intervals.

Upstands: Flash projections above or through the roof with two part flashings, consisting of a base flashing and a cover flashing, with at least 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Large penetrations in low pitch roofs: Extend the base flashing over the roofing ribs to the ridge to prevent ponding behind the penetrating element.

Wall abutments: Where a roof abuts a wall, provide as follows:

- In masonry walls, planked cladding or concrete: Step in courses to the roof slope. Interleave with damp proof course, if any.
- Raking in masonry: Build into the full width of the outer leaf. Turn up within cavity, slope inward across the cavity and fix to or build into the inner leaf at least 75 mm above the roofing line.
- Raking in concrete: Turn 25 mm into joints or grooves, wedge at 200 mm centres with compatible material and point up.

Fixing to pipes: Solder or seal with neutral cured silicone rubber and either of the following:

- Secure with a clamping ring.
- Provide a proprietary flexible clamping shoe with attached metal surround flashing.

Gutters

Gutter and sump support: Provide framing and lining to support valley gutters, box gutters and sumps. Line the whole area under the gutters and sumps.

Support: Steel framing

Lining: Lysaght Spandek, Colorbond Ultra

Box gutter: Prefabricate box gutters to the required section and shape. Form stop ends, downpipe nozzles, bends and returns. Dress downpipe nozzles into outlets.

- Hail guards: Install grating over the whole of the box gutter, over all box gutter sumps and over the edges of roofing sheeting entering box gutters.
- Overflows: Provide overflows to prevent back-flooding. Size to pass 100% of the design rainfall. Discharge overflows in visible locations and so water does not enter the building or cause damage to the building.
- Sumps: Minimum 150 mm deep and the full width of the box gutter.

Valley gutters: Profile to suit the valley boarding. Turn back both edges 180 x 6 mm radius. Nail or screw to the valley boarding at the top end to prevent the gutter creeping downwards.

Expansion joints in guttering longer than 30 m: Provide as follows:

- Type: Proprietary System

Gratings: Install removable gratings over rainheads and sumps.

Leaf guard location: All gutters

External downpipes

General: Prefabricate downpipes to the required section and shape where possible. Connect heads to gutter outlets and, if applicable, connect feet to rainwater drains.

Access cover: Provide a removable watertight access cover at the foot of each downpipe stack.

Downpipe support: Provide supports and fixings for downpipes.

Internal downpipes

Access: Provide access openings as follows:

- At each junction and bend.
- At the foot of each stack.
- At every second floor level.

Acoustic insulation: Mineral fibre pipe insulation 50 mm thick, spirally bound on with 1.5 mm wire at 150 mm pitch.

Building in: If pipes are built into masonry or concrete, spiral wrap the pipe (and insulation, if any) with building paper.

Rainwater disposal

System: See hydraulic / civil engineers drawings.

3.5 PLASTIC SHEET ROOFING

Installation

Standard: To AS 1562.3.

Fixing: Roofing screws with neoprene washers in oversized holes. Consult the manufacturer.

Fixing to timber: 30 mm minimum penetration.

3.6 COMPLETION

Reinstatement

Extent: Repair or replace damage to the roofing and rainwater system. If the work cannot be repaired satisfactorily, replace the whole area affected.

Touch up: If it is necessary to touch up minor damage to prepainted metal roofing, do not use spray paints.

Cleaning

Roofing and rainwater drainage system: Remove debris, metal swarf, solder, sealants and unused materials.

Exposed metal surfaces: Clean surfaces of substances that interfere with uniform weathering or oxidisation.

Roof plumbing: Clean out spoutings, gutters and rainwater pipes after completion of roof installation.

Warranties

Requirement: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the supplier and installer.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: As offered by the supplier/manufacturer.

4 SELECTIONS

Refer to drawings and roofing suppliers specifications

Derwent Entertainment Centre
601 Brooker Highway
Glenorchy
TAS 7010
Australia

PhilpLighton Architects Pty Ltd
65 Tamar Street
Launceston
TAS 7250
Australia
T: 03 6331 2133
E: [redacted]
W: www.philplighton.com.au

Standard Specification Derwent Entertainment Centre

23 September 2021
Reference: Derwent Entertainment Centre
Document No: Phi-Derwe-Glenorchy
Revision: 1

1. Scope

This specification applies to the supply, delivery, erection and fixing of Fielders FreeForm® sheeting and accessories including fasteners, moldings, flashing, roofing ventilation shown on the Drawings and/or as necessary for completion of the Works.

2. General requirements

2.1 Standards

Unless noted otherwise, all Works shall be performed in accordance with the relevant Australian Standard or International Standard in the absence of an Australian Standard, including those listed in Table 2-1.

Table 2-1 Primary Reference Standards

Standard	Title
AS 1562.1	Design and Installation of Sheet Roof and Wall Cladding
AS 1170.2	Structural Design, Wind Actions
AS 4040.0	Methods of Testing Sheet Roof and Wall Cladding
AS 4040.1	

Table 2-2 Secondary Reference Standards

Standard	Link
Published Design	https://specifying.fielders.com.au/freeform/
Installation Guide	https://specifying.fielders.com.au/freeform/installation-guide.pdf

2.2 Test Requirements

Sheeting materials, flashing and fasteners to be installed under this Contract must be certified or type tested as having capacity for concentrated, static and fatigue loads in accordance with AS 1562 based on the following conditions:

A concentrated load of 100 kg; and wind pressures derived in accordance with AS 1170 Part 2 for an average recurrence interval of 3 years, Cyclonic - Region C, 1.5 Terrain Category.

Testing is required from a NATA registered facility to demonstrate that each type and thickness of material together with the fasteners is capable of withstanding the applicable loads from the most extreme combination of wind pressure and purlin/girt spacing shown on the Drawings.

Roof sheeting to have tested capacities using the Low-High-Low Cyclonic testing methodology in accordance with the Building Code of Australia.

2.3 Weatherproofing

The whole of the cladding system shall be made weatherproof. Flashings, moldings, sealants and other accessories necessary to achieve this shall be supplied and installed in accordance with the cladding manufacturer's recommendations.

3. Quality control

An accredited Quality Control System in accordance with ISO 9001 shall be implemented for cladding on the project. Inspection and Test Plans (ITPs) shall be submitted to PhilpLighton Architects Pty Ltd for review and acceptance prior to procuring sheeting and associated materials.

4. Roofing

4.1 Pre-Painted Aluminum sheeting

Sheeting shall be high strength marine grade aluminum alloy 5251 or 5052 (H38 temper) in accordance with AS 1734, to minimum thickness of 0.9mm BMT.

Fielders FreeForm® cladding at 400mm cover, shall be sprung curved on site to match design curvature, unless noted otherwise.

Sheeting shall be installed in accordance with the manufacturer's recommendations and with the longer trough dimensions as pans against supporting steelwork and concealed fixings under the shorter crests.

The surface finish of aluminum sheeting and flashing shall be pre-painted as specified in the section referring to pre-painted finish to aluminum sheeting and flashing.

4.2 Pre-painted finish to aluminum sheeting and flashing

The sheet shall be pre-painted as per BlueScope standard pre-painted Aluminum specification in Glacier White™.

The paint shall be continuously roller coated to the pre-treated strip and cured by baking or stoving as recommended by the coating manufacturer.

The minimum dry film thickness of the finished coating shall be 25 microns and the finished surface shall be commercially smooth and free from flaw lines, streaks, blisters or other surface imperfections.

The pre-painted finish specified above shall apply equally to flashings, corner molds, barge molds and the like in the above-mentioned areas.

4.3 Flashings and accessories

Flashings shall be neatly scribed fully down into the profile of the sheeting and secured in accordance with the requirements of the design criteria but of a standard not less than that shown on the Drawings.

Notwithstanding the details of various flashings shown on the Drawings, the CONTRACTOR shall check these details and satisfy itself of their suitability to provide weatherproof joints or provide alternative flashing details, subject to acceptance by the OWNER, necessary to satisfy this requirement. Where laps occur in flashings, appropriate Neutral Cure Silicone sealant shall be used to seal the joint effectively.

Unless shown otherwise on the Drawings, flashing and other accessories shall be factory fabricated from 0.9mm minimum base metal thickness, and of the same finish as the external surface of the adjacent sheeting.

4.4 Gutters and downpipes

Gutters, downpipes and other rainwater goods shall be in accordance with AS 2179 and AS 2180.

Gutters, downpipes and accessories shall be factory designed and fabricated from the same material grade as the sheeting, and of the same finish to the external surface of the adjacent wall or eaves cladding.

Minimum thickness for external gutters and downpipes shall be 0.9mm. Minimum thickness for box gutters shall be 1.2mm. Box Gutters shall be designed and installed in accordance with AS/NZS3500.3:2003, AS/NZS 2179.1:1994, HB114:1998 and be fully supported as per manufacturer's recommendations.

Gutters and downpipes shall be supplied to site as single units. Joints are not permitted in spans less than stock lengths.

Gutters shall be supported at a maximum of 1200 mm centres and shall be suitably sloped to ensure that ponding of water does not occur under any circumstances minimum fall 1:200.

The downpipes shall be supported at ground level and securely fixed to the walls.

4.5 Fasteners

Complete details of fastener types and spacing for structures shall be submitted to the OWNER prior to commencing installation. These details shall be prepared by the cladding installer so as to be capable of withstanding wind pressures and test requirements specified in Section 2.2.

Fasteners shall be fixed in accordance with the manufacturer's recommendations for the site.

The fasteners shall be designed so that the enclosed area is waterproof under all temperatures, wind and other conditions reasonably anticipated at the site and for associated movements of the cladding.

They shall be manufactured from Grade 304 stainless steel and shall be installed with isolation media so as not to induce electrolytic action with either the aluminum cladding or structural steel framing.

Table 9-1 Use of Fasteners

Use	**Fastener**
Clips / Towers - Structural Connection of sheeting to Building	Clips shall be Supplied by the Cladding manufacturer and shall be cast aluminum CA401 Alloy F1 Temper. Clips shall be isolated from Steel structural members via PVC isolation tape of a min thickness of 250microns.
Clip / Towers -fixing screws	12g - 14 x 20 304ss Self drilling Hex screw with Neo Seal
Flashings to Sheeting	12g - 11 x 20 304ss stitching Hex screw with 16mm

	bonded aluminum washer

5. Handling and storage

Sheeting shall be kept dry in transit and on site to prevent water and/or condensation being trapped between adjacent surfaces. No stained or damaged sheeting shall be built into the finished work. Packs of sheet standing on site shall be stored clear of ground. Sheets shall be handled using clean dry gloves.

Given the outdoor nature of roofing and walling erection it is recommended that suitable precautions be taken to prevent personal sun damage. It has been found that sunscreens containing semi-conducting metal oxides such as titanium dioxide (TiO2) and zinc oxide (ZnO) can accelerate the degradation of organic materials, including paint systems. For personal safety, and to protect the surface of Fielders FreeForm®, it is recommended to:

- Wear clean, dry, cut-resistant gloves that are suitable for the task;
- Take suitable precautions against personal sun damage; and
- Prevent contact of the painted surface with sunscreens that contain titanium dioxide (TiO2) and zinc oxide (ZnO).

6. Installation

Consideration shall be given to the timing of installation of cladding relative to that of the supporting structure to avoid distortion of the sheeting and/or fixings or otherwise compromising the integrity of the cladding system.

Where required, due allowance shall be made for scaffolding and staging to carry out the work in a safe and workmanlike manner.

Work shall be erected plumb, level and square and in proper alignment and relationship to work of other trades. Sheet profiles shall not to be distorted or spread during fixing, and centre lines of sheet laps must be maintained at the nominated cover width. Scalloped accessories are to be fixed at the time and as part of the operation of fixing the sheet. The whole of the Works shall be erected and fixed in accordance with the manufacturer's recommendations so that there will be no objectionable distortion or stressing of the fastening from thermal movement or other causes. Sheeting, flashings, moldings and accessories shall be securely fixed in position and the whole of the work shall be weatherproof and bird proof on completion.

Fastening holes must be drilled square to the work to ensure correct sealing and weather tightness.

Holes are to be drilled using non-burring drills and not punched through the sheet.

Any cutting required shall be done in such a manner so as to avoid distortion of the sheeting. To ensure accurate fitting of facias, scalloped flashings and eaves filler strips, each are to be fixed at the same time and as part of the operation of fixing sheeting.

Corner molds, barge molds and the like shall be fastened to each sheeting support member through crests of the sheeting, and at a maximum spacing of every rib between supporting members.

Partially fixed and unfixed sheets shall be secured from being blown away at all times.

7. Isolation of aluminum and steel/timber

Where aluminum sheeting or edge angles are to be in contact with painted or galvanised steel surfaces, a suitable isolating medium shall be provided between the two metals. This shall be a PVC tape with a minimum thickness of 250 microns or Tremco Alta 300-40 isolation tape, or approved equivalent, applied in accordance with the manufacturer's recommendations.

This isolation methodology should also be used when aluminum is to be in direct contact with timber products.

8. Ventilation

8.1 Roof ventilators

Roof ventilators shall be manufactured from the same material as the roof cladding and shall be designed suitable for installation adopting the design wind velocity specified in Section 2.2.

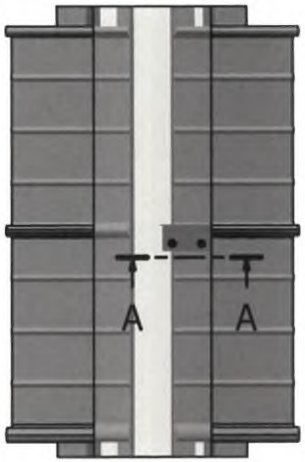
Roof ventilators shall be installed in accordance with the manufacturer's recommendations and shall be bird proof and weatherproof upon completion of installation.

8. Cleaning up

The roof shall be swept clean of debris (nuts, screws, cuttings, fillings etc.) using a soft broom on completion of fixings. Rubbish and debris including off-cuts, loose fastenings, broken drills and the like shall be removed from the site prior to completion of the Works.

All drill filings shall be removed, including those on purlins, in gutters and any other part of the roofing structure.

DO NOT SCALE - DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE



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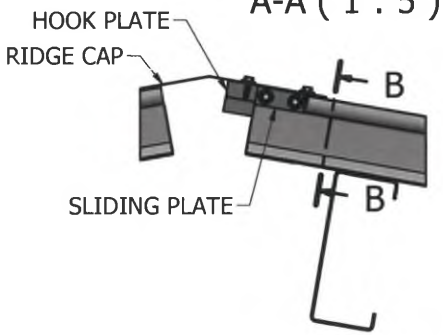

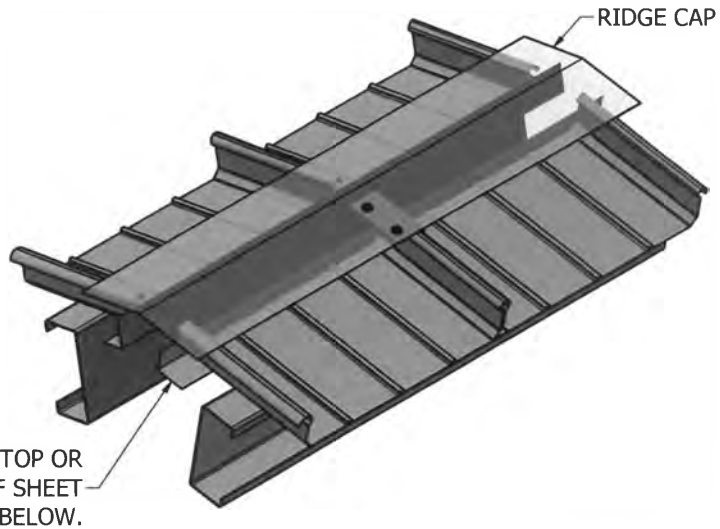

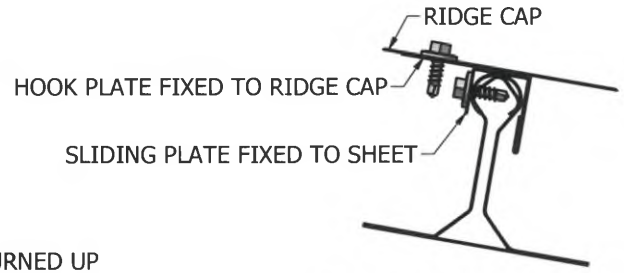

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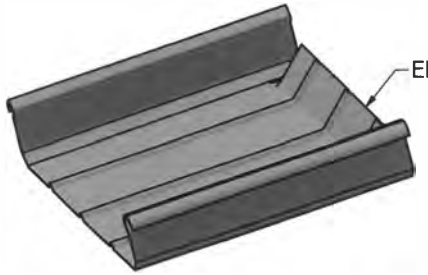
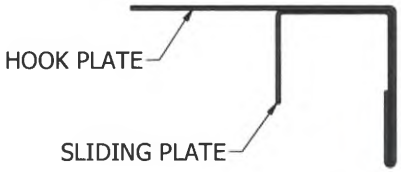




DETAIL VIEW
SCALE 1:1

NOTE: SAMPLE ONLY, ACTUAL SIZES, SPACING AND FIXINGS TO BE VERIFIED BY A STRUCTURAL ENGINEER.

ISSUE	REVISION DESCRIPTION	DRAWN	DATE
A	END TURNED UP OPTION ADDED	T.W	23/09/21

TOLERANCES
UNLES OTHERWISE STATED
0 DEC ± 1.0
1 DEC ± 0.5
2 DEC ± 0.1
HOLES + 0.5 - 0.0

	NAME	DATE
DRAWN	T.W	15/10/2015
CHECKED	N.J	16/04/2019
APPROVED	N.J	16/04/2019

FIELDERS
FINISH ON TOP
213 RAILWAY TCE
KESWICK TERMINAL SA 5035
Ph: 08 8292 3611
Fax: 08 8292 3626

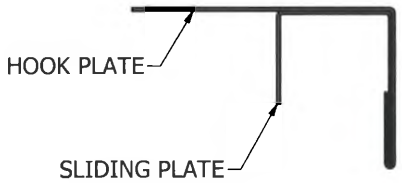
MATERIAL
COLOUR
FINISH

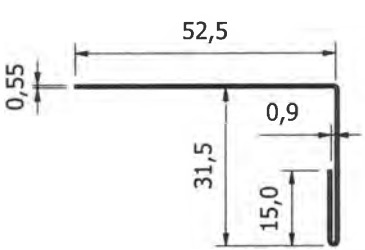
DESCRIPTION
FREEFORM SLIDING BRACKET

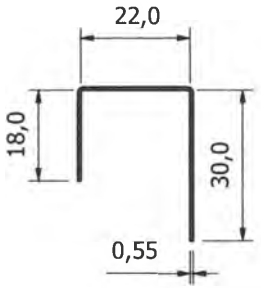
SCALE @ A3
1:10
SHEET
1 OF 2

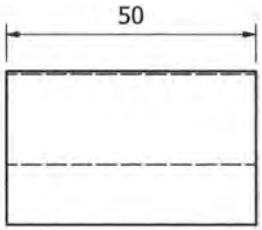
DWG NO
ACC19002

DO NOT SCALE - DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE









NOTE: SAMPLE ONLY, ACTUAL SIZES, SPACING AND FIXINGS TO BE VERIFIED BY A STRUCTURAL ENGINEER.

ISSUE	REVISION DESCRIPTION	DRAWN	DATE

TOLERANCES
UNLES OTHERWISE STATED
0 DEC ± 1.0
1 DEC ± 0.5
2 DEC ± 0.1
HOLES + 0.5 - 0.0

	NAME	DATE
DRAWN	T.W	15/10/2015
CHECKED	N.J	16/04/2019
APPROVED	N.J	16/04/2019

FIELDERS
FINISH ON TOP
213 RAILWAY TCE
KESWICK TERMINAL SA 5035
Ph: 08 8292 3611
Fax: 08 8292 3626

MATERIAL
COLOUR
FINISH

DESCRIPTION
FREEFORM SLIDING BRACKET

SCALE @ A3
1:10
SHEET
2 OF 2

DWG NO
ACC19002

FreeForm™ Installation Guide

1.1 INTRODUCTION

FreeForm™ is engineered for ultimate design flexibility in varying construction applications from single skin roof applications, vertical walls, conical tapered roofing and built up roof system applications. Available in both COLORBOND® steel and aluminium finishes, Fielders has the ability to roll the material onsite to any length or size using the Fielders Mobile Mill® roll former.

FreeForm™ panels accommodate the most complex roof configurations including curved surfaces allowing smooth transitions between roof planes and between the roof and other building elements

The unique tapering can be done from our standard 400mm profile and reduce to 220mm. This allows curved buildings like sports stadia to be accommodated with ease.

Our products are engineered to perform according to our specifications only if they are used in the appropriate conditions and installed to the recommendations in this manual and our other publications. Where we recommend use of third party materials, ensure you check the qualities and capabilities of those products with the relevant manufacturer before use.

The FreeForm™ concealed fix, standing seam system is a roofing system with an innovative architectural appearance. Its flexible design combines with G300 COLORBOND® steel from BlueScope Steel or 5251 H38 marine grade aluminium to provide outstanding watertightness, durability and stunning aesthetics. A variety of end panels and ridge covers cap off the most complex roof designs.

Benefits

The benefits of FreeForm™ cladding include:

- A concealed fixing system that requires no piercing fasteners and helps provide watertightness and superior resistance to wind uplift and harsh corrosive environments.
- It is available in tapered and curved shapes to meet the most challenging design conditions providing unparalleled design freedom.
- The ability to rollform on-site to allow for long continuous roof lines eliminating concerns regarding transportability of sheet lengths.
- Innovative clip system provides superior resistance to wind uplift whilst readily allowing for thermal expansion of long roof runs.
- Wide pans with distinctive ribs not only provide for a dynamic aesthetic but allow for roof pitches as low as 1.5 degrees with excellent water carrying capacity.

Sheeting

Whilst the standard FreeForm™ cover width is 400mm, FreeForm™ is able to be tapered down to 220mm or expanded out to maximum 480mm cover width for special designs. FreeForm™ can be manufactured in a range to meet the most irregular shapes required.

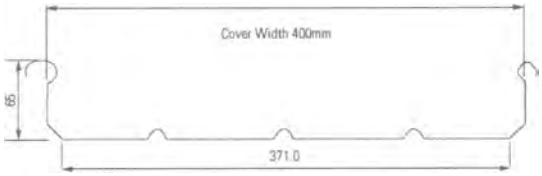
Fixings

FreeForm™ fixing towers are cast from CA401-F1 structural grade aluminium. Clips sit flat on the purlin. If insulation is required we recommend the use of the J-Clip roof-raiser system.

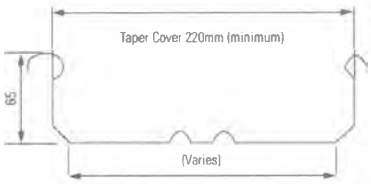
The shape of the fixing tower has been carefully designed to maximise strength, in both outward (wind uplift) and inward load forces. The head of the fixing tower accurately matches the FreeForm™ sheeting, to ensure the sheets slide freely during thermal movement.

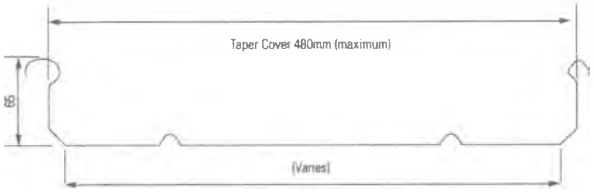
Fixing towers are affixed to the structure with Glass 5 (for FreeForm™ steel) or 304SS (for FreeForm™ Aluminium) screws to ensure maximum performance in corrosive environments.

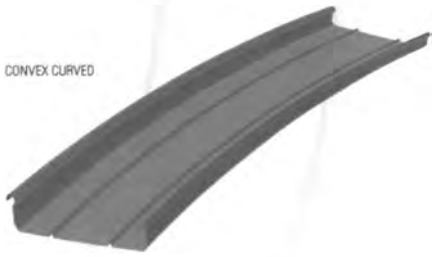
FreeForm™ 400 profile (2 or 3 Swage)



FreeForm™ 220-400 Taper profile (2 Swage)







**Please note: Concave can be sprung to a limit of 80m. Crank curving not available with concave applications.

1.2 MATERIAL SPECIFICATION

Table 1.1

Material	Yield (MPA)
Next generation ZINCALUME® steel aluminium/zinc/magnesium alloy coated steel complies with AS 1397:2011 G300, AM125 (300 MPa minimum yield stress, 125g/m² minimum coating mass).	300
COLORBOND® steel is pre-painted steel for exterior roofing and walling. It is the most widely used. The painting complies with AS/NZS 2728:2013 and the steel base is an aluminium / zinc alloy-coated steel complying with AS 1397:2011. Minimum yield strengths for the FreeForm™ range is G300 (300 MPa). Minimum coating mass is AM100 (100g/m²) plus paint coating mass.	300
COLORBOND® Metallic steel is pre-painted steel for superior aesthetic qualities displaying a metallic sheen. Minimum coating mass is AM100 (100g/m²) plus paint coating mass.	300
COLORBOND® Matt steel is pre-painted steel offering a softer look in neutral tones for a sophisticated design statement. Minimum Coating mass is AM100 (110g/m²) plus paint coating mass.	300
COLORBOND® Ultra steel is pre-painted steel for severe coastal or industrial environments (generally within about 100m - 200m of the source). The painting complies with AS/NZS 2728:2013 and the steel base is an aluminium/zinc alloy-coated steel complying with AS 1397:2011. Minimum coating mass is AM150 (150g/m²) plus paint coating mass.	300
Aluminium Mill finish Marine Grade Aluminium alloy 5251 / 5052 H38 Temper is suitable for severe coastal or industrial environments (generally within 0m - 500m of the source).	260/270
Prepainted Marine Grade Aluminium alloy 5251 / 5052 H38 Temper is suitable for severe coastal or industrial environments (generally within 0m - 500m of the source) The painting complies with AS/NZS 2728:2013.	260/270

Table 1.2 Minimum Radius for Curving

		Min Radii (m)		
				
Smooth Pre Curve	**BMT**	**Convex**	**Concave**	**Max Support C/C (m)**
"G300 ZINCALUME® steel or COLORBOND® steel"	0.55	6	8	1.5
	0.75	8	10	1.8
Pre-painted Marine Grade 5251 H38 Aluminium	0.9	2	8	1.5
	1.2	4	12	1.8
Crank Curve	**BMT**	**Convex**	**Concave**	**Max Support C/C (m)**
"G300 ZINCALUME® steel or COLORBOND® steel"	0.55	2	1	1.5
	0.75	3	2	1.8
Pre-painted Marine Grade 5251 H38 Aluminium	0.9	2	1	1.5
	1.2	3	2	1.8
Spring Curve	**BMT**	**Convex**	**Concave**	**Max Support C/C (m)**
"G300 ZINCALUME® steel or COLORBOND® steel"	0.55	80	90	1.5
	0.75	90	100	1.8
Pre-painted Marine Grade 5251 H38 Aluminium	0.9	45	50	1.6
	1.2	50	55	1.8

Thermal Expansion

Long continuous sheet lengths require careful consideration of thermal behaviour. The FreeForm™ system considers this movement by allowing the FreeForm™ profile to slide freely over the fixing tower system. This eliminates thermal buckling of the cladding profile. Due care should be given to the seaming process during installation, as movement of the system is dependent on accurate seam control. Attention should also be given to transverse flashings/ penetrations to ensure longitudinal movement is not negatively affected. The changes in length depend on the material type, and its corresponding coefficient.

The change in length can be calculated using the following equation:

EL(mm) = Length (m) x TC x CO

Where:
EL = increase in length (mm)
Length = original length (m)
TC = change in temperature (C°)
CO = For Aluminium the expansion co-efficient is 0.024
For Steel the expansion coefficient is 0.013

Careful detailing is required for long lengths to avoid leaks.

1.3 INSTALLATION PROCESS

Fixing towers are screw fixed to supporting purlins with selfdrilling 12-14 x 25 Screw. For Steel applications this should have a min class 5 protective coating. For aluminum applications these should be 304 grade Stainless Steel. Where possible, the direction of installation should be toward the prevailing weather conditions. This ensures that the overlap locates on the leeward side.

Lateral Spacing of the Fixing Towers

Lateral spacing of the fixing towers depends on the FreeForm™ profile being used. For best results fixing towers should be spaced with a cover width plus 2.0mm. For example for standard straight FreeForm™ 400mm cover, the fixing tower spacing is ideally at 402mm. For curved roofs, increase the spacing an extra 3-5mm depending on the radius of the FreeForm™ sheeting.

Longitudinal Spacing of Fixing Towers

Longitudinal spacing of fixing towers (or cladding span) is determined using the load capacity FreeForm™ tables included in this manual. Careful consideration should be given to areas of the structure which experience high localised loads e.g. edges of the building. It is common to reduce spacing's of fixing towers in this area. To ensure adequate thermal movement of the system is maintained, lateral spacing of fixing towers must be carefully aligned longitudinally during installation.

Flashing Fixing Details

Flashings are screw-fixed to the FreeForm™ sliding bracket assembly with 12x20 stitching screws for steel applications this should have a min class 5 protective coating. For aluminum applications these should be 304 grade Stainless Steel at each rib transversely or at max. 500mm c/c longitudinally as per Figure 1.9.

Timber and Metal Compatibility

Under no circumstances should steel, lead, copper, brass, or copper alloys be placed in contact with Aluminium, ZINCALUME® steel or COLORBOND® steel.

Care must be taken to avoid contact with building materials such as unseasoned or chemically treated timber, lime cement, concrete, mortar or plaster during construction and to provide impermeable barriers against long term contact.

If there are doubts about the compatibility of other products being used, seek advice from our technical representative. See tables 1.3 and 1.4 for direct contact and rainwater discharge compatibility issues.

General Installation Process

NOTE: This procedure provides an overview of some the main steps involved to install a FreeForm™ roof. Each roof is different and careful consideration should be given to the project specific work method before commencing work on site. This document does not replace a SWMS or risk assessment for the process. It is intended as a guide to assist in the installation of this specialised product.

Step 1

Lay first sheet onto roof and align edge with end of building.

Step 2

Install clips into under lap rib (diamond formed edge) beside each purlin. When clips are in place they can be slid along the sheet to line up accurately with the purlin.

To insert the clip hold it horizontal to the sheet with the top under the lip. Rotate the clip applying pressure to the base until it 'clips' into place and is vertical as shown in the photos.

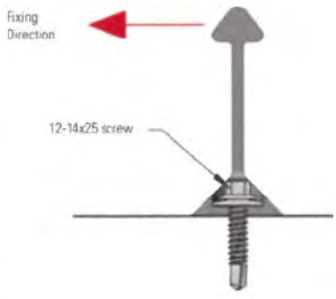
Step 3

Line clip up with the purlin ready to secure it into position.

Step 4

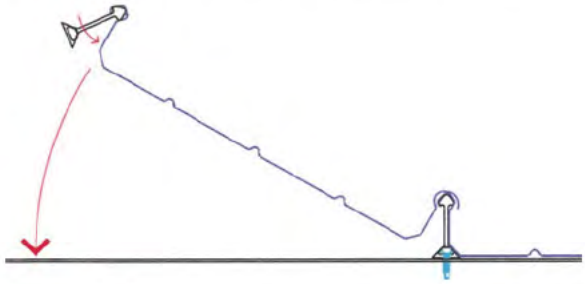
Screw clip to purlin with appropriate tek screws. A longer (150mm) hex head driver bit will assist here to clear the top of the sheet.

FreeForm™ fixing clips are screwed into the purlins oriented to allow for the desired direction of the ribs.



Step 5

The male and female ribs on the clips are fixed by overlapping the female rib over the male rib of the previous sheet.



Lift next sheet onto roof and place next to installed sheet.

Lift sheet up to 45° to hold 'over' (radius formed edge of sheet) above the top of under.

Several people spread along the length of the sheet may be required to help align it.

The sheet shown in the photo above is not properly engaged. The over needs to cover the under completely with the edge of the over touching the vertical face of the previous sheet.

Step 6

Rotate the sheet down to horizontal which will engage the over completely over the under.

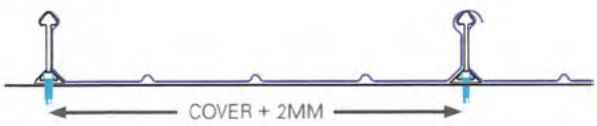


Figure 1.7: Lateral spacing of the fixing towers.

Figure 1.8: FreeForm™ detail of lap before seaming.

Step 7

Align the end of the sheet.

Step 8

Using the manual large hand crimpers, crimp the end 150mm of the seam.

Step 9

Split the electric seamer by lowering the side locking bar and pulling both sides of the tool apart. Place the seamer over the roof seam joint with the front set of rollers over the section of the seam that was manually crimped.

Step 10

Close up the electric seamer with the side locking bar. It may need to be rolled back or forth on the roof to engage the gears connected to the rollers.

Step 11

Ensure the trigger on the seamer is not locked in. Connect the extension cable supplied with the machine to a 240V power outlet. Connect the seamer to the extension cord and secure in place with the locking plug.

Step 12

Turn the power on and the extension lead switch on. Using the trigger on the seamer 'jog' it along 500mm of the seam to ensure it is engaged and seaming. Release the trigger.

Step 13

Turn the power off at the extension lead switch and lock in the trigger switch on the tool.

The seamer can now be controlled with the extension lead switch. Watch to ensure the lead doesn't get caught on anything or run over by the seamer.

Step 14

When seaming is completed correctly the edge of the material on the over should be pushed right in and touching the vertical section of the previous sheet.

Table 1.3: Compatibility of direct contact between metals or alloys

Roof Drainage System Components and Any Cladding Material	Accessories or Fastener or (Upper Surface)								
	ZINCALUME® steel	Galvanised steel	Zinc	COLORBOND® steel Including Ultra, Metallic and Matt	COLORBOND® Stainless	Stainless Steel [3]	Aluminium Alloys	Copper & Copper Alloys [1]	Lead
Aluminium Alloys	No [4]	No	Yes	No	No	Yes	Yes	No	No
ZINCALUME® steel [4]	Yes	Yes	Yes	Yes	No	No	No	No	No
Galvanised steel [4]	Yes	Yes	Yes	Yes	No	No	No	No	No
Zinc	Yes	Yes	Yes	Yes	No	No	Yes	No	No
COLORBOND® steel (Plus Ultra, Metallic & Matt)	Yes	Yes	Yes	No	No	No	No	No	No
COLORBOND® Stainless steel	No	No	No	No	Yes	Yes	No	No	No
Stainless steel	No	No	No	No	Yes	Yes	No	No	No
Copper and Copper Alloys [3]	No	No	No	No	No	No	No	Yes	No
Lead	No	No	No	No	No	No	No	Yes	Yes

(1) Monel - copper/nickel alloy. (2) For further guidance refer to AS/NZS 3500.3:2003. (3) Fixings only. (4) Our experience is that these materials are not compatible in extremely corrosive environments, so our advice differs from AS/NZS 3500.3:2003

Table 1.4: Acceptability of drainage from an upper surface to a lower metal surface

Lower Roof Drainage System Material	Upper Cladding or Roof Drainage System Material									
	ZINCALUME® steel	Galvanised steel	Zinc	COLORBOND® steel Including Ultra, Metallic and Matt	COLORBOND® Stainless steel	Stainless Steel	Aluminium Alloys	Copper & Copper Alloys [1]	Lead	Glazed Tiles, Glass and Plastic
Aluminium Alloys	No	No	Yes [3]	Yes	Yes	Yes	Yes	No	No	Yes
ZINCALUME® steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes(3)	No	No	Yes
Galvanised steel [4]	No	Yes	Yes	No	No	No	No	No	Yes	No
Zinc	No	Yes	Yes	No	No	No	No	No	Yes	No
COLORBOND® steel (Plus Ultra, Metallic & Matt)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
COLORBOND® Stainless steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Stainless steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Copper and Copper Alloys [1]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(1) Monel - copper/nickel alloy. (2) For further guidance refer to AS/NZS 3500.3.2003. (3) Our experience is that these materials are not compatible in extremely corrosive environments, so our advice differs from AS/NZS 3500.3:2003

1.4 FLASHINGS

Purpose of Flashing

Flashings are not only required to provide weather-resistance to the many junctions on a roof or wall structure, but are also a very visible part of the roof and wall cladding design, and perform an important role in the aesthetic appearance of the building. The following sections should be considered as a guide only. For a comprehensive account of flashing guidelines, refer to HB39-1997.

Similar methods of flashing are used for different cladding profiles. You can adapt the principles to suit your application. In all cases it is important to have ample cover provided by the flashing and proper turn-up of the cladding underneath. Be careful when moving between supports. Do not walk on the ridge immediately adjacent to flashings or translucent sheeting. Walk at least one pan away.

All flashings must be designed to prevent ponding of water or build-up of debris. Flashings must be designed to provide weather-resistance for the roof or wall cladding without reliance on sealant as the prime means of providing weather-resistance.

Flashing Materials

It is very important that flashings be made from materials that are compatible with the cladding (see Dissimilar Metals Tables 1.3 and 1.4). Flashings should conform to AS/NZS 2179.1:1994. Materials for flashings are available in the full range of material specification

Roof Flashing

The correct installation of flashings to seal the roof perimeters or penetrations is essential to the security and weather tightness of the roof. Consideration should be given to movement between the roof and building walls and to length expansion of flashings.

Allowance needs to be made for expansion and contraction of long runs of roof sheets to ensure that flashings do not constrain this movement or are strained by movement. To this end FreeForm™ flashing sliding brackets should be used as per Figure 1.11 to 1.14.

Fielders is able to supply a range of flashings which are provided to the same metal specification as the roofing sheet.

Figure 1.11: Barge flashing

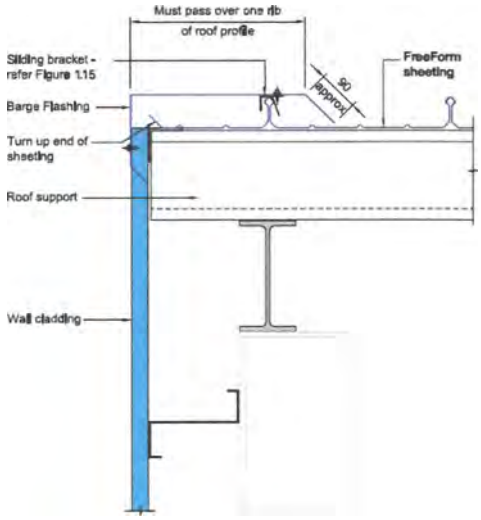
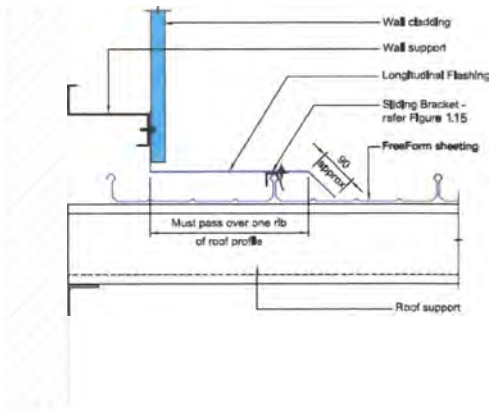


Figure 1.12: Longitudinal flashing



Barge and Longitudinal Flashings

The installation of these flashing types must make allowance for movement between the roof sheeting and the wall parallel to the edge of the sheeting. To accommodate this thermal movement, Fielders recommend the use of a sliding bracket.

Barge and longitudinal flashings are made to suit the cladding profile. They should have an edge turned down to dip into the pan or valley. The minimum recommended cover of longitudinal flashings over cladding should be taken from AS/NZS 3500.3:2015.

Refer Figures 1.11 and 1.12 for further details on these flashing types and the sliding bracket.

Transverse Flashings

Transverse flashings run across the pans or valleys. They usually have a stiffening lip, along the lower edge, which is turned-down to dip into the pan or valley. To maximise weatherproofing, the bent lip is fashioned to fit the profile. The turn-down for transverse flashings can be fashioned to fit the profile by scribing to match the FreeForm™ profile.

Flashing Cover

Fielders can produce a range of flashings to suit your needs and design (hip, barge, apron). To increase weather-resistance, Fielders recommends you maximise the overlap between flashings and cladding.

Fixing of Flashings

Longitudinal flashings shall be fastened at maximum 500mm centres. Transverse flashings shall be fastened in accordance with AS/NZS 3500.3:2015.

Flashing Laps

A lap is that part of a flashing that overlaps or covers any portion of the same shaped component, and is variously described as an end lap, overlap or underlap.

Laps should comply with the following criteria:

- an overlap must run in the same direction as the water i.e. downhill;
- an overlap must run over not under;
- an overlap must be across the fall or at a shallow angle;
- water must flow over a lap not into it;
- a lap must be self-draining and not rely solely on sealant;
- a lap must be mechanically fixed;
- a lap must have a minimum of width of 150mm;

* a lap should be sealed with a recommended sealant and fastened.

Figure 1.13: Ridge Capping

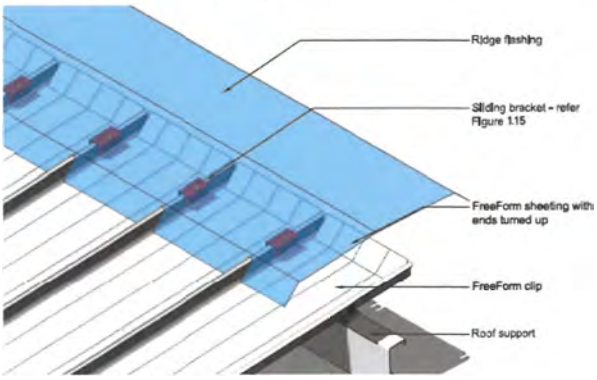


Figure 1.14: Transverse Flashing

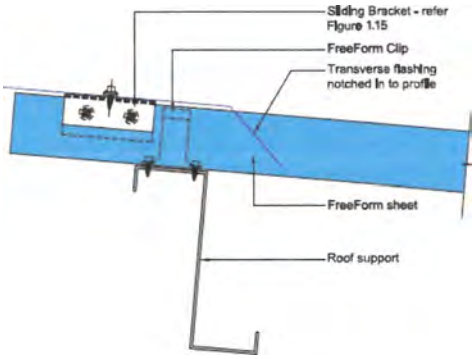


Figure 1.15: Sliding Bracket Detail

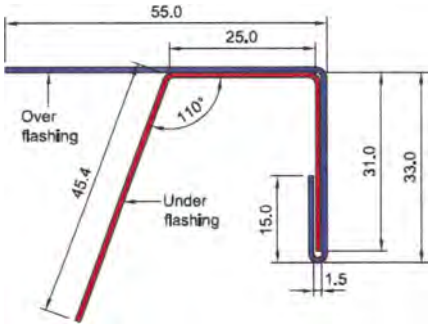
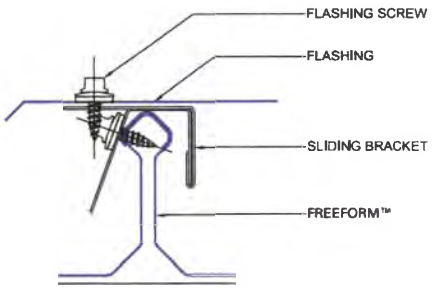


Figure 1.16: Sliding Clip Fixing Detail



BLUESCOPE CONTACTS

Brett Aldridge – Structural Engineer

Bluescope Building Components

brett.aldridge@bluescope.com

0447 138 965

Marko Zele – Business Development Manager – Victoria & Tasmania

Bluescope Building Components

marko.zele@bluescopesteel.com

0457 598 150

Carl Bowey – Engineering & Mobile Mill Manager

Fielders

cbowey@fielders.com.au

0400 408 579

Liam Thompson - Regional Manager - Tasmania

Lysaght

Liam.thompson@lysaght.com

0408514845

Ray Morgan – Major Projects Manager

Fielders

rmorgan@fielders.com.au

0419 578 262

0431 CLADDING – COMBINED

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide lightweight external wall cladding and associated work, including removal of existing cladding as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Location exposure severity
Exposure severity category: Very Severe

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:

- *0171 General requirements*.

1.3 TOLERANCES

Permitted deviations
Profiled metal sheet cladding: To AS 1562.1 clause 4.2.3.

Flat sheet and panel cladding: To the manufacturer's recommendations.

Structural steelwork for wall panels: ± 5 mm between bearing planes of adjacent supports.

1.4 SUBMISSIONS

Fire performance
Combustibility: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Combustibility**.

Fire hazard properties: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Fire hazard properties**.

Fire-resistance level: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Fire-resistance of building elements**.

Operation and maintenance manuals
General: Submit manufacturer's published use, care and maintenance requirements.

Products and materials
Type tests: As appropriate for the project, submit evidence of conformity to the following:

- Metal cladding generally: Cladding and fastenings to AS 1562.1 clause 5.5 for resistance to wind pressures.
- Metal cladding in cyclonic regions to AS/NZS 1170.2: Cladding and fastenings to AS 1562.1 clause 5.6.
  - Air infiltration test to AS/NZS 4284 clause 8.4 for test pressures of ± 150 Pa or ± 300 Pa as documented.
  - Water penetration test by static pressure to AS/NZS 4284 clause 8.5 at test pressure of 300 Pa.
  - Water penetration test by cyclic pressure to AS/NZS 4284 clause 8.6 at test pressure of 600 Pa.

Prototypes
General: Erect a prototype of each panel type, including at least one example of each component in the system to verify selections submitted as samples, to demonstrate aesthetic effects, to set quality standards for materials and execution and to verify performance, including wind loading.

Inclusions:

- Typical components, attachments to building structure and methods of installation.
- Window & Grille opening with cladding panel, trim and returns.
- Sealant filled joint.

Samples
Finish: Submit samples of the cladding material showing the range of variation available.

Shop drawings
Submit shop drawings to a scale that best describes the detail, showing the following:

- Dimensioned elevations of all elements.
- Details of construction, connections and all support systems.
- Dimensions of all typical elements and of any special sizes and shapes.
- Provision for the exclusion and/or drainage of moisture.
- Jointing details and method of fixing between individual elements and between this installation and adjacent work, including adjustment.
- Sealant types and full size sections of all sealant-filled joints and backing rods.
- Provision for thermal movement.
- Provision for movement under seismic and wind loads.
- Sequence of installation.
- Co-ordination requirements with other work.
- Schedule of materials, finishes, componentry, hardware and fittings.

Subcontractors
General: Submit names and contact details of proposed suppliers and installers.

Warranties
Cladding materials: Submit the manufacturer's product warranties.

1.5 INSPECTION

Notice
Inspection: Give notice so that inspection may be made of the following:

- Workshop assemblies before delivery to the site.
- Framing, sarking, vapour barrier and insulation before covering up or concealing.
- Completion of a prototype.

2 PRODUCTS

2.1 GENERAL

Storage and handling
Requirement: Store and handle materials to the manufacturer's recommendations and the following:

- Protect materials including edges and surfaces from damage.
- Keep dry and unexposed to weather.
- Do not drag sheets or panels across each other or over other materials.
- Sheeting: Stack flat and off the ground on at least 3 evenly placed bearers.
- Store metal materials away from uncured concrete and masonry on a level base.
- Do not store metal materials in contact with other materials which may cause staining, denting or other surface damage.
- Use gloves when handling precoated metal cladding material.

Components
Fasteners and ties: Type, size, corrosion resistance class and spacing to the cladding manufacturer's recommendations.

Flashings: To AS/NZS 2904.

2.2 FIRE PERFORMANCE

Combustibility
Cladding: Tested to AS 1530.1.

Fire hazard properties
Group number: To AS 5637.1.

Bonded laminated materials: Tested to AS/NZS 1530.3. Fire hazard indices, as follows:

- Spread of Flame Index: 0.
- Smoke-Developed Index: ≤ 3.

Insulation materials: Tested to AS/NZS 1530.3. Fire hazard indices as follows:

- Spread-of-Flame Index: ≤ 9.
- Smoke-Developed Index: ≤ 8 if Spread-of-Flame Index > 5.

Fire-resistance of building elements
Fire-resistance level: Tested to AS 1530.4.

2.3 ALUMINIUM PANELS

General
Requirement: Proprietary prefinished solid aluminium panel.

Refer to MONDOCLAD Fixed watertight cladding specification attached to specification July 2021

2.4 PROFILED SHEET METAL

3 EXECUTION

3.1 PREPARATION

Substrates or framing
Requirement: Before fixing cladding, check the fixing and alignment of substrates or framing and adjust if required. Remove any residue / glue or projection to obtain alignment and close fit.

Flexible underlay: Check that the underlay is restrained.

3.2 INSTALLATION

General
Fixing method: As documented or to one of the following fixing methods to the manufacturer's recommendations:

- Steel framing: Screw.
- Minimum penetration for profiled metal sheets:

Defective components: Do not install component parts which are defective, including warped, bowed, dented, abraded or broken members.

Damaged parts: Remove and replace damaged members during installation.

Accessories and trim
Requirement: Provide accessories and trim required to complete the watertight installation, and as documented constructed from Mondo Clad 3mm aluminium powder coted flashings and 1.2 mm aluminium colorbond flashing only where out of view below parapet heights

Corner flashing Finish off at corners with purpose-made folded cassette flashing. Layout of joints to approval.

Metal separation
Requirement: Prevent direct contact between incompatible metals, and between green hardwood or

chemically treated timber and aluminium or coated steel, by either of the following methods:

- Apply an anti-corrosion, low moisture transmission coating to contact surfaces.
- Insert a separation layer.

Incompatible metal fixings: Do not use.

Proprietary systems or products

Product fixing: Fix proprietary systems to the manufacturer's recommendations.

3.3 ALUMINIUM CLADDING

General

- Refer to 0432 MONDOCLAD Fixed watertight cladding specification
- .

4 SELECTIONS

Product : Mondo Clad

3mm Solid Aluminium

Colour Halo

Pattern : Joint pattern as per set out drawings .

Flat panels to be a 4 sided cassette

Curved cassette panels are to be 2 sided (Vertical sides folded).

All in accordance with manufacturers written instructions.

Generally allow to reuse existing top hat sections from previous installation except as noted.

Allow to remove small sections of glue from top hats , reinstall insulation that has become loose following removal of existing cladding.

Retain existing cladding in place .

Seek instruction should the wall build up including safety mesh, sarking insulation or top hats are damaged in advance of being opened up for recladding.

Where noted- Wall type 2 install additional top hat sections Stramit top hat battens TH64075

Install vapour permeable membrane

Equally spaced Matching black mastic joints to manufacturers written instruction.

Cassette units to be prepared using routed joint system

Refer to Drawings.

DESIGNER SPECIFICATION FOR MONDOCLAD
Aluminium Solid Aluminium Panel Cladding System
Fixed Watertight Cassette Panel System - 3mm thick

---

1. SCOPE OF WORK

The scope of work includes the design, supply fabrication and installation of MondoClad solid aluminium panel cladding, complete with all necessary sub-structures, anchors, hardware and fittings to provide a total installation, fully in conformity with the requirements and intent of the drawings and specification herein.

The cladding system shall be installed complete with matching copings, flashings etc. by an approved cladding specialist subcontractor in accordance with the supplier's recommendations.

2. DESIGN CONCEPT

The proposed MondoClad panel cladding shall be based on a watertight cassette panel system and divided into individual panels as indicated on architectural drawings.

A typical panel shall be fitted with extruded aluminium angle brackets. Such brackets shall be positioned in such a manner that brackets attached to adjacent panels shall overlap.

Fastening of panels shall take place and be concealed within the panel joints through the overlapping angle brackets into furring channels behind.

A construction joint of 12mm minimum shall be provided between cladding elements to cater for easy panel installation. All fixing and joint details shall be designed to provide for the expected thermal and structural movements.

To conceal fixings and form a watertight seal, seal construction joint with a suitable silicone or polyurethane sealant over a closed cell foam backing rod. Sealant applied to be of a type in accordance with sealant supplier's recommendations.

Horizontal cladding areas ideally should have a slope of 1:15
(4° approx) and to prevent staining should slope away from visible vertical facade areas.

3. DESIGN CRITERIA

All MondoClad solid aluminium panel cladding shall be so designed to meet or exceed specified performances required for the prevailing local weather conditions.

DESIGNER SPECIFICATION FOR MONDOCLAD
Aluminium Solid Aluminium Panel Cladding System
Fixed Watertight Cassette Panel System - 3mm thick

3.1. Design Wind Loading : _____ kPa positive and negative
No cladding element shall sustain permanent deformation or failure under loading equivalent 1.5 times the design wind pressure specified.

3.2. Deflection

Deflection of any aluminium frame shall not exceed 1/150 of the clear span.

3.3. Expansion and Contraction

The cladding shall be so fabricated and erected as to provide for all expansion and contraction of the components. Any temperature change due to climatic conditions shall not cause harmful buckling, opening of joints, undue stress on fastening and anchors, noise of any kind or other defects.

4. MATERIAL AND FINISHES

4.1. Cladding Material

All cladding shall be 3.0mm thick MondoClad solid aluminium panel, ASTM Alloy 5052 H32

(a)	Thickness:	3.0mm
(b)	Mechanical Properties:	Tensile strength ≥ 215 MPa 0.2% proof stress > 160 MPa Elongation 7% Modulus of Elasticity 69.3 GPa
(c)	Sound:	Absorption Factor NCR-0.05 Reflection 95%
(d)	Rigidity (E x I)	: 0.240 kNm2/m
(e)	Panel weight	: 8.31kg/m2

(f) Finish
The external cladding panel surface shall be factory prefinished by the supplier with a Fluoropolymer coating of either PVDF or FEVE or combination of both applied through a "REVERSE ROLLER COATING" process. Total dry-film thickness of the coating shall be 30 microns minimum consisting of a chromate conversion coating, an inhibitive primer and a top coat. The coated surface shall comply strictly with:

- AAMA 2605-13

The finished surface shall be factory protected with a self-adhesive peel-off foil, tested to withstand at least 3 months exposure to local weather conditions without losing the original peel-off characteristic or causing stains or other damages.

Application of the Fluoropolymer coating system by means of spray coating before or after forming and shaping of the cladding elements shall not be permitted.

The reverse side of the cladding panel surface facing the wall shall be in mill finish and line marked with the brand, colour and date of manufacture.

(g) Colour/Gloss : As per MondoClad® standard colour chart

4.2 The MondoClad Solid Aluminium shall be tested in accordance with Australian Standards listed below.

Test	Description	Result
AS 1530.1	Methods for fire tests on building materials, components and structures Combustibility test for materials	Passed
AS 1530.3	Simultaneous determination of Ignitibility, Flame Propagation, Heat Release and Smoke Release"	Ignitability Index 0 Flame Propagation 0 Heat Release 0 Smoke Release 0-1

4.3. Aluminium extrusions
Non visible extrusion shall be of aluminium alloy AA 6060-T5 in mill finish.

4.4. Fixings

(a) Fasteners, including concealed screws, nuts, bolts and other items required for connecting aluminium to aluminium or aluminium to steel shall be in

accordance with AS 3566.2 and of a type to suit its application and exposure conditions.

Class 1 and 2: Internal applications.

Class 3: External applications, moderate industrial and marine applications.
Class 4: Severe marine applications

(b) All fixing anchors, brackets and similar attachments used in the erections, shall be of aluminium, non-magnetic stainless steel, zinc coated steel, or hot dip zinc galvanised steel.

(c) Other fixing options should be discussed with a qualified professional.

4.5. Dissimilar Materials

It is advisable where two surfaces of dissimilar material come into contact, such surfaces shall be insulated with a layer of PVC or Polyethylene tape. This option should be discussed with a qualified professional

5. FABRICATION

5.1. All cladding panels shall be factory fabricated and assembled in compliance with the supplier's Data Sheets and to the best standard of workmanship under experienced factory supervision and control.

5.2. All panels shall be cut and routed using equipment and tools recommended and approved by the panel supplier. After folding into cassettes, an extruded aluminium profile shall be fixed to the minimum 20mm deep return bend.

Fixings shall be properly positioned so that the edge of the fixing hole is no closer than 10mm from the edge of the MondoClad panel and the distance between fixings shall not exceed 500mm.

5.3. If reinforcement of the panel is required please seek the advice of a qualified professional.

5.4. Each panel shall be marked on the reverse side for easy identification of size and location.

5.5. Finished panels shall be stored and transported to site in vertical position, face-to-face resp. back-to-back, with adequate protection to prevent scratches and dents.

5.6 The factory applied protective peel-off foil shall only be removed after the panels have been installed on site.

6. INSTALLATION

6.1 Panels shall be stored on site in vertical position, face-to face resp. back-to back-, with adequate protection to prevent scratches and dents.

6.2 Any component parts which are observed to be defective in any way, including warped, bowed, dented, abraded and broken members must not be installed. Member or parts which have been damaged during installation or thereafter before the time of final acceptance shall be removed and replaced.

6.3 No cutting, trimming, welding or brazing of any component parts during erection, in any manner which would damage the finish, decrease the strength or result in a visual imperfection or failure in performance shall be executed during erection. Component parts which require alteration shall be returned to shop for fabrication, if necessary replaced with new parts.

6.4 Anchorage of the cladding structure to the building structure shall be by approved methods in strict accordance to the specification and approved shop and/or erection drawing. Supporting brackets shall be so designed as to provide three-dimensional adjustments and accurate location of cladding components.

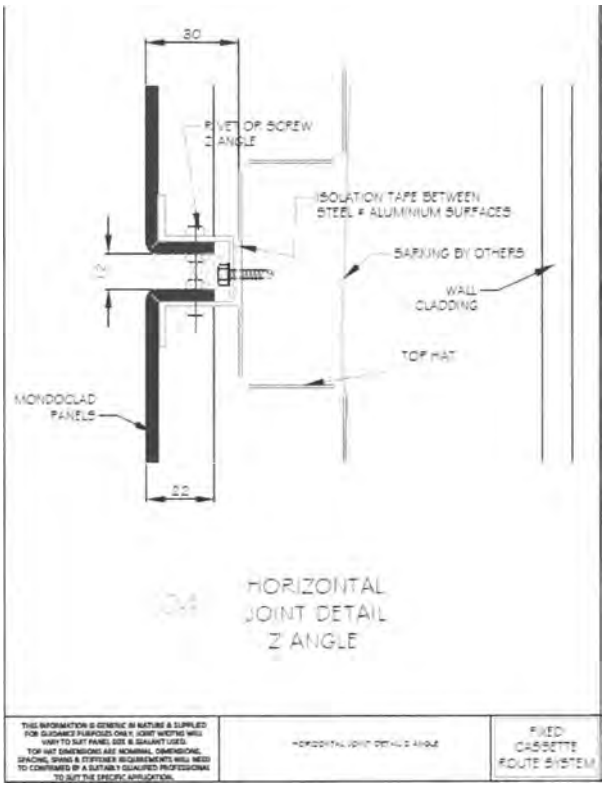
6.5 All component parts shall be installed level, true to line with uniform joints and reveals.

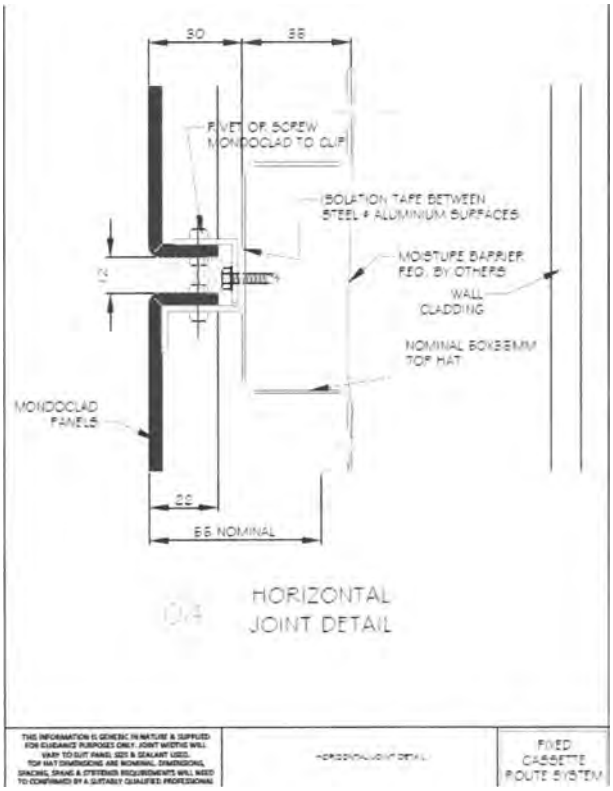
6.6 Cladding panels shall be left protected by the factory applied peel-off foil as long as possible. Under no circumstances shall the peel-off foil on individual panels be partially removed and left exposed to weathering.

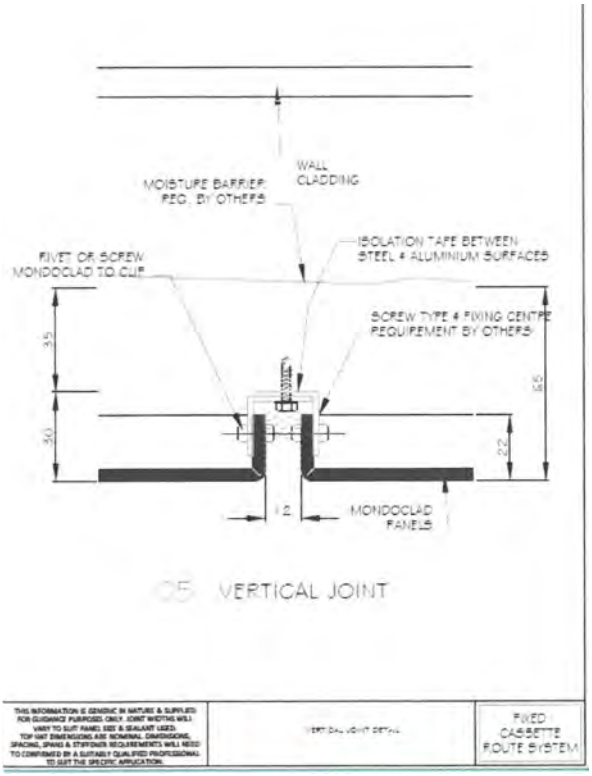
6.7 Before handing over of the completed cladding, all peel-off foil shall be removed. Panels which were exposed to weathering without peel-off foil shall be cleaned in accordance with supplier's recommendation.

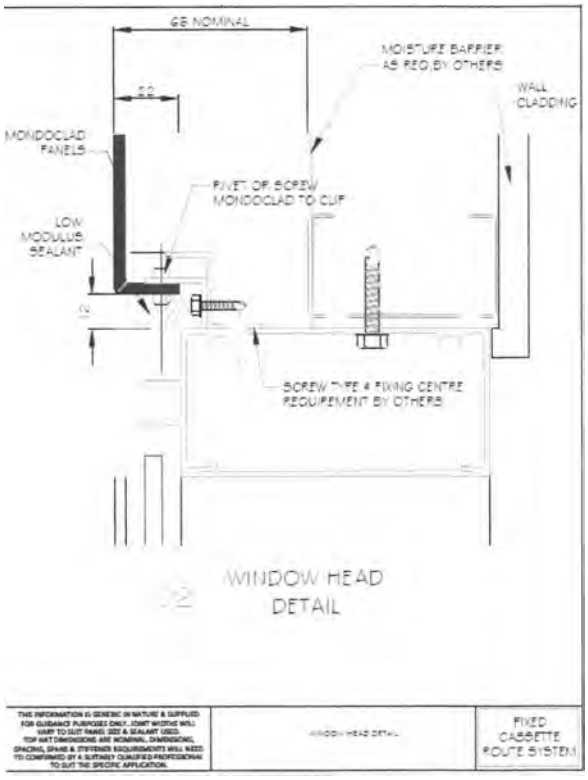
MondoClad

FIXING SYSTEMS – ROUTED









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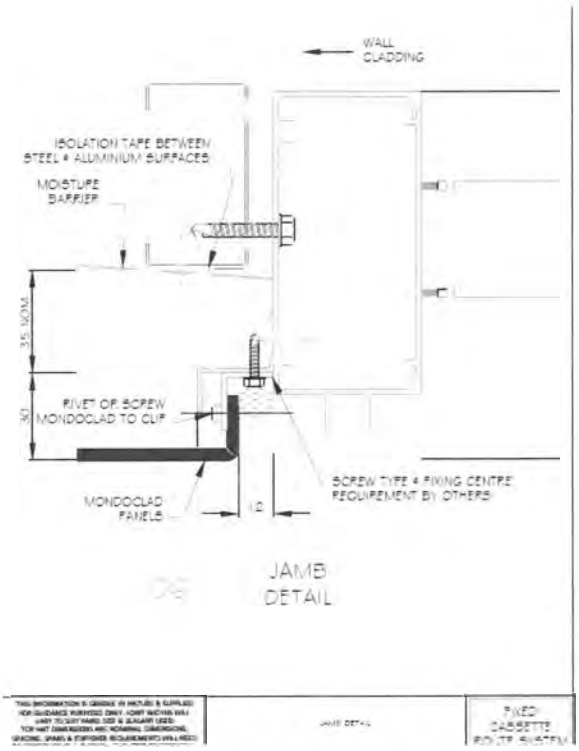
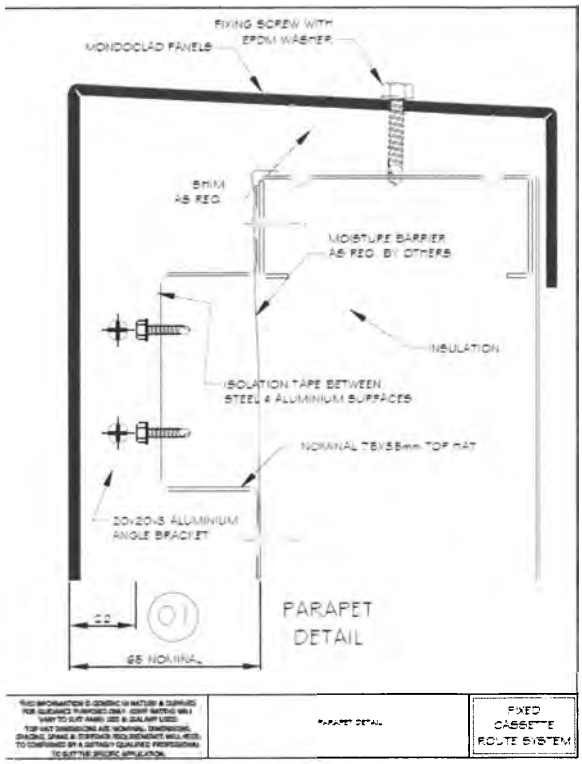
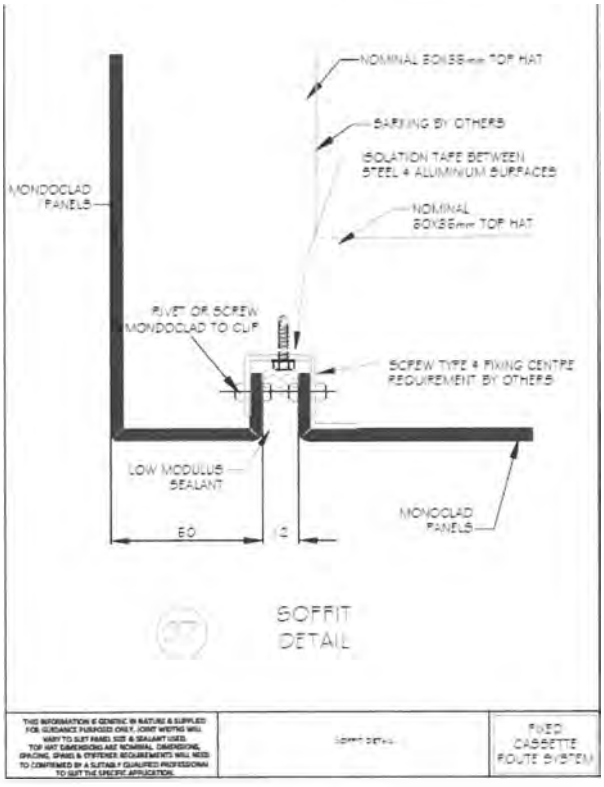
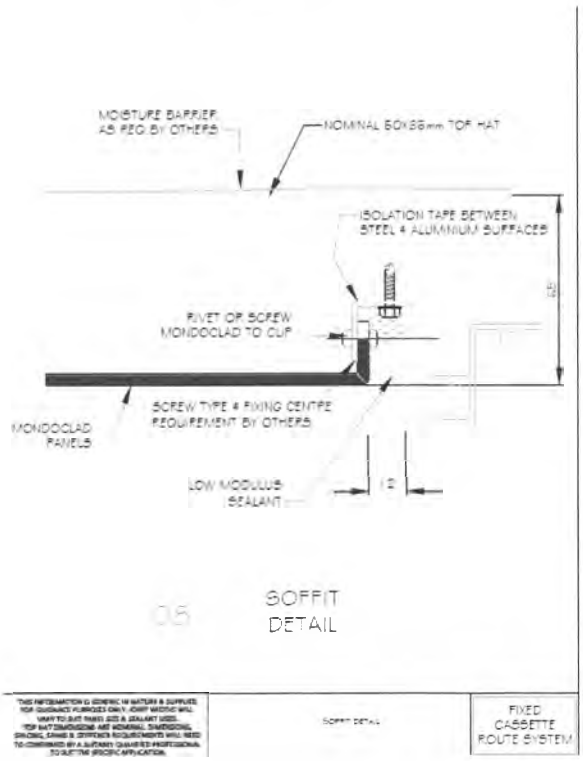
FIXING SYSTEMS – ROUTED



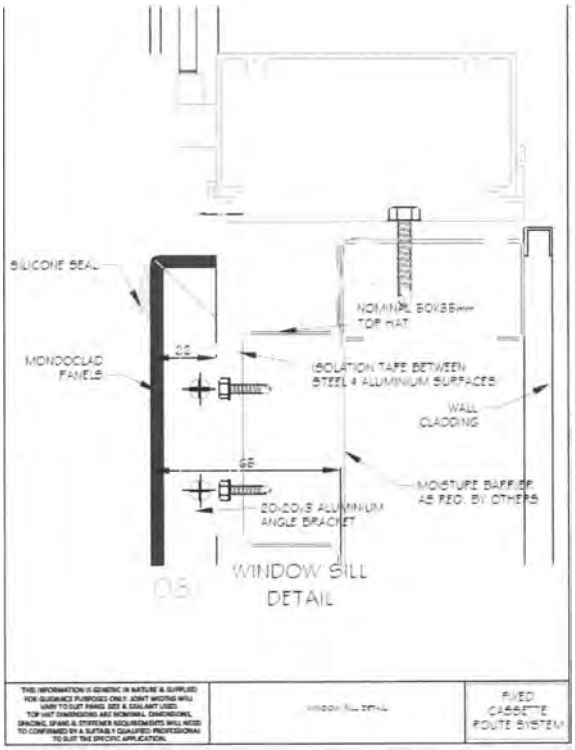






MondoClad™

FIXING SYSTEMS – ROUTED



0471 THERMAL INSULATION AND PLIABLE MEMBRANES

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide thermal insulation and pliable membrane systems, as documented.

Products and materials, including fasteners and concealed components, shall be corrosion resistant or protective coated to prevent corrosion.

Performance

Requirements:

- Complete for their function.
- Conforming to the detail and location drawings.
- Firmly fixed in position.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements.*

1.3 INTERPRETATION

Abbreviations

General: For the purposes of this worksection, the following abbreviations apply:

- IRMA: Inverted roof membrane assembly.
- PMR: Protected membrane roof.

Definitions

General: For the purposes of this worksection the following definitions apply:

- Bio-soluble: A product that dissolves in bodily fluids and is quickly cleared from the lungs.
- Fibre batts: Flexible insulation supplied as factory cut pieces and composed of mineral wool (glass and rock fibre) or polyester fibre.
- Fire hazard properties: Terminology to BCA A5.5.
- Pliable building membrane: To AS/NZS 4200.1 and equivalent to sarking-type materials as defined in the NCC.
- Thermal insulation terminology: To AS/NZS 4859.1.
- Vapour permeable (breathable) membrane: A flexible membrane material, normally used for secondary waterproofing that allows for the transmission of water vapour.

1.4 SUBMISSIONS

Fire performance

Fire hazard properties: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE, Fire hazard properties.**

Products and materials

Thermal insulation properties: Submit evidence of conformity to AS/NZS 4859.1 and AS/NZS 4859.2.

Warranties

Manufacturer's published product warranties: Submit on completion.

1.5 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the installed pliable membrane and insulation before covered up or concealed.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Labelling: Deliver mineral wool products to site in packaging with third party mark of conformity indicating product is bio-soluble and not listed as hazardous material in the Safe Work Australia Hazardous Chemical Information System (HCIS).

2.2 FIRE PERFORMANCE

Fire hazard properties

Insulation materials: Tested to AS/NZS 1530.3. Fire hazard indices as follows:

- Spread-of-Flame Index: ≤ 9.
- Smoke-Developed Index: ≤ 8 if Spread-of-Flame Index > 5.

Materials with reflective facing: Tested to AS/NZS 1530.3 and the recommendations of Appendix A6.

Pliable membranes: Flammability Index ≤ 5 tested to AS 1530.2.

2.3 INSULATION AND PLIABLE MEMBRANE MATERIALS

General

Mineral wool insulation: Bio-soluble and not listed as a hazardous material in the Safe Work Australia Hazardous Chemical Information System (HCIS).

Insulation

Standard: Thermal insulation materials to AS/NZS 4859.1:

- Cellulosic fibre (loose fill): To AS/NZS 4859.1 Section 4.

- Wool: To AS/NZS 4859.1 Section 5.
- Polyester (compressible): To AS/NZS 4859.1 Section 6.
- Mineral wool blankets and cut pieces (compressible): To AS/NZS 4859.1 Section 7.
- Rigid cellular foam insulation (EPS, PF, PIR, PUR and XPS): To AS/NZS 4859.1 Section 8.
- IR reflective (formed shapes and compressible with one or more external IR reflective surfaces): To AS/NZS 4859.1 Section 9.

Polyurethane (rigid cellular RC/PUR): To AS 1366.1.

Polyisocyanurate (rigid cellular RC/PIR): To AS 1366.2.

Polystyrene (moulded rigid cellular RC/PS-M): To AS 1366.3.

Polystyrene (extruded rigid cellular RC/PS-E): To AS 1366.4.

Polyurethane (sprayed): To AS 1366.1 Table 2.

Wet processed fibreboard (softboard): To AS/NZS 1859.4.

Pliable building membranes
Standard: To AS/NZS 4200.1.

Vapour barrier:

- Vapour control classification: Class 1.

Sarking membrane (other than walls and gables):

- Water control classification: Water barrier.

Vapour permeable (breathable) membrane: Minimum class 4.

Fasteners and supports
General: Metallic-coated steel.

Mesh support to roof insulation
Welded safety mesh: To AS/NZS 4389.

3 EXECUTION

3.1 GENERAL

Bulk insulation
Requirement: To AS 3999 and BCA J1.2. or BCA 3.12.1.1, as appropriate.

Installation: Firmly butt together fibre blankets or batts, with no gaps except as follows:

- Access openings and vents: Do not obstruct.
- Light fittings: To AS/NZS 3000 clause 4.5.
- Electrical cables: To AS 3999 clause 2.6.

Glass Wool and Rock Wool insulation: Conform to the *ICANZ Industry code of practice for the safe use of glass wool and rock wool insulation*.

Pliable building membrane
Installation: To AS 4200.2 and BCA J1.2 or BCA 3.12.1.1, as appropriate.

3.2 WALLS

Framed walls – thermal break strips
Product type: Proprietary item.

Application: To steel framing with lightweight external cladding.

R-Value: ≥ 0.2.

Screw fixing: Button head screws at 1 m centres.

Adhesive fixing: Wallboard adhesive walnuts at 1 m centres.

Framed walls – bulk insulation
Product type: Fibre batts.

Installation: Friction fit between framing members. If other support is not provided, staple nylon twine to the framing and stretch tight.

Masonry veneer cavity walls
Product: Rigid cellular insulation board.

Application: To steel or timber framing.

Installation: Horizontally with the tongue to the top edge, pushed over prefixed wall ties and held firmly against the wall frame. Keep boards clean and dry and free from mortar and grout. Do not bridge the cavity.

Fixing: Hex head screws at 450 mm centres.

Flashings: Install flashings before installing insulation panels. Prevent entry of water behind the insulation boards.

Full masonry cavity walls – inside cavity
Product: Rigid cellular insulation board.

Application: To the external face of the inner masonry leaf.

Installation: Horizontally with the tongue to the top edge and firmly against the inner masonry skin. Keep boards clean and dry and free from mortar and grout. Do not bridge the cavity.

Fixing: Proprietary plastic clips on pre-installed wall ties.

Flashings: Install flashings before installing insulation panels. Prevent entry of water behind the insulation boards.

Full masonry cavity walls – internal face
Product type: Rigid cellular extruded boards.

Application: To the internal face of internal masonry leaf.

Preparation of substrates: Conform to the following:

- Remove any deposit or finish which may impair adhesion.
- Remove excessive projections and fill voids and hollows with plaster.
- Maximum surface deviation from a 2400 mm straightedge: 6 mm.

Substrate correction: Skim plaster.

Installation: Apply boards horizontally with staggered vertical joints, all close butted and without crushing.

Fixing: Proprietary adhesive compatible with the insulation. Apply sufficient pressure to evenly distribute adhesive.

Vapour permeable (breathable) membrane
Application: Provide a vapour permeable membrane behind external facing material which does not provide permanent weatherproofing or which may be subject to condensation forming on the internal face, including the following:

- Boards or planks fixed vertically or diagonally.
- Boards or planks fixed in exposed locations where wind driven rain can penetrate the joints.
- Unpainted or unsealed cladding.
- Masonry veneer.

Installation: Run the vapour permeable membrane horizontally on the outer face of external wall framing, over the flashing, from the bottom plate up. Pull taut over the framing and fix to framing members. Seal across the wall cavity at the top.

Horizontal laps: At least 150 mm wide, lapped to make sure water is shed to the outer face of the membrane.

End or vertical overlaps laps: At least 150 mm wide made over framing.

Openings: Run the vapour permeable membrane over the openings and leave covered until windows and doors are installed. Cut the membrane on a 45° diagonal from each corner of the opening, fold the flaps inside and fix to the inside frame of the opening. If the membrane is used to provide a continuous air tight layer, seal all joints with pressure sensitive adhesive tape.

Fixing: Install as follows:

- Timber frames: Metallic-coated clouts, 20 mm long 6 to 8 mm staples or punched multi-point metallic-coated steel brads.
- Steel or aluminium frames: Hex head screws, with either 20 mm diameter washers or through hardboard strips.
- Plywood: Alternatives:
  - Metallic-coated clouts, 20 mm long 6 to 8 mm staples or punched multi-point metallic-coated steel brads at minimum 300 mm centres.
  - Water based contact adhesive with a 50% adhesive cover.

3.3 ROOFS

General
Location: The whole of the roof area including skylight shaft walls, except the following:

- Eaves, overhangs, skylights, vents and openings.
- Roofs to outbuildings, garages, and semi-enclosed spaces such as verandahs, porches and carports.

Mesh support to roof insulation
Locations: Provide support to the following:

- Sarking, vapour barrier or reflective thermal insulation membranes laid over roof framing members which are spaced at more than 900 mm centres.
- Blanket type thermal insulation laid over roof framing members as sound insulation to metal roofing.

Installing welded safety mesh: To AS/NZS 4389.

Pliable building membranes
Sarking membrane:

- Location: Provide sarking under tile and shingle roofing.

Vapour barrier:

- Installation: Lay over the roof framing with sufficient sag to allow the bulk insulation to achieve its full thickness. Overlap all edges 150 mm and seal all joints with pressure sensitive adhesive tape.

Metal roofs – thermal break strips
Product type: Proprietary item.

Application: To steel framing supporting metal sheet roof cladding.

R-Value: ≥ 0.2.

Metal roofs – bulk insulation
Product: Fibre blankets or batts.

Installation:

- Batts: Fit tightly between framing members.
- Blanket for sound insulation: Install over the roof framing, reflective thermal insulation (if any), and mesh support, so that the blanket is in continuous contact with the underside of the metal roofing sheets.
- Combined blanket and reflective insulation: Lay facing reflective insulation face downwards over safety mesh.

Waterproof membrane roofs – IRMA/PMR types

Product type: Rigid cellular extruded sheets.

Preparation: Make sure membrane is clean and free of loose material.

Separation layer: Lay over membrane with edges lapped 300 mm and turned up at upstands and penetrations.

Installation: Lay insulation boards in brick pattern with shiplap edges pushed together firmly, cut neatly around penetrations and extend up upstands.

Cathedral ceiling insulation – metal roofing and roofing tiles

Product type: Rigid cellular extruded sheets.

Application: Over ceiling lining that has been fixed to rafters.

Installation: Lay insulation boards with their long edges at right angles to the rafters and with the tongue pointing up the slope. Start laying at eaves and progress towards the ridge. Secure temporarily by occasional nailing to the rafters, the permanent fixing is provided by the nails used to secure the counter battens to the rafters. Cut boards and tightly fit to abutments and penetrations. Seal gaps with polyurethane foam.

Ceiling insulation – bulk insulation

Product type:

- Framed ceilings: Fibre batts.
- Suspended ceiling: Fibre blanket.

Application: Over ceiling lining.

Installation:

- Batts: Fit tightly between framing members.
- Blankets: Butt joint and lay over ceiling panels or lining.

4 SELECTIONS

Refer to Drawings

PhilpLighton Architects

65 Tamar Street,
Launceston TAS 7250
Telephone: (03) 6331 2133
launceston@philplighton.com.au

TRANSMITTAL 19 – RECLADDING – BUILDING APPROVAL

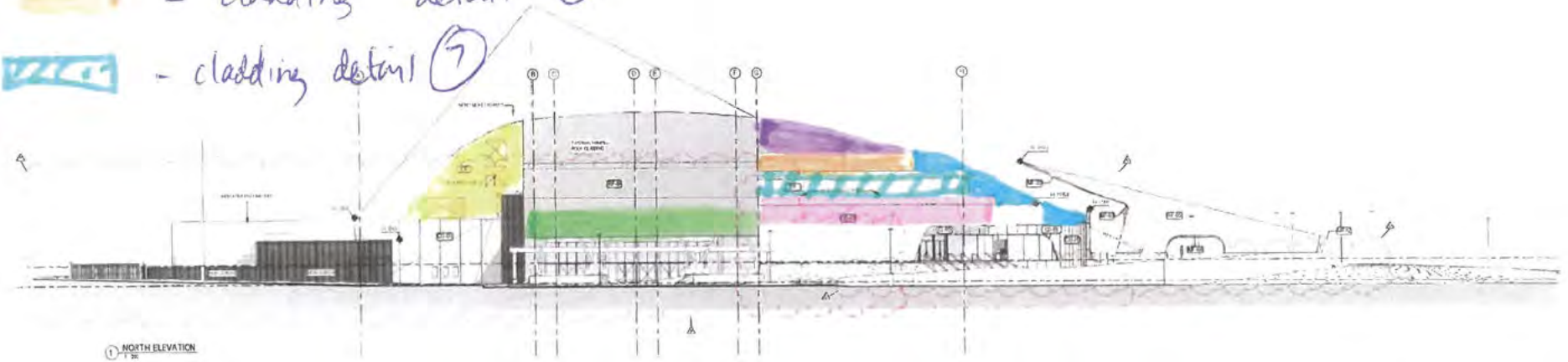
PROJECT: Derwent Entertainment Centre - Redevelopment **PROJECT NO:** 20.318	**DATE:** 28 APRIL 2022

DWG NO.	REV	TITLE	COPIES
A1012	B	ROOF PLAN – FAÇADE REPLACEMENT	1
A1013	C	ROOF PLAN – ROOF REPLACEMENT	1
A1014	A	ROOF REPLACEMENT – PART 01	1
A1015	A	ROOF REPLACEMENT – PART 02	1
A1016	C	ROOF PLAN – DEMOLITION	1
A1017	A	ROOF PLAN - STAGING PLAN	1
A1018	A	ROOF PLAN – ROOF SAFETY	1
A3002	B	BUILDING FAÇADE REPLACEMENT– ELEVATIONS 1	1
A3003	B	BUILDING FAÇADE REPLACEMENT – ELEVATIONS 2	1
A3004	A	FACADE REPLACEMENT – 3D VIEWS	1
A3005	A	ROOF REPLACEMENT – ELEVATIONS	1
A3502	C	BUILDING SECTIONS – FAÇADE REPLACEMENT	1
A6111	B	BUILDING FAÇADE SECTION DETAILS – SHEET 12	1
A6112	B	BUILDING FAÇADE SECTION DETAILS – SHEET 13	1
A6113	B	BUILDING FAÇADE SECTION DETAILS – SHEET 14	1
A6114	B	BUILDING FAÇADE TYPICAL DETAILS – SHEET 15	1
		EXISTING BUILDING – STRUCTURAL STEEL DRAWINGS	
		SPECIFICATION – ROOF RECLADDING	
		VOS – EXISTING CLADDING REPORT	
		PDA SURVEYORS – ROOF DETAILED SURVEY	
		VOS-EXISTING ROOFING REPORT	
		TENDER LETTER	
21.0299 - S000	2	DRAWING INDEX AND STRUCTURAL NOTES	1
21.0299 – S101	1	OVERALL ROOF PLAN	1
21.0299 – S201	1	ELEVATIONS 01	1
21.0299 – S202	1	ELEVATIONS 02	1
21.0299 – S203	1	ELEVATIONS 03	1
21.2099 – S601	1	STEELWORK DETAILS 01	1

DISTRIBUTION :	COMPANY:		DISTRIBUTION :	COMPANY:	
CLIENT	NICK SIER – LKG, SHANNON ROBERTS - LKG	✓	PLANNER	IRENE DUCKETT – IRENEINC	
FIRE ENGINEER	JOHN PAPWORTH – JP FIRE		STRUCTURAL ENGINEER	DAVID VISENTIN – GANDY & ROBERTS	
BUILDING SURVEYOR	GREG GREEN – GREEN BUILDING SURVEYING	✓	DDA CONSULTANT	MICHAEL SMALL – EQUALITY BUILDING	
TRAFFIC ENGINEER	JO FISHER – HOWARTH FISHER AND ASSOCIATES		CIVIL / ELECTRICAL / MECHANICAL ENGINEERS	JMG	
CONTRACTOR	VOS CONSTRUCTIONS – MARK MILLHOUSE	✓	DEPARTMENT OF STATE GROWTH	STEVEN deHAAN	

ISSUE FOR:				FORMAT:		METHOD:	
Construction		Information		Digital	✓	Courier	
Preliminary		Tendering		Negative		Email	✓
Approval	✓	Contract Signing		Print		Hand	

- Cladding detail (1)
- Cladding detail (2) (under Roof Overhang)
- cladding detail (3)
- cladding detail (4)
- cladding detail (5)
- cladding detail (6)
- cladding detail (7)



1 NORTH ELEVATION

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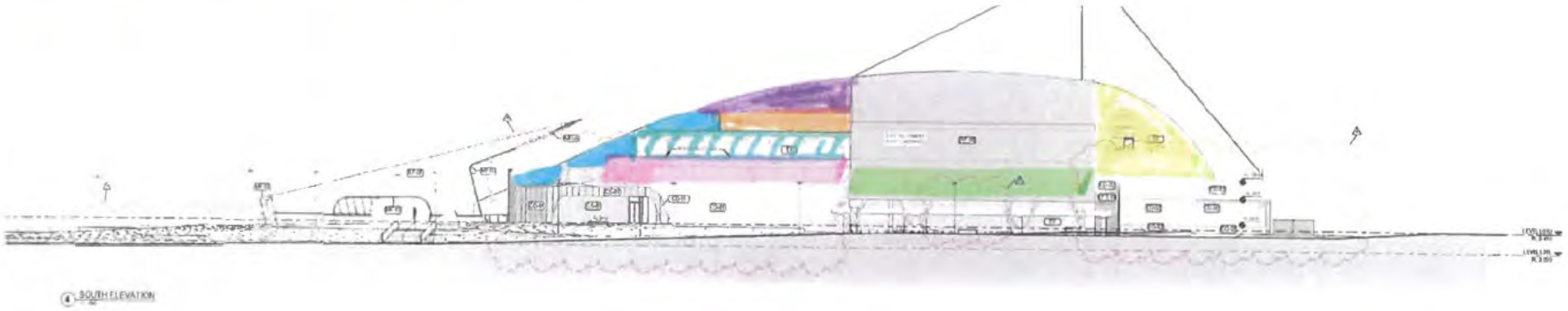

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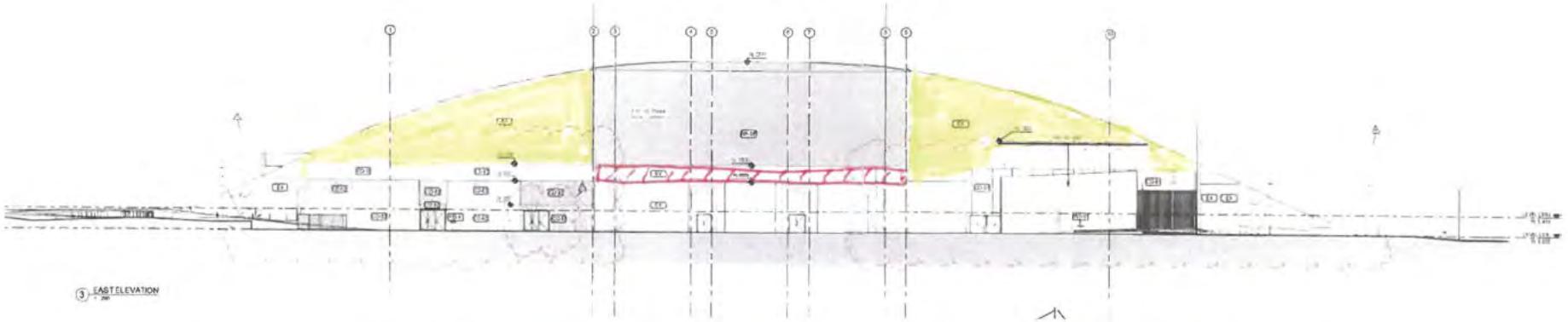

3 EAST ELEVATION

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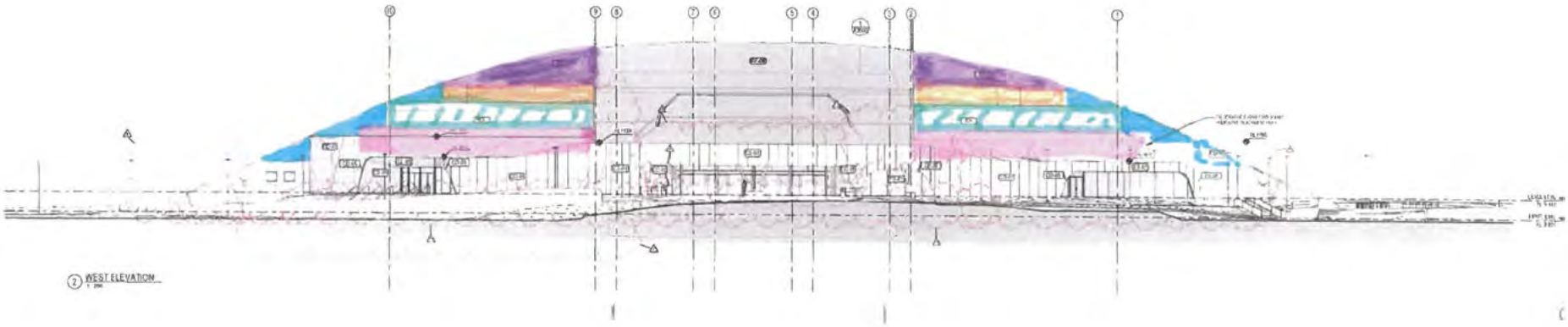

② WEST ELEVATION

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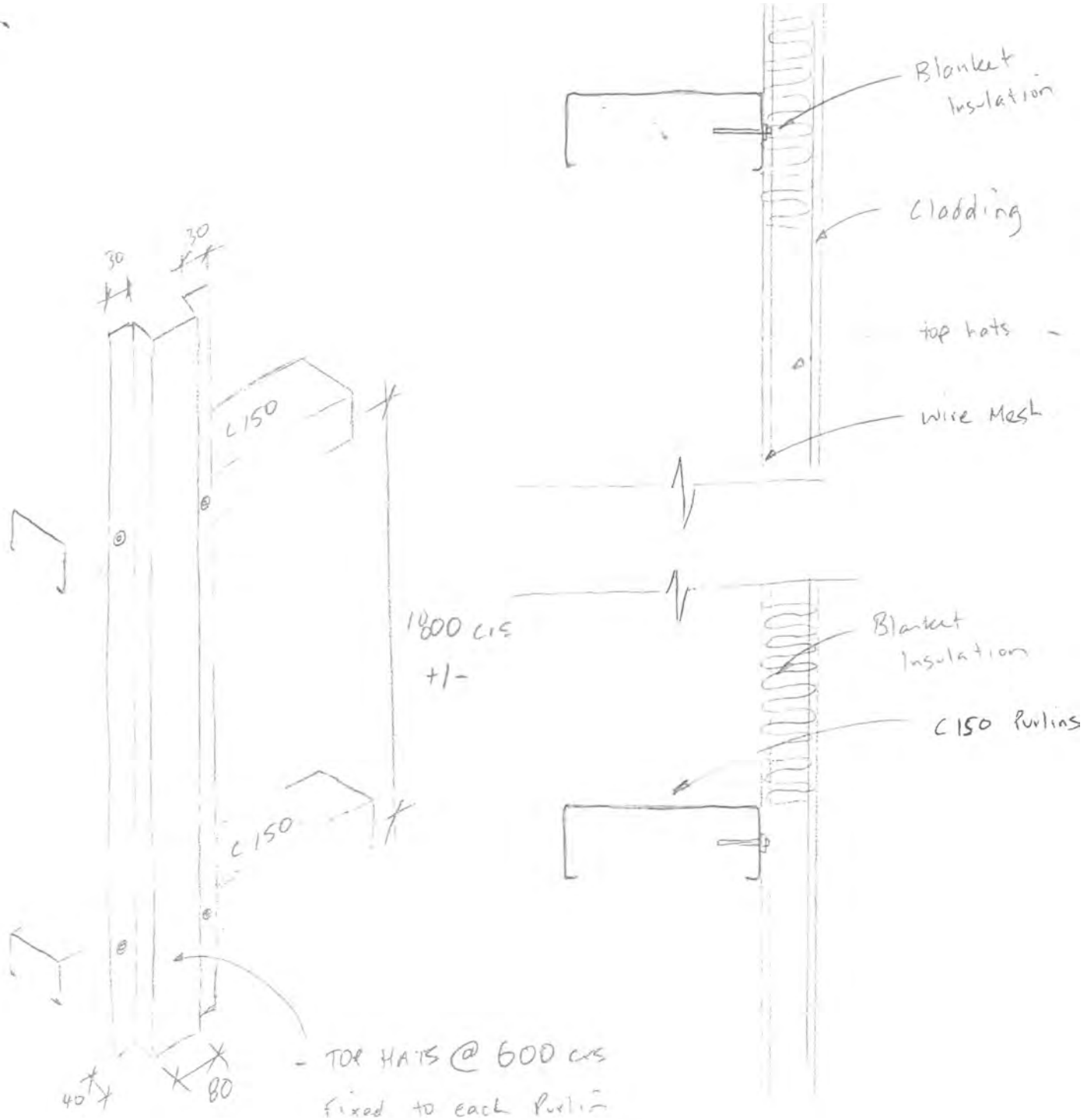

- TOP HATS @ 600 CLS fixed to each Purlin with 2 x Metal Hex Head Screws

- Top hats 1.5mm Gauge

[redacted] - cladding detail (1)

Vos Construction & Joinery Pty Ltd

Printed on Fri 21 May 2021 at 05:11 pm AEST

Job #: C000657 DEC Stage 2 works
601 Brooker Highway
Glenorchy, Tasmania 7010

Description

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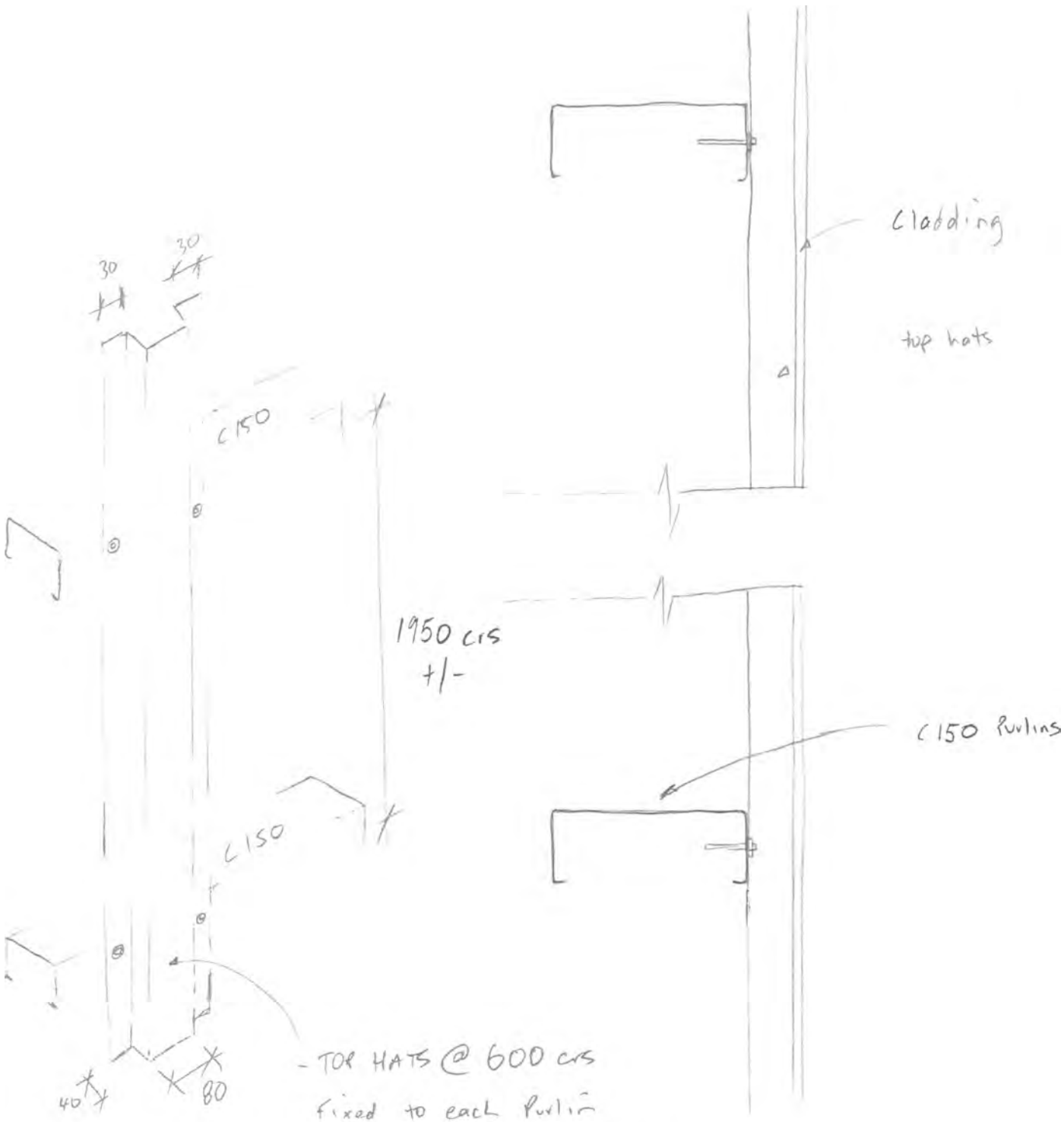

- TOP HATS @ 600 cts fixed to each Purlin with 2 x Metal Hex Head Screws
- Top hats 1.5mm gauge
- No Wire or insulation

Vos Construction & Joinery Pty Ltd

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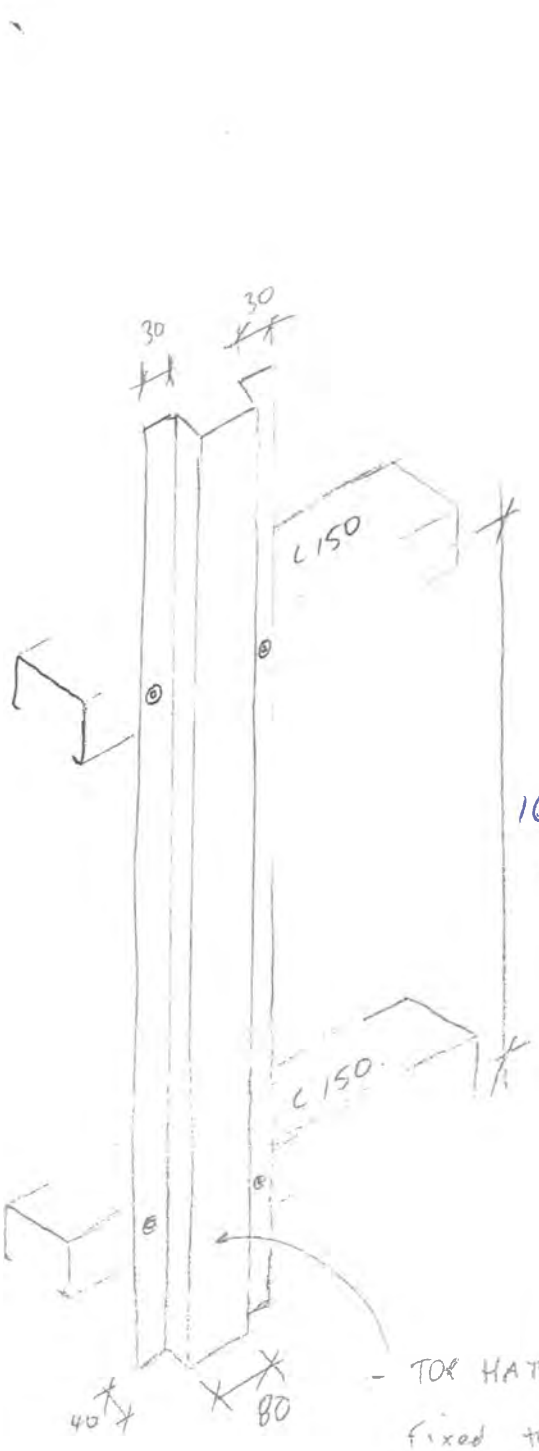

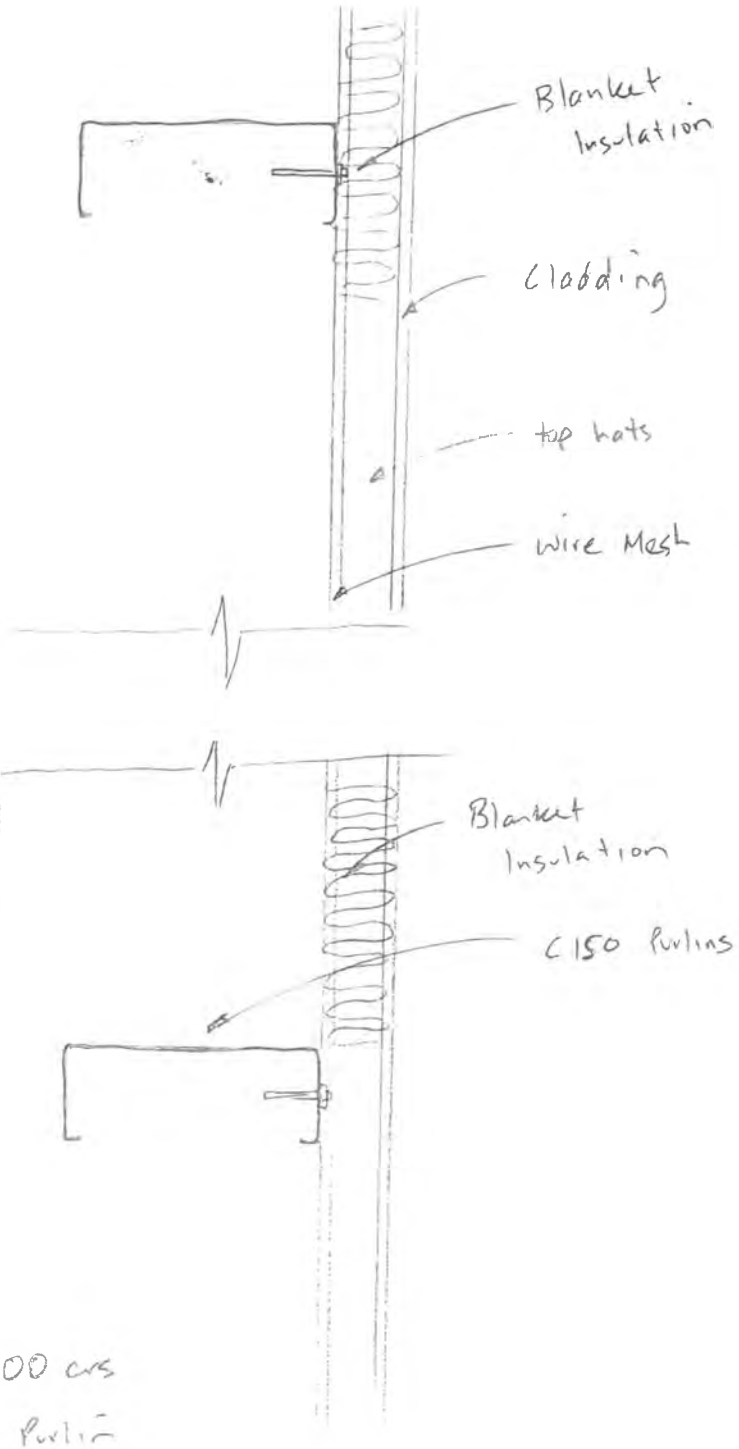

- TOP HATS @ 600 CTS fixed to each Purlin with 2 x Metal Hex Head Screws

- Top hats 1.5mm Gauge

[redacted] - cladding detail (3)

Vos Construction & Joinery Pty Ltd

Printed on Sat 22 May 2021 at 07:45 am AEST

Job #: C000657 DEC Stage 2 works
601 Brooker Highway
Glenorchy, Tasmania 7010

DEC ally cladding investigations

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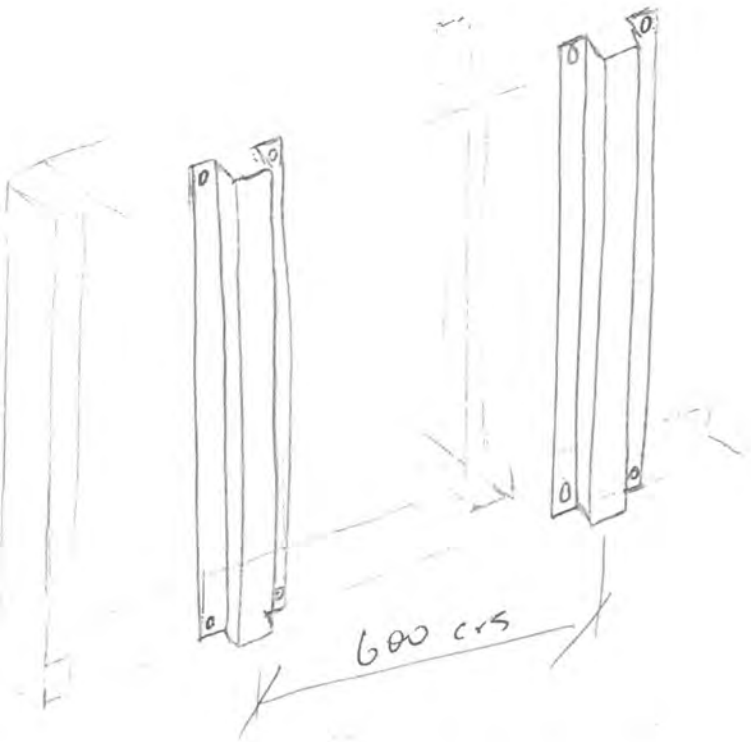
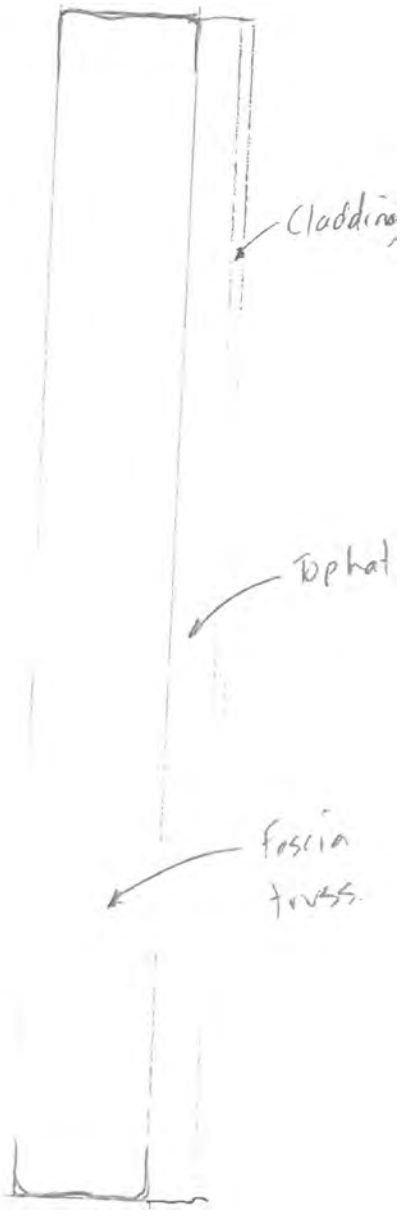
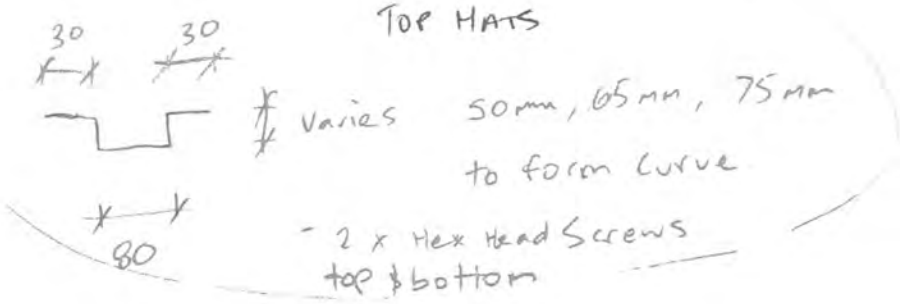
CLADDING DETAIL (4)

- No Insulation blanket
- No Wire Mesh







TOP HATS

Varies 50mm, 65mm, 75mm to form curve

- 2 x Hex Head Screws top & bottom

[redacted] - cladding detail (4)

Vos Construction & Joinery Pty Ltd

Printed on Fri 21 May 2021 at 05:07 pm AEST

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601 Brooker Highway
Glenorchy, Tasmania 7010

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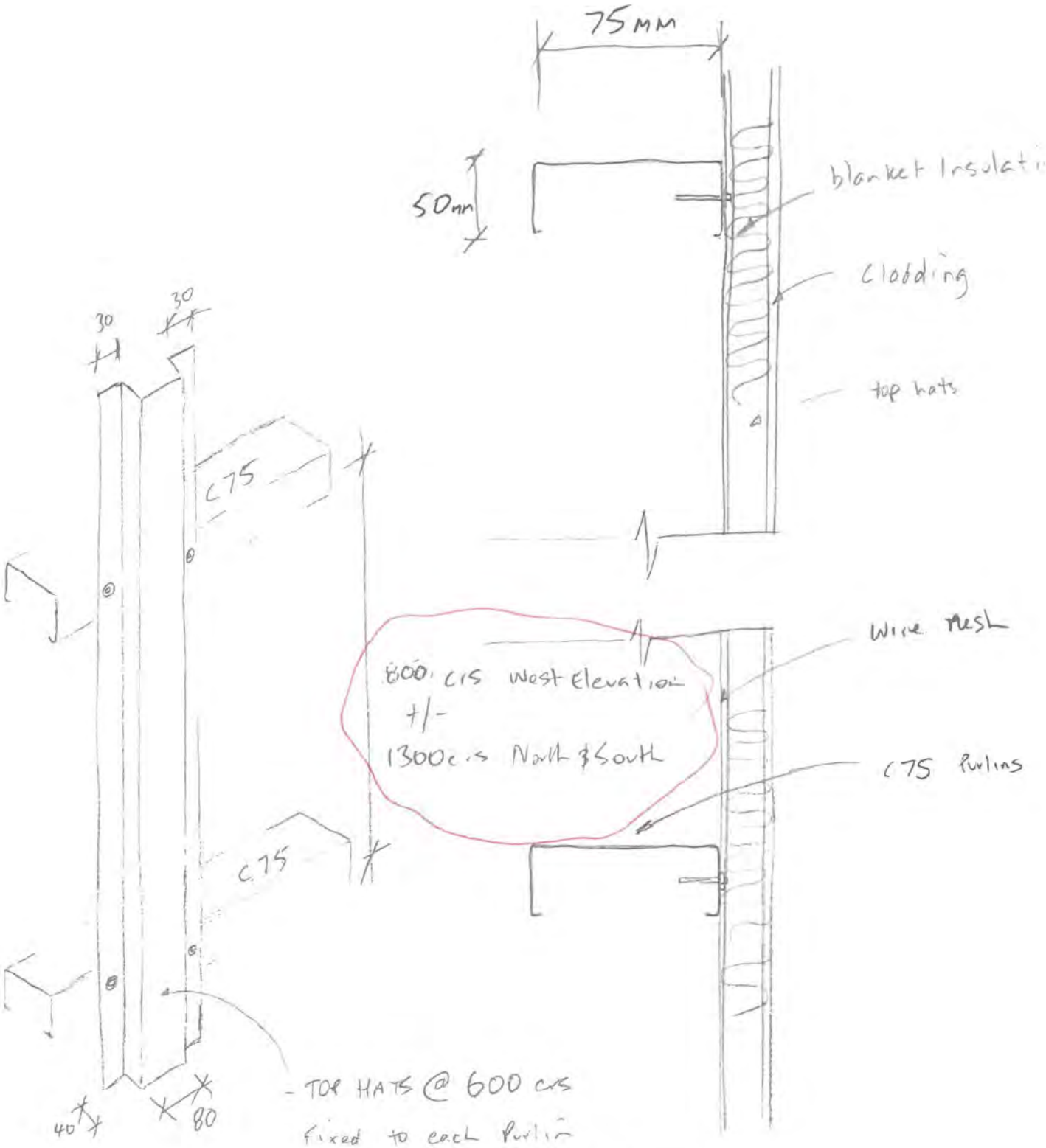

- TOP HATS @ 600 c/s fixed to each Purlin with 2 x Metal Hex Head Screws
- Top hats 1.5mm gauge

cladding detail (5)

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Printed on Fri 21 May 2021 at 05:09 pm AEST

Job #: C000657 DEC Stage 2 works
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Glenorchy, Tasmania 7010

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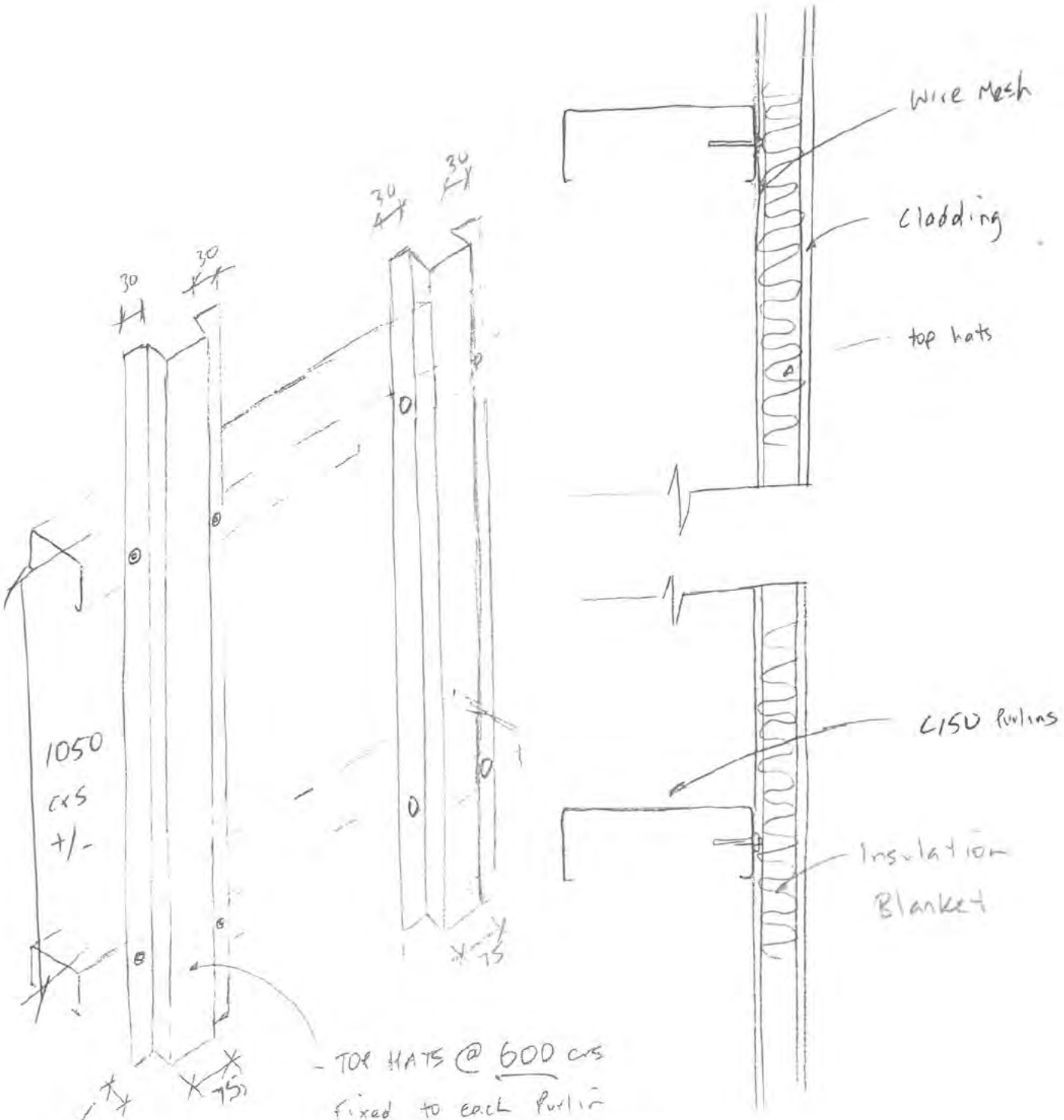

- cladding detail (6)

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Job #: C000657 DEC Stage 2 works
601 Brooker Highway
Glenorchy, Tasmania 7010

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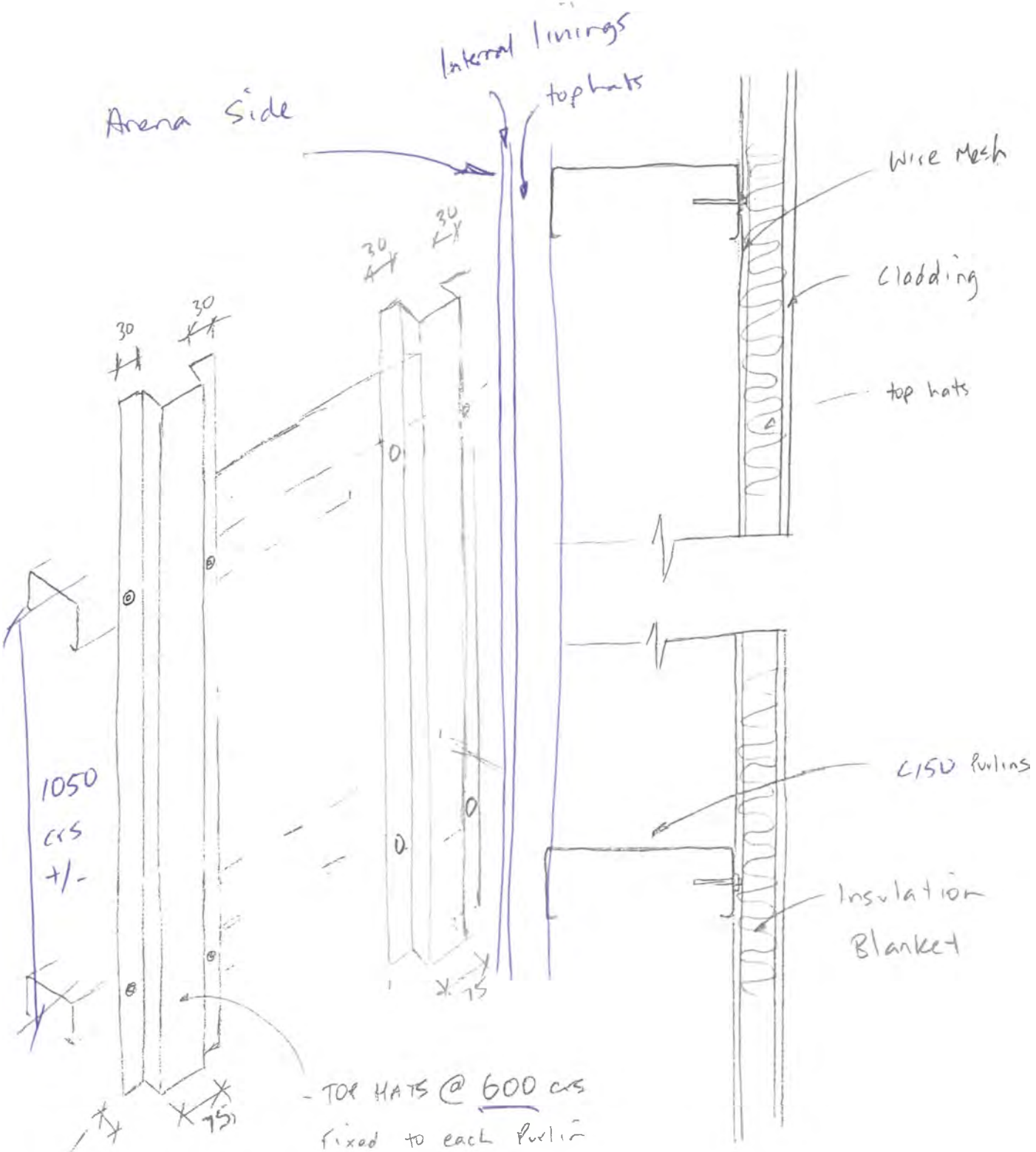

cladding detail (7)

Vos Construction & Joinery Pty Ltd

Printed on Fri 21 May 2021 at 05:08 pm AEST

Job #: C000657 DEC Stage 2 works
601 Brooker Highway
Glenorchy, Tasmania 7010

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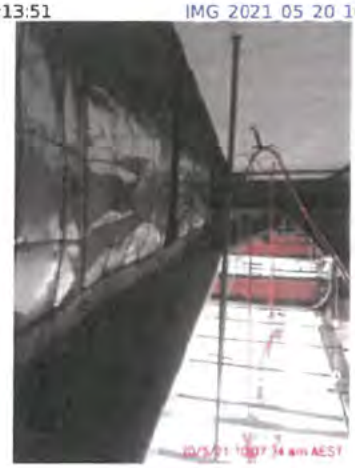

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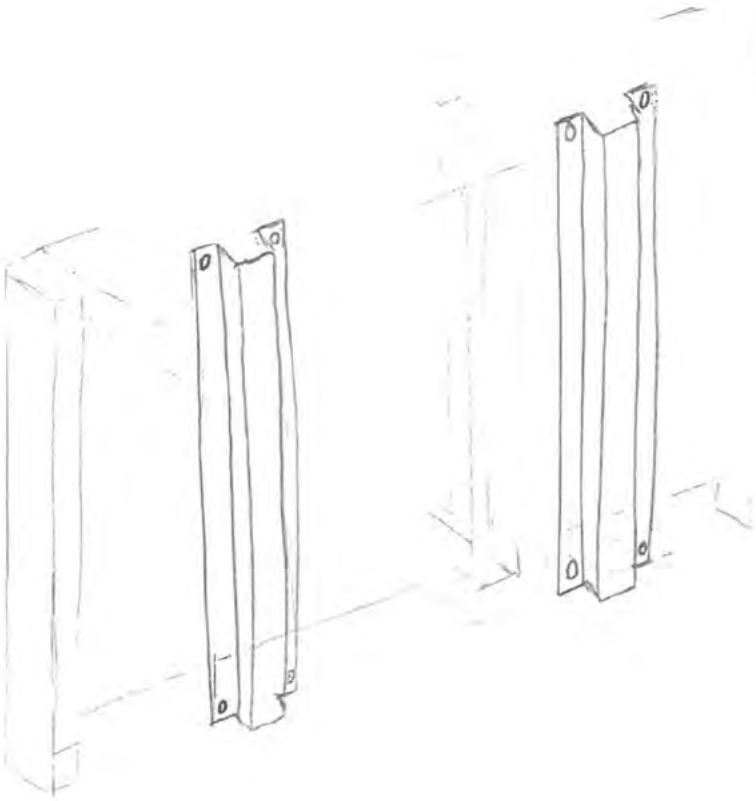

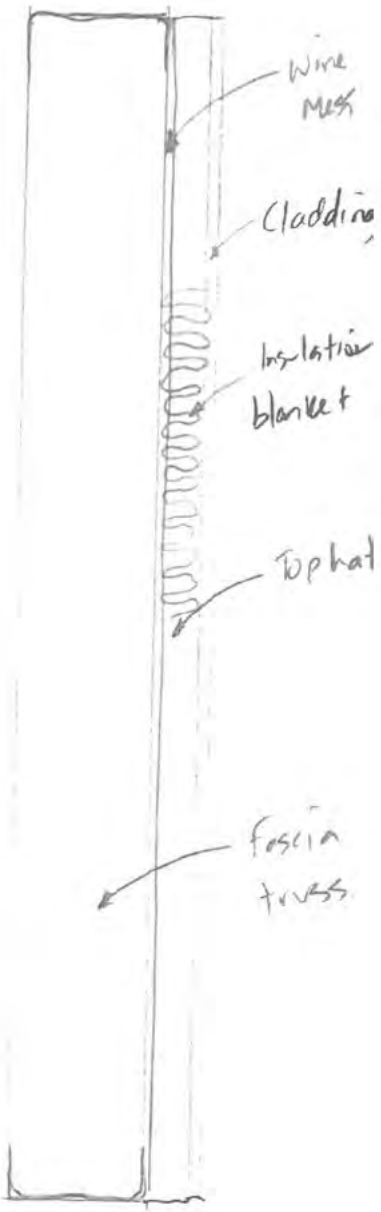

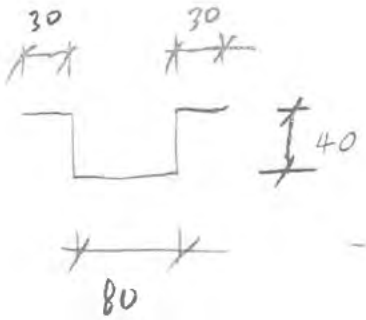

- Top hats 1.5mm Gauge
- 2 x Metal Fixing Hex Head Screws top & bottom

[illegible] - cladding detail (8)

Vos Construction & Joinery Pty Ltd

Printed on Fri 21 May 2021 at 05:01 pm AEST

Job #: C000657 DEC Stage 2 works
601 Brooker Highway
Glenorchy, Tasmania 7010

DEC ally cladding investigations

Description

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DEC ally cladding investigations

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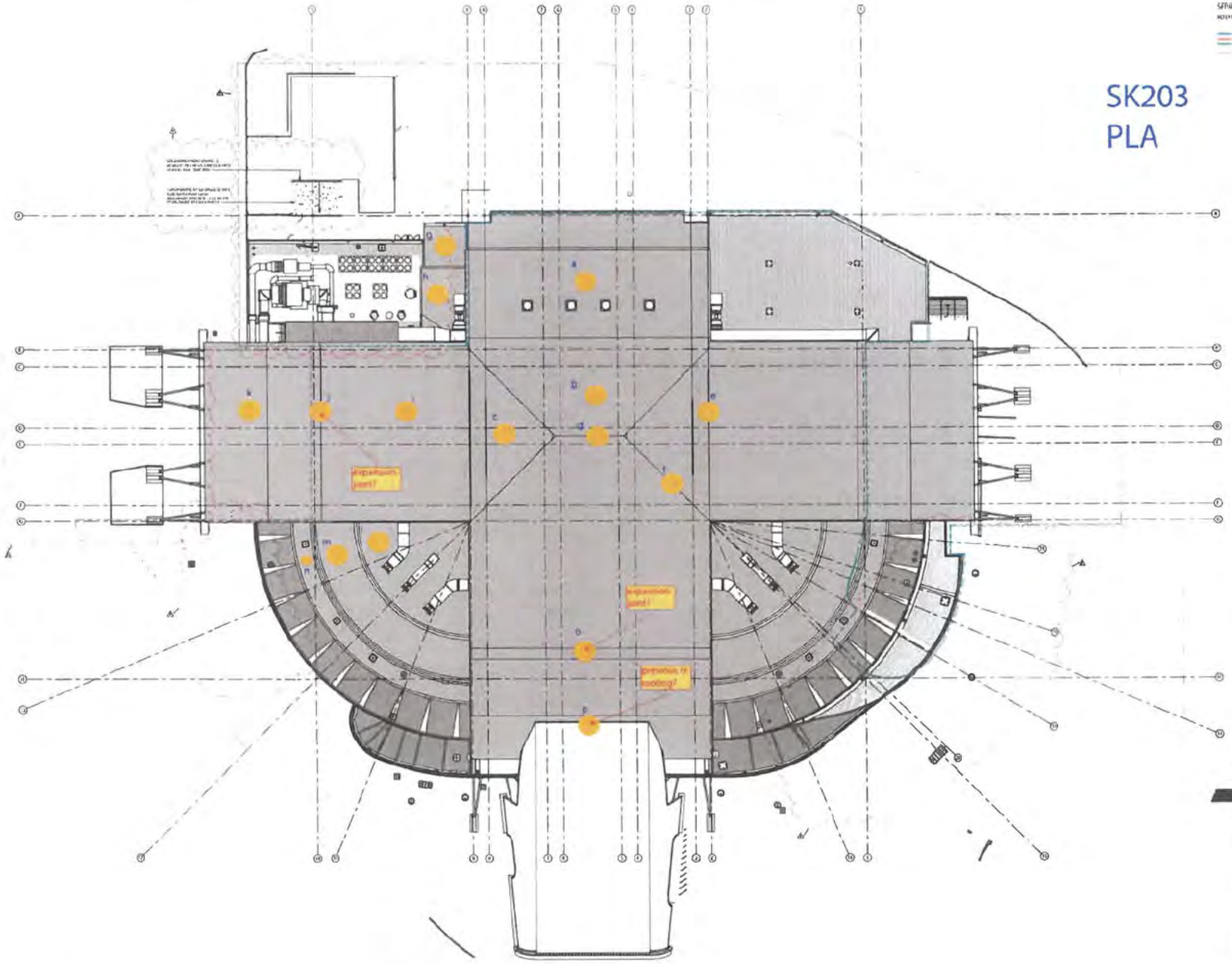
DERWENT ENTERTAINMENT CENTER
STAGE 2 WORKS

ROOF INVESTIGATION REPORT



SK203
PLA

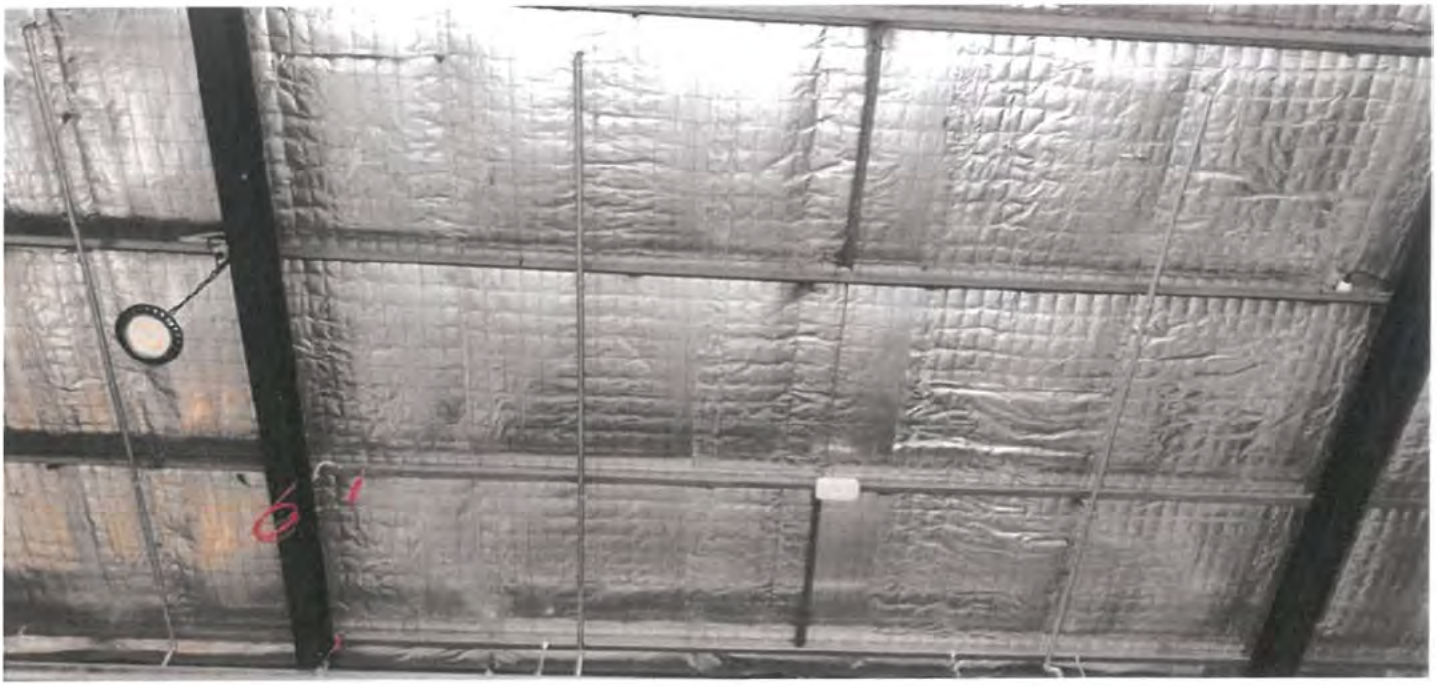
Architects

DESIGN UPDATE

A0503

D

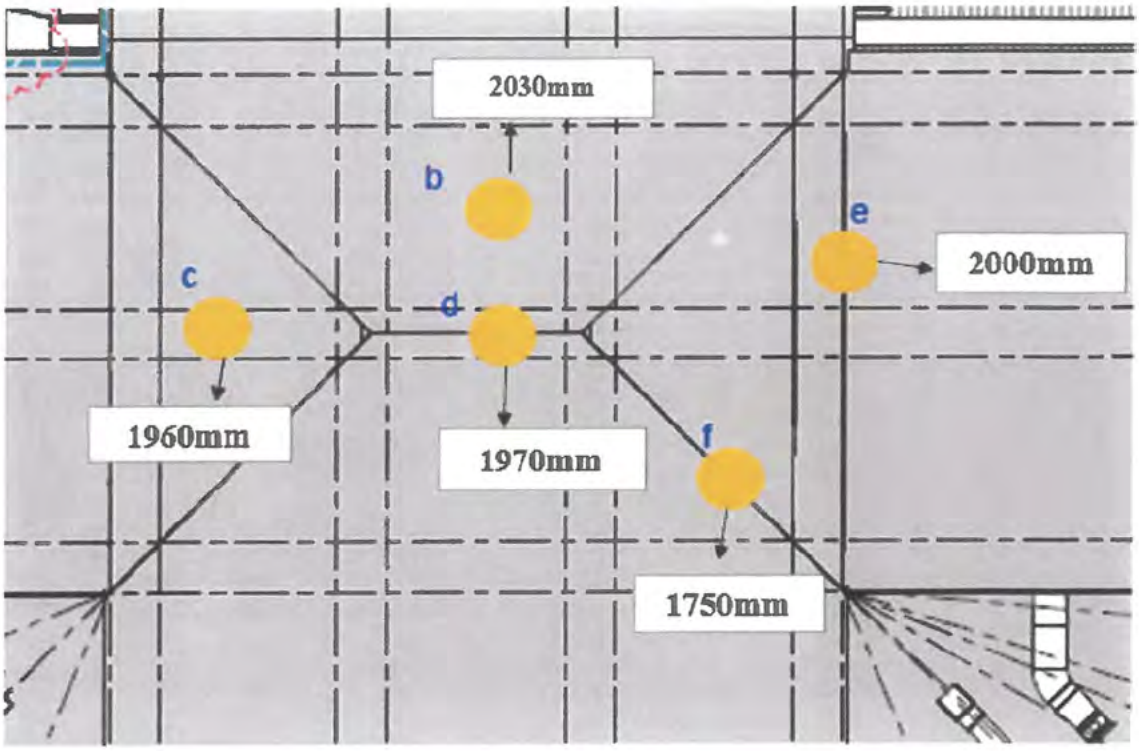
A: BACK OF HOUSE



Notes: 1) Distance between purlin to purlin: 1300mm.

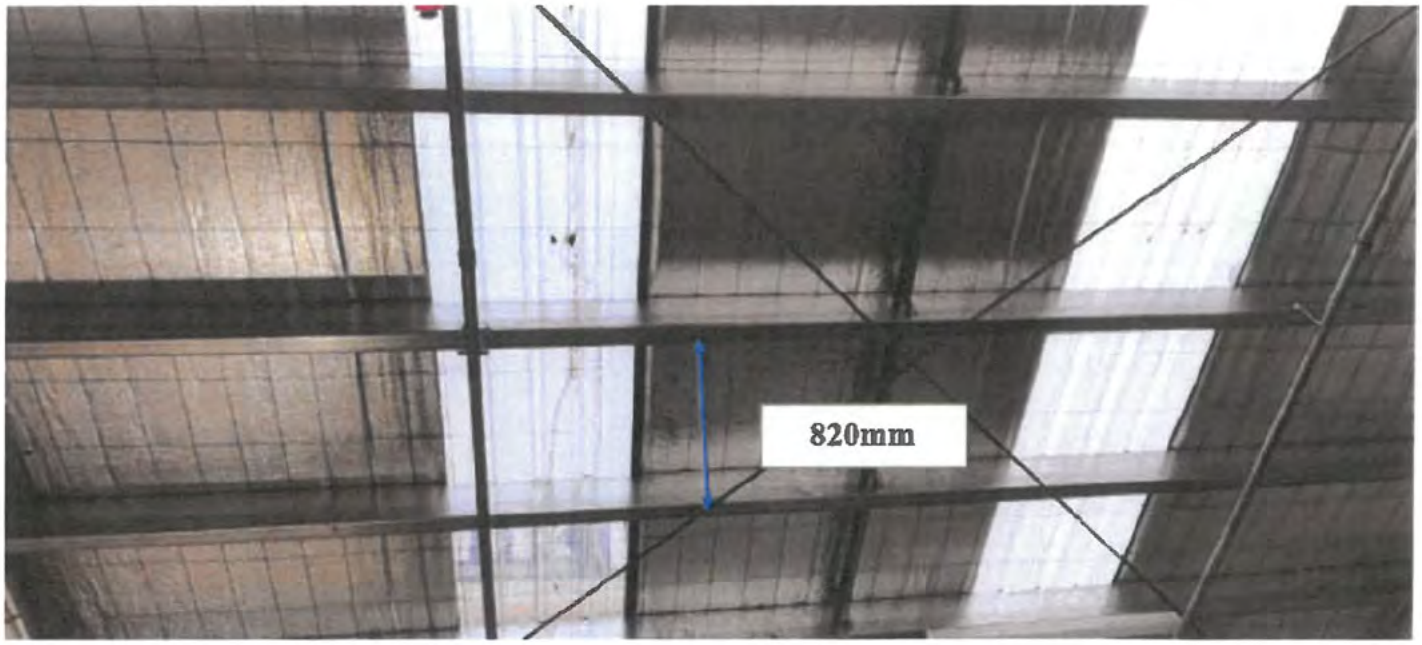
2) Mesh and double layer insulation is installed.

B, C, D, E, F: ARENA



Notes: Distance between purlin-to-purlin measurements at different locations is mentioned above. Meshing and Double layer insulation is installed.

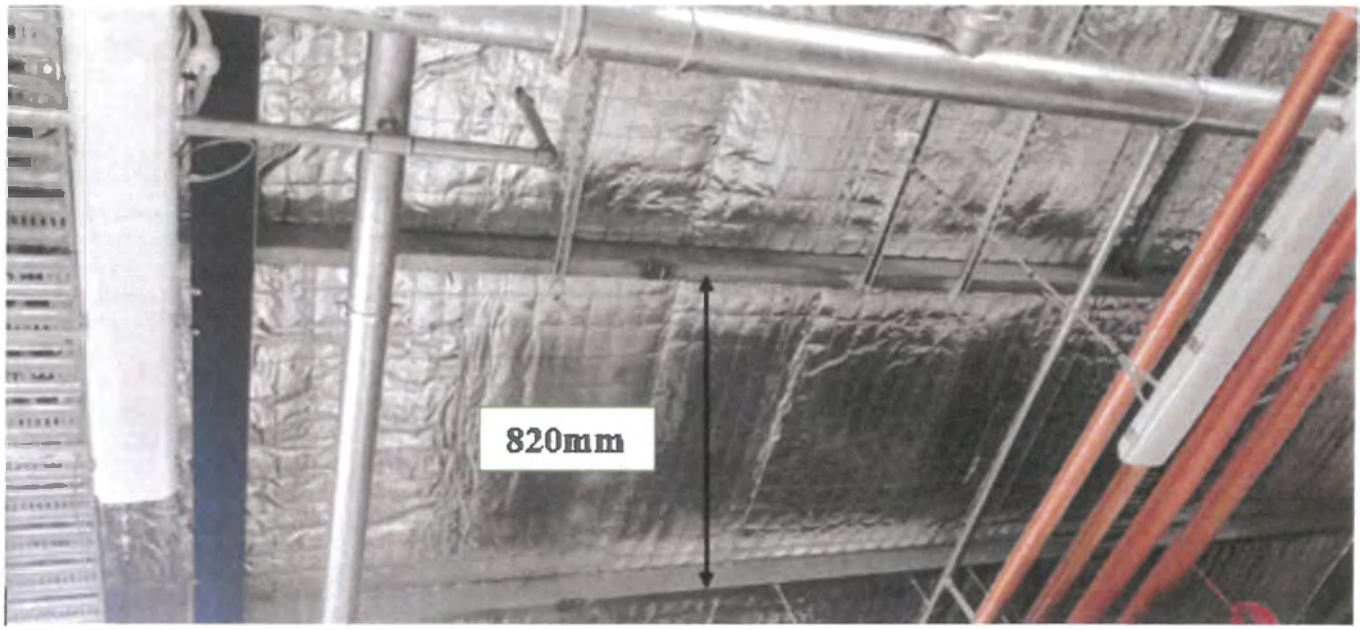
G: SHED



Notes: 1) Distance between purlin to purlin: 820mm

2) Mesh and Sisalation is installed and there is no insulation.

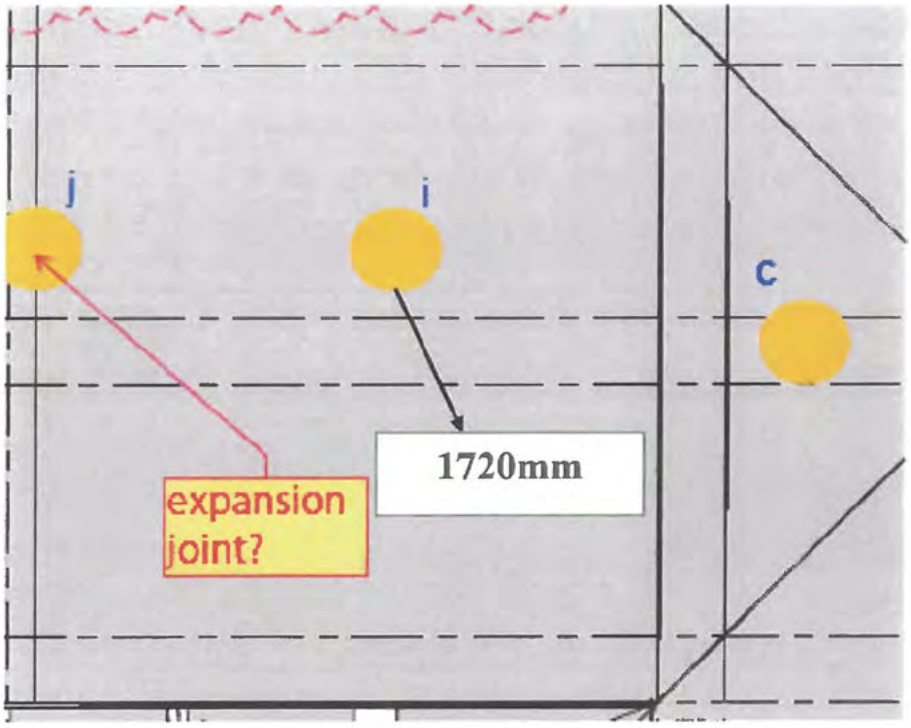
H: SECTOR 3



Notes: 1) Distance between purlin to purlin: 820mm

2) Mesh and single layer insulation are installed.

I: ARENA

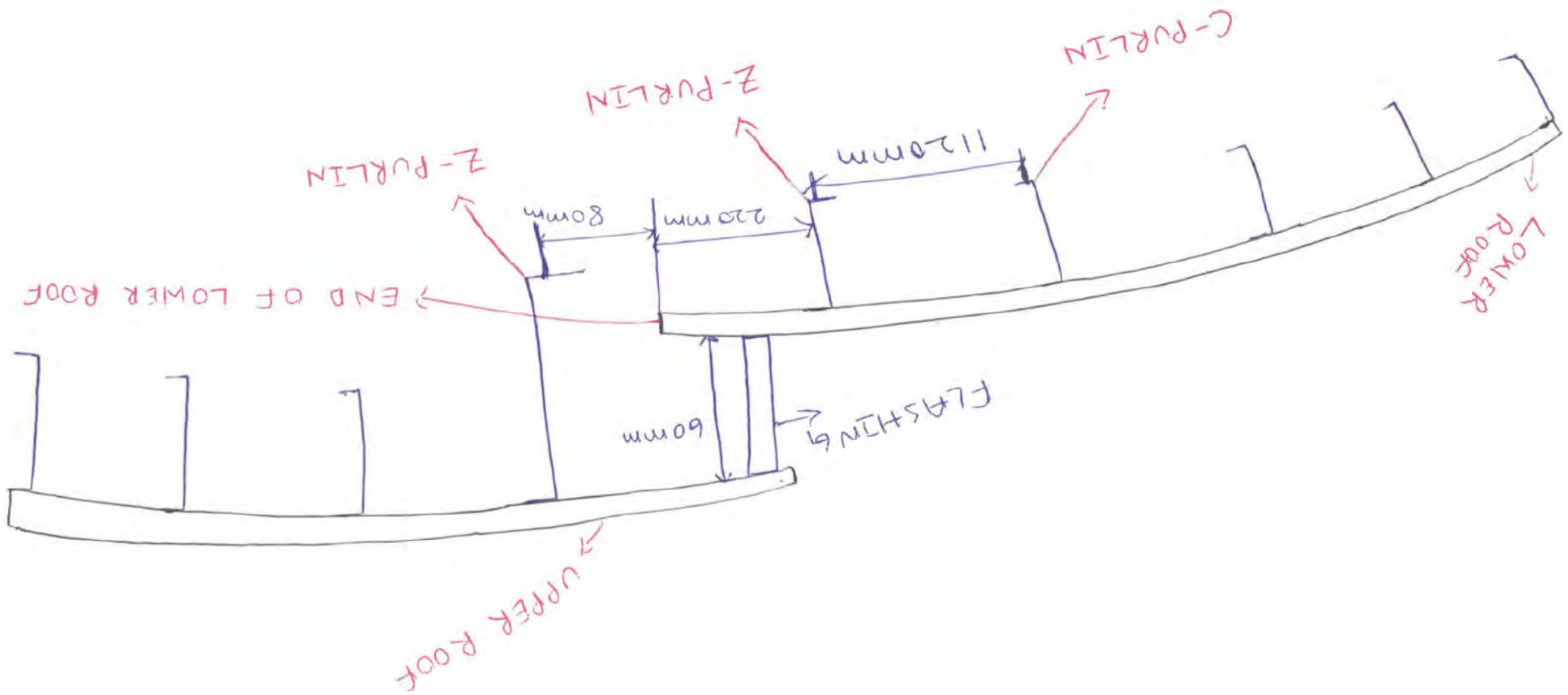


Notes: 1) Purlin to Purlin Distance 1720mm

2) Meshing and double layer insulation is installed.

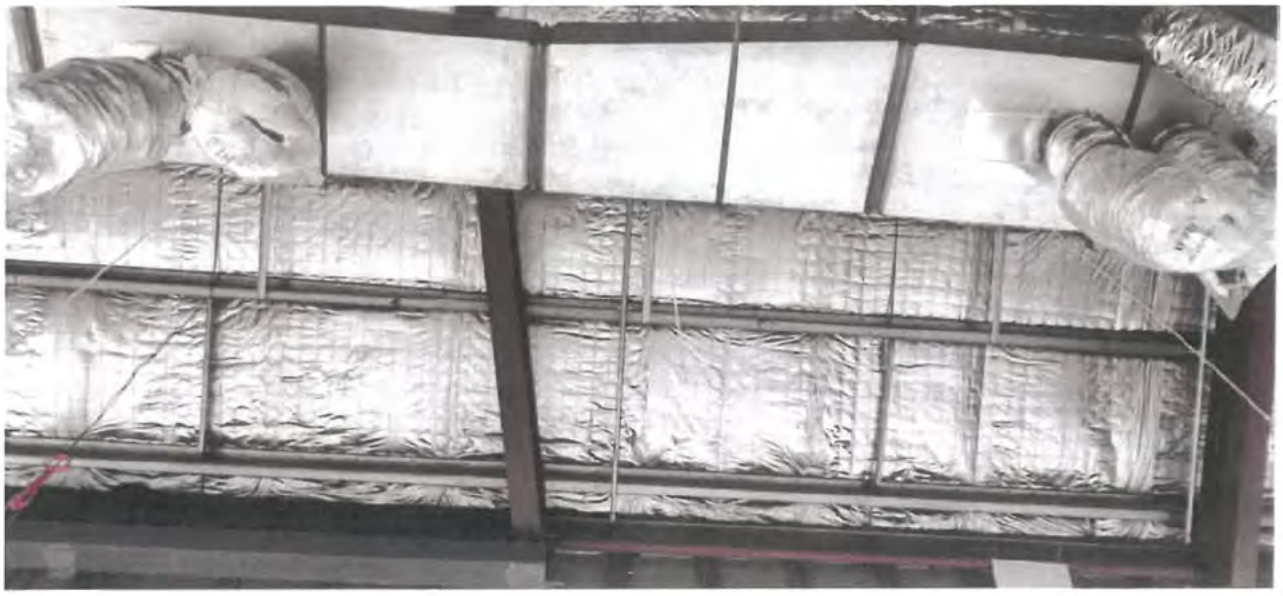
J: SECTOR 3

EXPANSION JOINT



EXPANSION JOINT :-

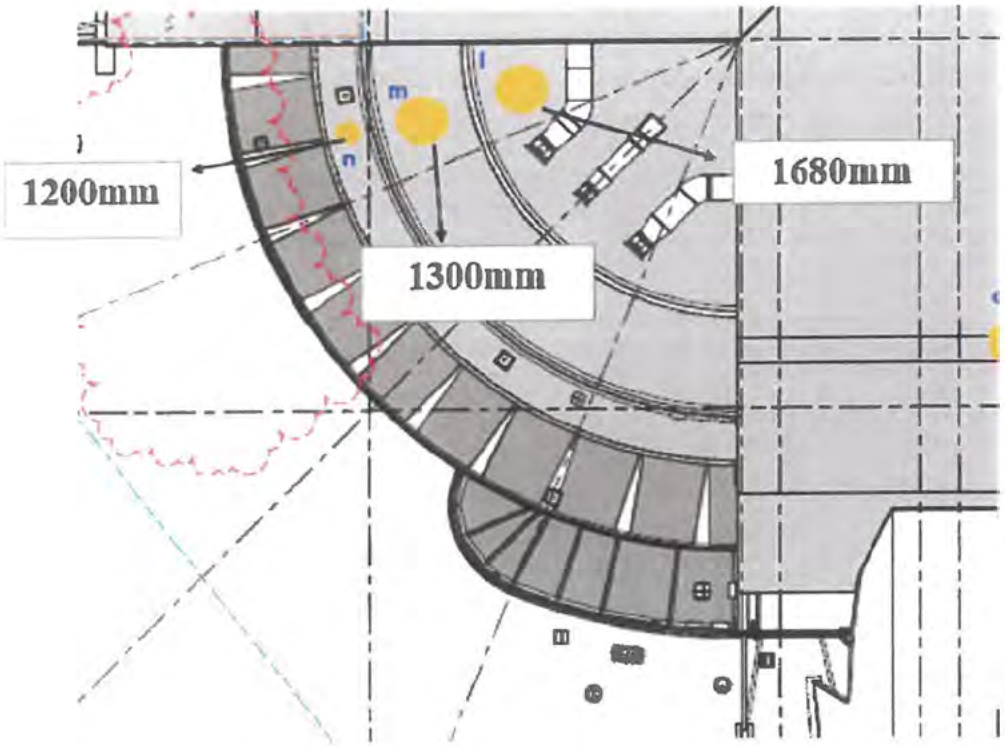
K: SECTOR 3



Notes: 1) Distance between purlin to purlin: 1200mm

2) Meshing and double layer insulation is installed.

L, M, N: SECTOR 2

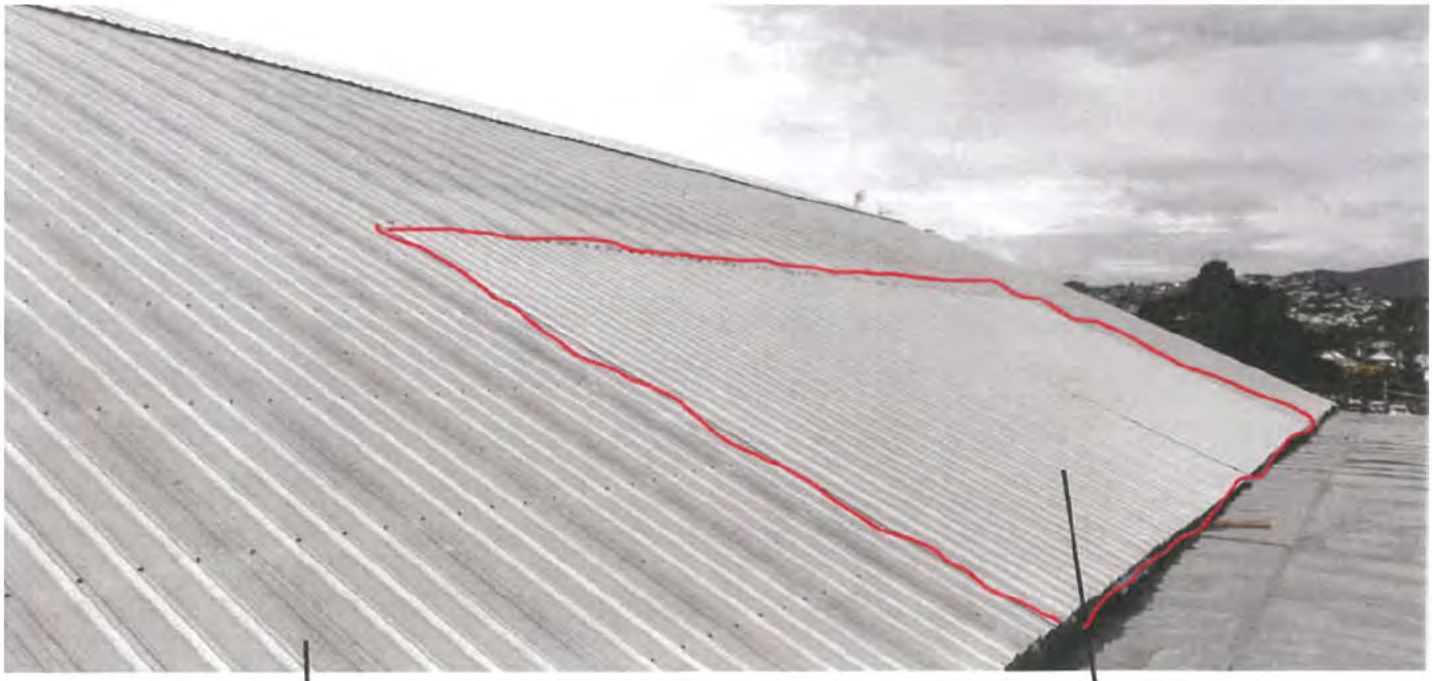


Notes: Distance between purlin to purlin at three locations L, M, N measurements are given. Double layer insulation and meshing is installed.

O: SECTOR 7

EXPANSION JOINT

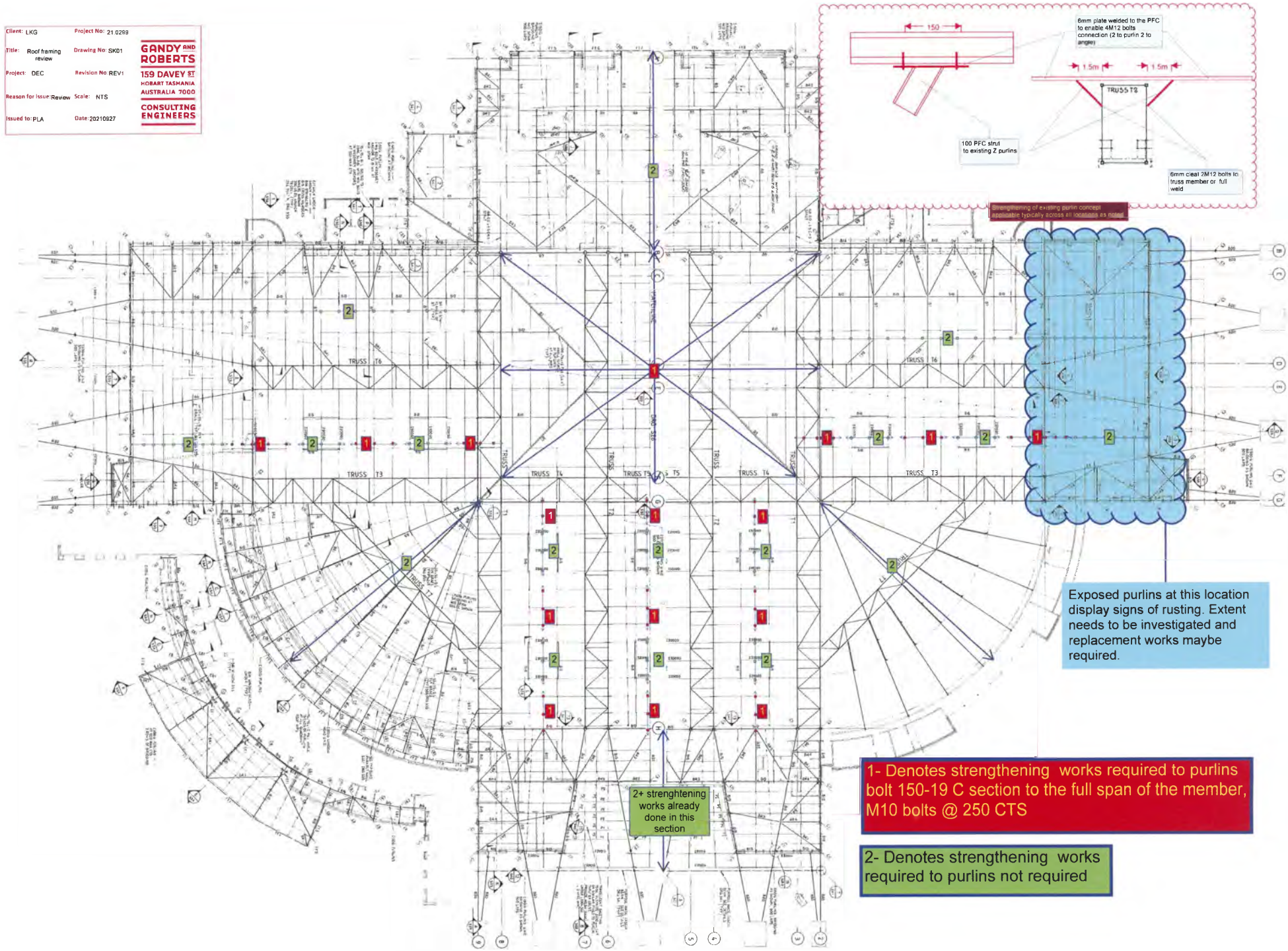
P: SECTOR 7

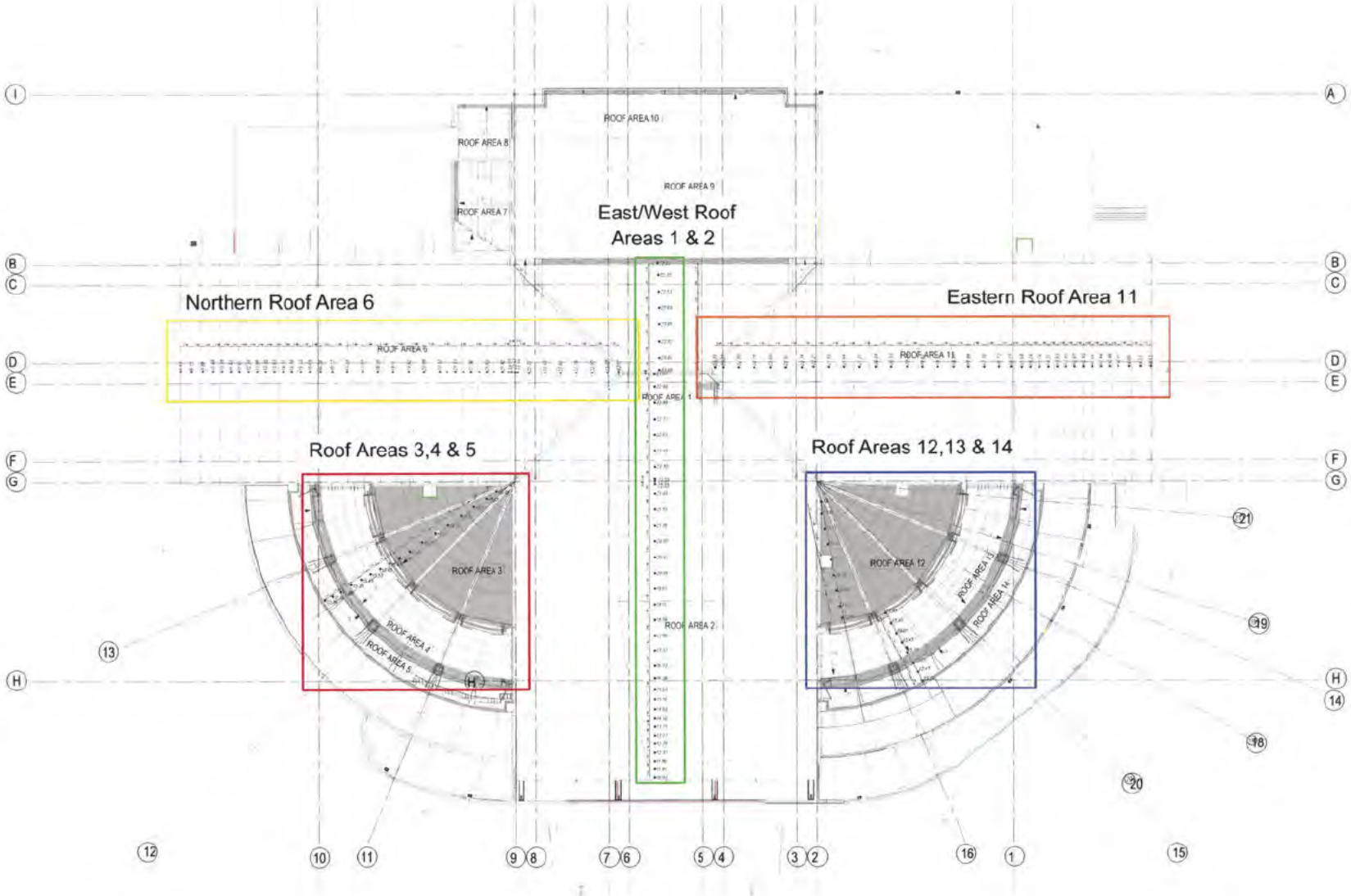


MONOCLAD ROOF

SPANDEK/TRIMDEK ROOF

Notes: The marked-up area is a new roof. The spandek or trimdek roof sheets were used for new roof area. The monoclad roof sheets were used for existing roof.


Client: LKG
Project No: 21.0299
Title: Roof framing review
Drawing No: SK01
Project: DEC
Revision No REV1
Reason for Issue: Review
Scale: NTS
Issued to: PLA
Date: 20210927
GANDY AND ROBERTS
159 DAVEY ST
HOBART TASMANIA
AUSTRALIA 7000
CONSULTING ENGINEERS
150
6mm plate welded to the PFC to enable 4M12 bolts connection (2 to purlin 2 to angle)
1.5m
1.5m
TRUSS T8
100 PFC strut to existing Z purlins
6mm cleat 2M12 bolts to truss member or full weld
Strengthening of existing purlin concept applicable typically across all locations as noted
TRUSS T6
TRUSS T3
TRUSS T4
TRUSS T5
Exposed purlins at this location display signs of rusting. Extent needs to be investigated and replacement works maybe required.
2+ strenghtening works already done in this section
1- Denotes strengthening works required to purlins bolt 150-19 C section to the full span of the member, M10 bolts @ 250 CTS
2- Denotes strengthening works required to purlins not required



NOTES

Date of Survey: 1 September 2021

Bearing datum is per SP157350

Horizontal datum is plane with Truncated MGA94 coordinates adopted at SPM8213 of
E 816.194 (-520000.00)
N 8440.820 (-5250000.00)

Vertical datum is AHD per SPM 6213 with reputed RL 2.761m

Only those features/points specifically requested by John Faulkner of Philp Lighton Architects have been located and subsequently shown on this plan.

Design grids are per supplied AutoCAD drawing file by Philp Lighton Architects 20-318 A0501.dwg supplied via dropbox 18 February 2021

Survey points located by this survey are shown as ⊕ & are the centre of screw head securing colorbond roofing. Located from walking the external roof surface.

Levers shown on this plan ⊕ are measured at the top of the roofing screws.

Due to the inherent dangers accessing the roof to locate the roof screws due to roof pitch & unguarded edges of the roof PDA Surveyors engaged Spidertech to access each of the roof screws surveyed. Some of these points have been able to be measured accurately & others have had to be located using a high survey pole. Due to the difficulties in access & the use of staff outside of PDA surveyors to conduct the survey there maybe some inaccuracies within this survey. From site checks we believe the accuracy of surveyed roofing screws is ±0.020m

If distances between screw heads is critical & requires better accuracy than that stated, physical check measurements will required to confirm noted dimensions prior to any construction.

Background data per Philp Lighton Architects plan A1013-B for illustrative purposes only.

SHEET 1 OF 3

REV	AMENDMENTS	BRAWN	DATE	APPR
E				
D				
C				
B				
A				

NOTES

0 1 2 5 10 25m

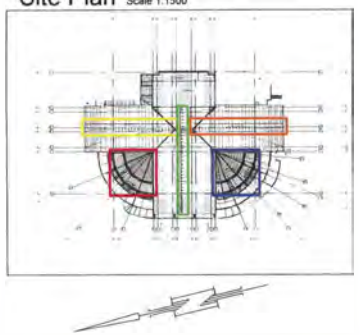
SURVEYOR: CH	CADCAM: 45343MD
DRAWN: CH	CHECKED: MD
DATE: 3 SEPTEMBER 2021	

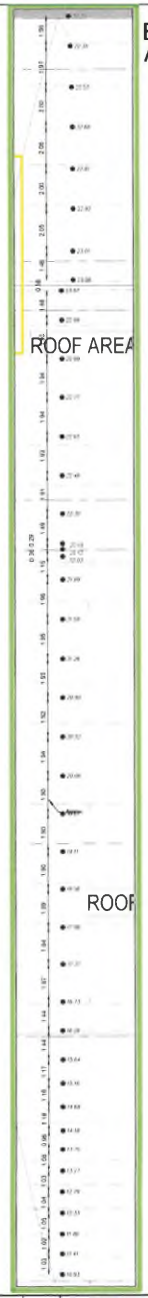
ROOF SCREW SURVEY
MYSTATE BANK ARENA
601 BROOKER HIGHWAY, GLENORHCY
for PHILP LIGHTON ARCHITECTS

PDA Surveyors
Surveying, Engineering & Planning
127 Bathurst Street
Hobart, Tasmania 7000
www.pda.com.au
Also at Kingston, Launceston & Burnie
PHONE +61 03 6234 3217
FAX +61 03 6234 3283
E-MAIL pda.hba@pda.com.au

SCALE	PAPER
1:250	(A1)
JOB NUMBER	DRAWING
45343MD - 3	

Site Plan Scale 1:1500

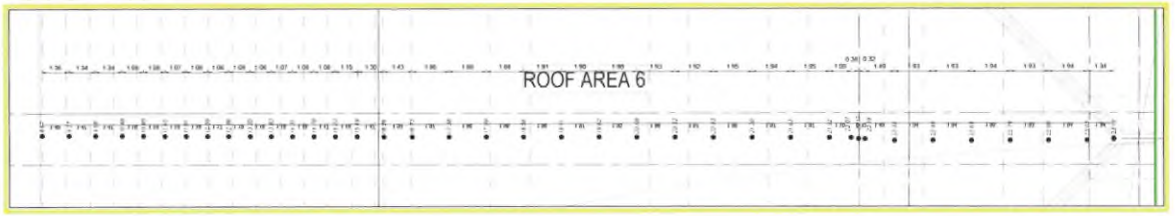




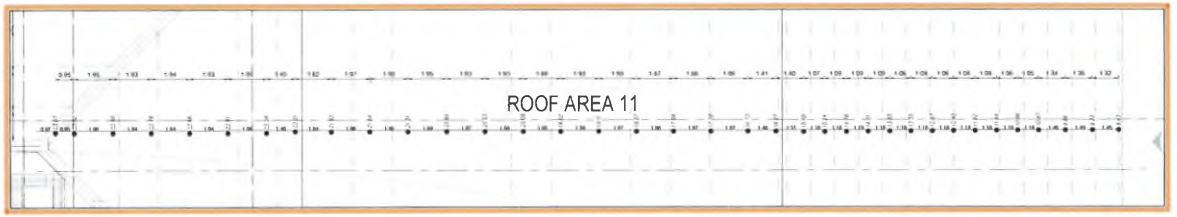
East/West Roof Area 1 & 2

Note: All dimensions on this sheet are horizontal distances (perpendicular to roof purlins) between roofing screws

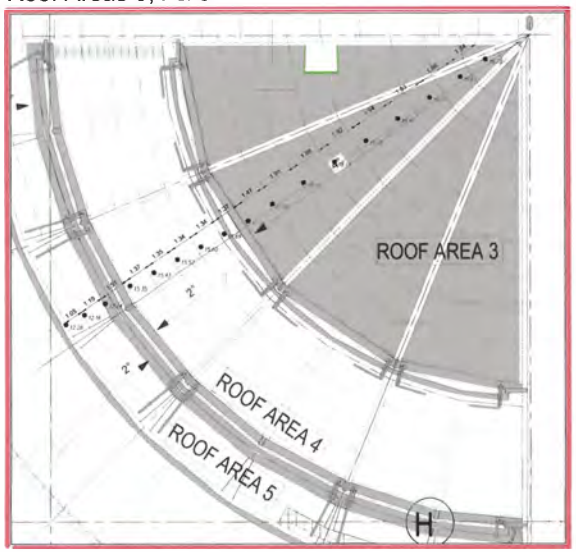
Northern Roof Area 6



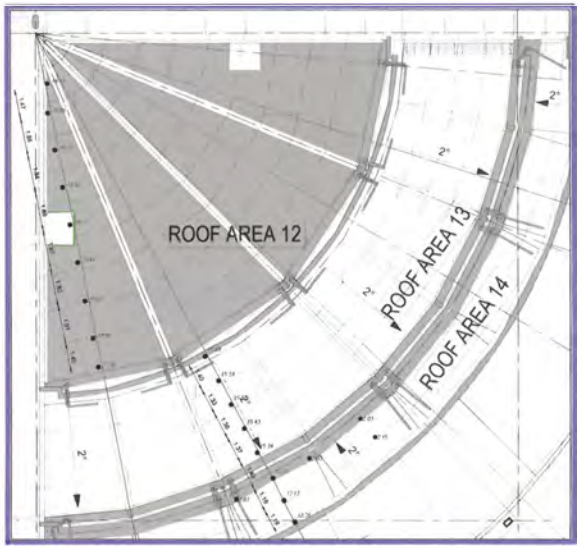
Southern Roof Area 11



Roof Areas 3,4 & 5



Roof Areas 12,13 & 14



NOTES

Date of Survey: 1 September 2021

Bearing datum is per SP157350.

Horizontal datum is plane with Truncated MGA94 coordinates adopted at SPM6213 of
E 819.194 (-522000.00)
N 8440.820 (-5250000.00)

Vertical datum is AHD per SPM 6213 with reputed RL 2.761m

Only those features/points specifically requested by John Faulkner of Philp Lighton Architects have been located and subsequently shown on this plan.

Design grids are per supplied AutoCAD drawing file by Philp Lighton Architects 20-318 A0501.dwg supplied via dropbox 16 February 2021.

Survey points located by this survey are shown as ✱ & are the centre of screw head securing colorbond roofing. Located from walking the external roof surface.

Levels shown on this plan ✱ 11.44 are measured at the top of the roofing screws

Due to the inherent dangers accessing the roof to locate the roof screws due to roof pitch & unguarded edges of the roof, PDA Surveyors engaged Spidertech to access each of the roof screws surveyed. Some of these points have been able to be measured accurately & others have had to be located using a high survey pole. Due to the difficulties in access & the use of staff outside of PDA surveyors to conduct the survey there maybe some inaccuracies within this survey. From site checks we believe the accuracy of surveyed roofing screws is ±0.020m.

If distances between screw heads is critical & requires better accuracy than that stated, physical check measurements will required to confirm noted dimensions prior to any construction.

Background data per Philp Lighton Architects plan A1013-B for illustrative purposes only.

REV	AMENDMENTS	DRAWN	DATE	APPR
E				
D				
C				
B				
A				

NOTES Scale 1:125

0 0.5 1 2.5 5 12.5m

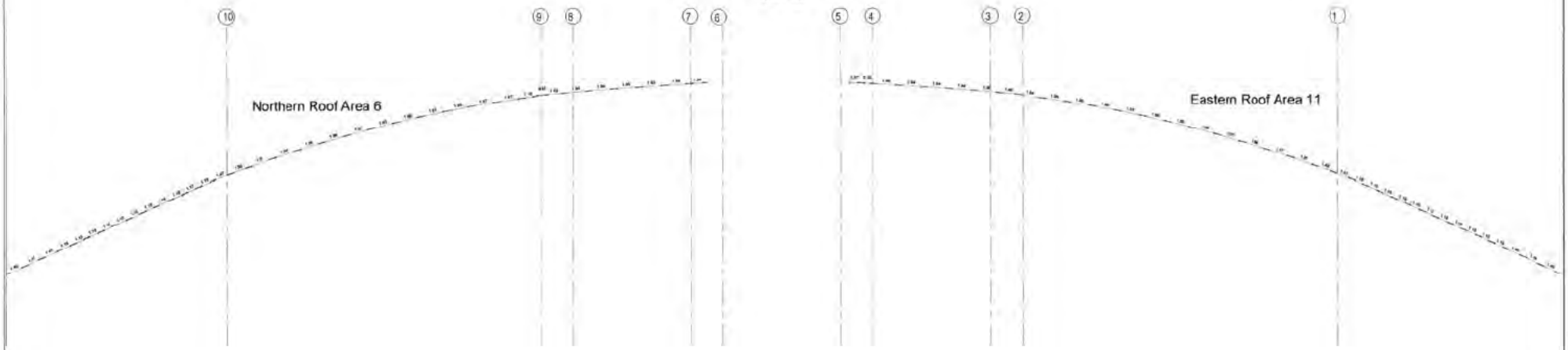
SURVEYOR	CH
GEODML	45343MD
DRAWN	CH
CHECKED	MD
DATE	3 SEPTEMBER 2021

ROOF SCREW SURVEY
MYSTATE BANK ARENA
601 BROOKER HIGHWAY, GLENORHCY
for PHILP LIGHTON ARCHITECTS

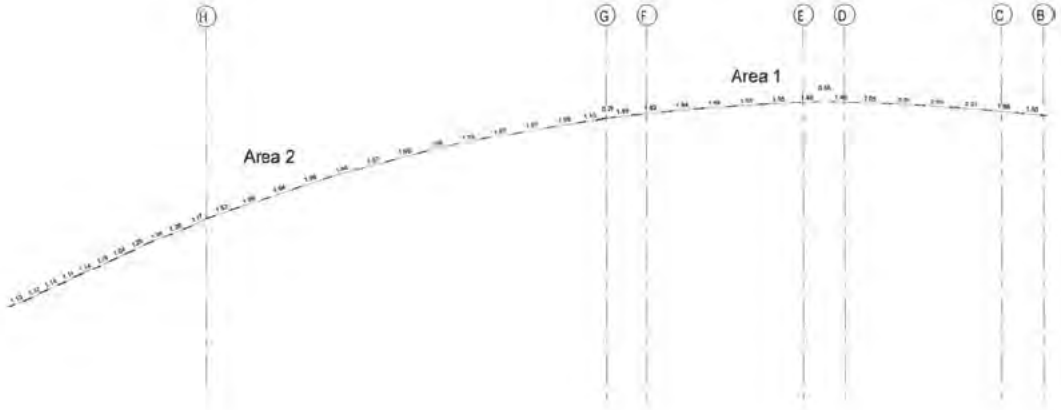
PDA Surveyors incorporating WALTER SURVEYS
Surveying, Engineering & Planning
127 Bathurst Street
Hobart, Tasmania, 7000
www.pda.com.au
Also at: Kingston, Launceston & Burnie
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au

SCALE	PAPER
1:125	(A1)
JOB NUMBER	DRAWING
45343MD - 4	

Section View
North/South Roof Areas 6 & 11
Scale 1:150



Section View
East/West Roof Area 1 & 2
Scale 1:150



NOTES

Date of Survey: 1 September 2021

Bearing datum is per SP157350

Horizontal datum is plane with Truncated MGA94 coordinates adopted at SPM6213 of
E 819.194 (-522000.00)
N 8440.820 (-5250000.00)

Vertical datum is AHD per SPM 6213 with reputed RL 2.761m

Only those features/points specifically requested by John Faulkner of Philp Lighton Architects have been located and subsequently shown on this plan

Design grids are per supplied AutoCAD drawing file by Philp Lighton Architects 20-318 A050.1.dwg supplied via dropbox 18 February 2021

Survey points located by this survey are shown as ⊕ & are the centre of screw head securing colorbond roofing. Located from walking the external roof surface.

Levels shown on this plan ⊕ thus are measured at the top of the roofing screws.

Due to the inherent dangers accessing the roof to locate the roof screws due to roof pitch & unguarded edges of the roof, PDA Surveyors engaged Spidertech to access each of the roof screws surveyed. Some of these points have been able to be measured accurately & others have had to be located using a high survey pole. Due to the difficulties in access & the use of staff outside of PDA surveyors to conduct the survey there may be some inaccuracies within this survey. From site checks we believe the accuracy of surveyed roofing screws is ±0.020m

If distances between screw heads is critical & requires better accuracy than that stated, physical check measurements will required to confirm noted dimensions prior to any construction

Background data per Philp Lighton Architects plan A1015-B for illustrative purposes only.

Note: All dimensions on this sheet are slope distances between roofing screws parallel to gridlines

(See Sheets 1 & 2 for plan notes)

SHEET 3 OF 3

REV	AMENDMENTS	DRAWN	CHKD	APPR
E				
D				
C				
B				
A				

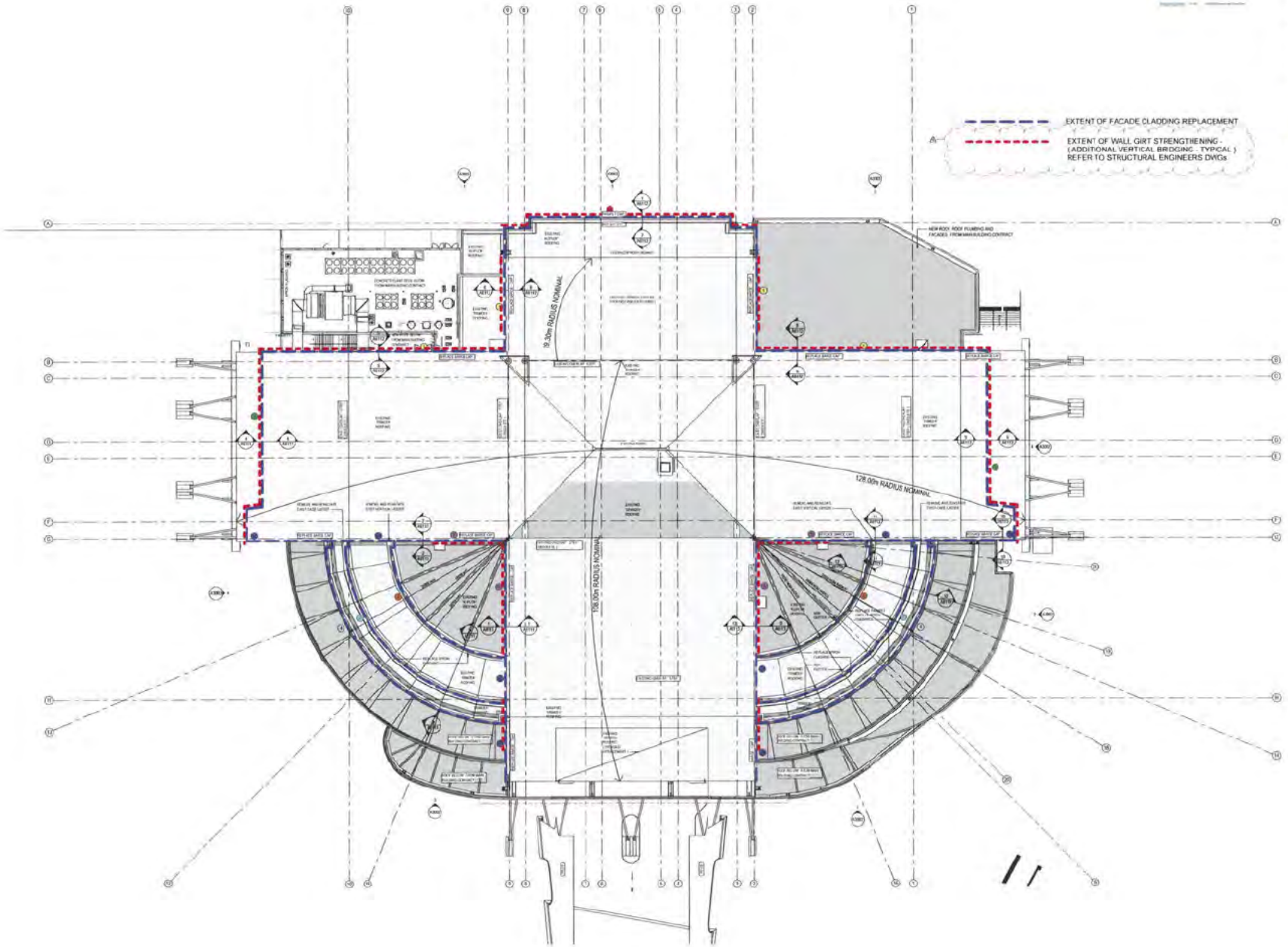
NOTES 1:150
0 1 2 4 6 15m

SURVEYED	CLIENT JOB
CH	45343MD
DRAWN	CHK DES'D
CH	MD
DATE	
3 SEPTEMBER 2021	

ROOF SCREW SURVEY
MYSTATE BANK ARENA
601 BROOKER HIGHWAY, GLENORHCY
for PHILP LIGHTON ARCHITECTS

PDA Surveyors
Surveying, Engineering & Planning
WALTER SURVEYS
127 Bathurst Street
Hobart, Tasmania, 7000
www.pda.com.au
Also at Kingston & Burnie
Launceston & Burnie
PHONE: +61 (0)6234 3011
FAX: +61 (0)6234 3065
EMAIL: pda.hbt@pda.com.au

SCALE	PAPER
1:150	(A1)
JOB NUMBER	DRAWING
45343MD - 5	



1 L03_GA ROOF PLAN - FACADE REPLACEMENT
1 : 200

PhilpLighton Architects

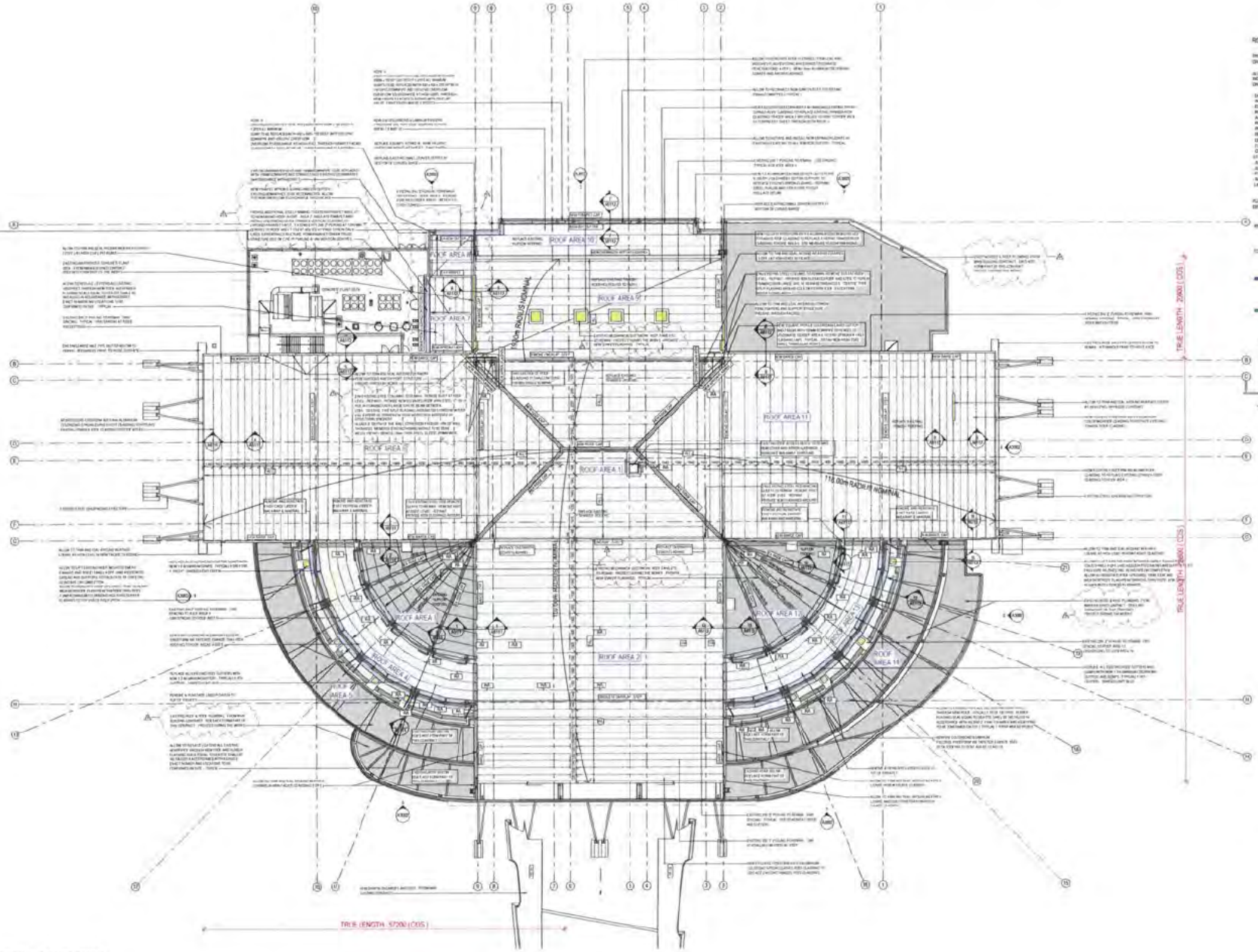
Rev	Description	Date
A	ISSUE TO CONTRACTORS	2020.12
B	ISSUED FOR TENDER	27.04.2021

LG GROUP
DERIMOT ENTERTAINMENT CENTRE
651 PARRAMATTA RD, LEICHHARDT NSW 2040

ROOF PLAN - FACADE REPLACEMENT

REVISED TENDER & IFA

Drawn by	Appd	Project Number
JT	AT	20.318
Scale	Date	
As indicated @ A0	27.04.2021	
Drawing No.		Rev.
A1012		B



1 L01 GA ROOF PLAN - ROOF REPLACEMENT
1 : 500

ROOF REPLACEMENT LEGEND

EXISTING PARAPET CAP TO BE REPLACED - REFER ALSO TO 10 610 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

EXISTING 1500 X 1500 MM SUMP BOX (LIFTER TO BE REPLACED - REFER ALSO TO 4110 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS. REFER TO HYDRAULIC ENGINEER

EXISTING COVER CAPPING TO STEEL ‘UC OR TRUSS RAFTERS AND BOX GUTTER SUMP PANS TO BE REPLACED - REFER ALSO TO 4110 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

EXISTING BOX GUTTER STEPPING TO BE REPLACED - TYPICALLY 1200MM, IN BOX GUTTER ENDS IN TWIN SUMPS - REFER ALSO TO 4110 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

EXISTING 1500 X 500 EXP BOX GUTTER SUMP TO BE REPLACED - REFER TO HYDRAULIC ENGINEERS FOR DETAILS ALL SIZES TO BE CONFIRMED ON SITE WITH EXISTING STRUCTURE. SIZES TO BE INCREASED TO WIDTH - WHERE CAN BE DROPPED BELOW ROOF DETAIL ARE 1800 X 1800MM MINIMUM, PERFORATED ALUMINIUM SHEET LEAF GUARDS OVER BOX GUTTER SUMPS - WILL ENABLE FLOW AND PREVENTION

EXISTING VELUX DOMPPS AND SPREADER TO BE REPLACED - PAINT FINISH ABOVE EXPOSED - REFER TO HYDRAULIC ENGINEER

NEW SKYLIGHTS OVER FOR - DIAGRAMS FROM MERIDIAN OF SCH 2017/18 SUMPS - PAINT FINISH WHERE EXPOSED - REFER TO HYDRAULIC ENGINEER FOR NEW LOCATION AND DETAILS

CONTRACTOR TO ERECT AND INCL & COMPLY WITH FOR TEMPORARY ROOF ACCESS AND EGRESS SYSTEM AS SPECIFIED TO THE EXISTING BUILDING TO AS1657

ALL AREAS OF THE ROOF TO BE ACCESSIBLE FOR MAINTENANCE AND HAVE MEANS OF ANCHORAGE OR HARNESS CLEARANCE CONNECTION TO SINGLE MAN SAFARE SAFETY D'ELETS TO NCES ACCORDING

COMPLETE SYSTEM TO BE DESIGNED AND INSTALLED BY UK ACCREDITED ROOF SAFETY CONTRACTOR

ALL WORKS TO BE INCLUDED IN PC SUM

PhilipDignon Architects

Rev	Description	Date	Chkd
A	ROOF REPLACEMENT - TENDER	26.06.20	RL
B	ROOF REPLACEMENT - TENDER	30.07.20	RL

Project
LK GROUP
CLEMENT ENTERTAINMENT CENTRE
601 BROOKSWAY, CLONCURRY Tas 4824

Title
ROOF PLAN - ROOF REPLACEMENT

Status
REVISED TENDER & RA

Drawn by: JT	Rev: B0	Project Number:	
Scale: As indicated @ A1	Date: 30.07.2020	20.316	
Drawing No: A1011		Rev: C	

ROOF REPLACEMENT LEGEND

This DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANTS DRAWINGS & SPECIFICATIONS

ALLOW TO REMOVE, UPGRADE AND REPLACE THE FOLLOWING EXISTING ITEMS INCLUDING FLASHING AND WATERPROOFING ALL PENETRATIONS THROUGH ROOF CLADDING ON COMPLETION

- DOWNPIPE SPREADERS AND DOWNPIPES
- A/C CONDENSOR UNITS AND MECHANICAL DUCTWORK THAT ARE TO REMAIN IN SERVICE
- ELECTRICAL CONDUIT AND WIRING THAT IS TO REMAIN IN SERVICE
- ROOF DRAINAGE OVERFLOW PIPES - GENERALLY 100 UPVC - PAINT FINISH
- ANTENNA AND COMMUNICATIONS EQUIPMENT
- ROOF SAFETY LADDERS, LADDER CATCHES AND HANDRAILS
- ROOF ANCHOR SAFETY EYELETS & SS CABLES - REMOVE AND REPLACE ALL EYELETS RETEST AND CERTIFY
- DENOTED LRA 1 ON THE PLAN INDICATIVE LAYOUT ONLY
- FINAL LAYOUT TO BE CONFIRMED BY AN ACCREDITED ROOF SAFETY INSTALLATION COMPANY ENSURE NEW INSTALLATION MEETS CURRENT AUTHORITY AND AUSTRALIAN STANDARD COMPLIANCE
- ALUMINIUM ROOF WALKWAYS AND SUPPORT FRAMING
- ALL BARGE AND PARAPET CAPPINGS AND FLASHINGS THAT ARE NOT TO BE REPLACED
- PROVIDE ADDITIONAL AND REUSE EXISTING INSULATION WHERE SHOWN
- ALL DIMENSIONS OF BOX GUTTERS, SUMPS & DOWNPIPES TO BE REPLACED LIKE FOR LIKE, EXCEPT WHERE NOTED AS AN INCREASE FROM CURRENT DIMENSIONS

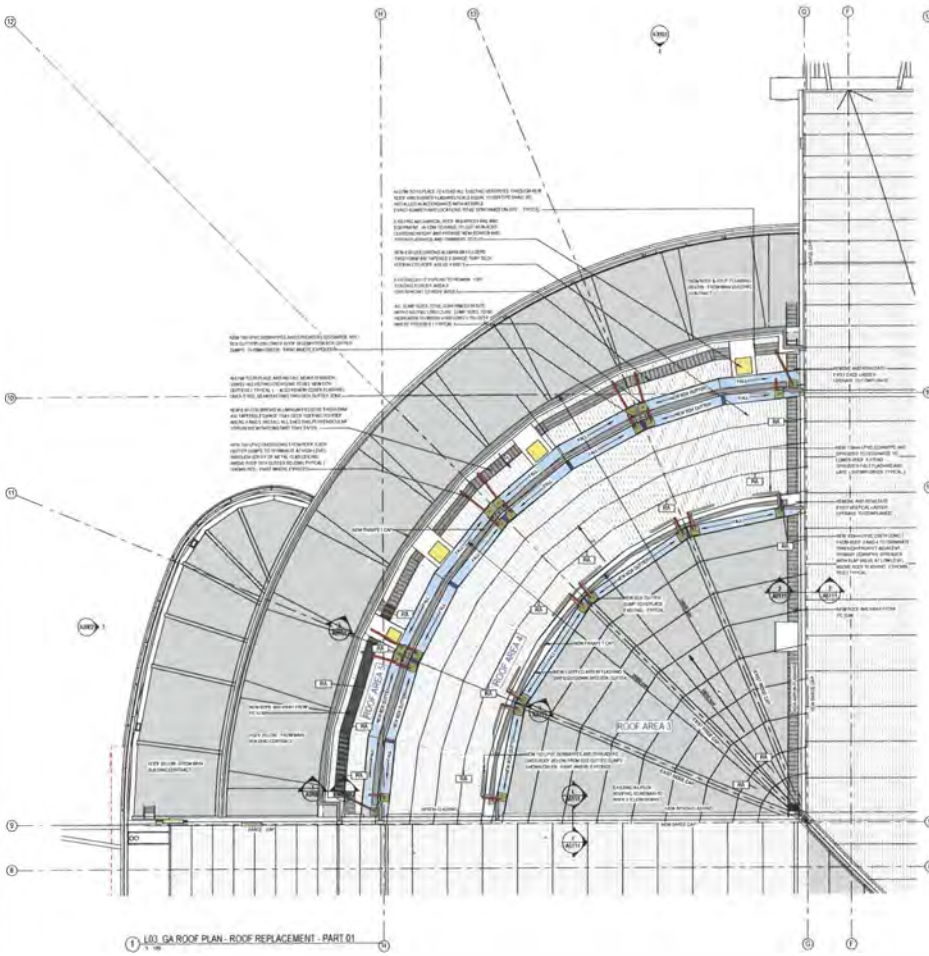
ALL NEW STORMWATER SERVICES INCLUDING EAVES GUTTERS, BOX GUTTERS, SUMPS AND DOWNPIPES SHALL BE INSTALLED IN ACCORDANCE WITH AS3500.3

EXISTING PARAPET CAP TO BE REPLACED - REFER ALSO TO A1100 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

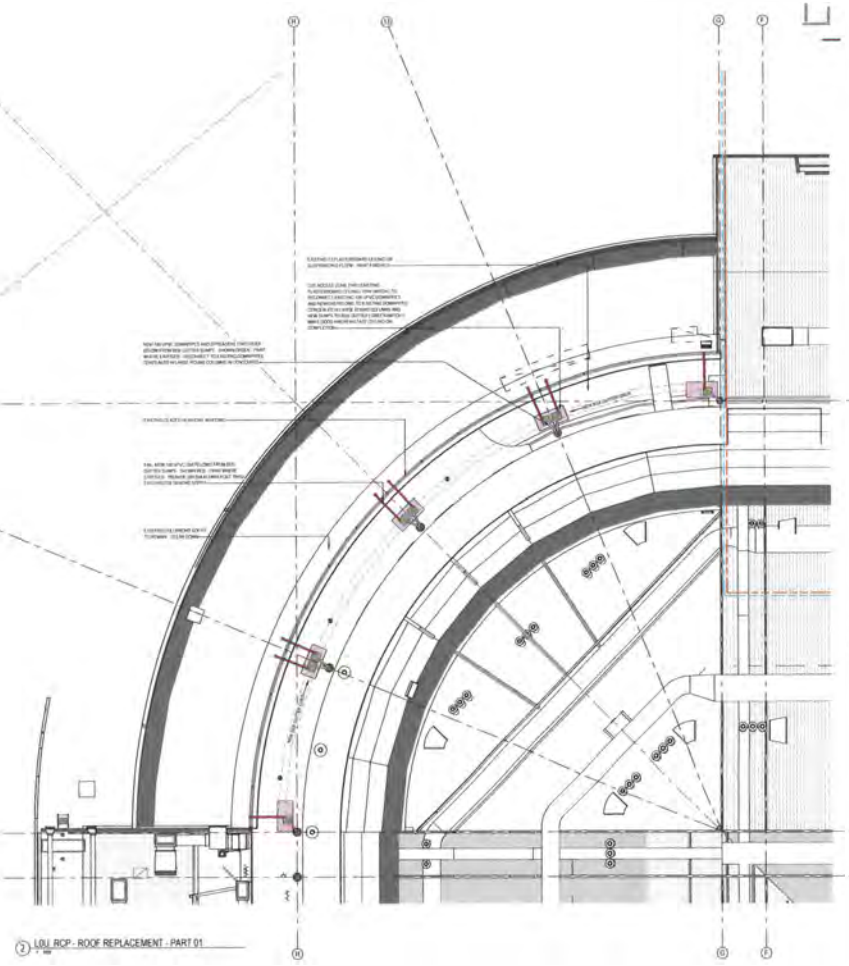
EXISTING COVER CAPPING TO STEEL I-BEAM OR TRUSS CHORD AND BOX GUTTER STOP ENDS TO BE REPLACED REFER ALSO TO A1100 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

EXISTING 100 UPVC DOWNPIPE AND SPREADER TO BE REPLACED - PAINT FINISH WHERE EXPOSED - REFER TO HYDRAULIC ENGINEER

NEW 100 UPVC OVERFLOW - DISCHARGE FROM UNDERSIDE OF BOX GUTTER SUMPS - PAINT FINISH WHERE EXPOSED - REFER TO HYDRAULIC ENGINEER FOR NEW OVERFLOW ARRANGEMENT DETAILS



1 L03_GA ROOF PLAN - ROOF REPLACEMENT - PART 01



2 L01_RCP - ROOF REPLACEMENT - PART 01

PhilpLighton Architects

Rev	Description	Date	Dsgn
1	ISSUE FOR REVISED TENDER	25.05.21	BA/LG

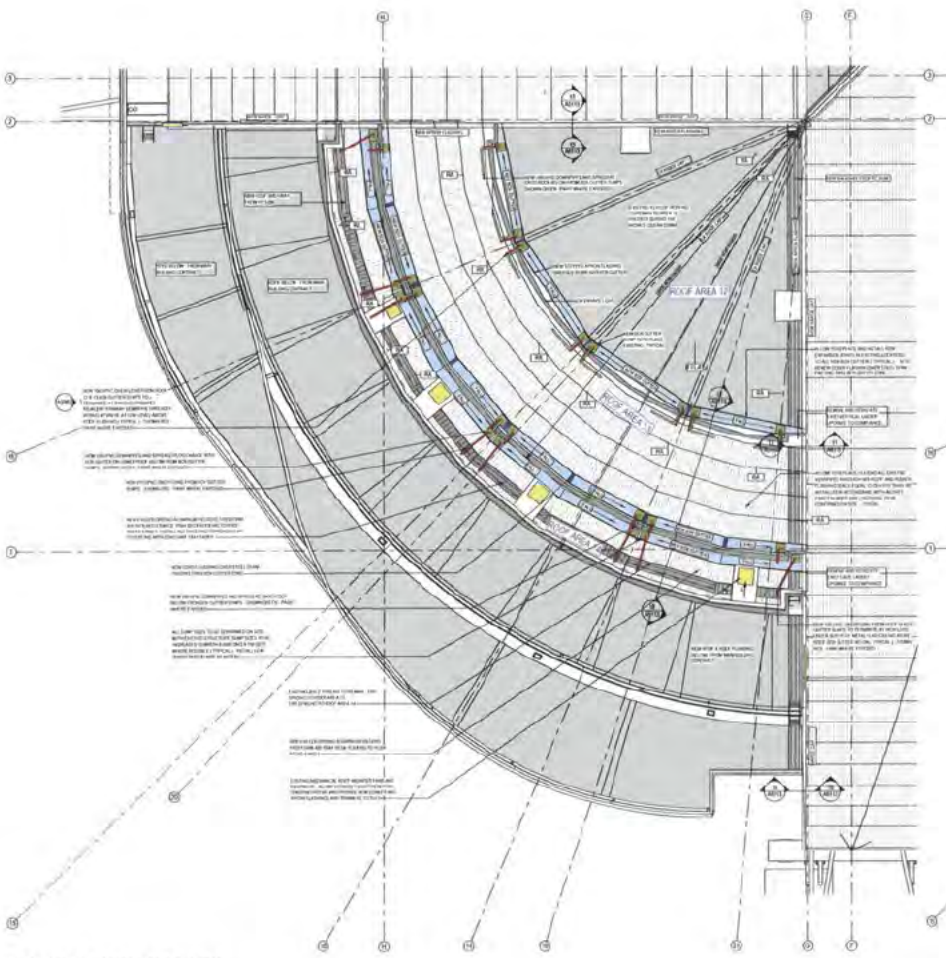
LG GROUP
ELWHURST ENTERTAINMENT CENTRE
555 BROOKSLAWNY, GLENORMY 1.02.3000

ROOF PLAN - ROOF REPLACEMENT - PART 01

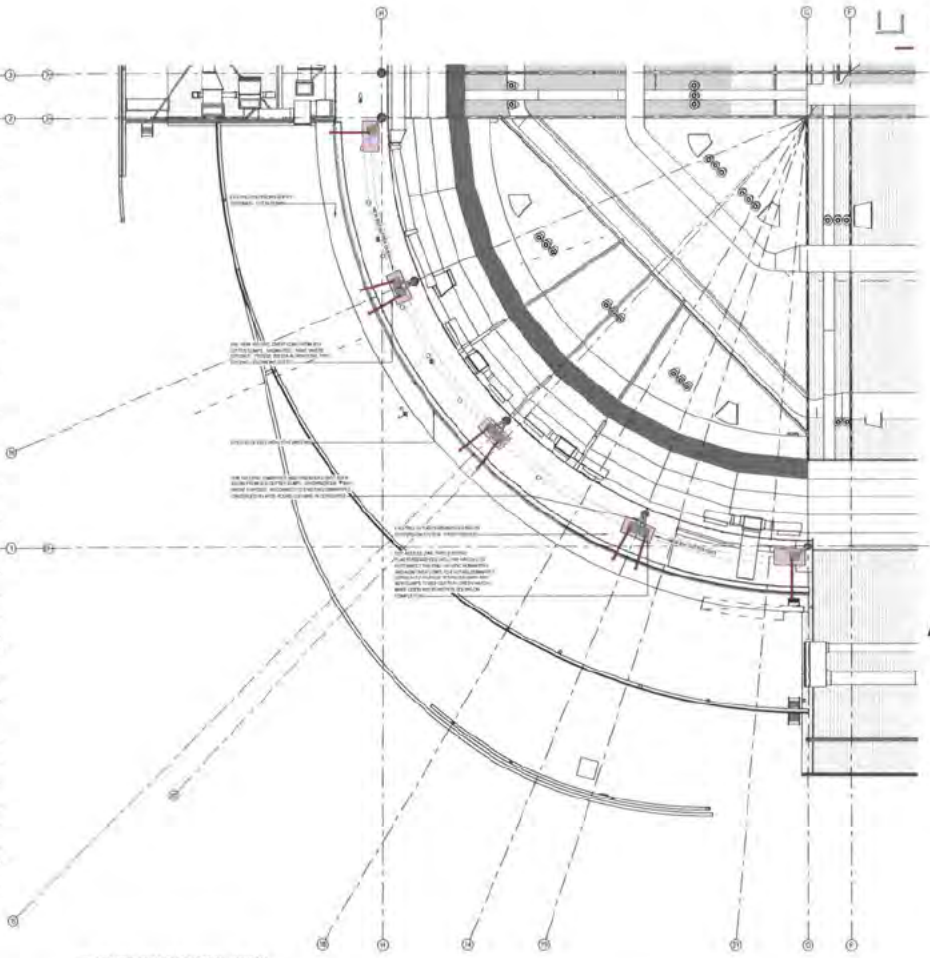
REVISED TENDER & BA

Drawn by: JP	Check: AB	Project Number: 20.318	
Scale: 1:100 @ A0	Date: 25.05.21		
Drawing No.: A1014	Rev: A		

ROOF REPLACEMENT LEGEND



1 L03_GA ROOF PLAN - ROOF REPLACEMENT - PART 02



2 L02_RCP - ROOF REPLACEMENT - PART 02

PhilpLighton Architects

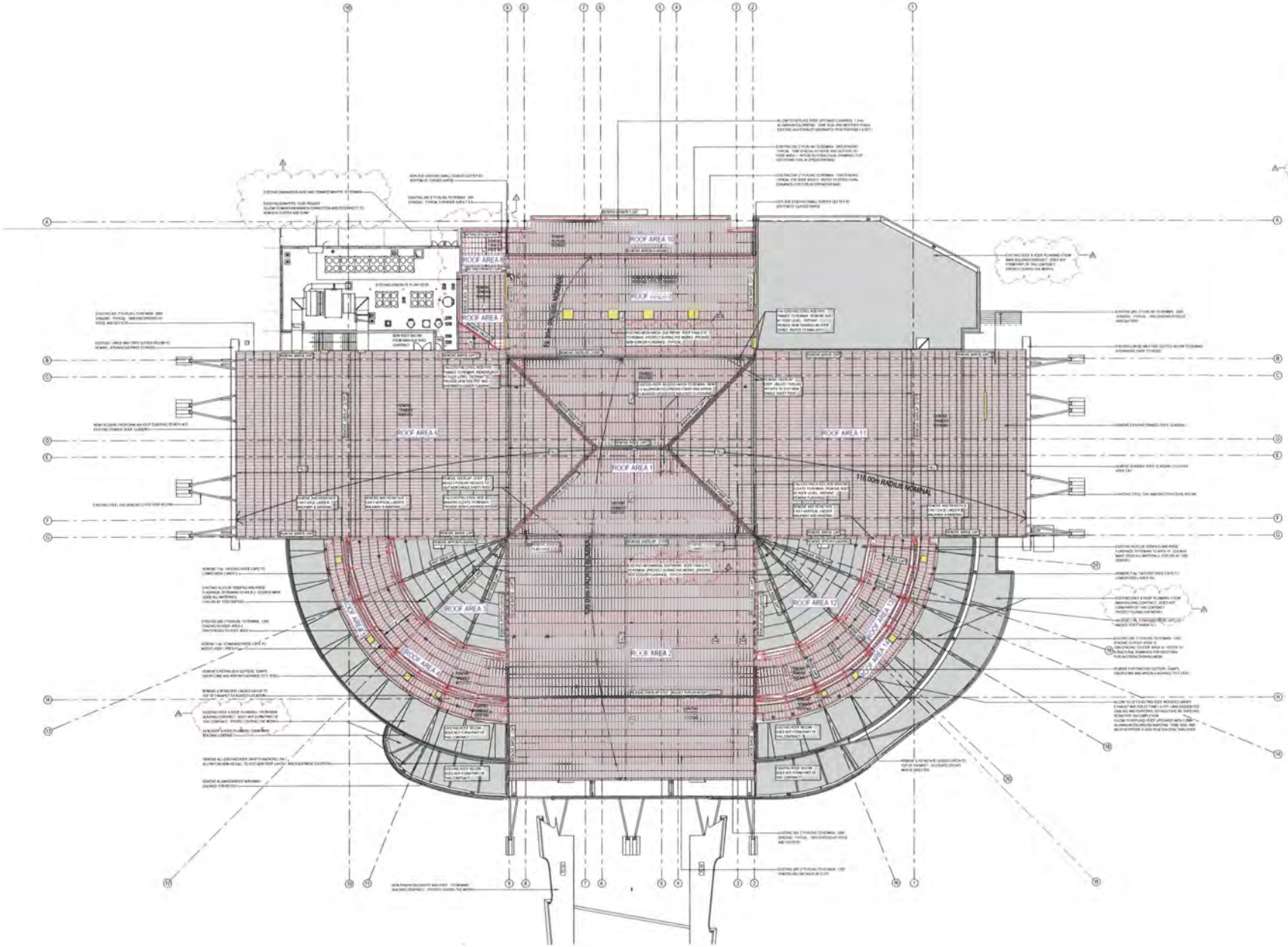
Rev	Description	Date	Chkd
A	ROOF REVISIONS - TENDER	28.06.21	

LD GROUP
CRANBERRY ENTERTAINMENT CENTRE

ROOF PLAN - ROOF REPLACEMENT - PART 02

REVISED TENDER & BA

Drawn By:	JT	Plot:	28.06.21
Scale:	1 : 100 @ A3	Date:	28.06.21
Drawing No:	A1015	Project Number:	20.318
		Rev:	A



1 L03_GA ROOF PLAN - ROOF DEMOLITION
1 : 200

DEMOLITION - TYPICAL NOTES

PhilpLighton Architects

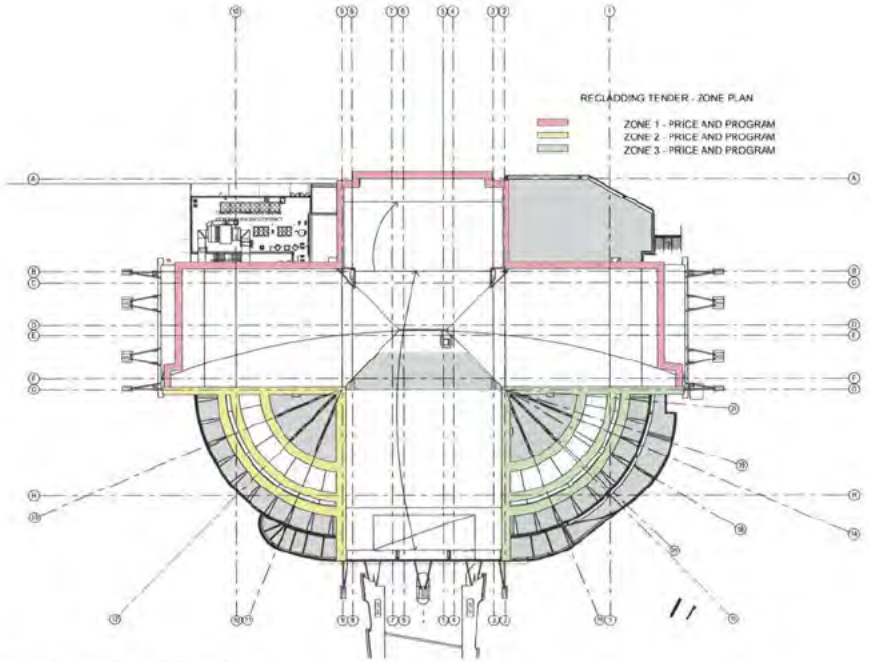
Rev	Description	Date
A		
B		
C		

LP GROUP
CARNIVAL ENTERTAINMENT CENTRE,

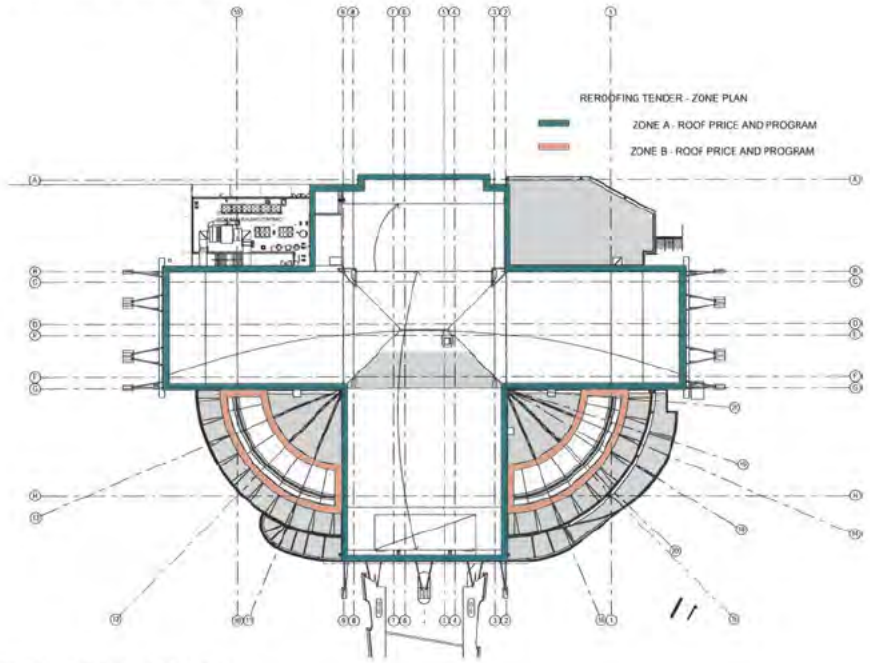
ROOF PLAN - DEMOLITION

REVISED TENDER & BA

Drawn by	Date	Project Number
JT	AT	
Scale	Date	20.318
As indicated @ A3	30.03.2022	
Drawing No.	Rev	
A1016	C	



2 L03_GA ROOF PLAN - FACADE REPLACEMENT - STAGING
1 : 400



1 L02_GA ROOF PLAN - ROOF REPLACEMENT - STAGING
1 : 400

QUOTATION NOTES

QUOTES TO BE ASSESSED ON PRICE, PROGRAM AND METHODOLOGY ON AN EQUAL WEIGHTING.

WE PROPOSE TO RECLAD PROCEED TO ENSURE ALL PROGRAMME'S MEET FOR BY MAY THE BUILDING CAN BE MADE WATERTIGHT. OBJECTIVE

QUOTES TO NOTE ALL ACCESS EQUIPMENT, BOOM, SCISSOR LIFT, SCAFFOLD ROOFING, PERIMETER AND VERTICAL SIGNS, SAFETY RAILS TO BE MADE TO EXISTING ARTWORK PERIMETER TO BE MATCH TO EXISTING, ANY ALTERATION OR CHANGE TO EXISTING QUOTED HERE.

EXCLUDE ROOF ACCESS SYSTEM

Philip Lighton Architects

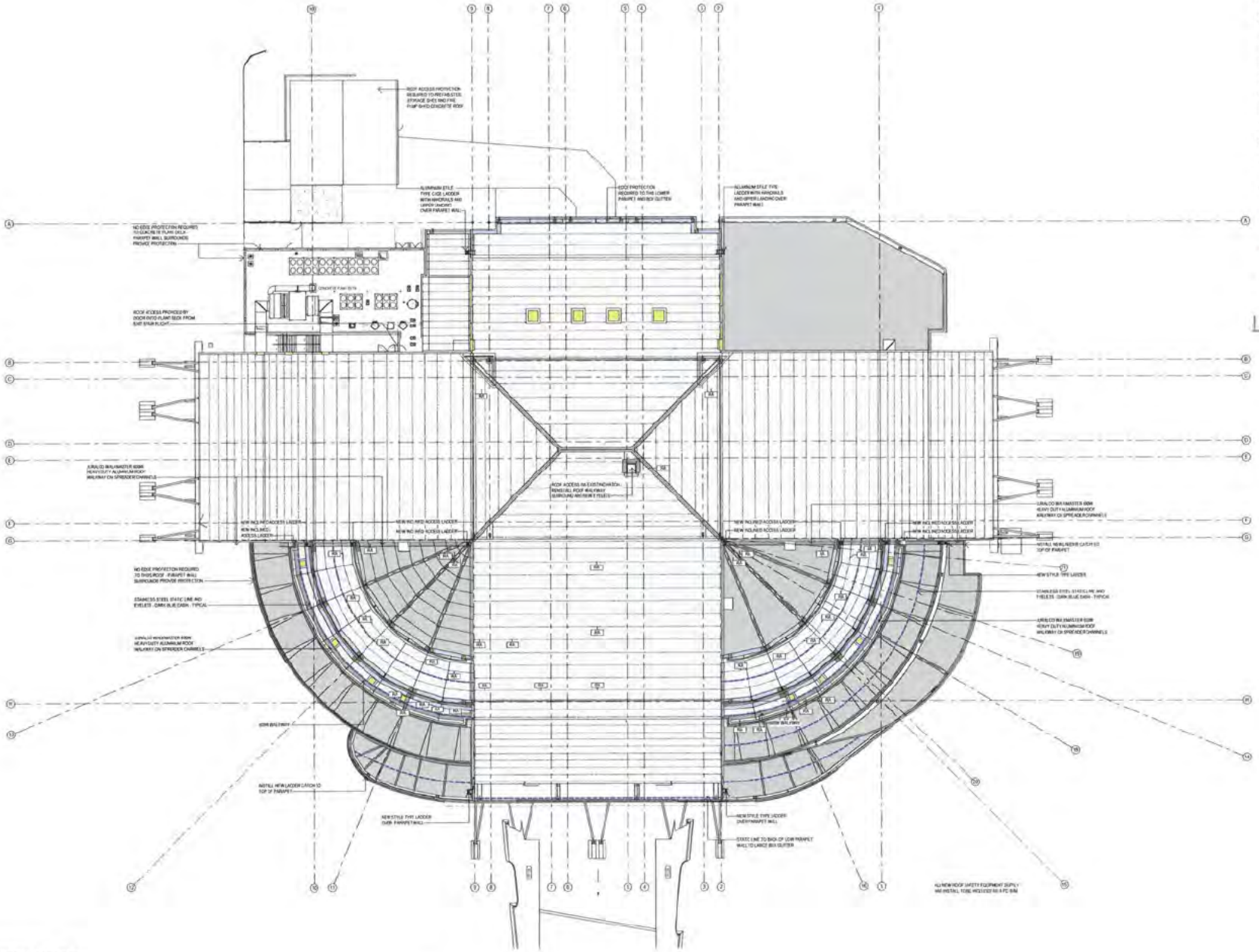
Rev	Description	Drawn	Date
A	ISSUE FOR FINAL TENDER		30.05.21

LI GROUP
CORPORATE ENTERTAINMENT CENTRE
651 BROOKER HWY, GLENORCHY TAS 7010

ROOF PLAN - STAGING PLAN

REVISED TENDER & RA

Drawn by: JP	Appr: SJ	Project Number: 20.318
Scale: As indicated @ A3	Date: 28.06.21	
Drawing No: A1017	Rev: A	



1 L01 GA ROOF PLAN - ROOF SAFETY
1 : 100

ROOF REPLACEMENT LEGEND

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANTS DRAWINGS & SPECIFICATIONS

ALLOW TO REMOVE, UPGRADE AND REPLACE THE FOLLOWING EXISTING ITEMS INCLUDING FLASHING AND WATERPROOF MEMBRANE, ON COMPLETION

- DOWNPIPE SPREADERS AND DOWNPIPES
- ALL STANDPIPE VENTS, AND MECHANICAL OR STANDING PLANT (ARE TO remain in) LEAVE
- ELECTRICAL CONDUIT AND WIRING THAT IS TO REMAIN IN SERVICE
- ROOF DRAINAGE OVERFLOW PIPES - GENERALLY 100 UPVC - PAINT FINISH
- ANTENNA AND COMMUNICATIONS EQUIPMENT
- ROOF SAFETY LADDERS, LADDER CATCHERS AND HANDRAILS
- ROOF ANCHOR SAFETY EYELETS & SS CABLES - REMOVE AND REPLACE ALL EYELETS - RETEST AND CERTIFY
- DEMOLITION PLAN INDICATIVE LAYOUT ONLY
- FINAL LAYOUT TO BE CONFIRMED BY AN ACCREDITED ROOF SAFETY INSTALLATION COMPANY. ENSURE NEW INSTALLATION MEETS CURRENT AUTHORITY AND AUSTRALIAN STANDARD COMPLIANCE
- ALUMINIUM ROOF WALKWAYS AND SUPPORTS REMAIN
- ALL BARGE AND PARAPET CAPPINGS AND FLASHINGS TO BE REPLACED. REMOVE AND REFIX ANY EXISTING INSULATION WHERE DISTURBED
- ALL DIMENSIONS OF BOX GUTTERS, SUMPS TO COMPLY WITH AS 4740 AND REPLACED LIKE FOR LIKE, EXCEPT WHERE NOTED AS BE INCREASED FROM CURRENT DIMENSIONS

ALL NEW STORMWATER SERVICES INCLUDING GUTTERS, BOX GUTTERS, SUMPS AND DOWNPIPES SHALL BE INSTALLED IN ACCORDANCE WITH AS3500.3.

EXISTING PARAPET CAP EDGE REPLACED
REFER ALSO TO S1100 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

EXISTING 180W X 180 MIN D PVC BOX GUTTER EDGE REPLACED
REFER ALSO TO S1100 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS. REFER TO HYDRAULIC ENGINEER

EXISTING COPER CAPPING TO STEEL LEDGE TRUSS OVERHANG AND BOX GUTTER EDGE TO BE REPLACED
REFER ALSO TO S1100 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

EXISTING BOX GUTTER STOP END TO BE REPLACED. TYPICALLY CONTAIN 1x RHS OUTLET IN LOW END OF THE SUMPS
REFER ALSO TO S1100 SERIES DRAWINGS FOR CONSTRUCTION DETAILS TO THESE AREAS

EXISTING 600 (+300) X 1000 DEEP BOX GUTTER SUMP TO BE REPLACED
REFER TO HYDRAULIC ENGINEER FOR DETAILS
ALL SIZES TO BE CONFIRMED ON SITE WITH EXISTING STRUCTURE. SIZES TO BE INCREASED TO WIDTH x 600 LONG x 300 DEEP WHERE POSSIBLE
INSTALL 600 X 600 / 3MM NOMINAL PERFORATED ALUMINIUM SHEET LEAF GUARD OVER ROOF OUTLET SUMPS - MILL FINISH 5.0 DIA 40% FREE OPEN FLOW

EXISTING 100 UPVC DOWNPIPE AND SPREADER TO BE REPLACED
PAINT FINISH AND/OR EXPOSED - REFER TO HYDRAULIC ENGINEER

NEW 150 UPVC OVERFLOW DISCHARGE FROM UNDERSIDE OF BOX GUTTER SUMPS - PAINT FINISH AND/OR EXPOSED - REFER TO HYDRAULIC ENGINEER TO REVIEW LOCATIONS AND DETAILS

CONTRACTOR TO DESIGN AND INSTALL A COMPLIANT FIT FOR PURPOSE ROOF ACCESS AND SAFETY SYSTEM AS SPECIFIED TO THE ENTIRE BUILDING TO SUIT

ALL AREAS OF THE ROOF TO BE ACCESSIBLE FOR MAINTENANCE AND SAFE MOVEMENT AROUND ROOF VIA HARNESS + LANYARD CONNECTION TO DWG'S NEW SS ROOF SAFETY EYELETS SPACED ACCORDING TO

COMPLETE SYSTEM TO BE DESIGNED AND INSTALLED BY AN ACCREDITED ROOF SAFETY CONTRACTOR

ALL WORKS TO BE IN ACCORDANCE WITH AS1657

PhilpLighton Architects

Rev	Description	Date	Client Initials
A	ROOF REPLACEMENT - TENDER		

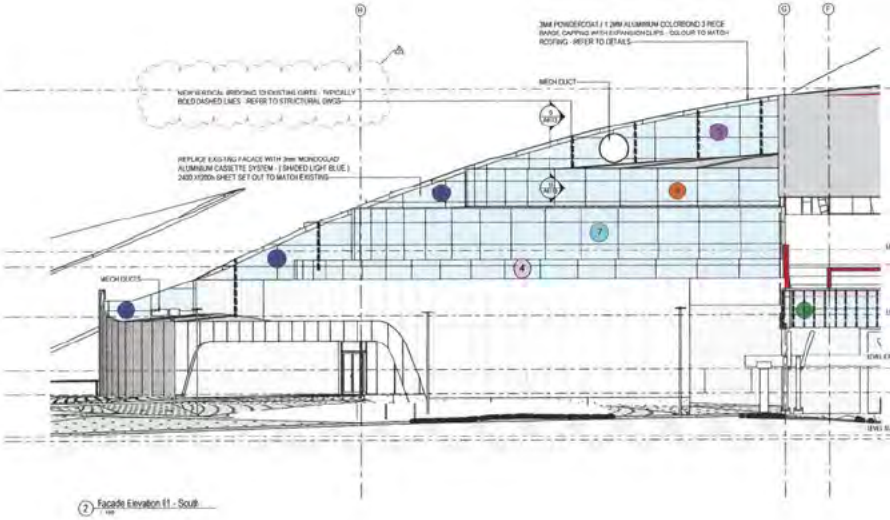
Project
LI GROUP
DYNAMIC ENTERTAINMENT LEVERS
69 BROOKES WAY, GLENROY TAS 7010

Title
ROOF PLAN - ROOF SAFETY

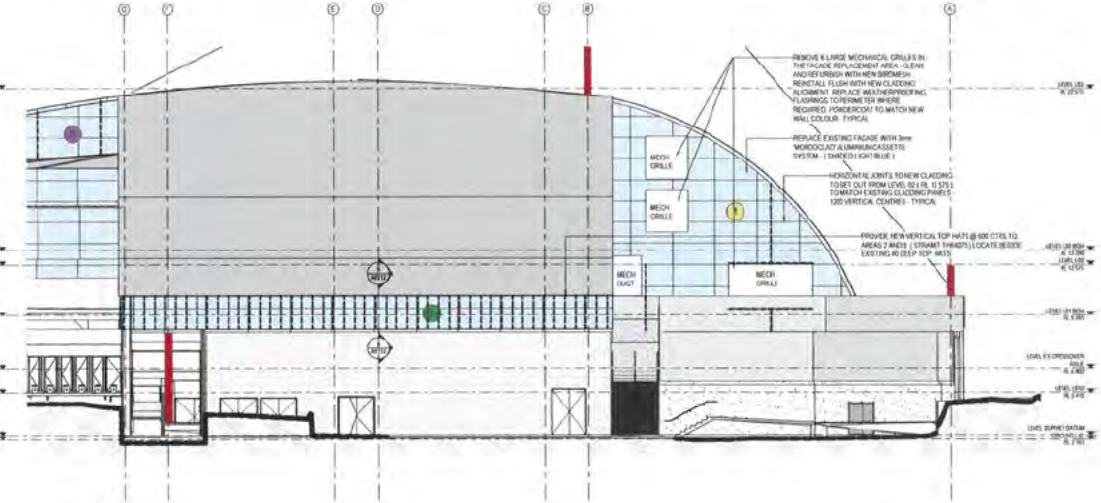
REVISED TENDER & BA

Drawn by	JP	Scale	As indicated @ A1
Date	19/12/2018	Project Number	20 318
Drawing No.	A1010	Rev.	A

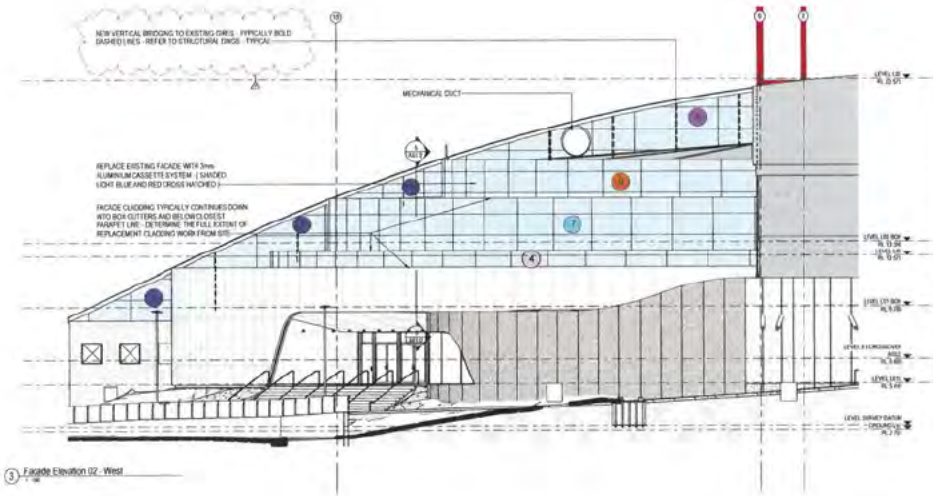
FACADE REPLACEMENT LEGEND



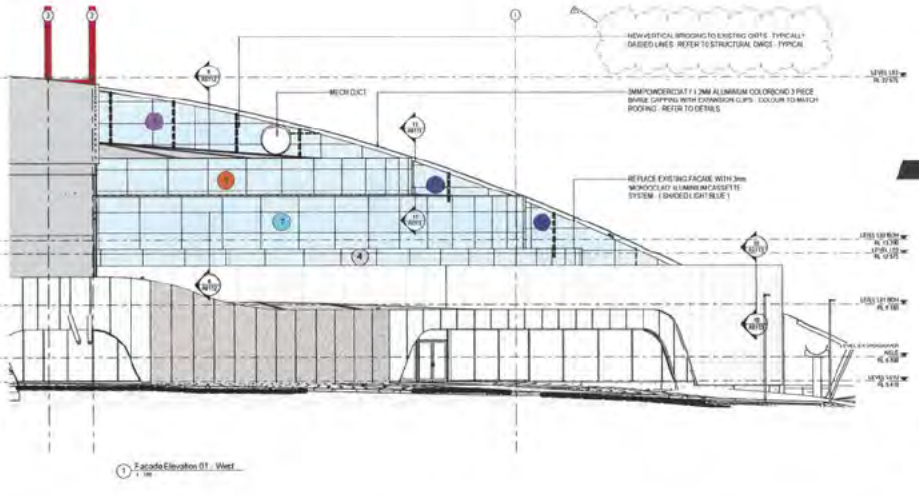
2 Facade Elevation 01 - South



4 Facade Elevation 02 - South



3 Facade Elevation 02 - West



1 Facade Elevation 01 - West

Philplighton Architects

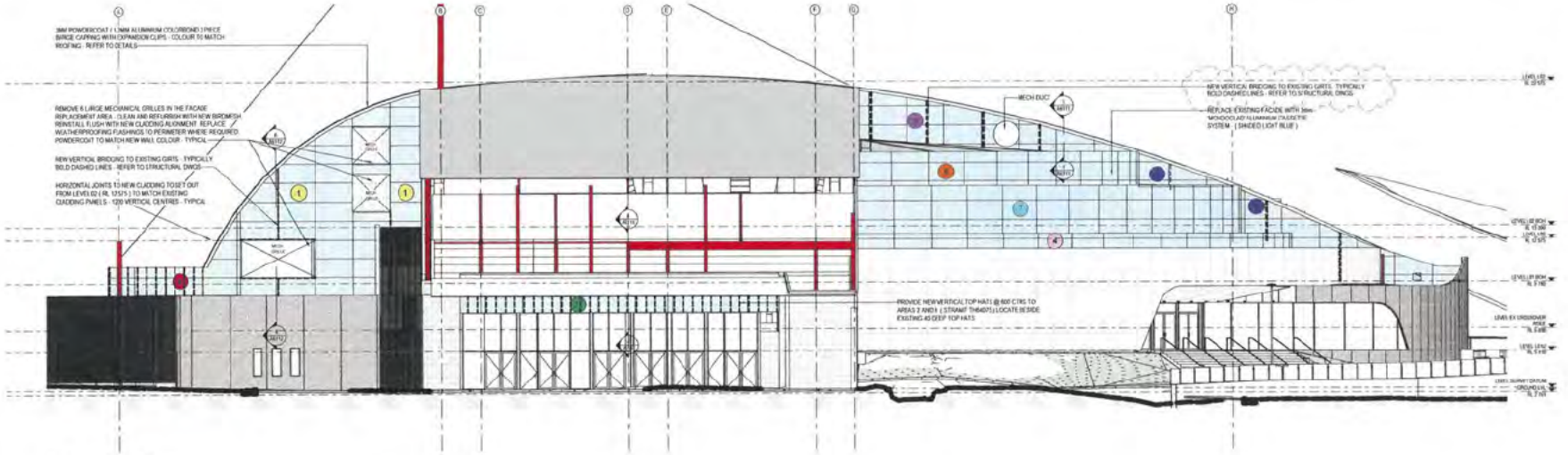
Rev	Description	Chkd	Date
A	ISSUED FOR TENDER	BA	2020.12
B	Publishing Drawing Information	BA	21.01.2021

LK GROUP
DOMINION ENTERTAINMENT CENTRE

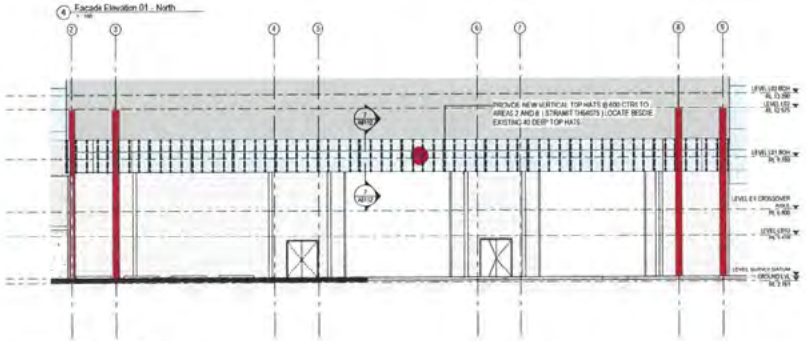
BUILDING FACADE ELEVATIONS 1

REVISED TENDER & BA

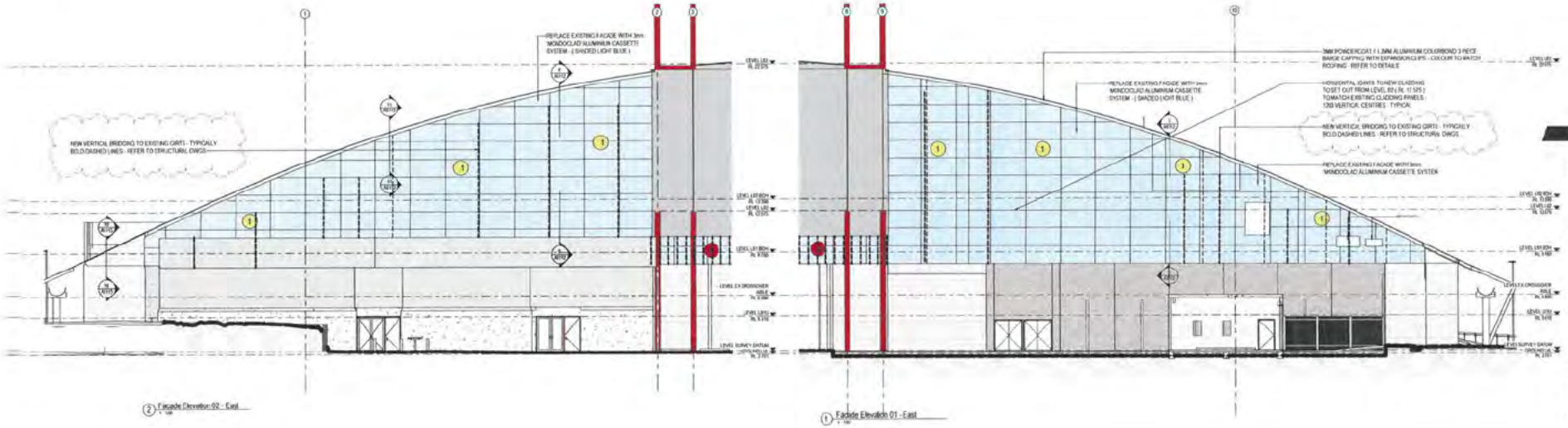
Drawn by: JT	Plan: A1	Project Number:	
Scale: 1 : 100 @ A3	Date: 21 Jan 2021	20318	
Drawing No: A3002	Rev: B		



4 Facade Elevation 01 - North



3 Facade Elevation 03 - East



2 Facade Elevation 02 - East

1 Facade Elevation 01 - East

FACADE REPLACEMENT LEGEND

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ASSESSMENT DRAWINGS & SPECIFICATIONS

ALLOW TO REMOVE AND REINSTALL THE FOLLOWING EXISTING ITEMS:
INCLUDING FLASHING AND WATERPROOFING ALL PENETRATIONS THROUGH NEW FACADE CLADDING ON COMPLETION

- DOWNPIPES, SPREADERS, AND GUTTERS
- AC CONDENSOR UNITS AND MEDIA CAL ELECTRICAL CONDUIT AND WIRING THAT IS TO REMAIN IN SERVICE
- ELECTRICAL CONDUIT AND WIRING THAT IS TO REMAIN IN SERVICE
- ROOF DRAINAGE OVERFLOW PIPES
- ANTENNA AND COMMUNICATIONS EQUIPMENT
- ROOF SAFETY LEGGERS, LADDER CLEATS AND HANDRAILS
- SUSPENDED ROOF ASSEMBLY'S AND SUPPORT FRAMES
- FLOODLIGHTS THAT ARE TO REMAIN IN SERVICE
- MECHANICAL GRILLES TO BE REUSED - REPLACE WHERE DAMAGED BEFORE REINSTALL
- ALL BARGE AND PARAPET CAPPINGS AND FLASHINGS THAT ARE NOT TO BE REPLACED
- PROVIDE ADDITIONAL METAL FLASHING, SCREWS, POINTS AND FIXINGS WHERE SHOWN
- PROVIDE ADDITIONAL AND REUSE EXISTING MOUNTS WHERE SHOWN

1 2 3 4 5 6 7 8

REFER TO CONSTRUCTION SERVICES INVESTIGATION REPORT FOR FACADE CONDITIONS TO AREAS 1 TO 8
REFER ALSO TO 0 01 SERIES DRAWINGS FOR DEMOLITION OF EXISTING TO THOSE AREAS

@ 1:100

PhilipLighton Architects

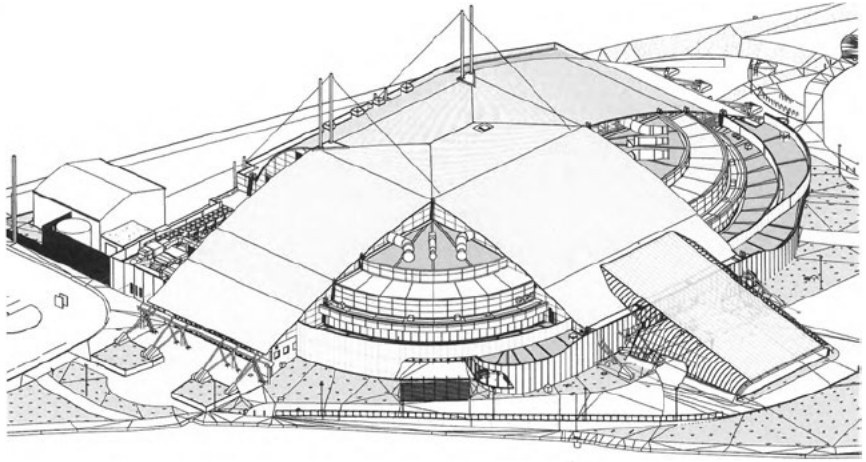
Rev	Description	Date	Dwn
A	ROOF DEMOLITION - 10/2018		ABB D
B	Drawing Amended Coordination		JDH BM

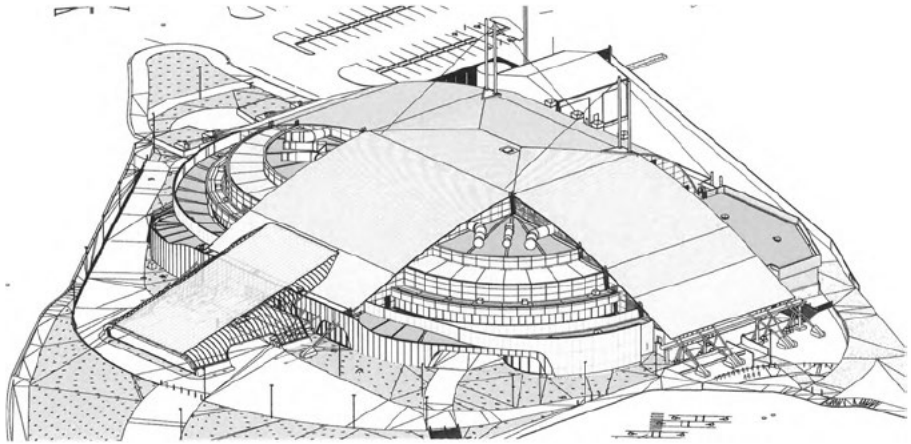
LR GROUP
PERMANENT ENTERTAINMENT CENTRE
620 BROOKER WAY, CLOVERDALE WA 6105

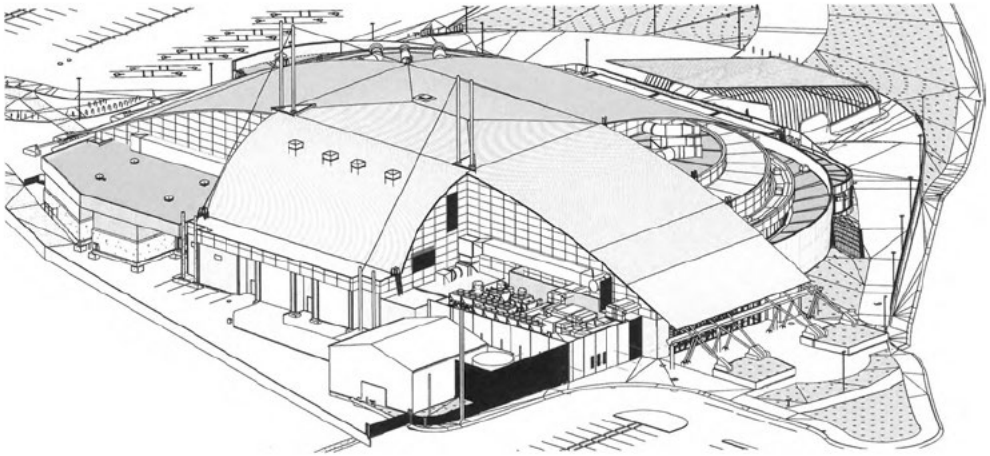
BUILDING FACADE ELEVATIONS 2

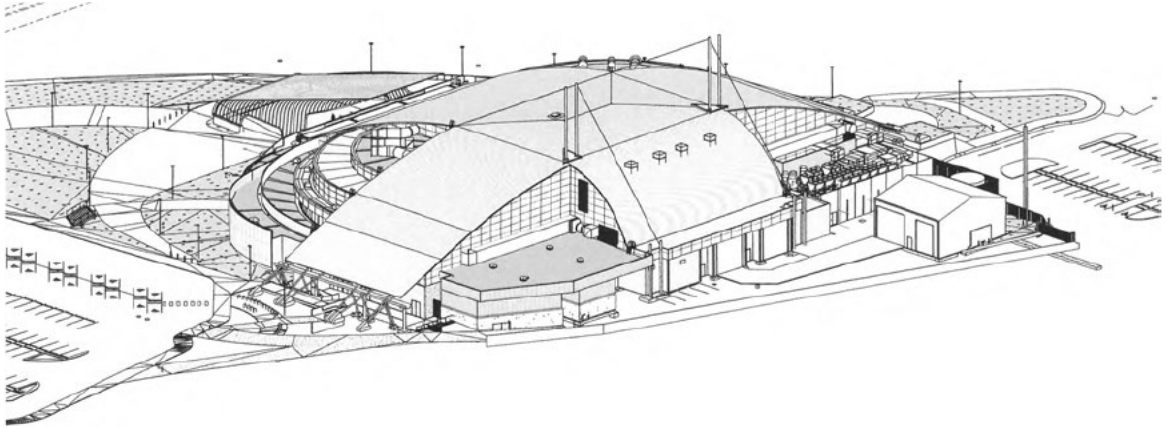
REVISED TENDER & BA

Drawn by	JT	Rev	B2	Project Number
Scale	1:100 @ A1	Date	21.04.2022	20.318
Drawing No	A3003			Rev B









PhilpLighton Architects

Rev	Description	Dwn	Date
A	ROOF EXCLADDING - TENDER		Aprils 21

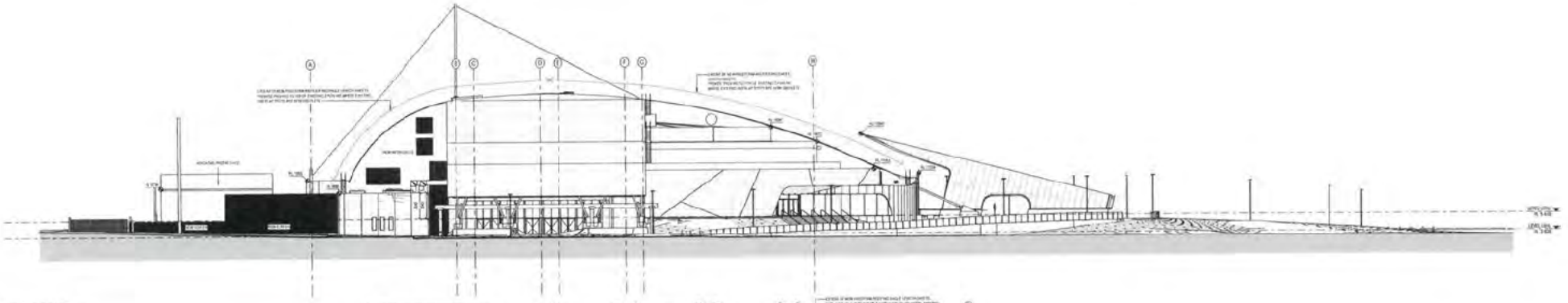
Contractor to verify all dimensions on site before commencing any work or shop drawings.

Project
LK GROUP
DERWENT ENTERTAINMENT CENTRE
661 BRIDGER HWY, GLENORCHY TAS 7010

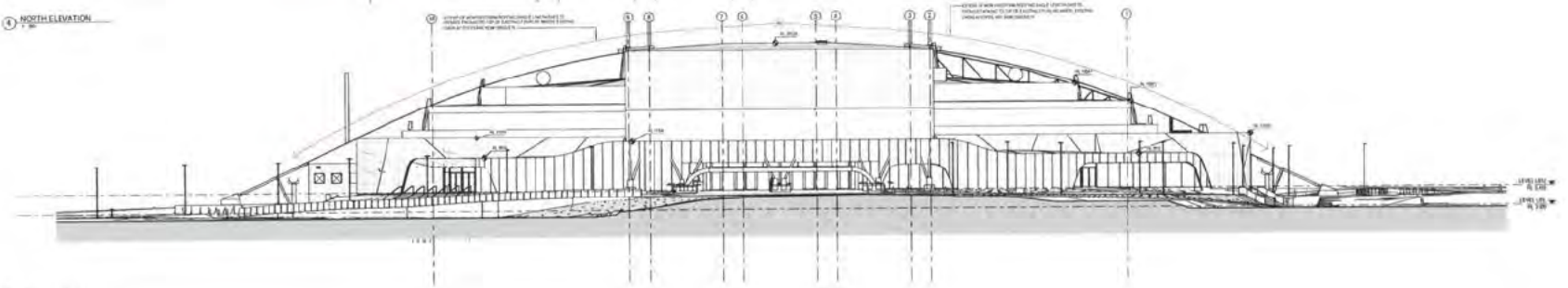
Title
ROOF & FACADE REPLACEMENT 3D VIEWS

Issue
REVISED TENDER & BA

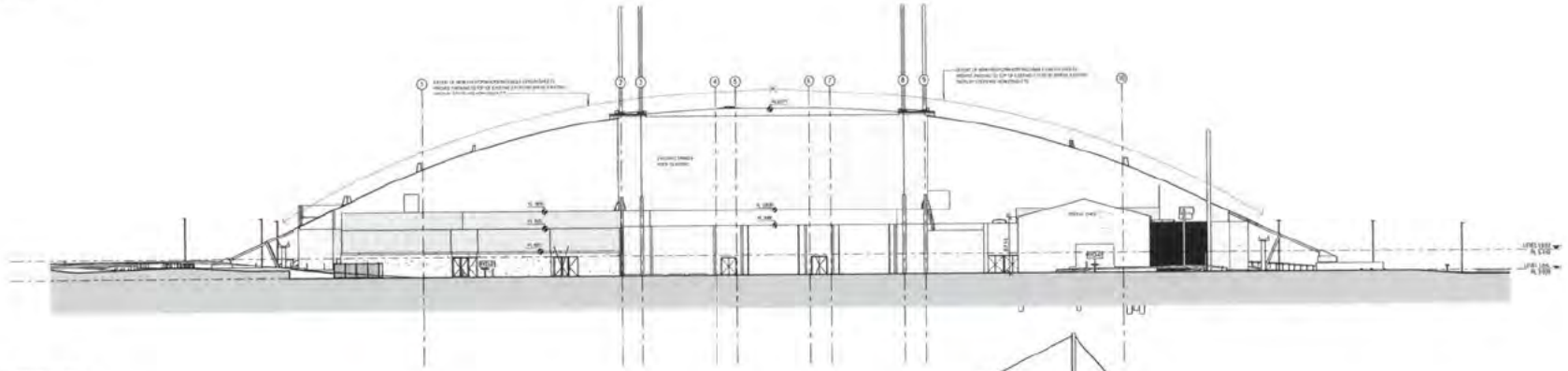
Drawn by	JT	Print	AI	Project Number
Scale	@ A0	Date	28.05.21	20.318
Drawing No.	A3004			Rev A



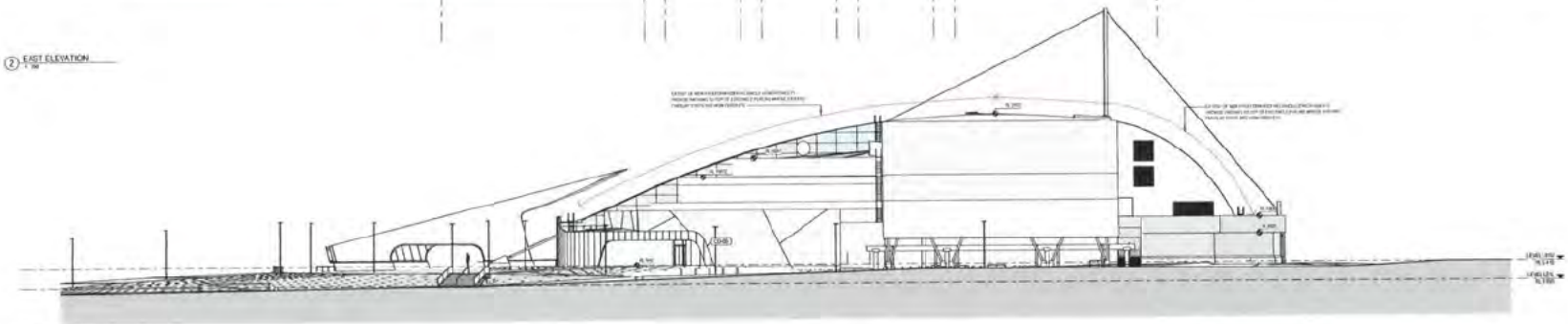
4 NORTH ELEVATION



3 WEST ELEVATION



2 EAST ELEVATION



1 SOUTH ELEVATION

PhilipLighton Architects

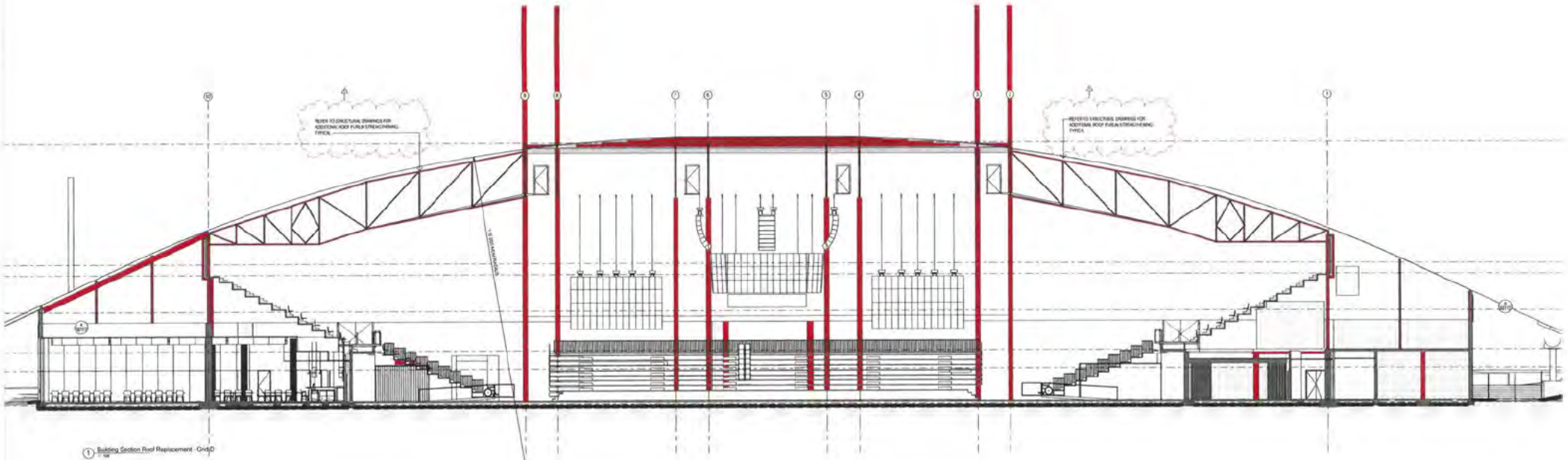
Rev	Description	Date	Auth
A	FOR BUILDING CONSENT		

LIB GROUP
DERMOTT ENTERTAINMENT CENTRE
201 BROOKER AVENUE, CLENDENON 7 61 7510

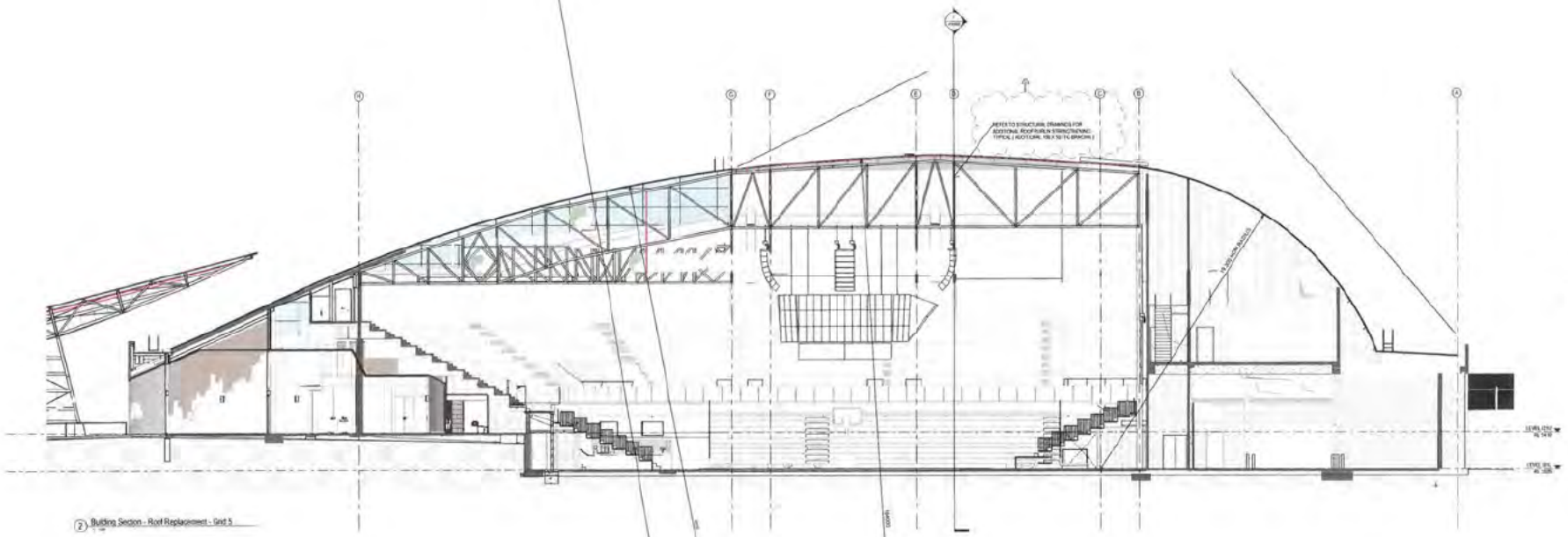
ROOF REPLACEMENT - ELEVATIONS
1

REVISED TENDER & IBA

Owner No.	0	Plan	A2
Scale	1 : 200 @ A0	Date	28-09-21
Project Number			20.318
Drawing No.		A3005	Rev. A



1 Building Section Roof Replacement - Grid D
1 : 100



2 Building Section - Roof Replacement - Grid 5
1 : 100

Philplaighton Architects

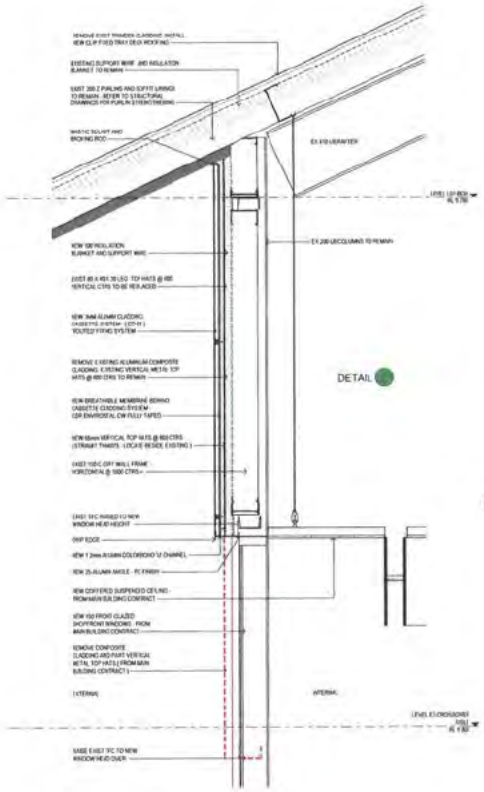
Rev	Description	Dwn	Date
A	ADDED BRACING - REFER STRUCTURE		02.06.22
B	ISSUED FOR TENDER		24.06.22
C	Updated for Revised Steelwork		07.09.2022

LX GROUP
DERWENT ENTERTAINMENT CENTRE
15a BROOKER HWY, ELLENBROOK WA 6069

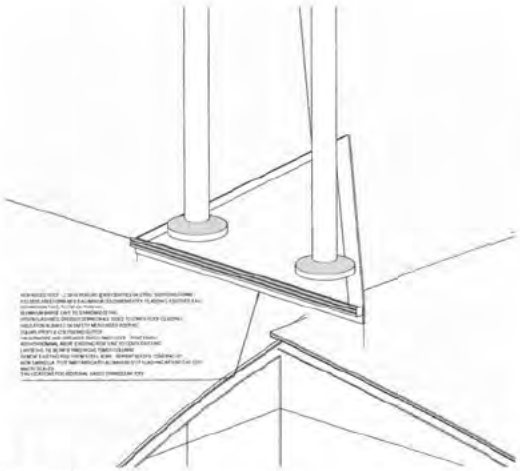
BUILDING SECTIONS - ROOF REPLACEMENT

REVISED TENDER & BA

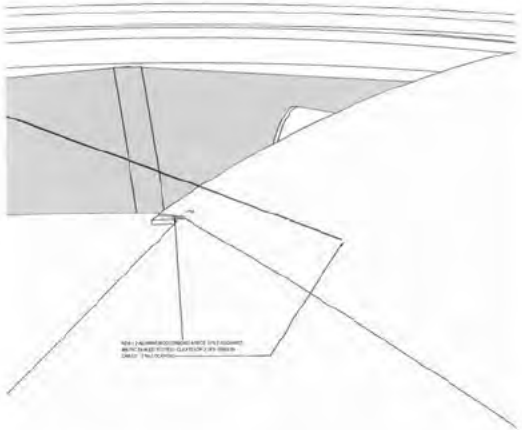
Drawn by: JT	Paper: A1	Project Number:
Scale: 1 : 100 @ A1	Date: 07/04/2022	20.318
Drawing No.: A3502		Rev: C



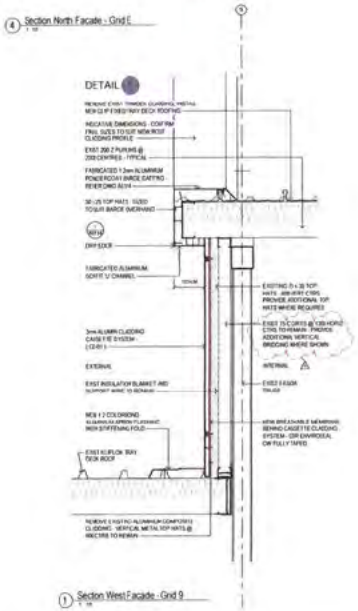
4 Section North Facade - Grid E
1 : 50



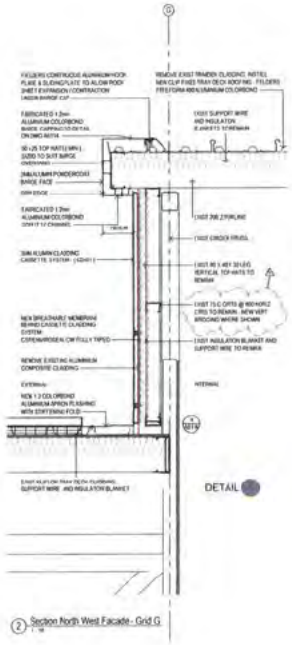
5 3D - 2 No UPPER TRIANGLE ROOFS



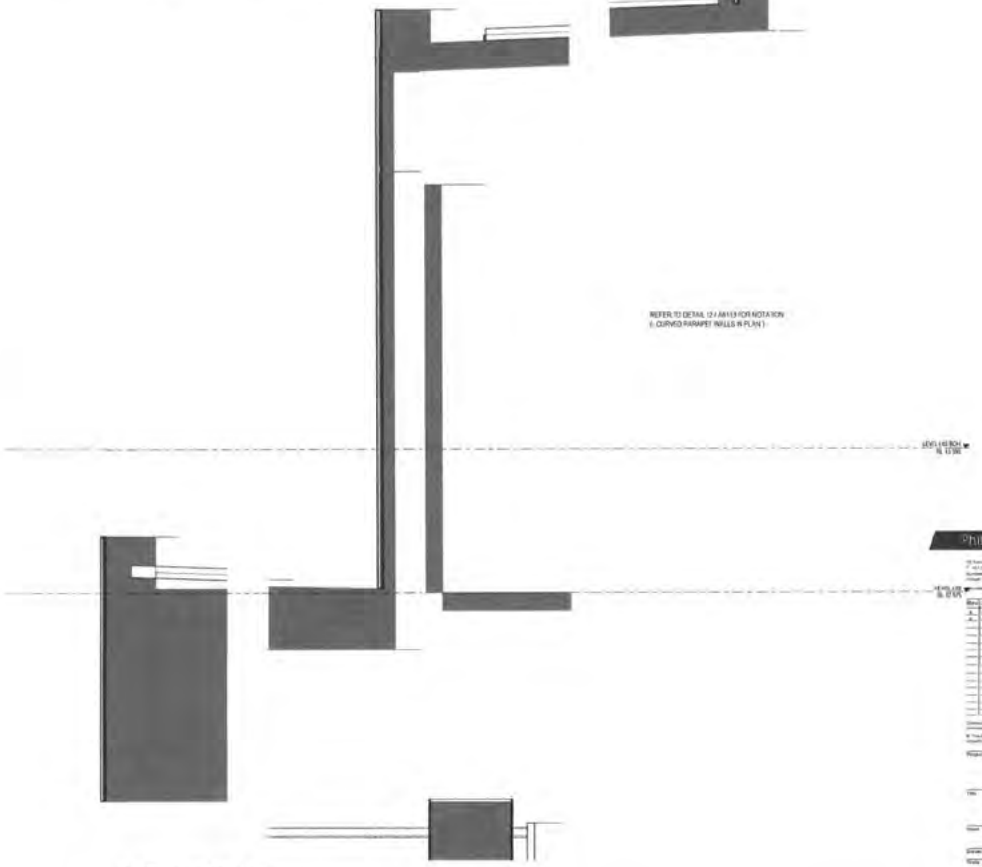
6 3D - 2 No UPPER STAY WIRE CLEATS



1 Section West Facade - Grid 9
1 : 10



2 Section North West Facade - Grid G
1 : 10



3 Section North West Facade - Grid I1
1 : 10

PhilipLighton Architects

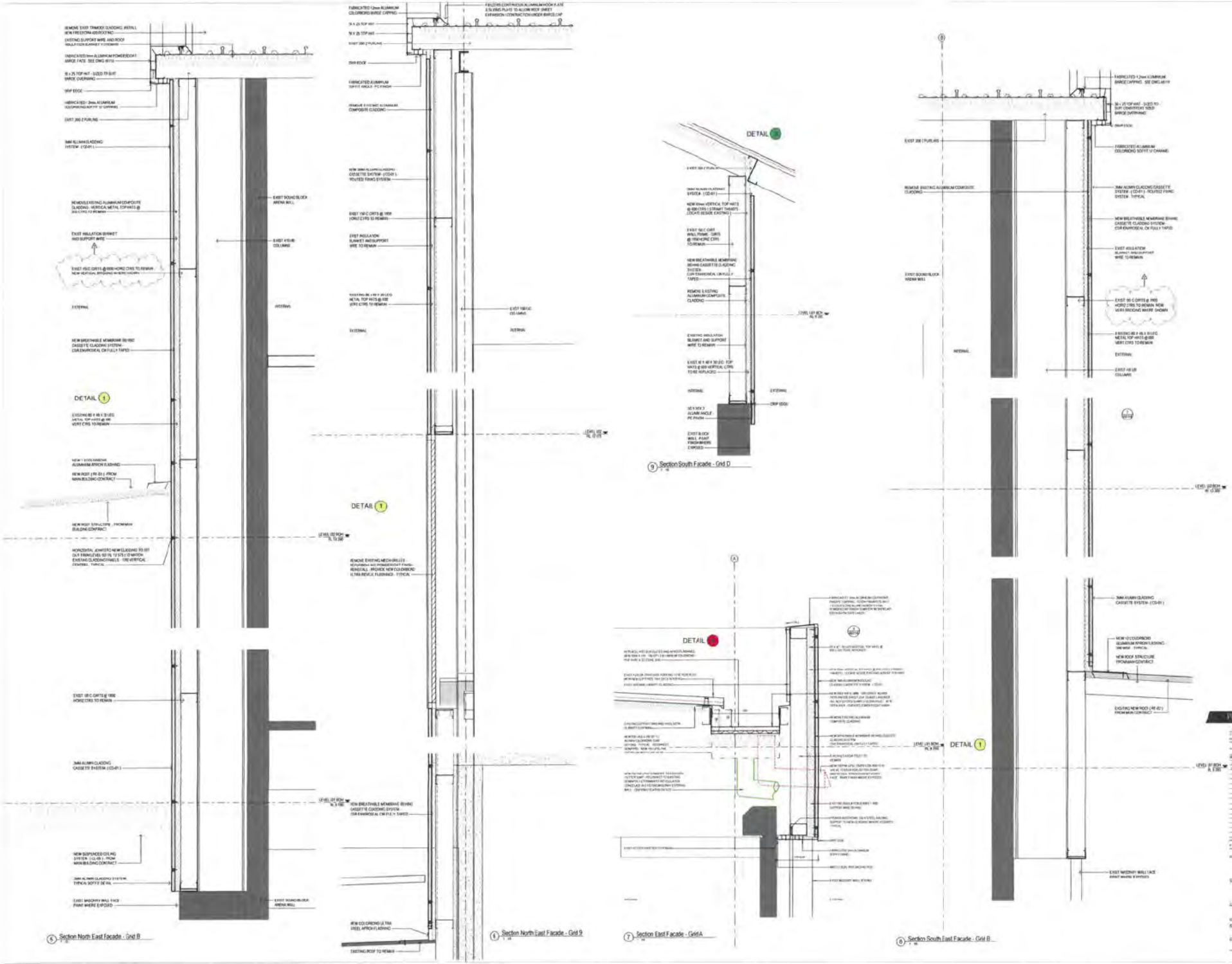
Rev	Description	Dwn	Chkd
A	REVISED TENDER - ISSUE		
B	ADDITIONAL DRAWINGS		

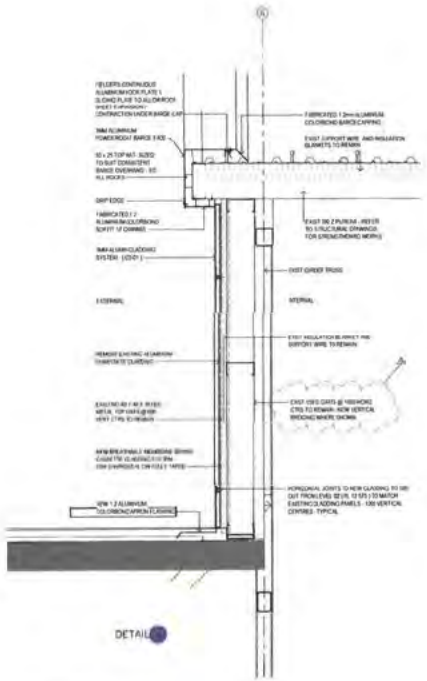
LX GROUP
TOWNHALL ENTERTAINMENT CENTRE
600 BROOKSBANK AVENUE, NORTH VANCOUVER, BC

BUILDING FACADE SECTION DETAILS - SHEET 12

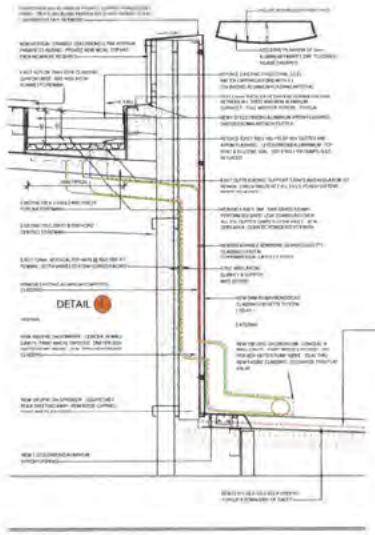
REVISED TENDER & IFA

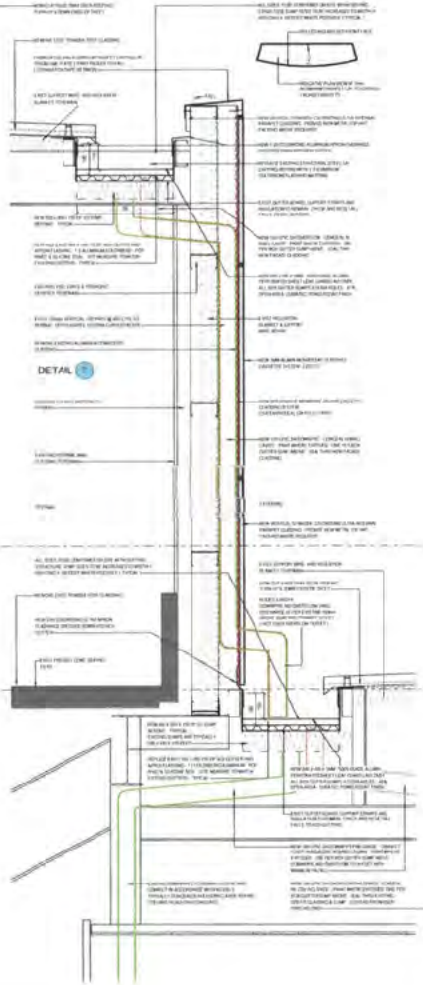
Drawn by	JT	Chkd	AP	Project Number
Scale	1 : 10 @ A0	Date	31 Mar 2022	20318
Drawing No.	A6111	Rev.	B	


DETAIL 1
DETAIL 2
DETAIL 1
DETAIL 1
DETAIL 2
DETAIL 1
EXIST SOUND BLOCK ARENA WALL
EXIST HSUB COLUMN
EXIST INSULATION BLANKET AND SUPPORT WIRE
EXIST 150 C CHANNEL GIRTS @ 1800 HORIZ CTRS TO REMAIN
NEW BREATHABLE MEMBRANE BEHIND CASSETTE CLADDING SYSTEM - CSR ENVIROSEAL OR FULLY TAPED
EXISTING 90 X 45 X 3.0 LEG METAL TOP HATS @ 600 VERT CTRS TO REMAIN
NEW 1 COLORBOND ALUMINIUM APRON FLASHING
NEW ROOF (RE-R2) - FROM MAIN BUILDING CONTRACT
NEW ROOF STRUCTURE - FROM MAIN BUILDING CONTRACT
HORIZONTAL JOINTS TO NEW CLADDING TO SIT OUT FROM LEVEL 02 FL 12 570 (12 MATCH EXISTING CLADDING PANELS - ONE VERTICAL CENTRES) - TYPICAL
EXIST 150 C GIRTS @ 1800 HORIZ CTRS TO REMAIN
3MM ALUMIN CLADDING CASSETTE SYSTEM (CD-01)
NEW SUSPENDED CEILING SYSTEM - (CL-09) - FROM MAIN BUILDING CONTRACT
3MM ALUMIN CLADDING SYSTEM - TYPICAL SOFFIT DETAIL
EXIST MASONRY WALL FACE PAINT WHERE EXPOSED
EXIST SOUND BLOCK ARENA WALL
NEW CO-CORDING ULTRA STEEL APRON FLASHING
EXISTING ROOF TO REMAIN
REMOVE EXISTING MECH GRILLES - REFURBISH AND POWDERCOAT PANEL - REINSTALL - PROVIDE NEW COLORBOND ULTRA REVEAL FLASHING - TYPICAL
REMOVE EXISTING ALUMINIUM COMPOSITE CLADDING - VERTICAL METAL EXPANTS @ 300 CTRS TO REMAIN
EXIST INSULATION BLANKET AND SUPPORT WIRE TO REMAIN
EXIST 150 C GIRTS @ 1800 HORIZ CTRS TO REMAIN - NEW VERTICAL BRIDGING WIRE SHOWN
EXIST HSUB COLUMN
NEW BREATHABLE MEMBRANE BEHIND CASSETTE CLADDING SYSTEM - CSR ENVIROSEAL OR FULLY TAPED
EXISTING 90 X 45 X 3.0 LEG METAL TOP HATS @ 600 VERT CTRS TO REMAIN
NEW 1 COLORBOND ALUMINIUM APRON FLASHING
NEW ROOF (RE-R1) - FROM MAIN BUILDING CONTRACT
NEW ROOF STRUCTURE - FROM MAIN BUILDING CONTRACT
EXIST 200 Z PURLINS
REMOVE EXISTING ALUMINIUM COMPOSITE CLADDING
EXIST SOUND BLOCK ARENA WALL
EXIST HSUB COLUMN
3MM ALUMIN CLADDING CASSETTE SYSTEM - (CD-01) - ROUTED FIXING SYSTEM - TYPICAL
NEW BREATHABLE MEMBRANE BEHIND CASSETTE CLADDING SYSTEM - CSR ENVIROSEAL OR FULLY TAPED
EXIST INSULATION BLANKET AND SUPPORT WIRE TO REMAIN
EXIST 150 C GIRTS @ 1800 HORIZ CTRS TO REMAIN - NEW VERT BRIDGING WIRE SHOWN
EXISTING 90 X 45 X 3.0 LEG METAL TOP HATS @ 600 VERT CTRS TO REMAIN
EXIST HSUB COLUMN
EXISTING NEW ROOF (RE-R2) FROM MAIN CONTRACT
EXIST MASONRY WALL FACE PAINT WHERE EXPOSED
3MM ALUMIN CLADDING CASSETTE SYSTEM - (CD-01)
NEW 12 COLORBOND ALUMINIUM APRON FLASHING - 300 WIDE - TYPICAL
NEW ROOF STRUCTURE - FROM MAIN CONTRACT
EXIST 200 Z PURLINS
REMOVE EXISTING ALUMINIUM COMPOSITE CLADDING
EXIST SOUND BLOCK ARENA WALL
EXIST HSUB COLUMN
EXIST INSULATION BLANKET AND SUPPORT WIRE TO REMAIN
EXIST 150 C GIRTS @ 1800 HORIZ CTRS TO REMAIN - NEW VERT BRIDGING WIRE SHOWN
EXISTING 90 X 45 X 3.0 LEG METAL TOP HATS @ 600 VERT CTRS TO REMAIN
EXIST HSUB COLUMN
EXIST MASONRY WALL FACE PAINT WHERE EXPOSED
4 Section North East Facade - Grid B
5 Section North East Facade - Grid 9
7 Section East Facade - Grid A
9 Section South Facade - Grid D
8 Section South East Facade - Grid B
Philplughton Architects
UX GROUP
ELEMENT ENTERTAINMENT CENTRE
601 BRICKER HWY, GLENORCHY TAS 7010
BUILDING FACADE SECTION DETAILS - SHEET 13
REVISED TENDER & BA
1 : 10 @ A0
07.04.2021
20318
A6112
B

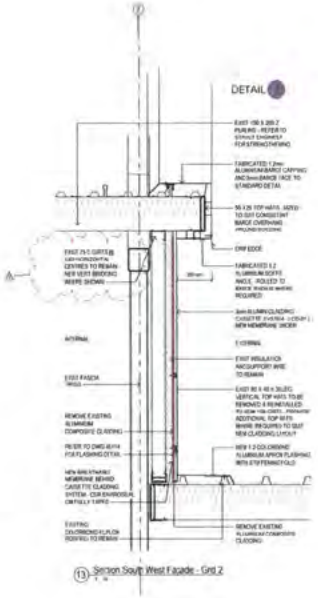


11 Section South Facade - Grid G

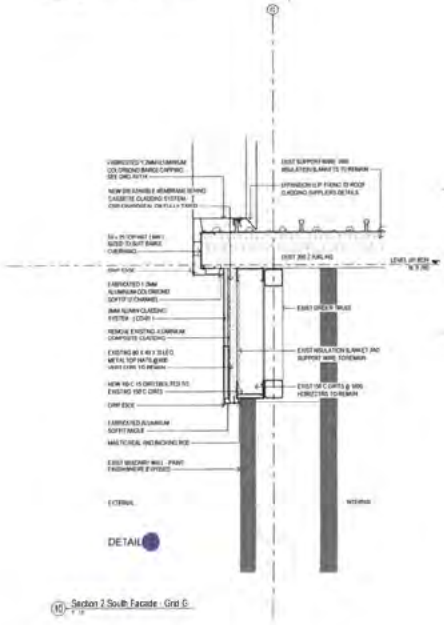




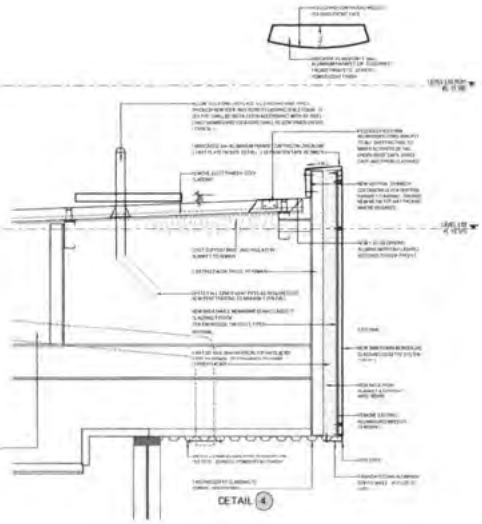
12 Section South West Facade - Grid 19



13 Section South West Facade - Grid 2



10 Section 2 South Facade - Grid G



Philip Lighton Architects

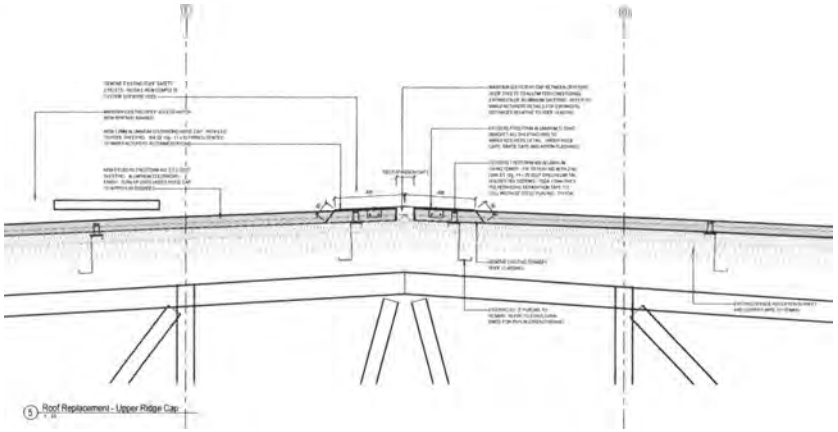
Rev	Description	Dwn	Date
A	ISSUE FOR CONSTRUCTION		
B	REVISED TENDER & BA		

BUILDING FACADE SECTION
DETAILS - SHEET 14

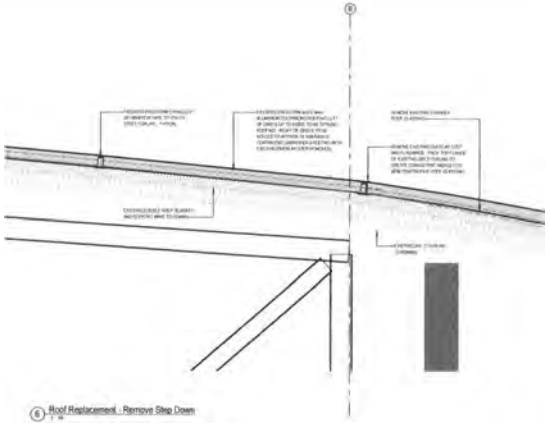
REVISED TENDER & BA

Drawing No.	Project Number
A6113	20318

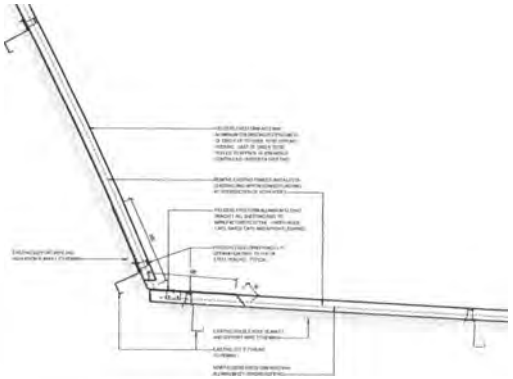
Rev B



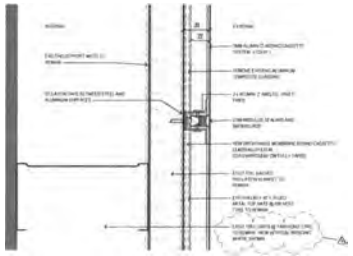
5 Roof Replacement - Upper Ridge Cap



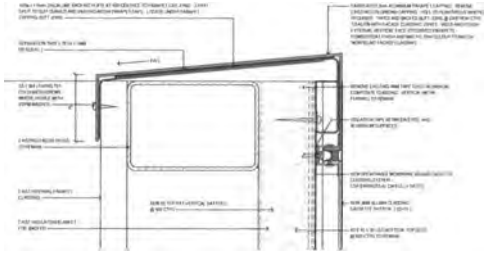
6 Roof Replacement - Remove Step Down



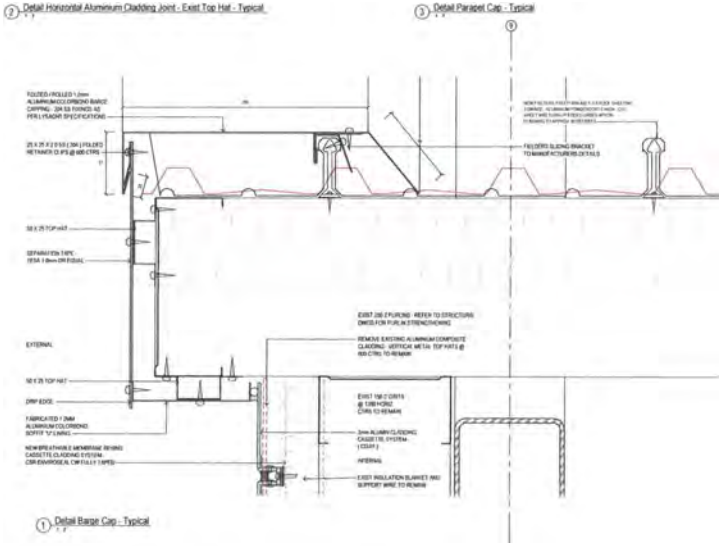
8 Roof Replacement - Roof Area 10 Transition



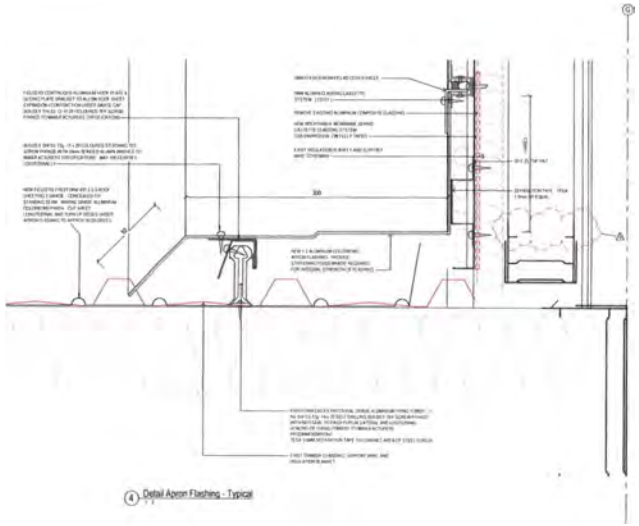
2 Detail Horizontal Aluminium Cladding Joint - Exist Top Hat - Typical



3 Detail Parapet Cap - Typical



1 Detail Barge Cap - Typical



4 Detail Apron Flashing - Typical

PhilpLighton Architects

Rev	Description	Dwn	Date
A	ISSUE FOR CLIENT REVIEW		26.05.21
B	Issued for Council Submission		27.08.21

CD GROUP
DERWENT ENTERTAINMENT CENTRE
191 BERRIDALE HWY, CLYDE RIVER, TAS, 7140

BUILDING FACADE TYPICAL DETAILS - SHEET 15

REVISED TENDER & BA

Drawn by	Date	Project Number
JT	27.04.2021	20.318
Reviewed by	Scale @ A3	Rev
	A6114	B

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: The Crown C/O Dept of State Growth *Owner name*
PO Box 536 *Address*
Hobart TAS 7000 *Suburb/postcode*

Designer details:

Name: Mr Anthony Dalgleish
Category: Architect
Business name: Philp Lighton Architects
Phone No: 63 312133
Business address: 65 Tamar Street
Launceston TAS 7250
Fax No:
Licence No: 567913835
Email address: launceston@philplighton.com.au

Details of the proposed work:

Owner/Applicant Derwent Entertainment Centre (MyState Arena)
Designer's project reference No. 20.318
Address: 601 Brooker Highway
Lot No: 110871/1
Glenorchy TAS 7010

Type of work: Building work [X] Plumbing work [ ] *(X all applicable)*

Description of work:

Alteration
Reroofing and Recladding
External roof and wall facade

(new building / alteration / addition / repair / removal / re-erection water / sewerage / stormwater / on-site wastewater management system / backflow prevention / other)

Description of the Design Work (Scope, limitations or exclusions): *(X all applicable certificates)*

Certificate Type:	Certificate	Responsible Practitioner
	X Building design	Architect or Building Designer
	☐ Structural design	Engineer or Civil Designer
	☐ Fire Safety design	Fire Engineer
	☐ Civil design	Civil Engineer or Civil Designer
	☐ Hydraulic design	Building Services Designer
	☐ Fire service design	Building Services Designer
	☐ Electrical design	Building Services Designer
	☐ Mechanical design	Building Service Designer
	☐ Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	☐ Other (specify)	

Deemed-to-Satisfy: X Performance Solution: ☐ *(X the appropriate box)*

Other details:

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing Nos: A1012-B, A1013-C, A1014-A, A1015-A, A1016-C, A1017-A, A1018-A, A3002-B, A3003-B, A3004-A, A3005-A, A3502-C, A6111-B, A6112-B, A6113-B, A6114-B	Prepared by: Philp Lighton Architects	Date: 28 04 2022
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Philp Lighton Architects	Date: 28 09 2021
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:

NCC 2019 Vol 1
1562.1-2018

Any other relevant documentation:

Attribution as designer:

I Mr Anthony Dalgleish am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	Name: (print)	*Signed*	*Date*
Designer:	Anthony Dalgleish		28 04 22
Licence No:	567913835		

Assessment of Certifiable Works: (TasWater)

Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.

If you cannot check ALL of these boxes, LEAVE THIS SECTION BLANK.

TasWater must then be contacted to determine if the proposed works are Certifiable Works.

I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

- [X] The works will not increase the demand for water supplied by TasWater
- [X] The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- [X] The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- [X] The works will not damage or interfere with TasWater's works
- [X] The works will not adversely affect TasWater's operations
- [X] The work are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- [X] I have checked the LISTMap to confirm the location of TasWater infrastructure
- [X] If the property is connected to TasWater's water system, a water meter is in place, or has been applied for to TasWater.

Certification:

I Mr Andrew Floyd being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008,* that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: www.taswater.com.au

	Name: (print)	*Signed*	*Date*
Designer:	Anthony Dalgleish		28 04 22

www.vosconstruction.com.au
admin@vosconstruction.com.au

Vos Construction & Joinery P/L ABN 99 009 558 258
Vos Enterprises P/L ABN 43 921 408 590

LAUNCESTON
3 HUDSON FYSH DR,
WESTERN JUNCTION TAS 7212
P 03 6398 8300
F 03 6398 8333

HOBART
7O BROWNS RD, KINGSTON 7050
PO BOX 146 KINGSTON TAS 7051
P 03 6229 0300
F 03 6229 0333

DEVONPORT
40 APPLEDORE ST, DEVONPORT TAS 7310
PO BOX 168, DEVONPORT TAS 7310
P 03 6424 4444
F 03 6424 9265

Tick applicable Vos Office: ☐ ☑ ☐

MEMORANDUM: INVITATION TO TENDER

PROJECT: *DERWENT ENTERTAINMENT CENTRE RECLADDING AND REROOFING WORKS*

PROJECT DETAILS: REMOVAL AND REPLACEMENT OF EXISTING CLADDING AND ROOFING

DATE: 05/10/2021

TENDERER'S COMPANY NAME:

Vos Representative: Nathan Watkins

Contact Name: **Nathan** Watkins

Telephone:

Mobile: **0407 746 338**

Email: nwatkins@vosgroup.com

Facsimile: **(03) 6229 0333**

Vos Construction & Joinery Pty Ltd (Vos) is calling for quotations for Tender Packages for the project referred to above. You are invited to submit a tender for the relevant works usually performed by you.

Tenderers are advised to note the data shown below:

Architect:	Philp Lighton
Type of Head Contract:	AS2124-1992
Type of Sub-Contract:	AS2545-1993
Commencement Date:	November 2021
Date for Practical Completion:	31st March 2022
Retention / Security:	5%
Liquidated Damages:	$10,500 per day for the first 14 days of delay and $5,500 per day for each day of delay thereafter
Defects Liability Period:	12 months

This is a federally funded project: ☐ **This is a privately funded project:** ☐

QUOTATIONS REQUIRED BY: **5.00pm 20th October 2021**

The drawings and specifications are available for copying at Digital Office Solutions

The Vos Formal Instrument of Agreement is available for inspection at our Kingston office. Failure to do so will not substantiate a claim.

It is your responsibility that you view all documents to ensure that the information from which you are preparing your tender submission is complete and does in fact represent the complete scope of the work for your trade.

Should you submit a quotation, it will be considered that you have viewed all the necessary documentation and allowed for all the necessary scope of works and statutory requirements associated with your trade. This includes compliance with all legal obligations relating to Goods & services Tax, Long Service Leave, Redundancy, Workers Compensation and Workplace Health & Safety. This also includes compliance to Vos site safety requirements on all Vos project sites.

Subcontractors and their employees must comply with the Vos High Risk Construction Work Policy. A copy of this policy is available upon request.

The successful tenderer is to supply a *Risk Assessment / Safe Work Method Statement* for the work activities that they are performing and conforming with Vos' '*Sub Contractor Risk Assessment / Safe Work Method Statement (SC RA/SWMS) Checklist'* prior to commencement on site.

The use of Step Ladders is to be discouraged unless absolutely necessary. Step Ladders can only be used onsite after a RA/SWMS has been completed and approved.

Tenderers are advised to familiarise themselves with site conditions, and include any allowances necessary to undertake works.

The tender amount is to be a lump sum quotation, and not subject to rise and fall.

Tenderers are also required to include an indicative program and timeframe for their works alongside their quote.

Any claim for additional work relating to a discrepancy in documentation will not be considered unless Vos Construction is notified of the discrepancy through a request for information issued in the tender period.

Tenderers to allow for any measures necessary to meet the construction program, including overtime if required.

No claims for additional costs or extensions of time will be considered should you fail to include all the relevant details at the time of tender. A conforming tender MUST BE submitted. However, alternative proposals may be submitted for consideration.

Please specify your allowances in your tender and any specific exclusions. If you have any queries concerning scope of works or specification, contact the Vos representative on page 1.

Vos complies with the Building Code 2016 in relation to both federally funded and privately funded work. Therefore it is a condition for participation that tenderers and any subcontractors they engage comply with the Building Code 2016 and with any new Code substituted for it (Building Code). Copies of the Building Code are available at: http://www.fwbc.gov.au/building-code. It is also a condition of participation in this tender that, at the time the expression of interest or tender is lodged, the tenderer must not have been:

a) precluded from tendering for Australian Government funded work; or

b) specifically excluded from participating in this tender.

By submitting a quotation you agree that you comply with the requirements of the Building Code. A failure to meet this condition will result in your exclusion from the tender. Vos may request evidence of compliance with the Building Code at any stage throughout the tender period.

Contract Terms

Subcontractors are to comply with the following key items as part of this RFT package (generally in line with Treasurer's Instructions and Tas Govt procurement guidelines; and back-to-back with the VOS/LK Head Contract):

1. Form of subcontract to be AS2545-1993 (companion doc to head contract AS2124-1992)
2. Tenderers to be prequalified with Tasmanian Government Department of Treasury prequalification scheme for contractors building and construction and maintenance services
3. Comply with AS4120-1994 Code of Tendering
4. Comply with National Code of Practice for the Construction Industry 1997 edition (including the Tasmanian annexure to the National Code of Practice for the Construction Industry)
5. Comply with project's Subcontractor Warranty Deed (as per Head Contract Annexure Part H)
   a. Warranty to be in favour of both Principal & Crown, jointly and severally
   b. Warranty terms as per Head Contract Annexure Part G:
      i. Roofing = 10 years
      ii. Cladding = 10 years
6. Comply with project's Building and Construction Training Policy requirements
   a. Amended conditions of contract, back-to-back with Head Contract, including:
   b. Tas Govt position re zero tolerance towards violence against women
   c. Buy Local commitment
   d. Modern slavery
   e. Wood encouragement policy
   f. Definitions back-to-back, including COVID-19 etc.

g. Personal Property Securities Act (PPSA)
h. Security of Payment Act (Tas.)
i. Principal step in rights (default, termination of head contract etc.)

PLEASE ADVISE IF YOU WILL BE PRICING THIS PROJECT.	**Yes** ☐ **No** ☐
Tenderer's name:	
Contact Name:	**Email:**
Telephone:	**Mobile:**
Email:	**Facsimile:**

ROOF STRENGTHENING WORK
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HIGHWAY
GLENORCHY TASMANIA 7010

DWG. No.	DRAWING TITLE	CURRENT REVISION	ISSUE DATE
S000	DRAWING INDEX & STRUCTURAL NOTES	2	26.04.2022
S101	OVERALL ROOF PLAN	1	12.04.2022
S201	ELEVATIONS 01	1	12.04.2022
S202	ELEVATIONS 02	1	12.04.2022
S203	ELEVATIONS 03	1	12.04.2022
S601	STEELWORK DETAILS 01	1	12.04.2022

STRUCTURAL NOTES

GENERAL

1. This set of drawings describes the structural design intent for this project. It is not intended as an instruction manual, and is only upon competent, experienced contractors and subcontractors (or freedom and engineering design) to interpret.
2. These drawings shall be read in conjunction with all other contract drawings and specification. Any discrepancies shall be referred to Gandy & Roberts.
3. Setting out dimensions shown on this drawing shall be verified by the Contractor.
4. Dimensions shall not be obtained by scaling these drawings.
5. All non-load bearing walls shall be strip clad. All fire protection of steel and backing to 30mins unless otherwise shown. Provide appropriate head ties or slip/flexible materials to allow vertical shrinkage and/or expansion of the wall and vertical deflection of the slab whilst maintaining lateral wall stability.

APPROVALS

1. The Contractor is responsible for ensuring that a valid building permit is in place for the work that has been surveyed as notified of all site inspection requests.
2. The Contractor is responsible for engaging all site inspections & witnessing all hold points associated within the contract or by the Building Surveyor.
3. A minimum of 24 hours notice is required for Gandy and Roberts to attend the site. Do not rely upon telephone or email communication requests - make contact with our office to confirm attendance.
4. Photographic documentation to be an adequate basis to proceed beyond a hold point unless agreed with Gandy and Roberts in advance.

WORK HEALTH AND SAFETY

1. The main contractor and all subcontractors shall comply with the Work Health and Safety Act, Regulations and all relevant codes of practice.
2. The Gandy and Roberts Design Safety Report 20.0108 revision A forms an integral part of the documentation. This report identifies safety risks and proposed control measures to be followed by the Contractor and the Building Operator. Contract and tenants requiring more explanation than in the safety report are encouraged to put drawings with any enclosed to mark in the Principal Contractor.
3. Should the main Contractor or Subcontractors identify omissions or errors in the report related to the scope of Gandy and Roberts' work on the project, or have safer ways of working, they should contact Gandy and Roberts prior to construction.
4. Should the main Contractor propose an alternative design, they need to present these with appropriate safety risk planning to Gandy and Roberts for review.

TEMPORARY WORKS

1. The Gandy & Roberts design is for the completed structure in service. It does not include structural assessment of the structures prior to construction completion. The Contractor is required to safely and all temporary works necessary to enable completion of the structure (including the engagement of suitably qualified designers) and is responsible for all associated costs. This includes (but is not limited to) the following:
   - Underpinning, including complying (without reservations) of the Building Act 2016 Form 5 process for boundary protection works.
   - Precast panel propping.
   - Formwork.
   - Scaffolding.
   - Shoring.
   - Assessment of floors/roofs carrying construction loads in excess of the design load of new and existing structures.
   - Weld propping of suspended slabs.
2. The person responsible for these works is referred to as the 'as the Temporary Works Engineer' in Gandy & Roberts documentation.
3. During construction the Contractor shall maintain the structure in a stable condition and ensure that no part is overstressed under construction activities.
4. All propping to beams and slabs shall be removed before construction of any masonry walls or partitions on floors.

MASONRY

1. All work (including any material shall be in accordance with AS 3700 - 2018.
2. All blockwork units to have a characteristic unconfined compressive strength of 15 MPa minimum and a characteristic initial modulus of elasticity of 8 GPa minimum. All brick units to have a characteristic unconfined compressive strength of 18 MPa minimum and a characteristic initial modulus of elasticity of 6.8 MPa minimum.
3. Mortar mix shall be Class M3 - 1 : 1 : 6 (Cement : Lime : Sand). No retarding admixture must be used without the approval of Gandy & Roberts.
4. Cement and lime in the grout fills shall be kept clear of mortar droppings or blockouts provided to allow cleaning out at base.
5. Grout used in 2 Core bound masonry shall be N20 grade with sufficient slump to adequately fill the specified voids. 10mm maximum aggregate size.
6. Cover to reinforcement to be 15mm to faces of masonry units (20mm for exposure classification B1).
7. Refer to the Architectural drawings for details of control joints in masonry walls. Where are shown, provide joints at 6.0m centres. Control joints shall be 10mm wide, free of mortar, and caulked with an appropriate flexible sealant.
8. Unless otherwise specified, provide restrained reinforced brick ties at 600mm vertical centres across all control joints and for masonry walls or walls / pilasters or reinforced masonry beams and columns at 600mm centres both horizontally and vertically respectively. Durability class R2.
9. Masonry anchors: Unless noted otherwise to be chemical anchors with Dynabolt Rebars. Refer to concrete notes for repairing anchors in grouted masonry.

WATERPROOFING

1. Refer to the architectural documentation for full details of the waterproofing systems for this project. Where necessary, attention is drawn to the interfaces of waterproofing membranes which are to be constructed integrally with the structure. It is not intended for the structure to be entirely and completely describe the waterproofing system.
2. All proprietary products are to be installed in accordance with the manufacturers specifications.
3. All waterproofing systems require a comprehensive drainage system to minimise ponding. Refer to architectural and hydraulic documentation for details of surface falls, stormwater overflows and disposal. Limit drawings etc.

STRUCTURAL STEELWORK

1. All workmanship shall be in accordance with AS 4100:1998.
2. All plate and open sections to be grade 300 and down.
3. All hollow sections to be grade C350 minimum.
4. Imported steel (ie. manufactured outside of Australia) shall not be used unless compliance with AS4100:1998 can be adequately proven.
5. Welding shall be performed by a qualified and experienced operator in accordance with AS 1554-2014 Unless noted otherwise all welds shall be fillet continuous (full length). All welds shall be category SP purpose using E48XXMH5D electrodes unless otherwise agreed with Gandy & Roberts.
6. Bolts shall be high strength (grade 8.8) bolts to AS1252-1996 tightened to snug tight fit.
7. Bolts designated HSFF and HSTB shall be grade 8.8 bolts fully tightened in accordance with AS 4100-1998.
8. Ring bolts and cast-in bolt cages shall be commercial grade 4.6 bolts.
9. For connections not detailed otherwise, use a 10mm thick, standard web side plate with 2M20 bolts and 6mm continuous fillet weld each side.
10. The ends of all tubular members/hollows are to be sealed with internal thickness plates and continuous filled welds unless otherwise shown.
11. All steelwork shall be coated with an appropriate protection system in accordance with AS/NZS2312:2014 unless noted otherwise the protection system shall meet the following fire resistance requirements (protect with, exposure classification C2 Low): 15+ years
    - Inserts (protect with, exposure classification C3 Medium): 15+ years
12. Members requiring cold zinc rich, fire sprayed or HDTF bolted connections must not be painted.
13. Bowed members shall be installed with camber up. See BS procedure shall be as noted on the drawings.
14. Hangings hanging shall be either a proprietary system or similar. Allow 8 No. bolt pattern (straight joint, total 4 bolts on a knee one side). Hangers to be installed at distances no greater than (if times the depth of the steel style).
15. Allow for increased preformed heights upstage of roof sheeting expansion joints and flexible joints at expansion joint locations. Refer to architectural drawings and/or roofing contractor for location, extent and details of expansion joints if any.
16. Before fabrication commences, the Contractor shall submit a pdf copy of the shop drawings to the Engineer for review (review does not include checking of dimensions). Unverified drawings shall not be used. Retaining plans and calculations if applicable.

DESIGN CRITERIA

The structure has been designed using the following criteria:

Wind Loading
Design Wind Speed (to AS/NZS 1170.2 2011)
Ultimate: 51 ms (ultimate limit state)
44 ms (serviceability limit state)

Wind Category (to AS 4055-2012): >N3

Fire rating levels (unprotected structural members):

	Concrete	Masonry	Steel	Timber
Floors:	120/120/120	-/-/-	-/-/-	-/-/-
Columns:	120/120/120	-/-/-	-/-/-	-/-/-
Walls:	120/120/120	-/-/-	-/-/-	-/-/-

Earthquake
Design Category (EDC) = 2 to AS 1170.4

DEMOLITION

1. All demolition work shall be in accordance with AS 2601-2001.
2. A suitably qualified engineer shall be engaged to direct the demolition procedure and provide advice on propping and any other temporary support required during demolition.
3. Stacking of materials and use of mobile plant are not to exceed the assessed load capacity of any structural element.
4. Neat saw cuts to be made to new edges of all masonry prior to removal of any masonry units.
5. The contractor is responsible for overhead any preventive measures required to ensure the safety of all persons on property.

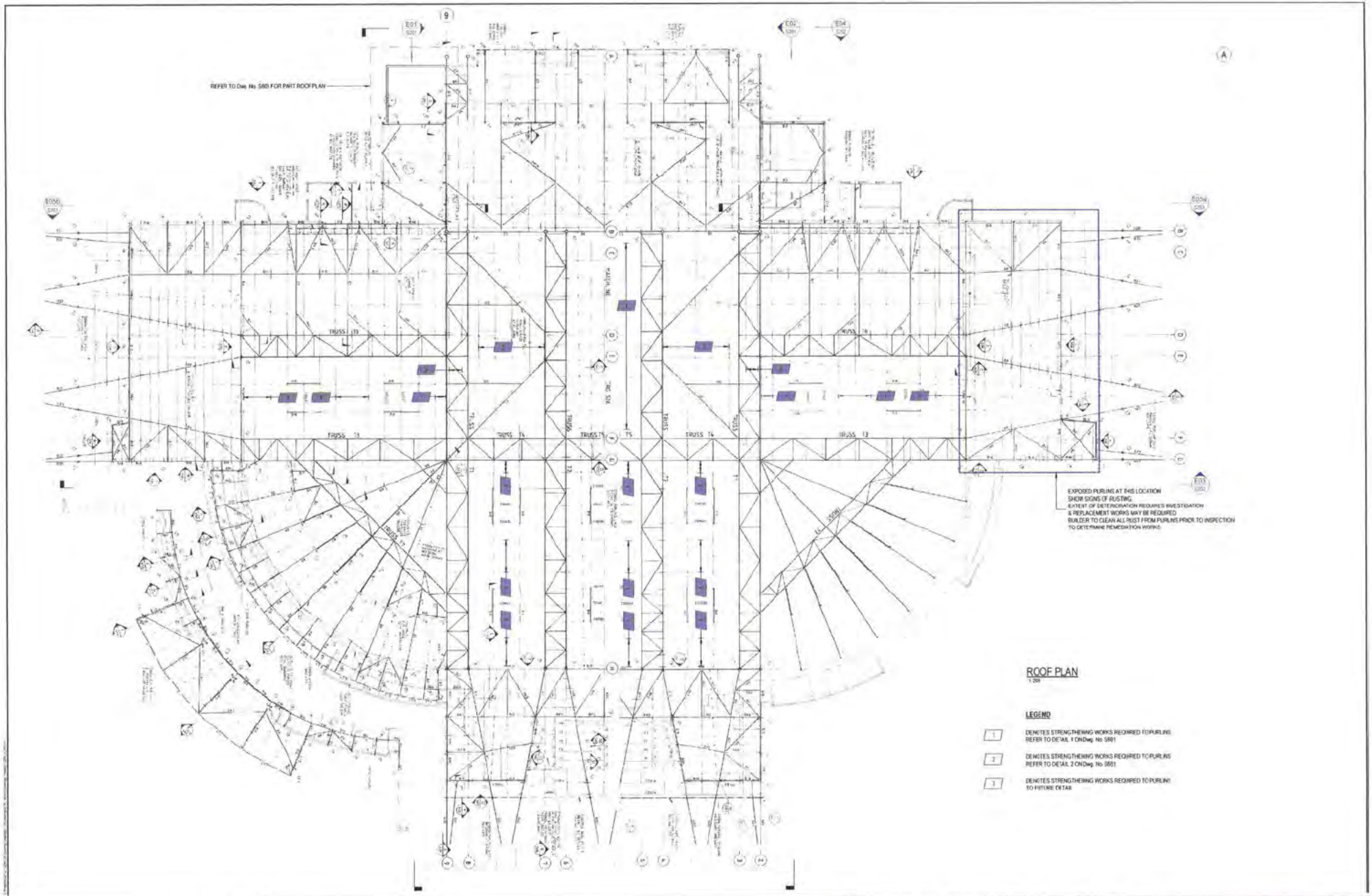
REV.	DESCRIPTION	APP'D	DATE
1	[illegible]	JH	26.04.2022
2	[illegible]	JH	12.04.2022
1	[illegible]	JH	08.04.2022

GANDY AND ROBERTS CONSULTING ENGINEERS
159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 6877 fx 03 6223 7183

DERWENT ENTERTAINMENT CENTRE
601 BROOKER HIGHWAY
GLENORCHY TASMANIA 7010

DRAWING INDEX & STRUCTURAL NOTES

JN	JR	Checked
21.0299	S000	2



ROOF PLAN

1:200

LEGEND

1 — DENOTES STRENGTHENING WORKS REQUIRED TO PURLINS REFER TO DETAIL 1 ON Dwg. No. S601

2 — DENOTES STRENGTHENING WORKS REQUIRED TO PURLINS REFER TO DETAIL 2 ON Dwg. No. S601

3 — DENOTES STRENGTHENING WORKS REQUIRED TO PURLINS TO FUTURE DETAIL

REV	DESCRIPTION	APP'D	DATE
1	ISSUED FOR BUILDING APPROVAL	DV	12.04.2022
A	ISSUED FOR COORDINATION	DV	08.04.2022

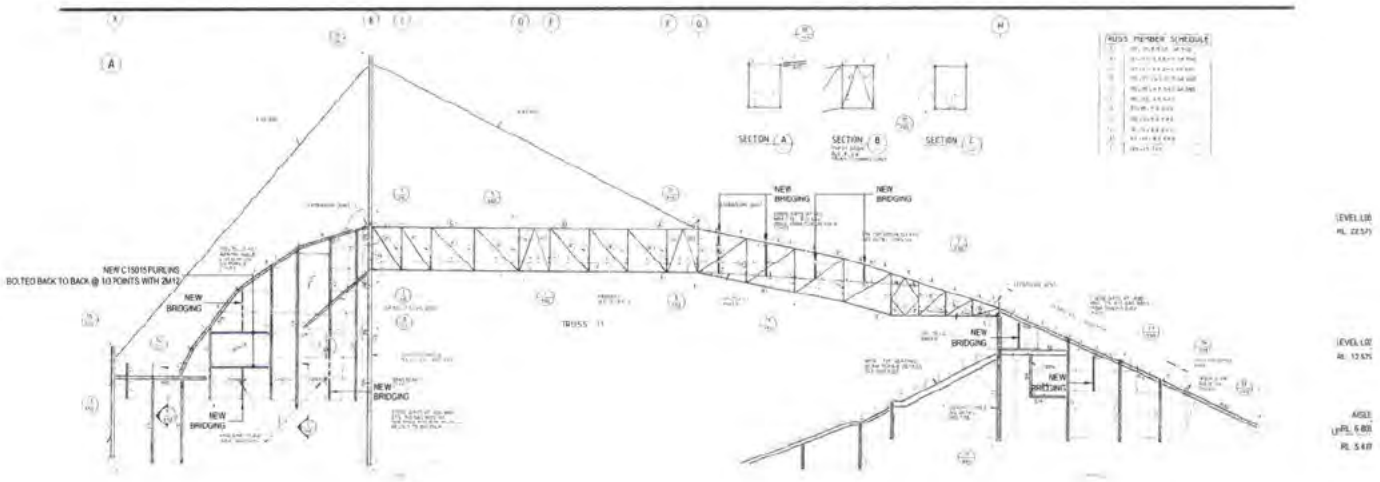
THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

GANDY AND ROBERTS CONSULTING ENGINEERS
159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 8877 fx 03 6223 7183

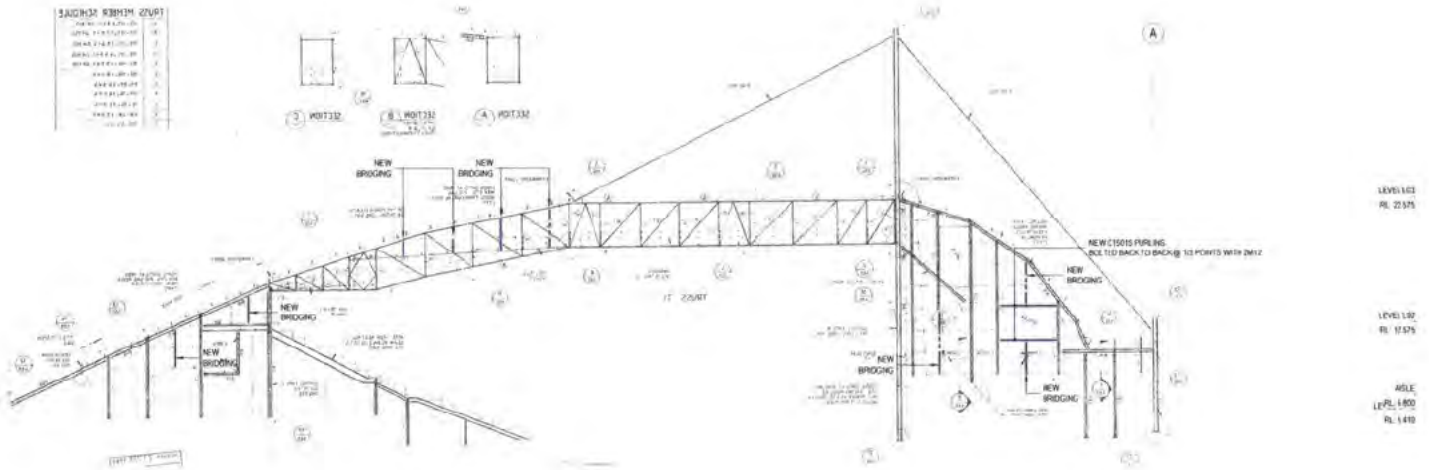
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HIGHWAY
GLENORCHY TASMANIA 7010

OVERALL ROOF PLAN

DY	JR	Checker
21.0299	S101	1



ELEVATION E01 / S101
1:200



ELEVATION E02 / S101
1:200

REV	DESCRIPTION	APP'D	DATE
1	ISSUE FOR BUILDING APPROVAL	DV	13.04.2021
A	ISSUE FOR COORDINATION	DV	09.04.2021

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159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 8877 fx 03 6223 7183

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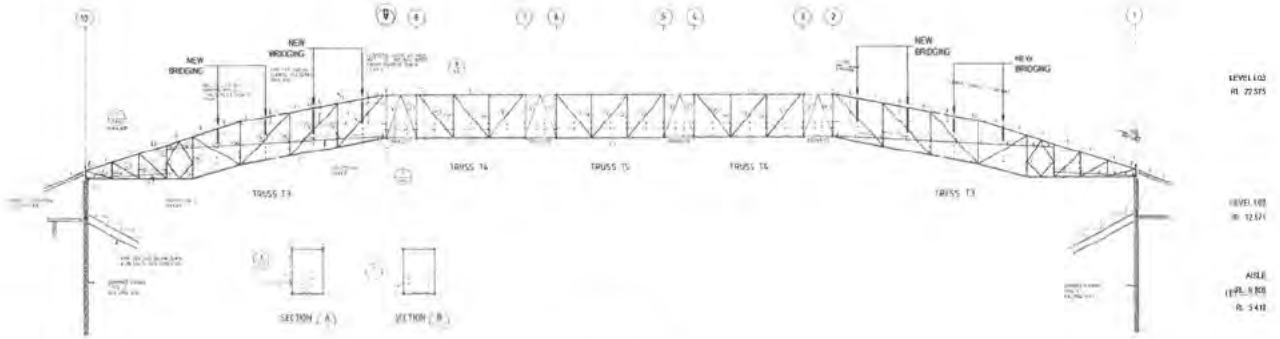
601 BROOKER HIGHWAY
GLENORCHY TASMANIA 7010

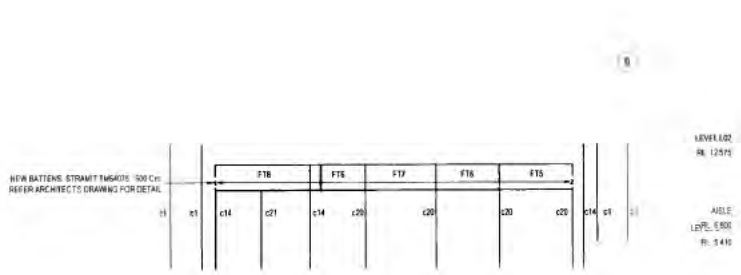
ELEVATIONS 01

DESIGNED	DRAWN	CHECKED
DV	JR	Checker
PROJECT	DRAWING	REVISION
21.0299	S201	1

1 : 200 @ A1



ELEVATION (E02)
1:200 (S101)



ELEVATION (E04)
1:200 (S101)

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REV	DESCRIPTION	APP'D	DATE
1	ISSUED FOR BUILDING APPROVAL	DS	13.04.2022
A	ISSUED FOR CONSTRUCTION	DS	19.04.2022

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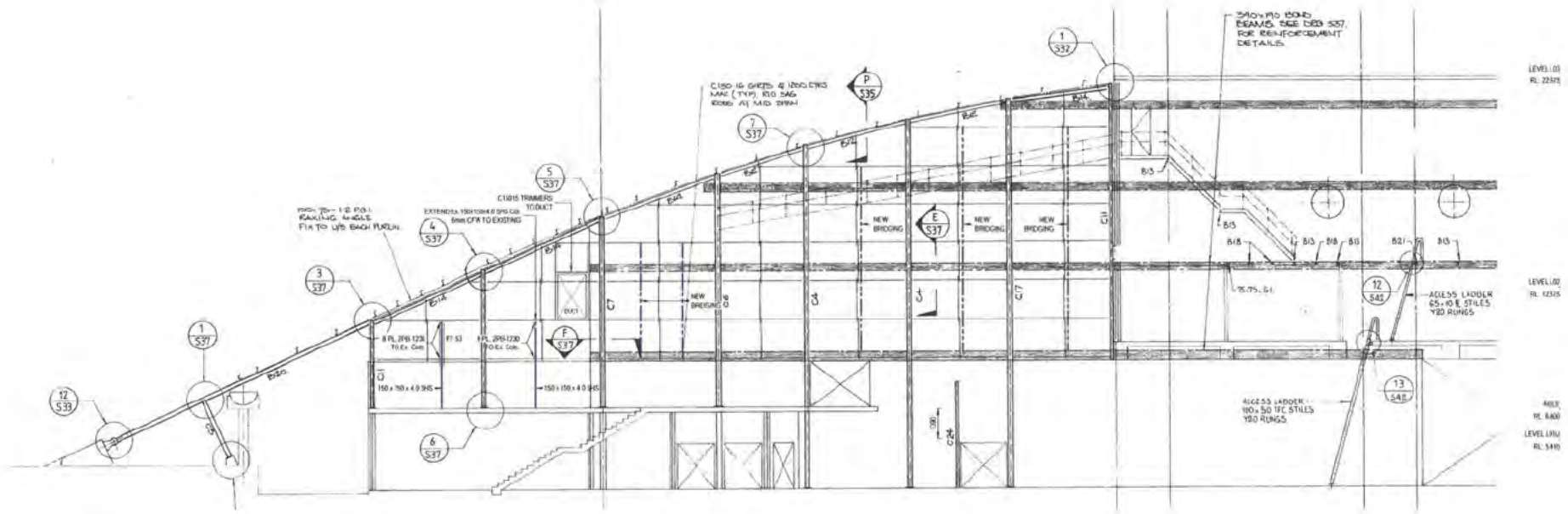
159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 6877 fx 03 6223 7183

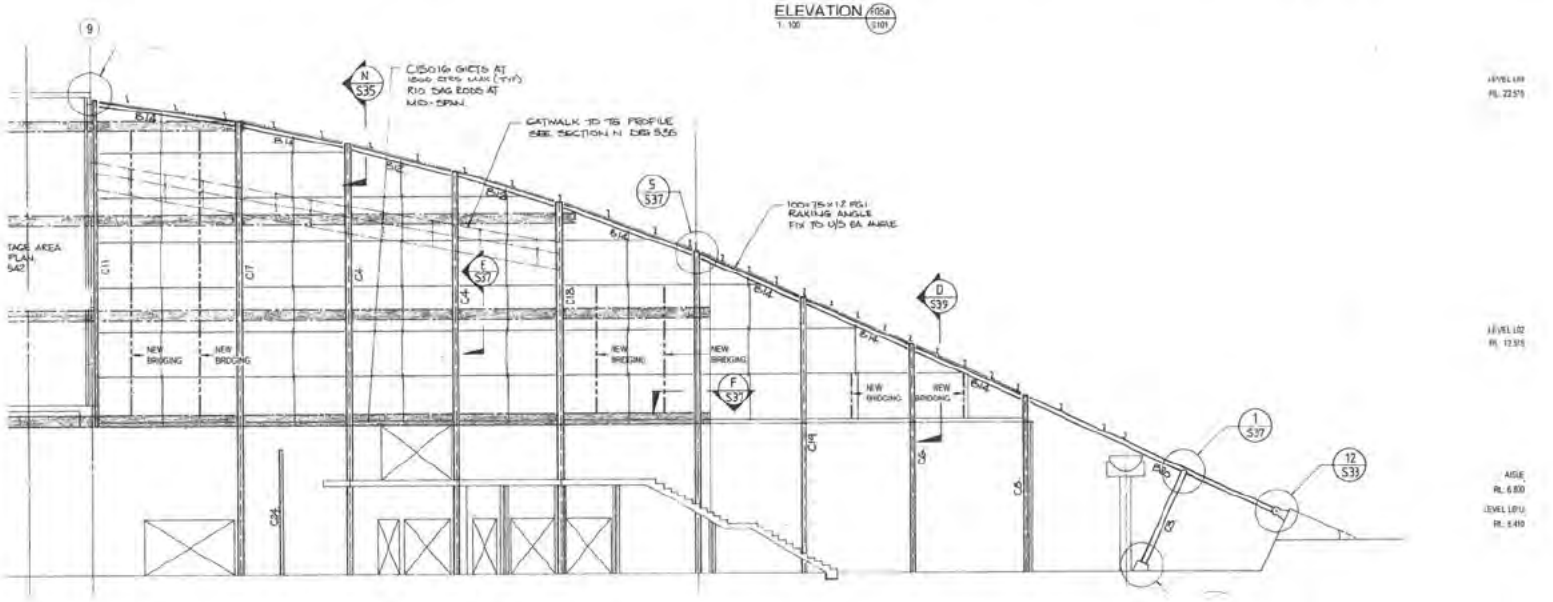
DERWENT ENTERTAINMENT CENTRE
601 BROOKER HIGHWAY
GLENORCHY TASMANIA 7010

ELEVATIONS 02

DV	JM	Checker
21.0299	S202	1



ELEVATION 1:100 (E05a S101)



ELEVATION 1:100 (E05b S101)

REV	DESCRIPTION	APP'D	DATE
I	ISSUED FOR BUILDING APPROVAL	DV	12.04.2022
A	ISSUED FOR COORDINATION	DV	05.04.2021

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159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 8877 fx 03 6223 7183

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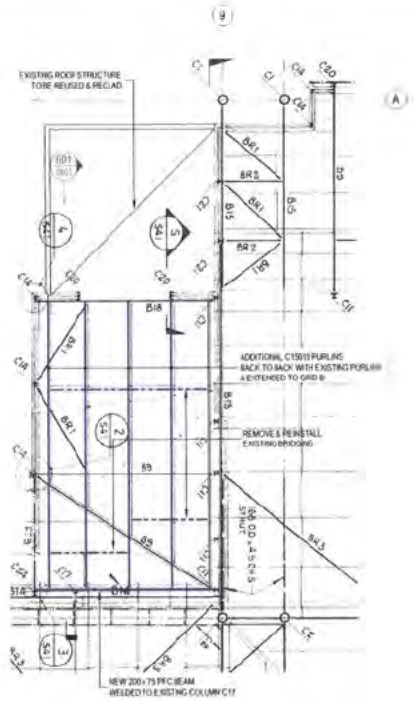
601 BROOKER HIGHWAY
GLENORCHY TASMANIA 7010

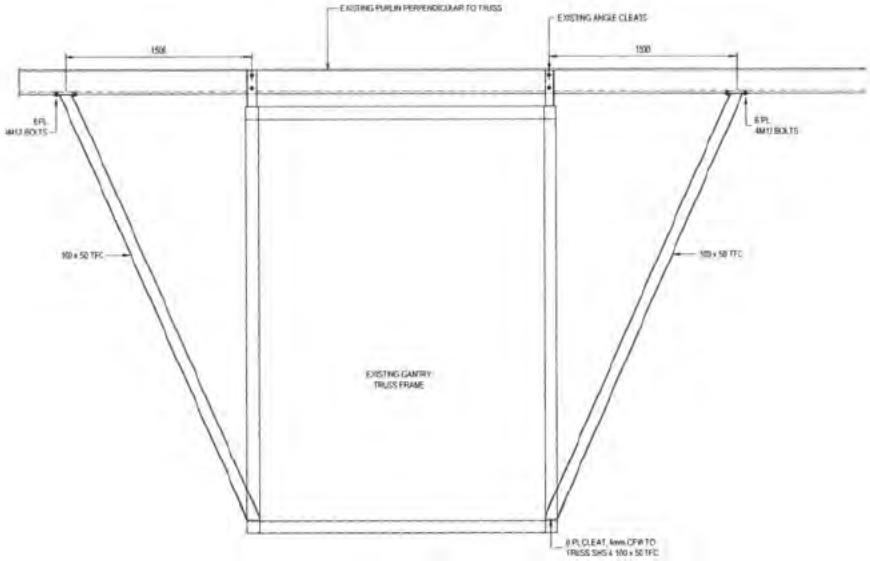
ELEVATIONS 03

1:100@A1

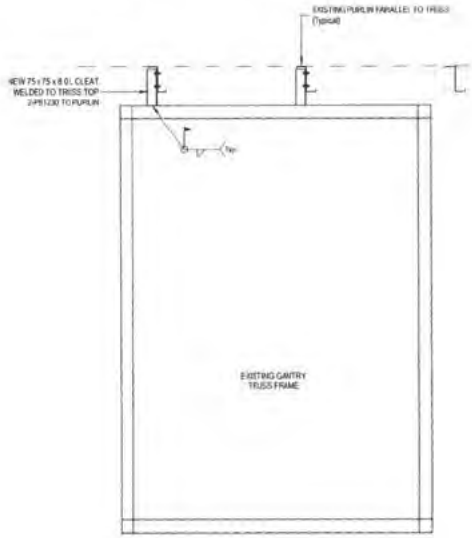
DV	JR	Checker
21.0299	S203	1



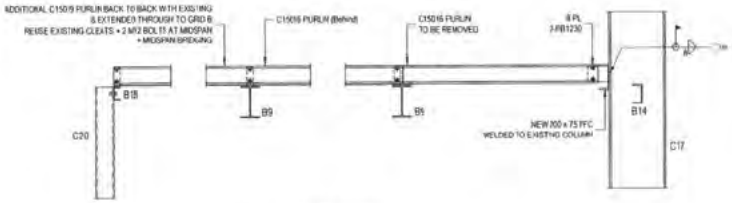
PART ROOF PLAN - LOW LEVEL
1:100



TYPICAL ROOF PURLIN STRENGTHENING - DETAIL 1
1:20



TYPICAL ROOF PURLIN STRENGTHENING - DETAIL 2
1:20



SECTION
1:20

REV	DESCRIPTION	APPD	DATE
1	ISSUED FOR BUILDING APPROVAL	DV	01.04.2021
A	ISSUED FOR COMMENT	DV	08.03.2021

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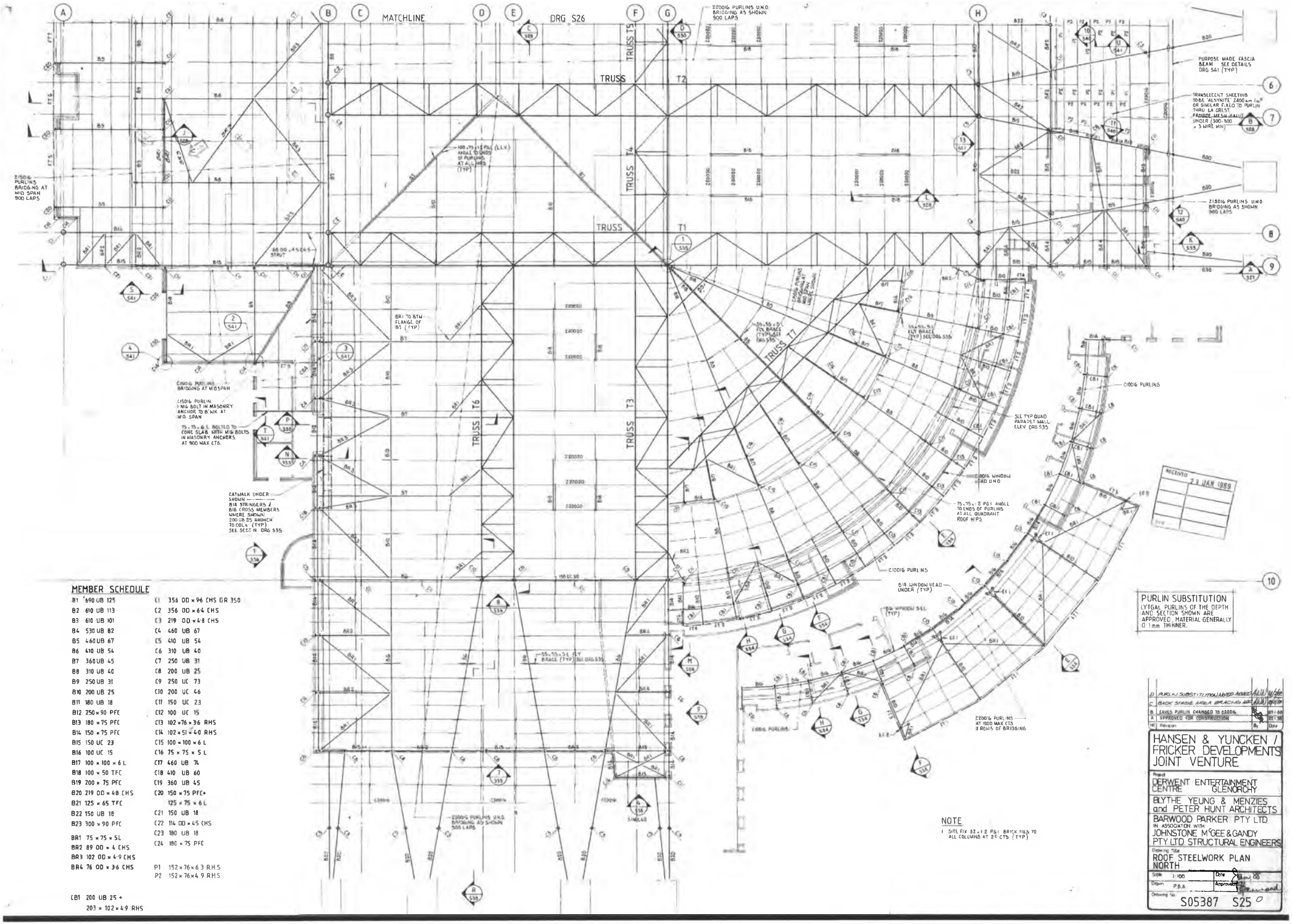
GANDY AND ROBERTS CONSULTING ENGINEERS
159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 8877 fx 03 6223 7383

DERWENT ENTERTAINMENT CENTRE
601 BROOKER HIGHWAY
GLENORCHY TASMANIA 7010

STEELWORK DETAILS 01

1:100 A1
DV | JR | Checker
21.0299 | S601 | 1



MEMBER SCHEDULE

B1	690 UB 125	C1	356 OD × 96 CHS GR 350
B2	610 UB 113	C2	356 OD × 64 CHS
B3	610 UB 101	C3	219 OD × 48 CHS
B4	530 UB 82	C4	460 UB 67
B5	460 UB 67	C5	410 UB 54
B6	410 UB 54	C6	310 UB 40
B7	360 UB 45	C7	250 UB 31
B8	310 UB 40	C8	200 UB 25
B9	250 UB 31	C9	250 UC 73
B10	200 UB 25	C10	200 UC 46
B11	180 UB 18	C11	150 UC 23
B12	250 × 90 PFC	C12	100 UC 15
B13	180 × 75 PFC	C13	102 × 76 × 36 RHS
B14	150 × 75 PFC	C14	102 × 51 × 40 RHS
B15	150 UC 23	C15	100 × 100 × 6 L
B16	100 UC 15	C16	75 × 75 × 5 L
B17	100 × 100 × 6 L	C17	460 UB 74
B18	100 × 50 TFC	C18	410 UB 60
B19	200 × 75 PFC	C19	360 UB 45
B20	219 OD × 48 CHS	C20	150 × 75 PFC+ 125 × 75 × 6 L
B21	125 × 65 TFC	C21	150 UB 18
B22	150 UB 18	C22	114 OD × 45 CHS
B23	300 × 90 PFC	C23	180 UB 18
BR1	75 × 75 × 5L	C24	180 × 75 PFC
BR2	89 OD × 4 CHS		
BR3	102 OD × 4.9 CHS		
BR4	76 OD × 3.6 CHS	P1	152 × 76 × 6.3 R.H.S
		P2	152 × 76 × 4.9 R.H.S

CB1 200 UB 25 + 203 × 102 × 4.9 RHS

PURLIN SUBSTITUTION

LYTGAL PURLINS OF THE DEPTH AND SECTION SHOWN ARE APPROVED, MATERIAL GENERALLY 0.1mm THINNER.

NOTE

1 SITE FIX 32 x 12 P61 BRICK TIES TO ALL COLUMNS AT 2.6 CTS (TYP)

D	PURLIN SUBSTITUTION ADDED	AW	14/6/89
C	BACK STAGE AREA BRACING ADDED	AW	19/4/89
B	EAVES PURLIN CHANGED TO Z300G	BT	1.88
A	APPROVED FOR CONSTRUCTION	BT	12.87
No	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project: DERWENT ENTERTAINMENT CENTRE GLENORCHY

BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

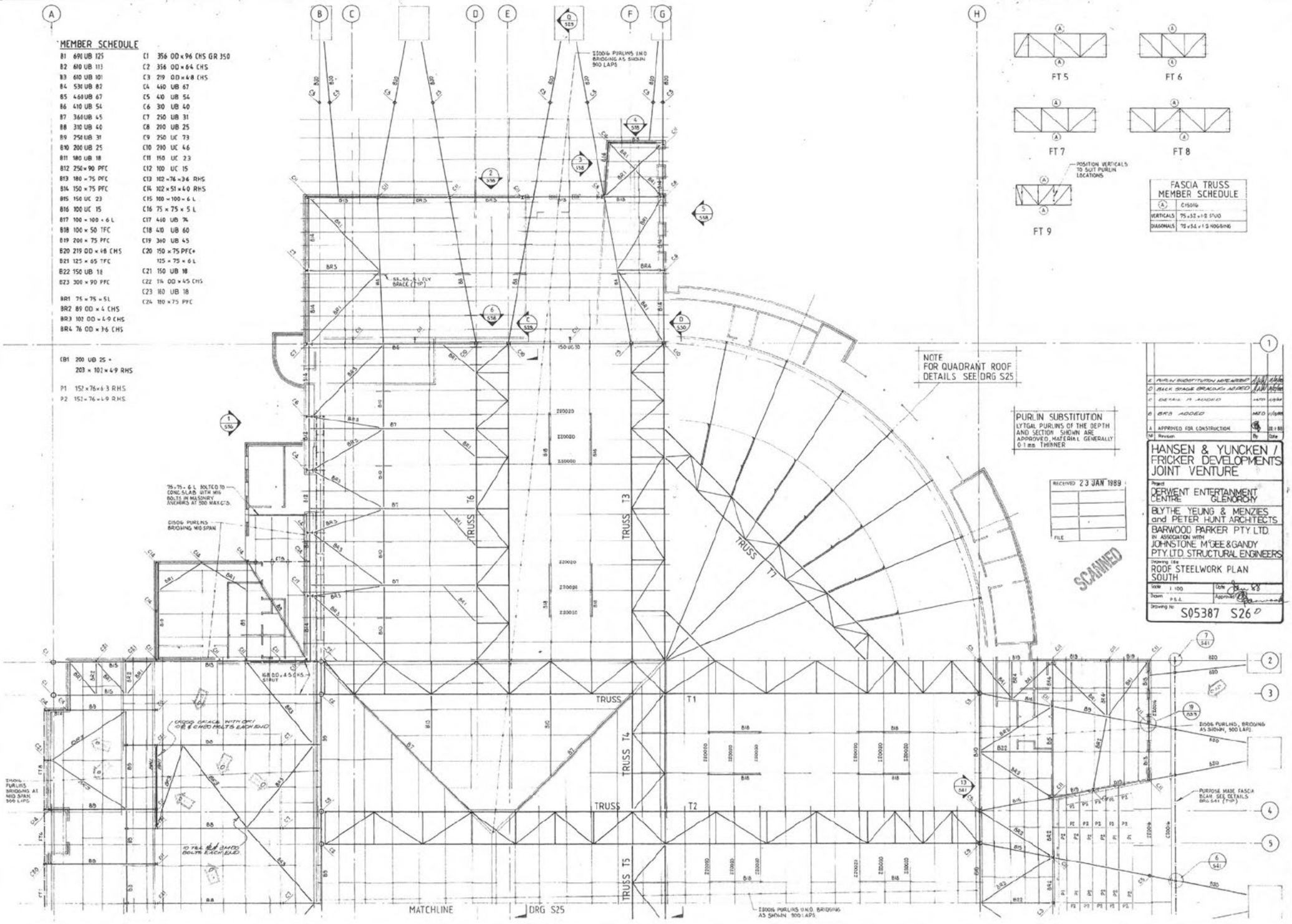
BARWOOD PARKER PTY LTD. IN ASSOCIATION WITH JOHNSTONE McGEE & GANDY PTY LTD. STRUCTURAL ENGINEERS

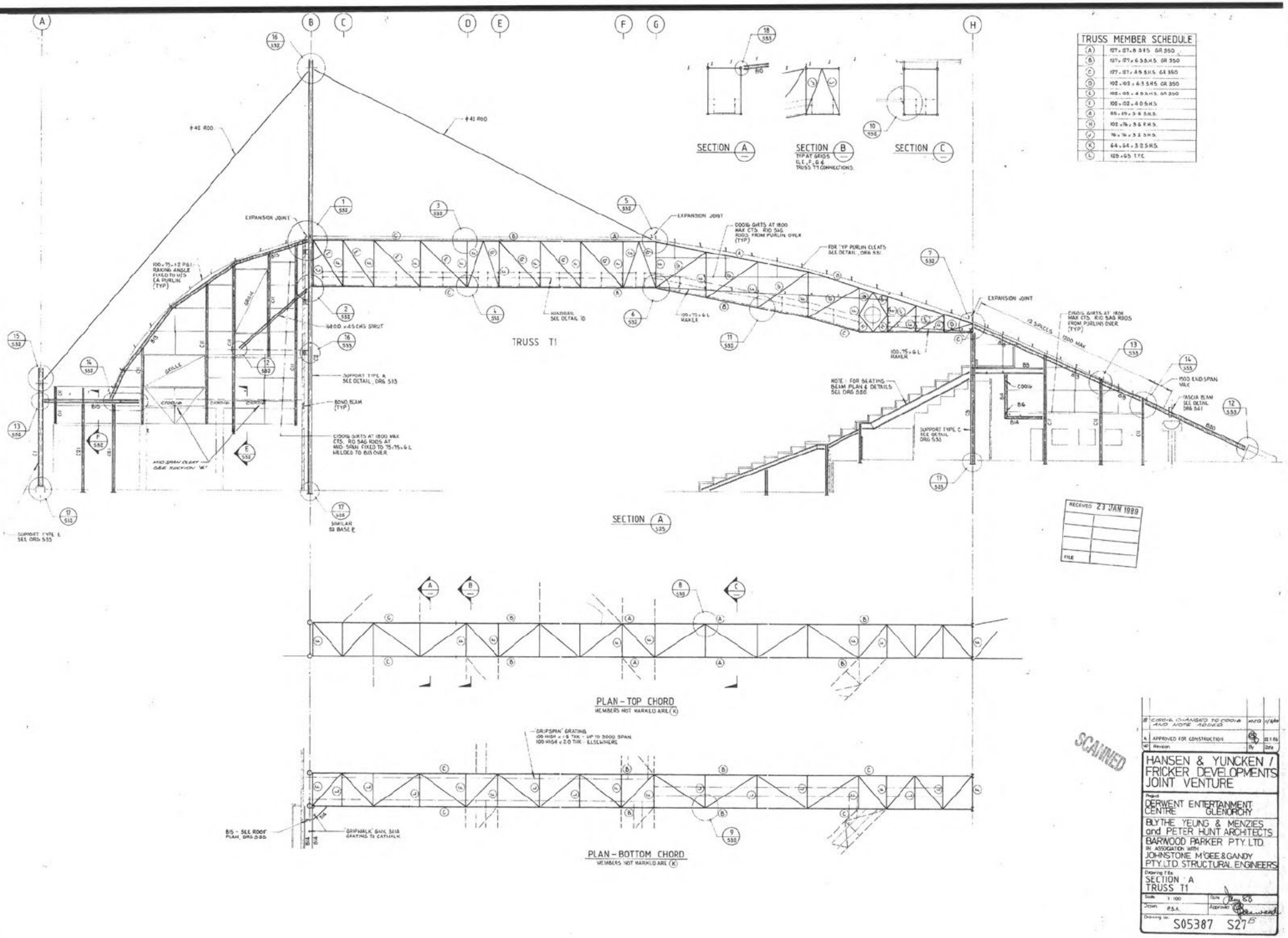
Drawing Title: ROOF STEELWORK PLAN NORTH

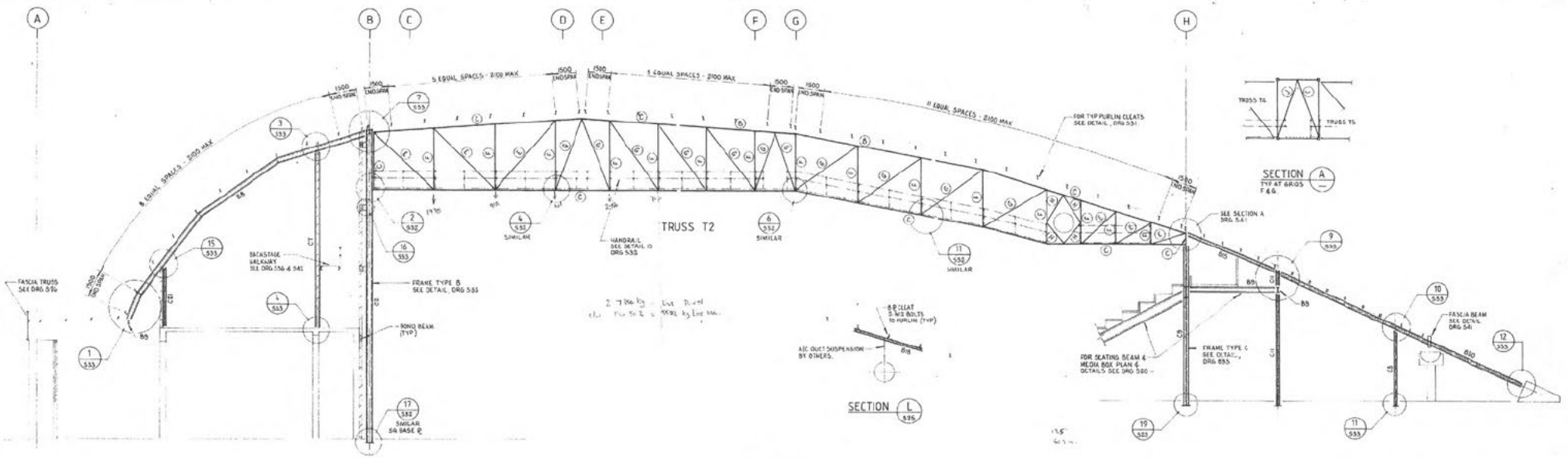
Scale: 1:100 Date: June 88

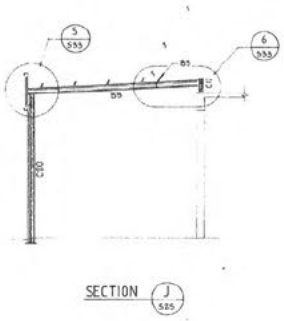
Drawn: P.S.A. Approved:

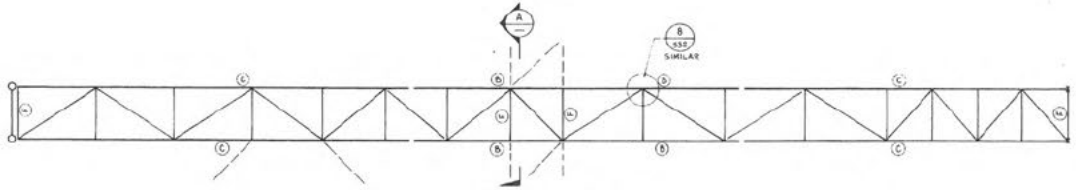
Drawing No: S05387 S25 D

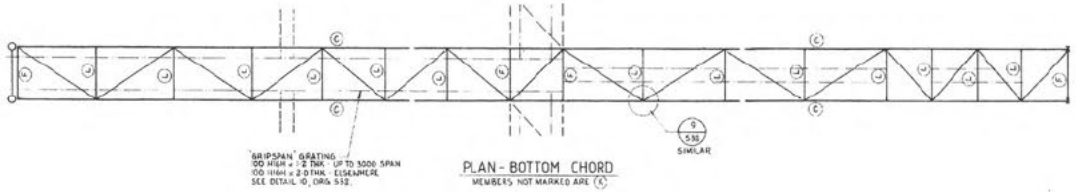

MEMBER SCHEDULE
B1 690 UB 125
B2 610 UB 113
B3 610 UB 101
B4 530 UB 82
B5 460 UB 67
B6 410 UB 54
B7 360 UB 45
B8 310 UB 40
B9 250 UB 31
B10 200 UB 25
B11 180 UB 18
B12 250 x 90 PFC
B13 180 x 75 PFC
B14 150 x 75 PFC
B15 150 UC 23
B16 100 UC 15
B17 100 x 100 x 6 L
B18 100 x 50 TFC
B19 200 x 75 PFC
B20 219 OD x 48 CHS
B21 125 x 65 TFC
B22 150 UB 18
B23 300 x 90 PFC
BR1 75 x 75 x 5 L
BR2 89 OD x 4 CHS
BR3 102 OD x 4.9 CHS
BR4 76 OD x 3.6 CHS
C1 356 OD x 9.6 CHS GR 350
C2 356 OD x 6.4 CHS
C3 219 OD x 4.8 CHS
C4 460 UB 67
C5 410 UB 54
C6 310 UB 40
C7 250 UB 31
C8 200 UB 25
C9 250 UC 73
C10 200 UC 46
C11 150 UC 23
C12 100 UC 15
C13 102 x 76 x 3.6 RHS
C14 102 x 51 x 4.0 RHS
C15 100 x 100 x 6 L
C16 75 x 75 x 5 L
C17 460 UB 74
C18 410 UB 60
C19 360 UB 45
C20 150 x 75 PFC+ 125 x 75 x 6 L
C21 150 UB 18
C22 114 OD x 4.5 CHS
C23 160 UB 18
C24 180 x 75 PFC
CB1 200 UB 25 + 203 x 102 x 4.9 RHS
P1 152 x 76 x 6.3 RHS
P2 152 x 76 x 4.9 RHS
FT 5
FT 6
FT 7
FT 8
FT 9
POSITION VERTICALS TO SUIT PURLIN LOCATIONS
FASCIA TRUSS MEMBER SCHEDULE
A C15016
VERTICALS 75 x 32 x 1.2 STUD
DIAGONALS 70 x 34 x 1.2 NOGGING
NOTE FOR QUADRANT ROOF DETAILS SEE DRG S25
PURLIN SUBSTITUTION
LYTGAL PURLINS OF THE DEPTH AND SECTION SHOWN ARE APPROVED, MATERIAL GENERALLY 0.1mm THINNER
RECEIVED 23 JAN 1989
FILE
SCANNED
E PURLIN SUBSTITUTION NOTE ADDED
D BACK STAGE BRACING NOTED
C DETAIL 19 ADDED
B BR3 ADDED
A APPROVED FOR CONSTRUCTION
No Revision By Date
HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE
Project DERWENT ENTERTAINMENT CENTRE GLENORCHY
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS
BARWOOD PARKER PTY LTD IN ASSOCIATION WITH JOHNSTONE McGEE & GANDY PTY LTD STRUCTURAL ENGINEERS
Drawing title ROOF STEELWORK PLAN SOUTH
Scale 1:100 Date
Drawn P.S.A. Approved
Drawing No S05387 S26 D
TRUSS T1
TRUSS T2
TRUSS T3
TRUSS T4
TRUSS T5
TRUSS T6
MATCHLINE DRG S25
Z300 PURLINS U.N.O. BRIDGING AS SHOWN 500 LAPS
Z150 PURLINS BRIDGING AS SHOWN, 500 LAPS
PURPOSE MADE FASCIA BEAM SEE DETAILS DRG S41 (TYP.)


TRUSS MEMBER SCHEDULE
A 127 x 127 x 8 SHS GR 350
B 127 x 127 x 6.5 SHS GR 350
C 127 x 127 x 4.9 SHS GR 350
D 102 x 102 x 6.3 SHS GR 350
E 102 x 102 x 4.9 SHS GR 350
F 102 x 102 x 4.0 SHS
G 89 x 89 x 3.6 SHS
H 102 x 76 x 3.6 RHS
J 76 x 76 x 3.2 SHS
K 64 x 64 x 3.2 SHS
L 125 x 65 TFC
SECTION A
SECTION B
TYP AT GRIDS C, E, F, & G. TRUSS T1 CONNECTIONS.
SECTION C
TRUSS T1
SECTION A
PLAN - TOP CHORD
MEMBERS NOT MARKED ARE (K)
'GRIPSPIN' GRATING
PLAN - BOTTOM CHORD
MEMBERS NOT MARKED ARE (K)
RECEIVED 23 JAN 1989
FILE
SCANNED
HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE
DERWENT ENTERTAINMENT CENTRE GLENORCHY
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS
BARWOOD PARKER PTY. LTD. IN ASSOCIATION WITH JOHNSTONE M'GEE & GANDY PTY. LTD. STRUCTURAL ENGINEERS
SECTION 'A' TRUSS T1
Scale 1:100
Drawn P.S.A.
S05387 S27









TRUSS MEMBER SCHEDULE	
(A)	127 × 127 × 8 SHS GR 350
(B)	127 × 127 × 6.3 SHS GR 350
(C)	127 × 127 × 4.0 SHS GR 350
(D)	102 × 102 × 6.3 SHS GR 350
(E)	102 × 102 × 4.0 SHS GR 350
(F)	102 × 102 × 4.0 SHS
(G)	89 × 89 × 3.6 SHS
(H)	102 × 76 × 3.6 RHS
(J)	76 × 76 × 3.2 SHS
(K)	64 × 64 × 3.2 SHS
(L)	125 × 65 TFC

RECEIVED 23 JAN 1989

FILE

A	APPROVED FOR CONSTRUCTION		23-1-89
NO	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

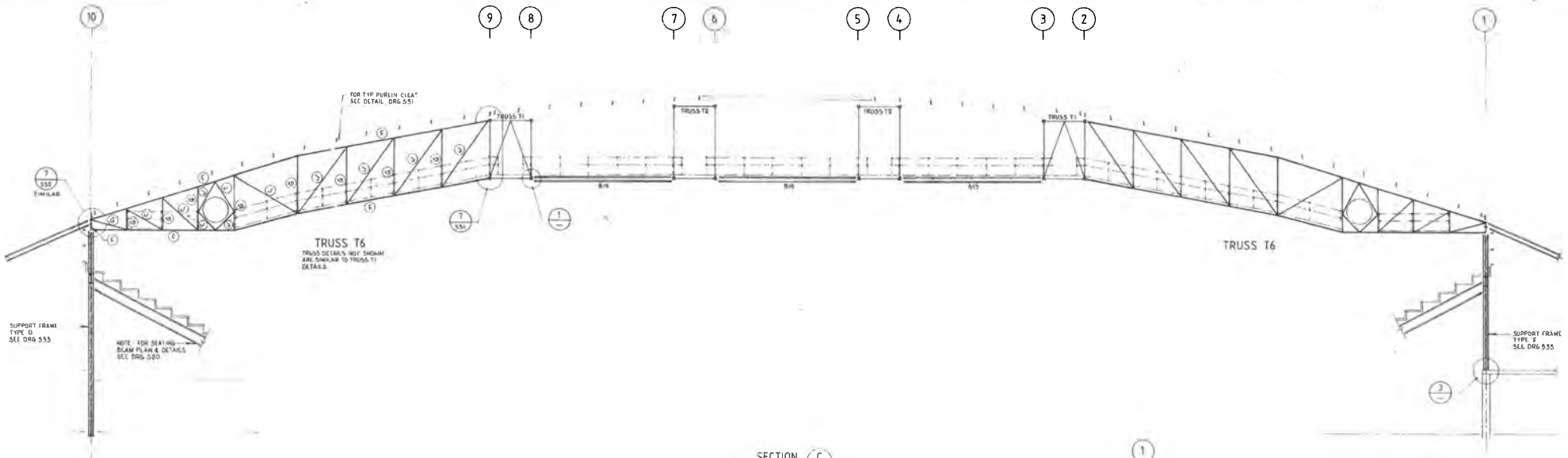
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY. LTD. IN ASSOCIATION WITH JOHNSTONE M°GEE & GANDY PTY. LTD. STRUCTURAL ENGINEERS

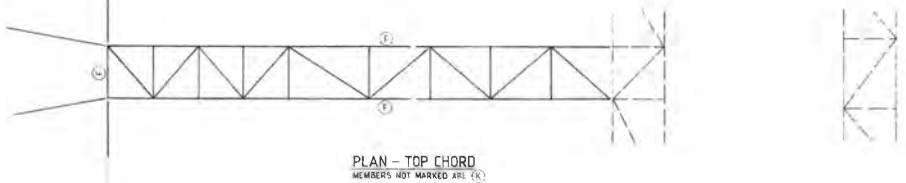
Drawing Title
SECTION B
TRUSS T2

Scale 1:100 Date Jan 89
Drawn PSA Approved

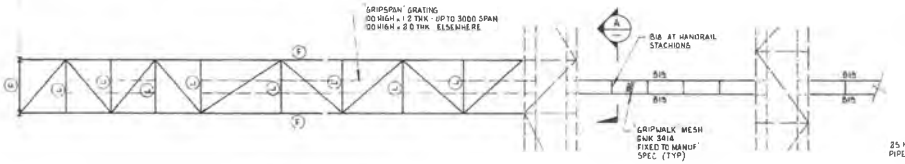
Drawing No. S05387 S28 1



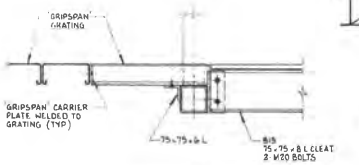
SECTION C



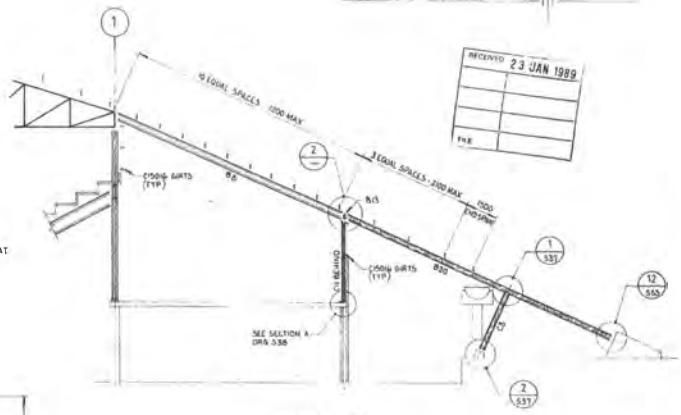
PLAN – TOP CHORD
MEMBERS NOT MARKED ARE (K)



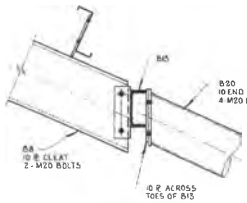
PLAN – BOTTOM CHORD
MEMBERS NOT MARKED ARE (K)



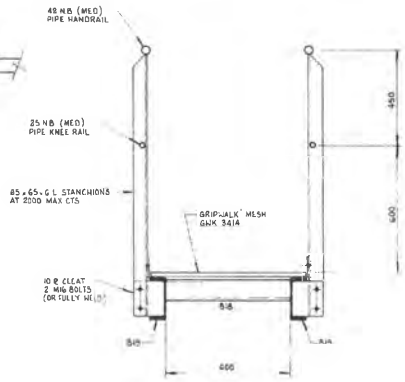
DETAIL 1



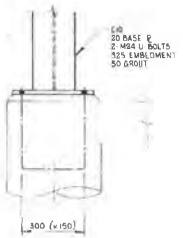
SECTION Q



DETAIL 2



SECTION A



DETAIL 3

TRUSS MEMBER SCHEDULE	
(A)	127 x 127 x 8 SHS GR 350
(B)	127 x 127 x 6.3 SHS GR 350
(F)	127 x 127 x 4.9 SHS GR 350
(D)	102 x 102 x 6.3 SHS GR 350
(E)	102 x 102 x 4.9 SHS GR 350
(F)	102 x 102 x 4.0 SHS
(G)	89 x 89 x 3.0 SHS
(H)	101 x 76 x 3.6 RHS
(J)	76 x 76 x 5.2 SHS
(K)	64 x 64 x 3.2 SHS
(L)	125 x 65 TFC

RECEIVED 23 JAN 1989

A	APPROVED FOR CONSTRUCTION		20/1/89
No	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

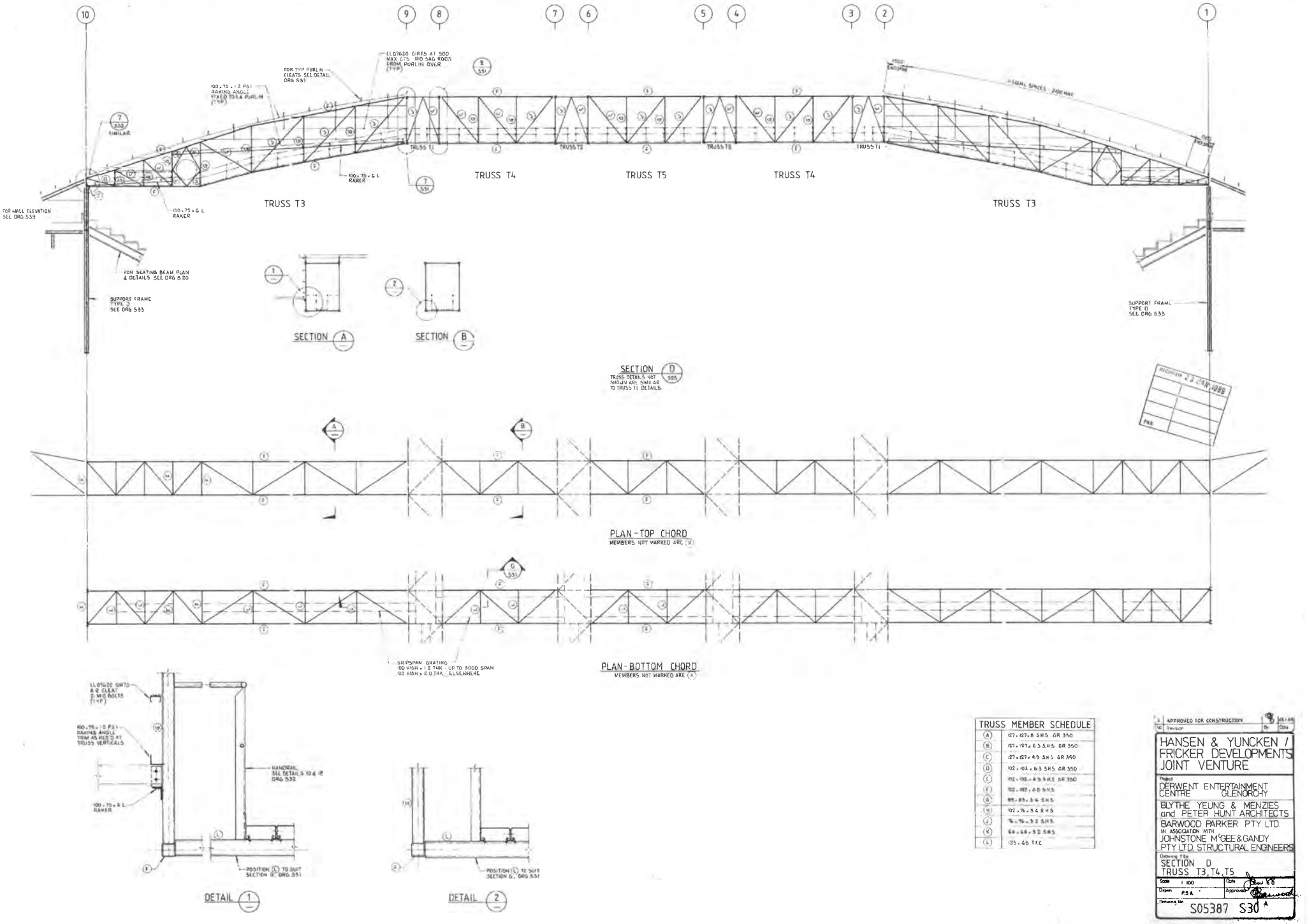
Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY LTD IN ASSOCIATION WITH JOHNSTONE McGEE & GANDY PTY LTD STRUCTURAL ENGINEERS

Drawing Title
SECTION C
TRUSS T6

Scale 1:100	2nd
Drawn P.S.A.	Approved
Drawing No S05387 S29	A



TRUSS MEMBER SCHEDULE	
(A)	127 x 127 x 8 SHS GR 350
(B)	127 x 127 x 6.3 SHS GR 350
(C)	127 x 127 x 4.5 SHS GR 350
(D)	102 x 102 x 6.3 SHS GR 350
(E)	102 x 102 x 4.5 SHS GR 350
(F)	102 x 102 x 4.0 SHS
(G)	89 x 89 x 3.6 SHS
(H)	102 x 76 x 5.6 RHS
(J)	76 x 76 x 3.2 SHS
(K)	64 x 64 x 3.2 SHS
(L)	125 x 65 TFC

RECEIVED 23 JAN 1986

A	APPROVED FOR CONSTRUCTION		
No.	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

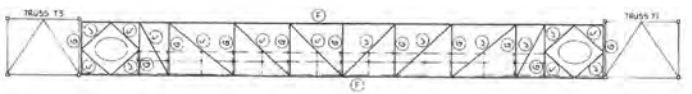
Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

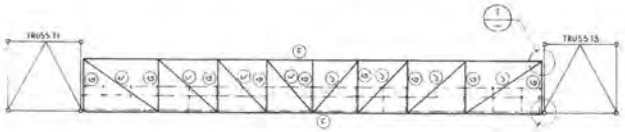
BARWOOD PARKER PTY. LTD. IN ASSOCIATION WITH JOHNSTONE M'GEE & GANDY PTY. LTD. STRUCTURAL ENGINEERS

Drawing Title
SECTION D
TRUSS T3, T4, T5

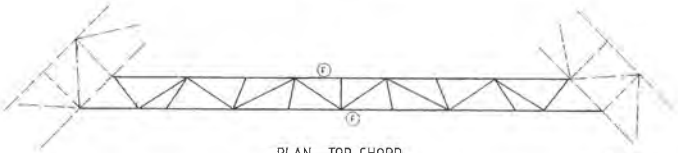
Scale	1:100	Date	Jan 88
Drawn	P.S.A.	Approved	
Drawing No.	S05387 S30		A



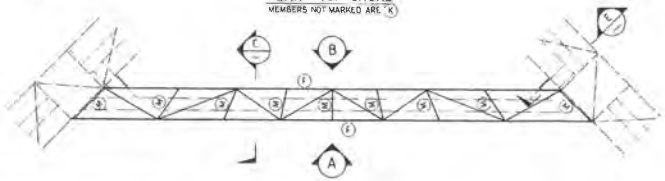
ELEVATION A



ELEVATION B



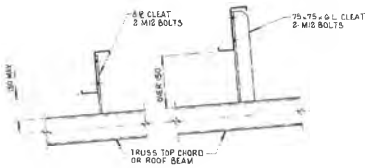
PLAN – TOP CHORD
MEMBERS NOT MARKED ARE (K)



PLAN – BOTTOM CHORD
MEMBERS NOT MARKED ARE (K)

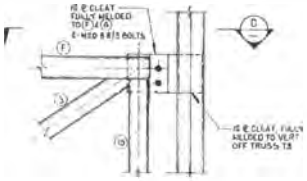
TRUSS T7

TRUSS MEMBER SCHEDULE	
(A)	127×127×8 SHS GR 350
(B)	127×127×6.3 SHS GR 350
(C)	127×127×4.5 SHS GR 350
(D)	102×102×6.3 SHS GR 350
(E)	102×102×4.5 SHS GR 350
(F)	102×102×4.0 SHS
(G)	89×89×5.6 SHS
(H)	89×76×3.6 RHS
(J)	76×76×3.2 SHS
(K)	64×64×3.2 SHS
(L)	125×65 PFC
(M)	200×50 PFC

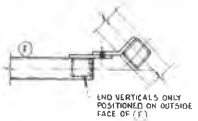


TYP PURLIN CLEATS

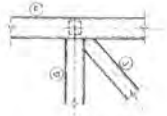
SECTION C

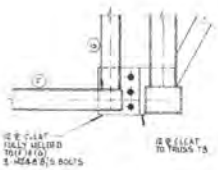


DETAIL 1

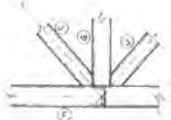


SECTION D

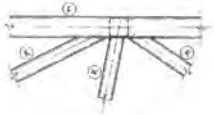




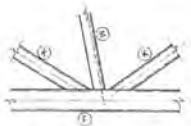
DETAIL 2



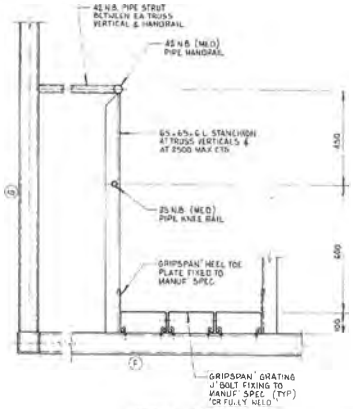
DETAIL 4



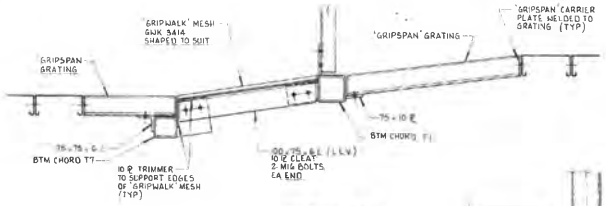
DETAIL 5



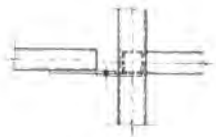
DETAIL 6



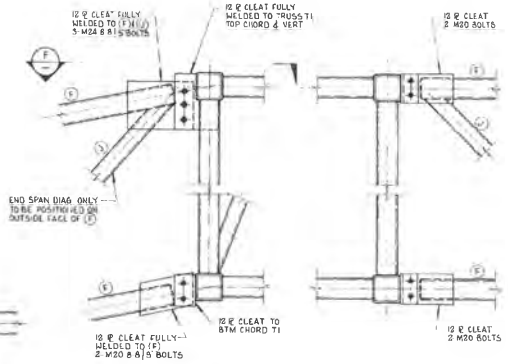
DETAIL 3



SECTION E

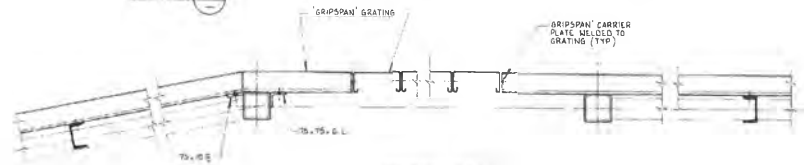


SECTION F



DETAIL 7 (550)

DETAIL 8 (550)



SECTION G (550)

A	APPROVED FOR CONSTRUCTION	SB	23.1.98
No	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

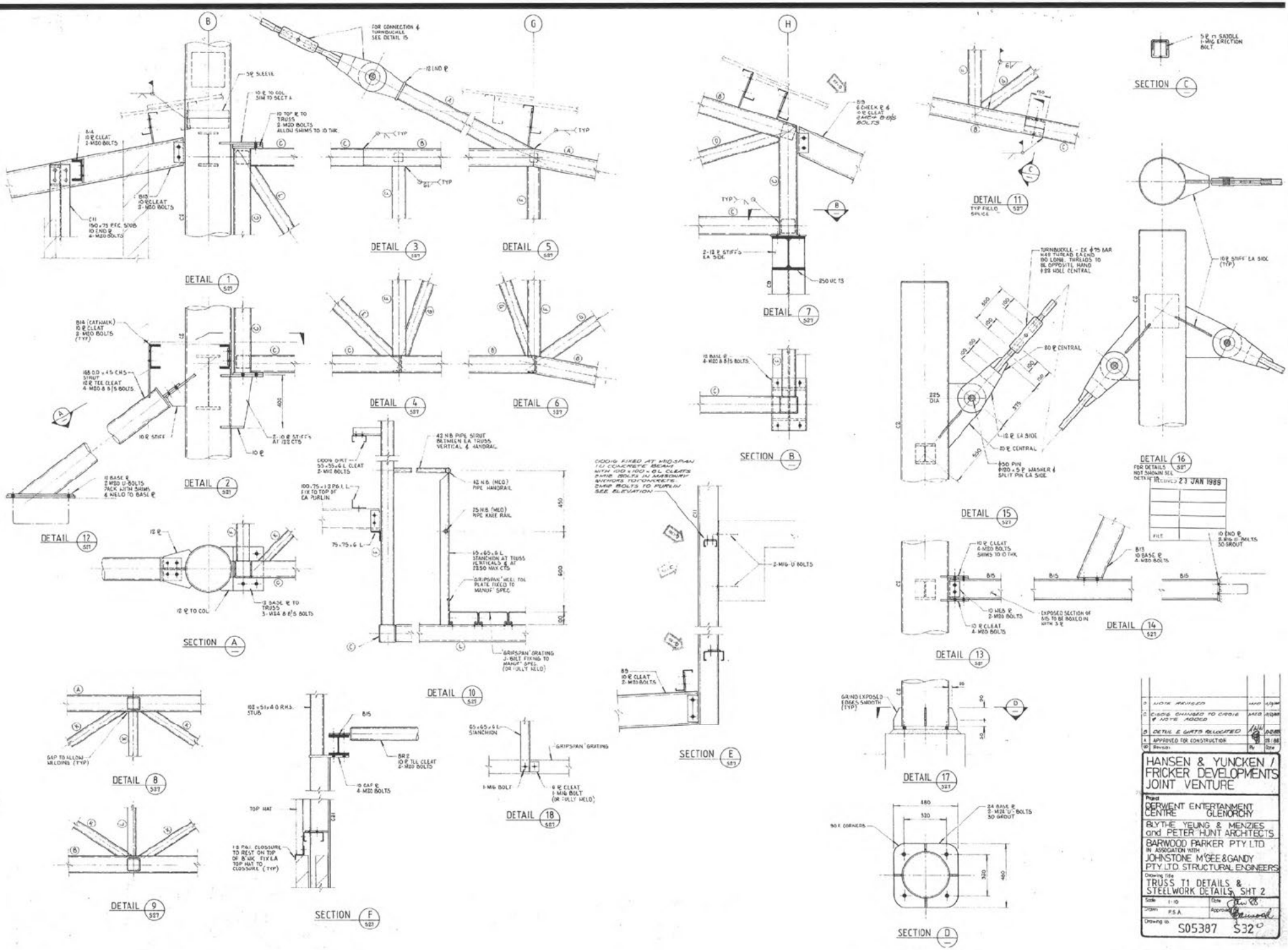
Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

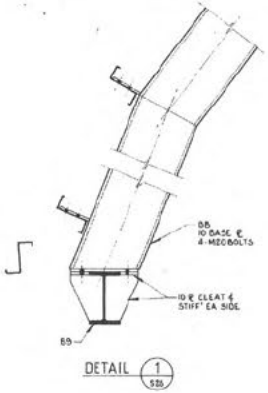
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS
BARWOOD PARKER PTY LTD
IN ASSOCIATION WITH
JOHNSTONE McGEE & GANDY PTY LTD. STRUCTURAL ENGINEERS

Drawing Title
TRUSS T7 DETAILS & STEELWORK DETAILS SHT 1

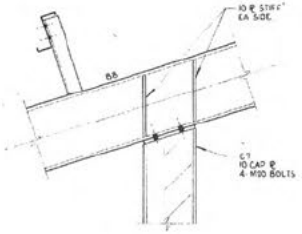
Scale	1:100, 1:10	Date	Jan 98
Drawn	P.S.A.	Approved	

Drawing No. S05387 S31 A

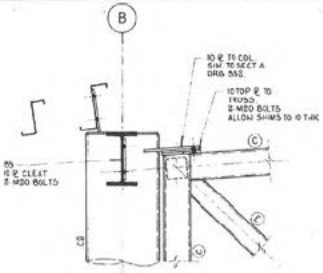

DETAIL 1 S27
DETAIL 2 S27
DETAIL 3 S27
DETAIL 4 S27
DETAIL 5 S27
DETAIL 6 S27
DETAIL 7 S27
DETAIL 8 S27
DETAIL 9 S27
DETAIL 10 S27
DETAIL 11 S27
DETAIL 12 S27
DETAIL 13 S27
DETAIL 14 S27
DETAIL 15 S27
DETAIL 16 S27
DETAIL 17 S27
DETAIL 18 S27
SECTION A
SECTION B
SECTION C
SECTION D
SECTION E
SECTION F
RECEIVED 23 JAN 1989
HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE
Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS
BARWOOD PARKER PTY LTD
IN ASSOCIATION WITH
JOHNSTONE M'GEE & GANDY PTY LTD STRUCTURAL ENGINEERS
Drawing title
TRUSS T1 DETAILS & STEELWORK DETAILS SHT 2
Scale 1:10
Drawn P.S.A.
Drawing no. S05387 S32



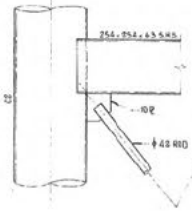
DETAIL 1 / 526

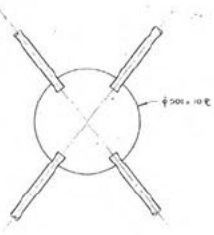


DETAIL 3 / 526

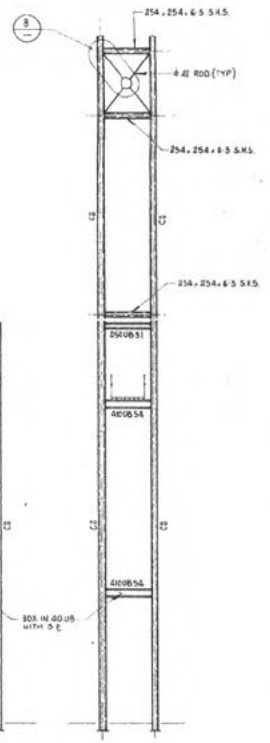


DETAIL 7 / 526

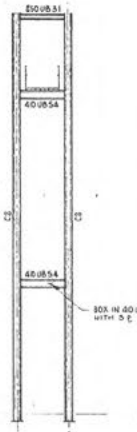




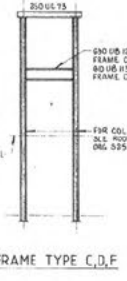
DETAIL 8 / —



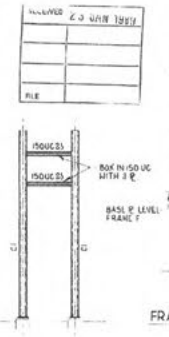
FRAME TYPE A



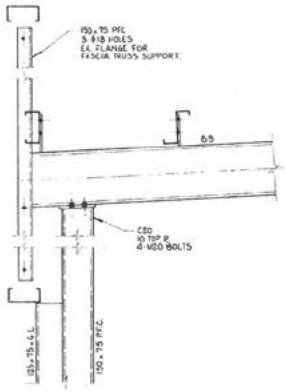
FRAME TYPE B



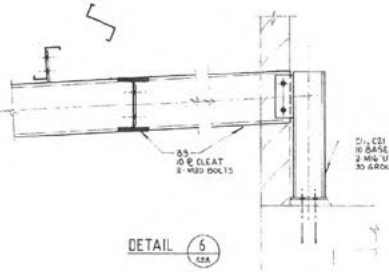
FRAME TYPE C,D,F



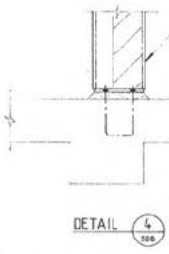
FRAME TYPE E



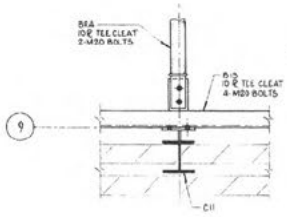
DETAIL 5 / 526



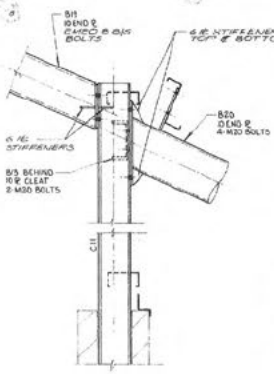
DETAIL 6 / 526



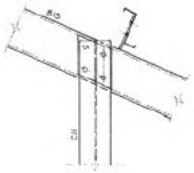
DETAIL 4 / 526



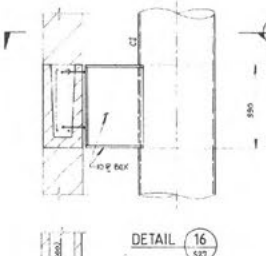
PLAN



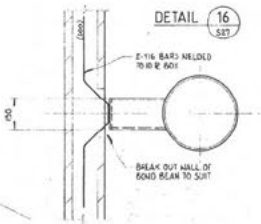
DETAIL 14 / 527



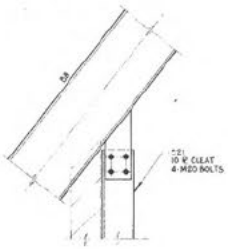
DETAIL 13 / 527



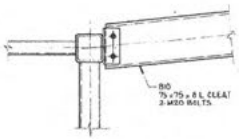
DETAIL 16 / 527



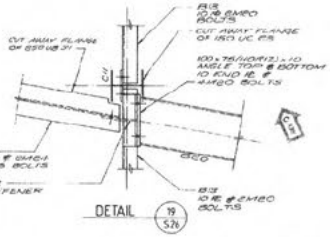
SECTION A / —



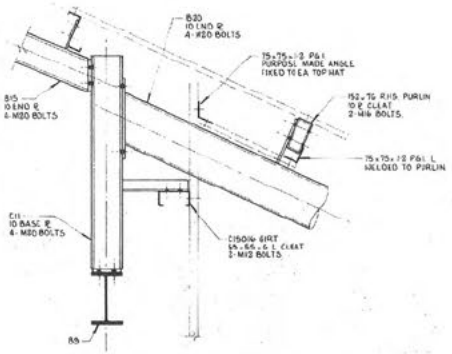
DETAIL 15 / 526



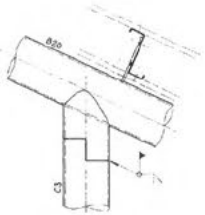
DETAIL 18 / 527



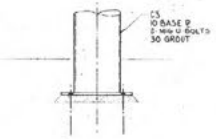
DETAIL 19 / 526



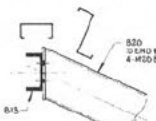
DETAIL 9 / 525



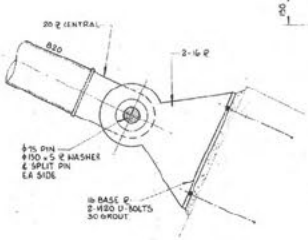
DETAIL 10 / 526



DETAIL 11 / 526



SECTION K / 525



DETAIL 12 / 526

C	100 x 75 x 10 L ADDED TO DETAIL 19	AMD	18.8.88
B	DETAIL 14 REVISED, DETAIL 19 ADDED	AMD	14.6.88
A	APPROVED FOR CONSTRUCTION		22.1.88
No	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

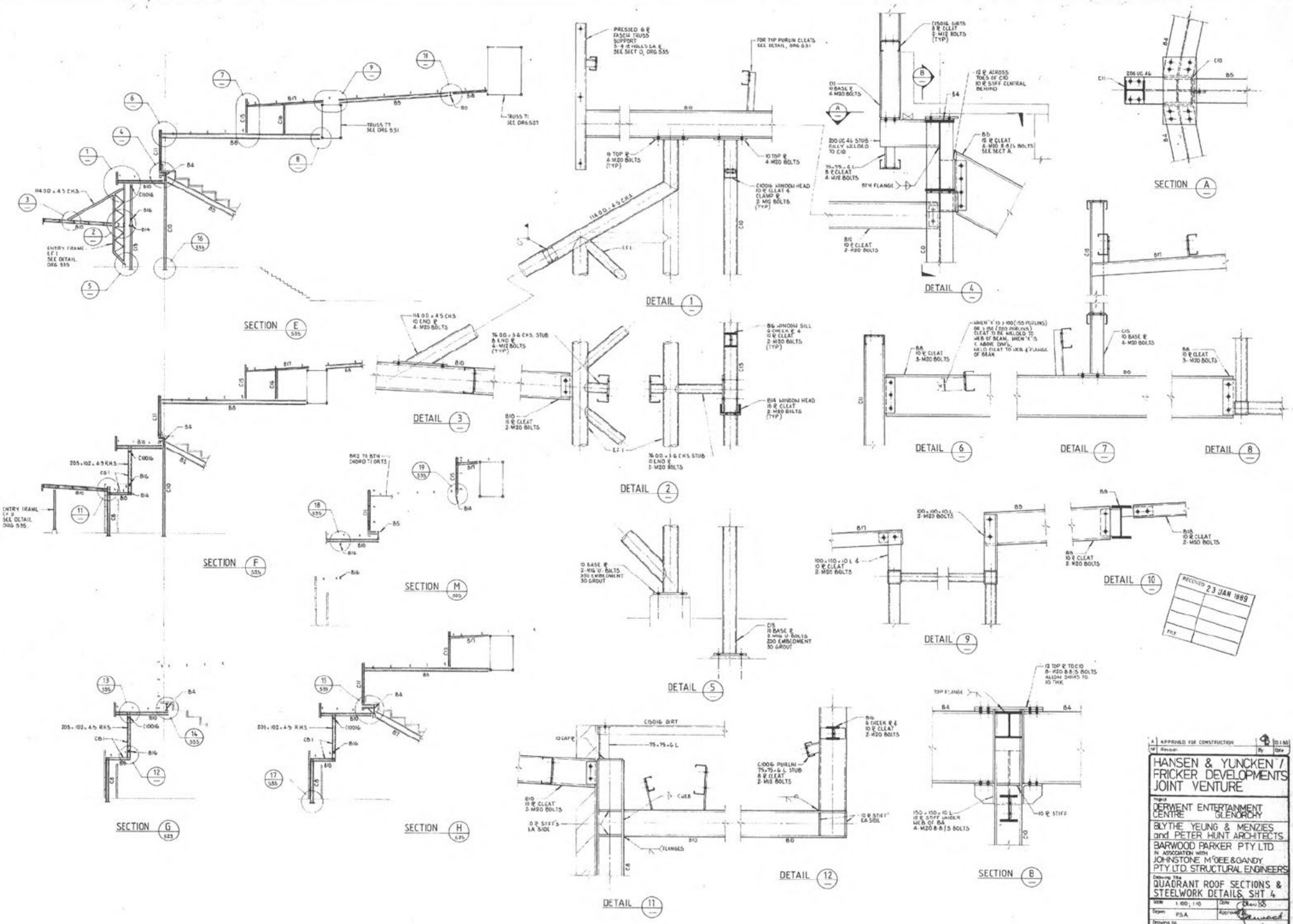
Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

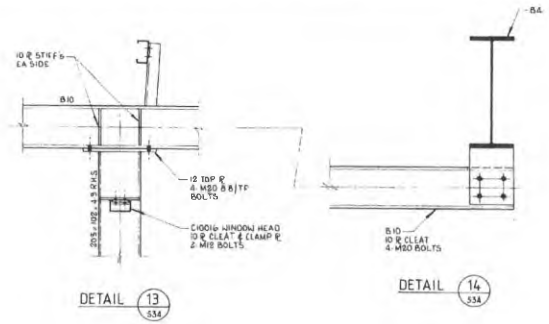
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY LTD.
IN ASSOCIATION WITH
JOHNSTONE M'GEE & GANDY PTY LTD. STRUCTURAL ENGINEERS

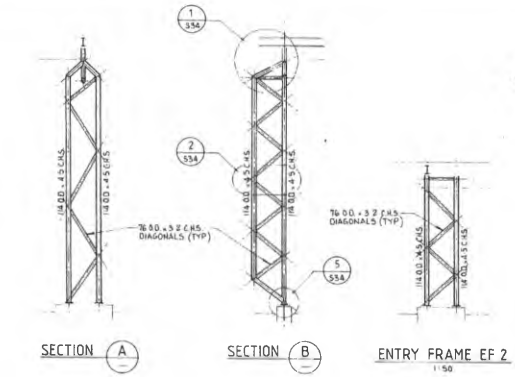
Drawing Title
STEELWORK DETAILS SHT 3

Scale	1:100, 1:10	Date	JAN 88
Drawn	P.S.A.	Approved	
Drawing No	S05387 S33		

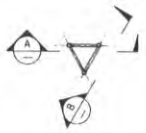

SECTION E
SECTION F
SECTION G
SECTION H
SECTION M
SECTION A
SECTION B
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
DETAIL 5
DETAIL 6
DETAIL 7
DETAIL 8
DETAIL 9
DETAIL 10
DETAIL 11
DETAIL 12
RECEIVED 23 JAN 1989
HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE
DERWENT ENTERTAINMENT CENTRE GLENORCHY
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS
BARWOOD PARKER PTY LTD
IN ASSOCIATION WITH
JOHNSTONE McGEE & GANDY PTY LTD STRUCTURAL ENGINEERS
QUADRANT ROOF SECTIONS & STEELWORK DETAILS SHT 4
S05387 S34 A



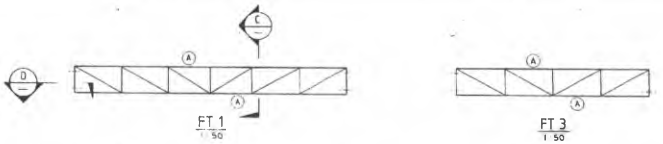
DETAIL 13 534 DETAIL 14 534

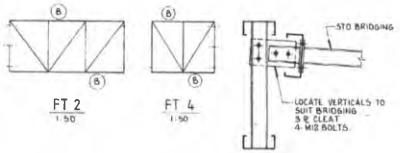


SECTION A SECTION B ENTRY FRAME EF 2 1:50

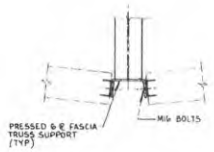


ENTRY FRAME EF1 1:50

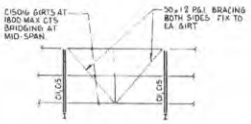




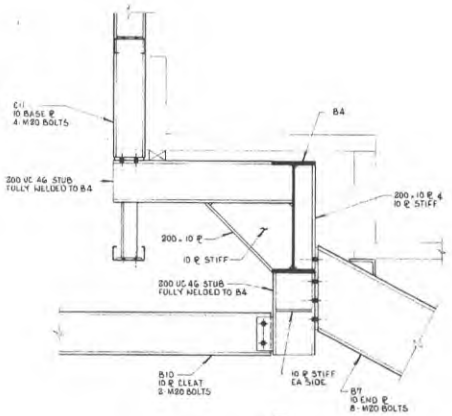
FASCIA TRUSS MEMBER SCHEDULE	
A	C150/6
B	76×51×12 STD PLATE
VERTICALS	75×52×12 STUD (U.N.O)
DIAGONALS	76×54×12 NOGGING (U.N.O)



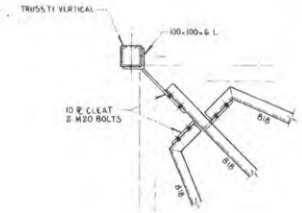
SECTION D SECTION C



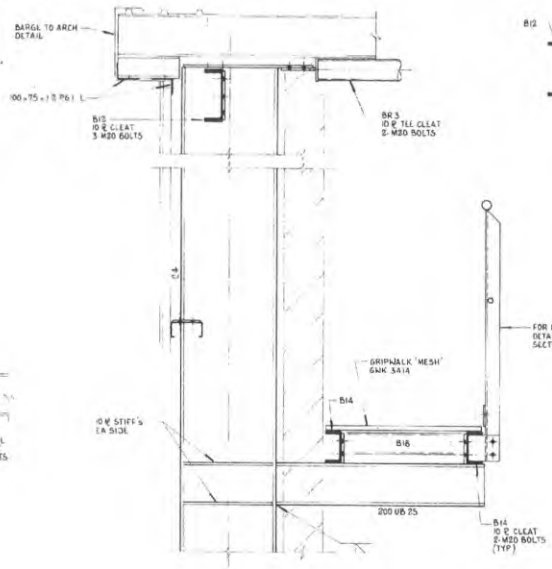
TYP QUAD PARAPET WALL ELEV.



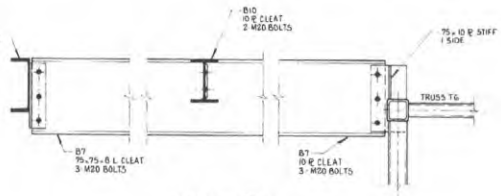
DETAIL 15 534



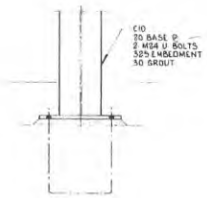
DETAIL 1 525



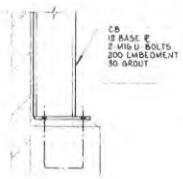
SECTION N 525



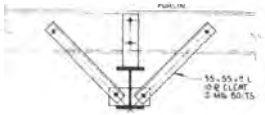
SECTION P 535



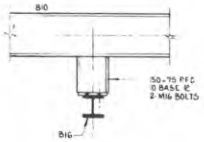
DETAIL 16 534



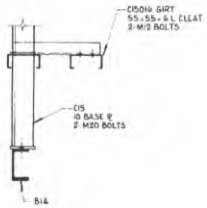
DETAIL 17 534



TYP FLY BRACE



DETAIL 18 534



DETAIL 19 551

A	APPROVED FOR CONSTRUCTION		29.1.89
NO	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project: DERWENT ENTERTAINMENT CENTRE GLENORCHY

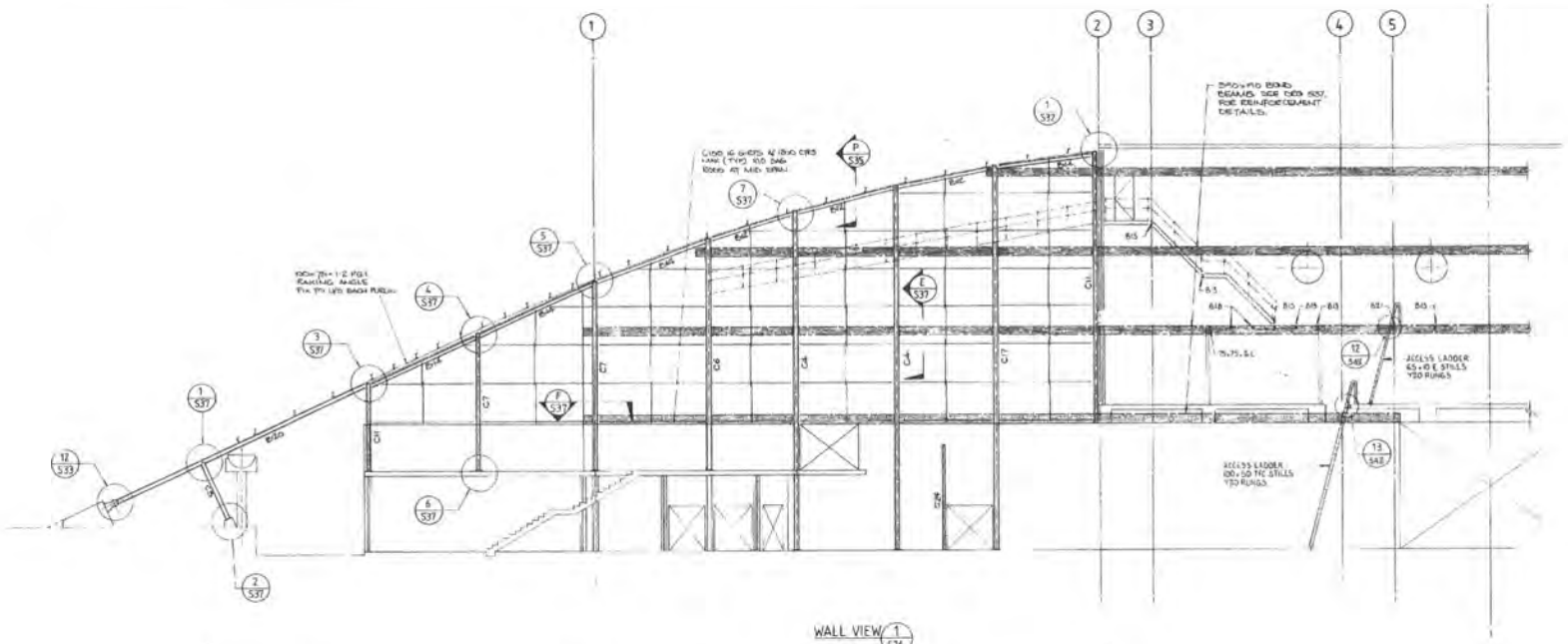
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY LTD IN ASSOCIATION WITH JOHNSTONE M'GEE & GANDY PTY LTD STRUCTURAL ENGINEERS

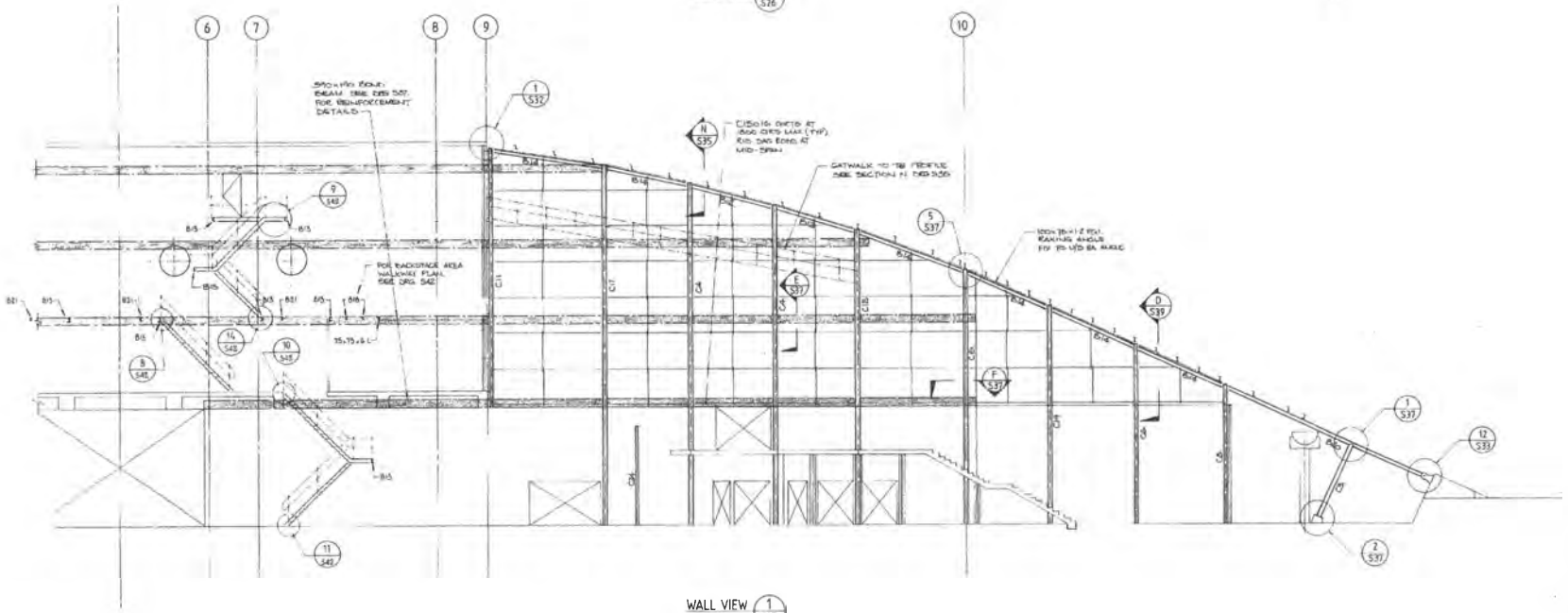
Drawing Title: STEELWORK DETAILS SHT 5

Scale	1:10 U.N.O.	Date	Jan 89
Drawn	P.S.A.	Approved	

Drawing No. S05387 S35 A



WALL VIEW 1 / 526



WALL VIEW 1 / 525

RECEIVED 23 JAN 1989

FILE

C	PRE CAST DUCT COLLARS REMOVED		19.2.88
B	PRE CAST TRUCK OUTLETS ADDED		1.2.88
A	APPROVED FOR CONSTRUCTION		22.88
NO	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

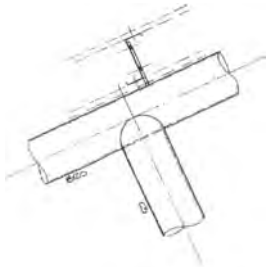
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY. LTD.
IN ASSOCIATION WITH
JOHNSTONE M'GEE & GANDY PTY. LTD. STRUCTURAL ENGINEERS

Drawing Title
WALL VIEW 1

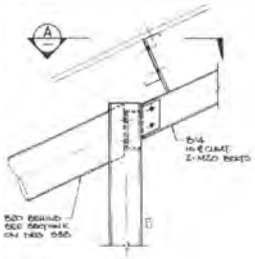
Scale 1:100 Date
Drawn M.J.F Approved

Drawing No
S05387 S36 C

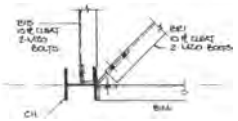


DETAIL 1 / 536

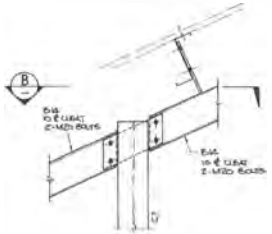
DETAIL 2 / 536



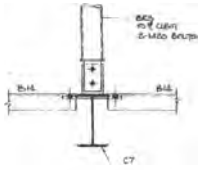
DETAIL 3 / 536



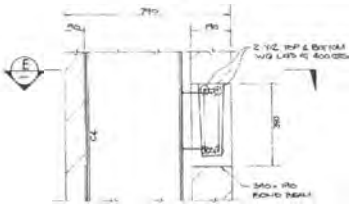
SECTION A

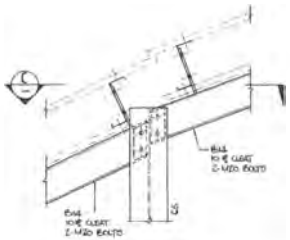


DETAIL 4 / 536

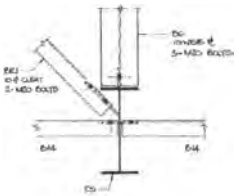


SECTION B

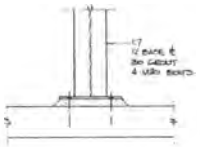




DETAIL 5 / 536

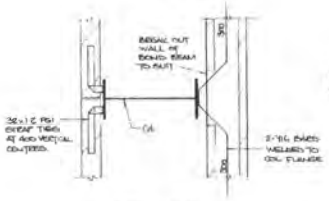


SECTION C



DETAIL 6 / 536

BOND BEAM TO COL CONNECTION (TYPICAL)



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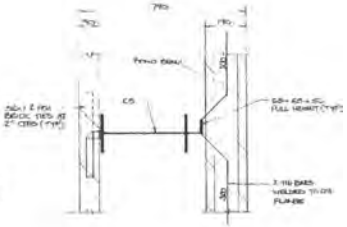
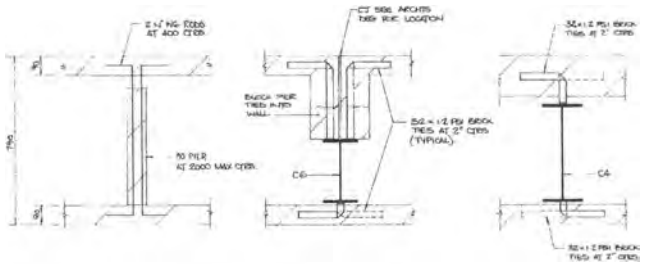


SECTION F / 536



TYPICAL BLOCK TIE DETAILS

A	APPROVED FOR CONSTRUCTION		23.1.89
NO	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

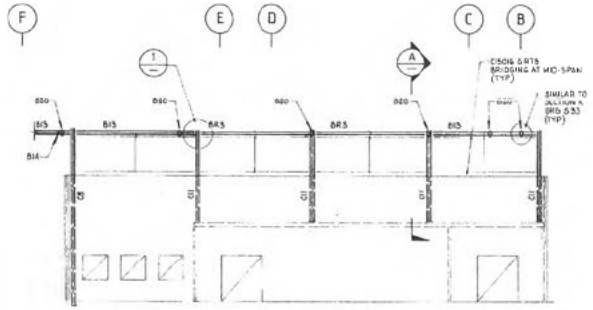
Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

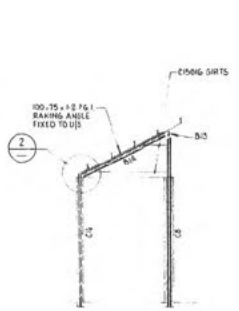
BARWOOD PARKER PTY. LTD.
IN ASSOCIATION WITH
JOHNSTONE M'GEE & GANDY PTY. LTD. STRUCTURAL ENGINEERS

Drawing Title
WALL VIEW 1 DETAILS

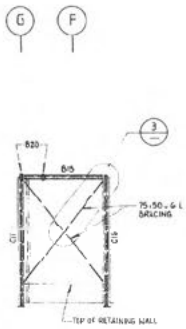
Scale	1:100	Date	Jan 88
Drawn	M.J.F.	Approved	
Drawing No	S05387 S37		



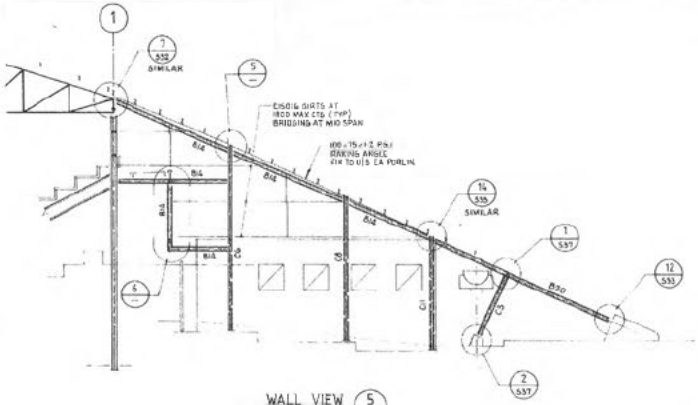
WALL VIEW 2 / 536



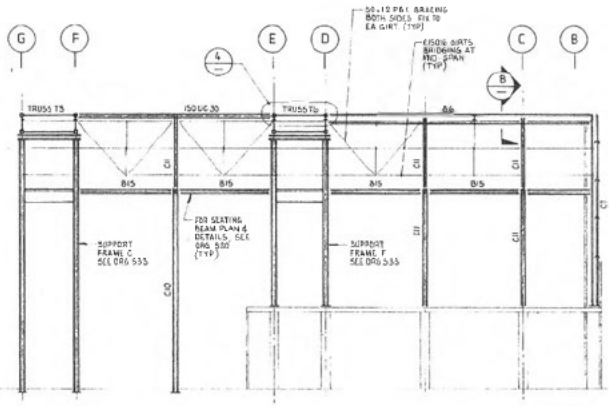
WALL VIEW 3 / 536



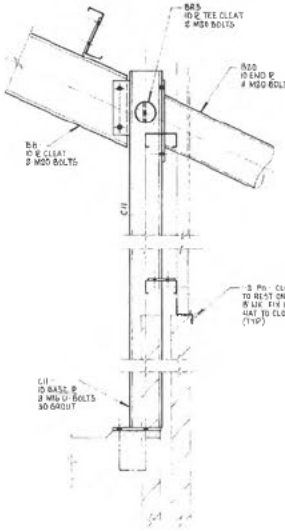
WALL VIEW 4 / 536



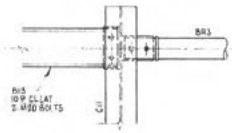
WALL VIEW 5 / 536



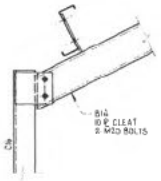
WALL VIEW 6 / 536



SECTION A



DETAIL 1



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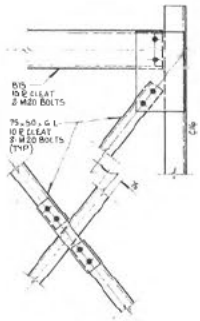

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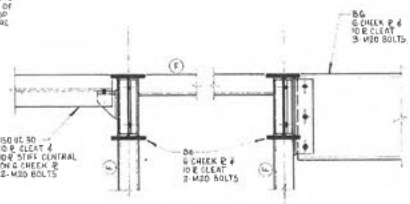

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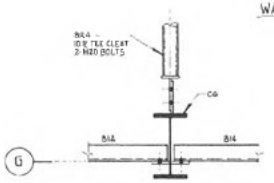
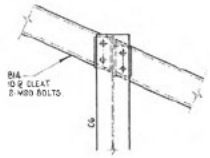


PLAN



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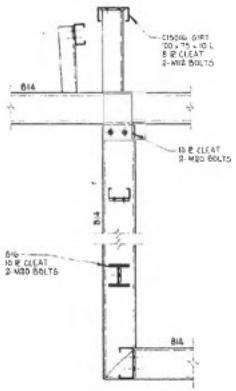
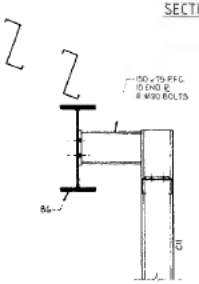


DETAIL 6



SECTION B

RECEIVED	23 JAN 1989		
FILE			

4	APPROVED FOR CONSTRUCTION		18.1.89
No	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

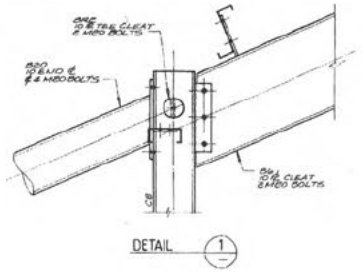
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY LTD.
IN ASSOCIATION WITH
JOHNSTONE McGEE & GANDY PTY LTD STRUCTURAL ENGINEERS

Drawing Title
WALL VIEWS 2,3,4,5 & 6 & DETAILS

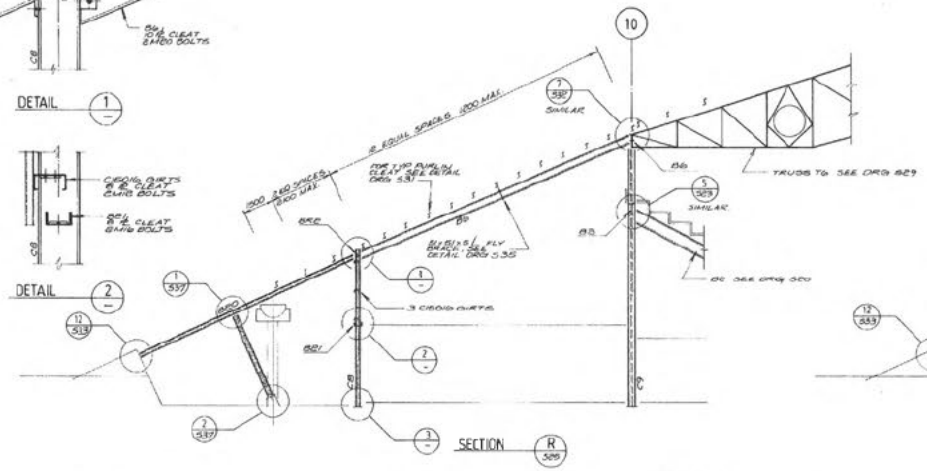
Scale	1:100, 1:10	Date	
Drawn	P.S.A.	Approved	

Drawing No.
S05387 S38 A

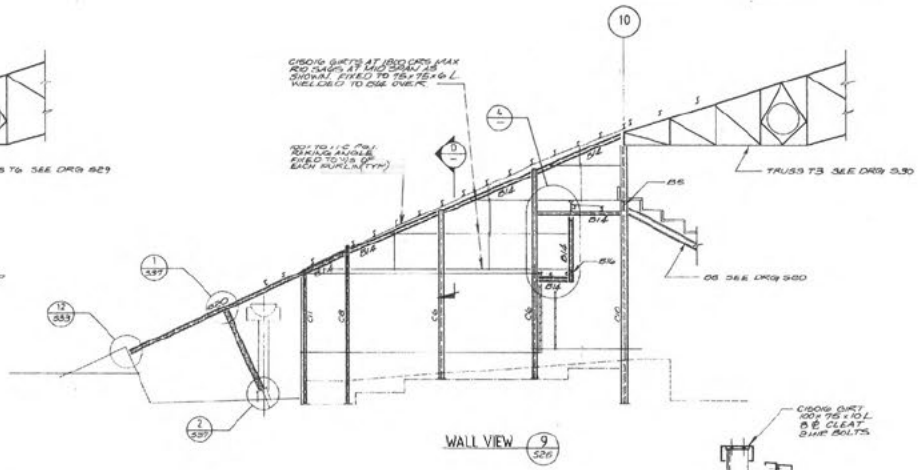


DETAIL 1

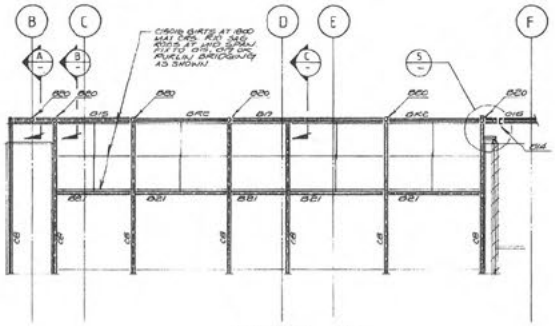
DETAIL 2



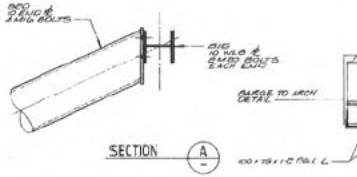
SECTION R 326



WALL VIEW 9 326



WALL VIEW 7 325



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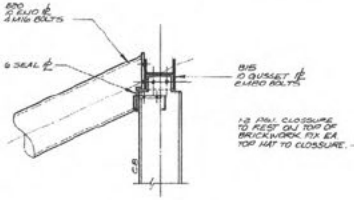

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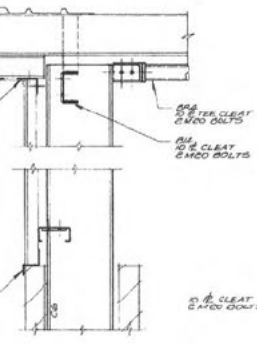
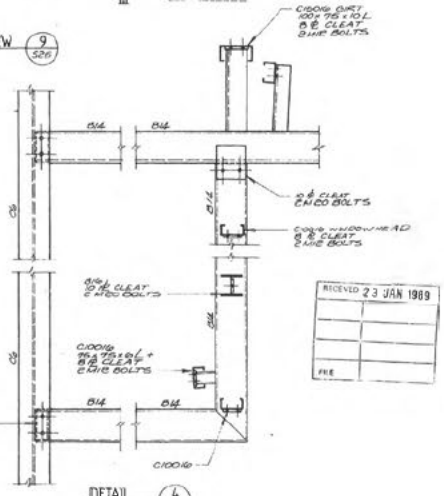
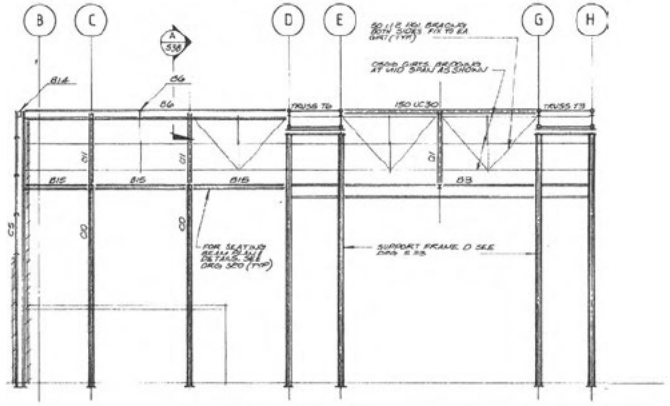


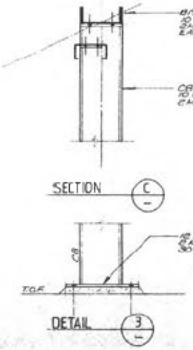
SECTION D



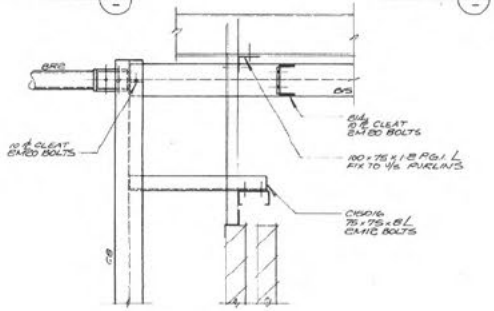
DETAIL 4



WALL VEIW 8 325



DETAIL 3



DETAIL 5

RECEIVED 23 JAN 1989

FILE

A APPROVED FOR CONSTRUCTION — By — Date

Nil Revision — By — Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

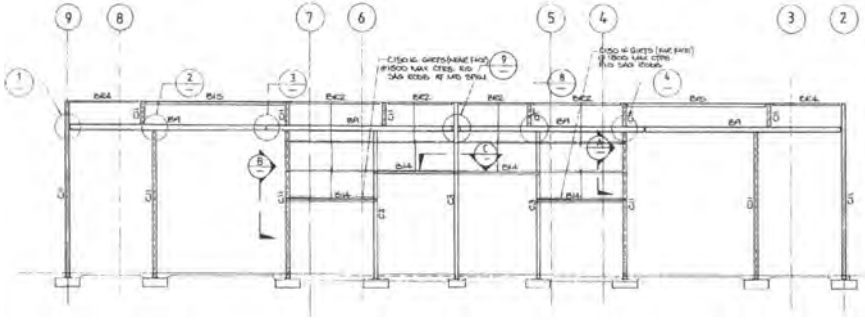
BARWOOD PARKER PTY. LTD. IN ASSOCIATION WITH JOHNSTONE N°GEE & GANDY PTY LTD STRUCTURAL ENGINEERS

Drawing Title
WALL VEIWS 7,8,9 & DETAILS

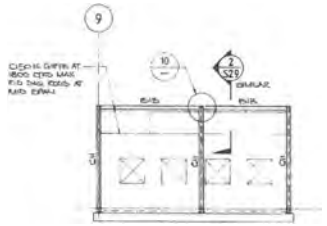
Scale 1:100 @ A1.0 — Date Jan 89

Drawn A.N.N — Approved

Drawing No. S05387 — S39 A



WALL VIEW (10/S25)



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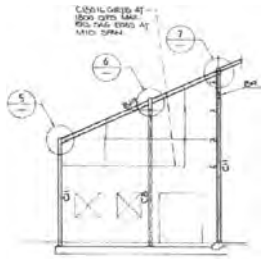
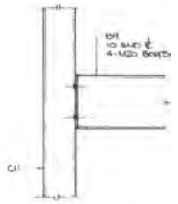


WALL VIEW (12/S25)



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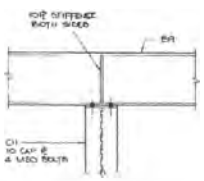

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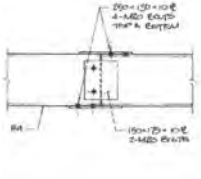

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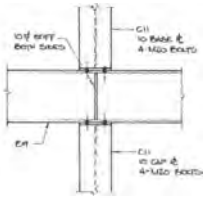

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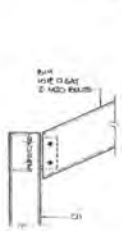

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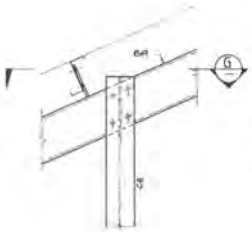

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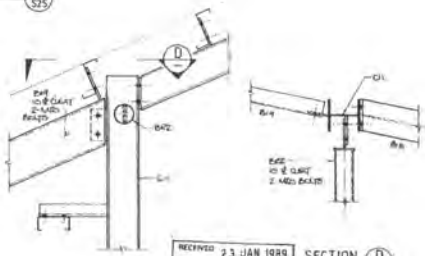
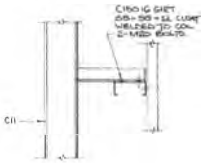
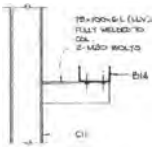


DETAIL (7) SECTION (D)



SECTION (A)



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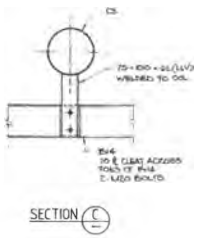

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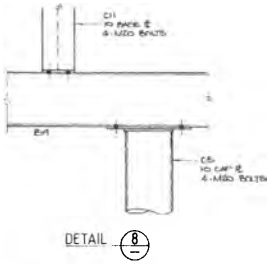

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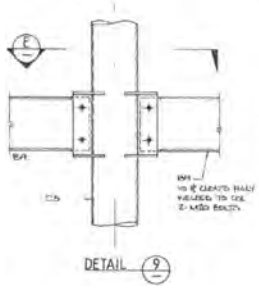

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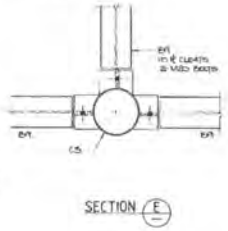

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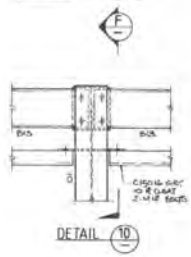

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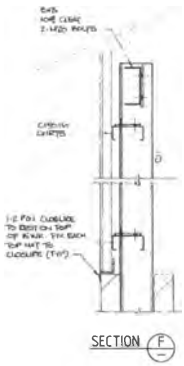

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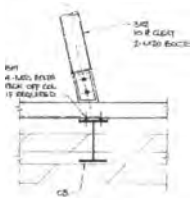


SECTION (G)

RECEIVED 23 JAN 1989

FILE

A	APPROVED FOR CONSTRUCTION		20 1 89
VO	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

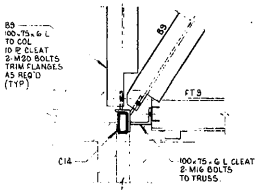
BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY LTD
IN ASSOCIATION WITH
JOHNSTONE M'GEE & GANDY PTY LTD. STRUCTURAL ENGINEERS

Drawing Title
WALL VIEWS 10,11,12 & DETAILS

Scale	1:100 1:10	Date	
Drawn	M.J.F.	Approved	

Drawing No
S05387 S40 A



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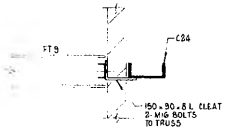

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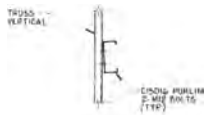

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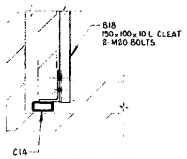

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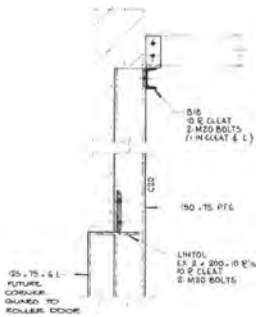

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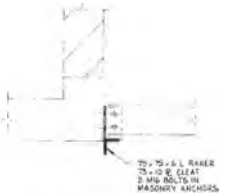

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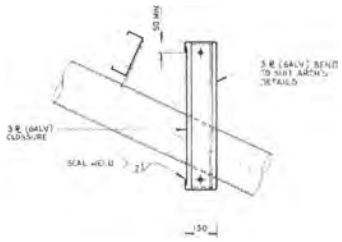
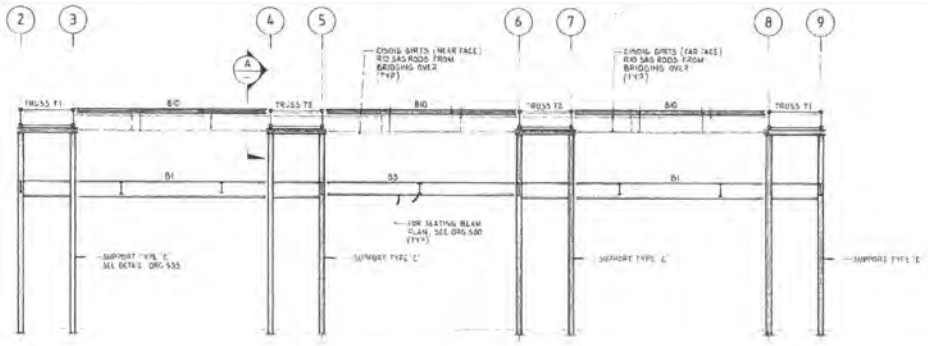
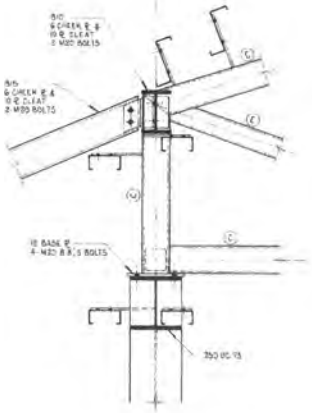


PURPOSE MADE FASCIA BEAM
(FOR LOCATION SEE DRG's 525 & 526)



WALL VIEW (13) 525



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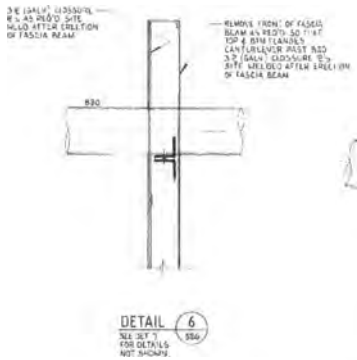
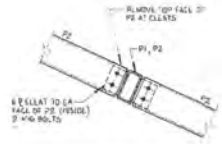


DETAIL (6) 526
SEE SET 7
FOR DETAILS
NOT SHOWN

DETAIL (7) 526



SECTION (U) 525

B	SECTION 'S' MOVE ADDED		8.9.98
A	APPROVED FOR CONSTRUCTION		23.1.98
Issue	Revision	By	Date

HANSEN & YUNCKEN / FRICKER DEVELOPMENTS JOINT VENTURE

Project
DERWENT ENTERTAINMENT CENTRE GLENORCHY

BLYTHE YEUNG & MENZIES and PETER HUNT ARCHITECTS

BARWOOD PARKER PTY. LTD. IN ASSOCIATION WITH JOHNSTONE McGEE & GANDY PTY LTD. STRUCTURAL ENGINEERS

Drawing Title
WALL VIEW 13 & STEELWORK DETAILS

Scale 1:100, 1:10 | Date 23.1.98
Drawn WSH | Approved

Drawing No. S05387 S41 B

Department of State Growth

Tasmanian Government

Document Register			
Document ID		MSBA-DR-HCV195 Revision 0	
Date		4/08/2022	
Project		DEC (MSBA) Redevelopment	
Description		MSBA-HVC-195 Roofing and Cladding replacement	
ID	**DWG NO.**	**REV**	**TITLE**
1	**Drawings**		
2	A1012	B	ROOF PLAN – FAÇADE REPLACEMENT
3	A1013	C	ROOF PLAN – ROOF REPLACEMENT
4	A1014	A	ROOF REPLACEMENT – PART 01
5	A1015	A	ROOF REPLACEMENT – PART 02
6	A1016	C	ROOF PLAN – DEMOLITION
7	A1017	A	ROOF PLAN - STAGING PLAN
8	A1018	A	ROOF PLAN – ROOF SAFETY
9	A3002	B	BUILDING FAÇADE REPLACEMENT– ELEVATIONS 1
10	A3003	B	BUILDING FAÇADE REPLACEMENT – ELEVATIONS 2
11	A3004	A	FACADE REPLACEMENT – 3D VIEWS
12	A3005	A	ROOF REPLACEMENT – ELEVATIONS
13	A3502	C	BUILDING SECTIONS – FAÇADE REPLACEMENT
14	A6111	B	BUILDING FAÇADE SECTION DETAILS – SHEET 12
15	A6112	B	BUILDING FAÇADE SECTION DETAILS – SHEET 13
16	A6113	B	BUILDING FAÇADE SECTION DETAILS – SHEET 14
17	A6114	B	BUILDING FAÇADE TYPICAL DETAILS – SHEET 15
18			
19	S05387-S25	D	EXISTING BUILDING – STRUCTURAL STEEL
20	S05387-S26	D	EXISTING BUILDING – STRUCTURAL STEEL
21	S05387-S27	B	EXISTING BUILDING – STRUCTURAL STEEL
22	S05387-S28	A	EXISTING BUILDING – STRUCTURAL STEEL
23	S05387-S29	A	EXISTING BUILDING – STRUCTURAL STEEL
24	S05387-S30	A	EXISTING BUILDING – STRUCTURAL STEEL
25	S05387-S31	A	EXISTING BUILDING – STRUCTURAL STEEL
26	S05387-S32	D	EXISTING BUILDING – STRUCTURAL STEEL
27	S05387-S33	C	EXISTING BUILDING – STRUCTURAL STEEL
28	S05387-S34	A	EXISTING BUILDING – STRUCTURAL STEEL
29	S05387-S35	A	EXISTING BUILDING – STRUCTURAL STEEL
30	S05387-S36	C	EXISTING BUILDING – STRUCTURAL STEEL
31	S05387-S37	A	EXISTING BUILDING – STRUCTURAL STEEL
32	S05387-S38	A	EXISTING BUILDING – STRUCTURAL STEEL
33	S05387-S39	A	EXISTING BUILDING – STRUCTURAL STEEL
34	S05387-S40	A	EXISTING BUILDING – STRUCTURAL STEEL
35	S05387-S41	B	EXISTING BUILDING – STRUCTURAL STEEL
36			
37	21.0299 - S000	2	DRAWING INDEX AND STRUCTURAL NOTES
38	21.0299 – S101	1	OVERALL ROOF PLAN
39	21.0299 – S201	1	ELEVATIONS 01
40	21.0299 – S202	1	ELEVATIONS 02
41	21.0299 – S203	1	ELEVATIONS 03
42	21.2099 – S601	1	STEELWORK DETAILS 01
43			
44	21.0299-SK01	1	ROOF FRAMING REVIEW

Department of State Growth

Tasmanian Government

Document Register			
Document ID		MSBA-DR-HCV195 Revision 0	
Date		4/08/2022	
Project		DEC (MSBA) Redevelopment	
Description		MSBA-HVC-195 Roofing and Cladding replacement	
ID	**DWG NO.**	**REV**	**TITLE**
45			
46	45343MD-3		PDA SURVEYORS – ROOF DETAILED SURVEY
47	45343MD-4		PDA SURVEYORS – ROOF DETAILED SURVEY
48	45343MD-5		PDA SURVEYORS – ROOF DETAILED SURVEY
49			
50	**Documents**		
51	MSBA-D0-HCV195		VOS Proposed SoW -Tender letter
52	MSBA-D1-HCV195 -R1	1	LKPG Delivery recommendation
53	MSBA-PRO-HCV195	0	MSBA-Variation No.HCV195 Roofing and Cladding replacement - Programme
	MSBA-DA-001-R1	1	Roof and Cladding variation- Budget 14-08-2022
55			
56	20.318-RPT-001	0	VOS – EXISTING CLADDING REPORT
57	20.318-RPT-002	0	VOS-EXISTING ROOFING REPORT
58			
59	HCV195		VOS INVITATION TO TENDER LETTER
60			
61	20.318	T1	DEC Re-Cladding Architectural Specification
62	20.318	T1	DEC Reroofing Architectural Specification
63			
64	Form35	0	20.318 DEC Recladding Form 35 Architecture - Certificate of The Responsible Designers
65			
66			
67			
68			
69			