



SUBMISSION: EMERGENCY DEPARTMENT EXPANSION, ROYAL HOBART HOSPITAL

SUBMISSION TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS
2 February 2022

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INTRODUCTION

The Royal Hobart Hospital (RHH) has developed a masterplan to help meet future hospital demand and address the health needs of primarily the population of south and south-east Tasmania, but also the requirements for the rest of the state for complex, tertiary care.

Analysis of clinical service activity indicates significant, sustained growth in hospital admissions and emergency department (ED) presentations is forecast to 2050. In response, the Tasmanian Department of Health has commenced planning for an increase in available infrastructure to deliver emergency department care, together with other planned infrastructure upgrades.

Emergency Departments (EDs) are under increasing pressure due to the high demand for ED access to available inpatient beds. This lack of available resources to meet emergency demand is leading to crowding and access block resulting in prolonged waiting periods for an inpatient bed.

ED presentations have increased at the RHH, resulting in increased admission workloads, ED crowding and delayed access to emergency care. This is on a background of changing population demographics in southern Tasmania, which is experiencing a growing and ageing population.

On 6 September 2021 the Minister for Health announced that there would be at least 25 points of care opened in the Lower Ground of H Block by the end of 2022.

To achieve this announcement the ED Expansion project has been split into two phases. The accelerated extension in LG H block and the Broader expansion to 118 points of care by June 2025.

The project is a key element of the Royal Hobart Hospital Redevelopment Phase 2. The project is funded via the Royal Hobart Hospital Redevelopment Phase 2 budget.

The RHH ED has significantly outgrown its current capacity and facilities. This lack of capacity is contributing to a number of operational issues including ambulance ramping, crowded waiting areas, compromised patient flow and generating a high stress work environment.

The current ED was completed in 2011 and is designed to cater for approximately 45,000 presentations each year. In 2017-18 there were in excess of 63,000 presentations to the department prior to the inception of the project. Whilst Covid caused a 2% reduction in growth of ED presentations in 2019-20, it has surged by 17% in the last 12 months to just under 74,000.

Analysis of clinical service activity indicates significant, sustained growth in hospital admissions and ED presentations is forecast to 135,000 in 2035.

In order to create space for a staged expansion over the next three and a half years, the Phase 1 work of relocating the Paediatric Outpatients to 3D, gutting the lower ground floor of H block and building a new fully contained ED Short Stay Unit (SSU) with at least 25 points of care needs to be undertaken. Additionally, this unit will be able to perform as a pandemic response area.

The larger Phase 2 work of completing the expansion for ED will be designed in early 2022 and come to the PSCPW in mid to late 2022.

CURRENT HEALTH NEEDS AND PRIORITIES

Model of Care

While efforts are being made to respond to increasing ED service demand, including improving available bed stock and the development of hospital avoidance programs, the RHH ED must continue to improve its operational efficiency. The developed documentation for this project describes models of care for the RHH ED that inform infrastructure planning to 2035.

The methods used in the new RHH approved Model of Care for the ED included:

- Review of relevant peer-reviewed and 'grey' literature.
- Analysis of relevant THS data.
- Targeted consultation with lead clinicians and decision makers.

The RHH ED has anticipated ongoing increase in service demand. The model of care provides a summary of the ways the ED will care for patients across different treatment streams whilst demand continues to increase.

The model of care describes 118 treatment points that will be configured as follows to align with projections and analysis completed.

Zone	Treatment points
Resuscitation zone	6 treatment points
Acute care zone	54 treatment points
Lower acuity mental health	2 treatment points
Lower acuity adult	18 treatment points
Paediatric	10 treatment points
Short stay unit	28 treatment points
TOTAL	118 treatment points

The RHH ED needs to continue to function during the build process. The greatest risk to patient safety is disruption to resuscitation and acute care areas. Neither area can have any down-time. The completion of this Phase 1 of the Short Stay Unit in LG H Block will facilitate the capacity required to complete the major component of the ED Expansion in Phase 2 of the project.

Existing Facilities

The current ED provides for 64 Points of Care and was operational in 2008.

Stakeholders report the RHH ED is currently experiencing many 'pain points' in the flow of patients through this journey. Pain points that are potentially amenable to amended models of care include the following:

- Prolonged waiting for ambulances to offload patients to the ED at peak periods of demand (i.e. ambulance 'ramping').
- Prolonged waiting periods in the single RHH ED waiting room, with mixed cohorts of patients (paediatric, adult, mental health, correctional) sharing the same waiting room.
- Prolonged waiting periods for inpatient beds.
- Slow throughput of patients through the ED.

COVID-19 Response and Requirements

COVID-19 has had a significant and profound effect on both the Health system and the people of Tasmania. The Phase 1 component of the project, Lower Ground H Block (refer to attachment 1) has been identified as an area of the hospital that will be able to be quickly adapted in the future to address any new pandemic situations. The new Short Stay Unit will be established and engineered to be self-sufficient with external access as well as fast access to the ICU. A 'negative air flow' environment will facilitate dealing with airborne viruses and provide a value for money design for 28 Points of Care.

Stakeholder Consultation

The ED Expansion Project held multiple broad stakeholder workshops during 2020 and 2021, developing the feedback and shaping the design to date.

In late September 2021 a group of 22 stakeholders, many of whom had been involved in the prior early-stage concept design discussions, were involved in the development of the new ED Model of Care to be used from June 2025 onwards and which will inform the detailed design of the Project.

Detailed design of this Phase 1 works is being developed by both clinicians and nursing staff. Several workshops have been run by the consulting architectural team in order to produce a design that is efficient and user friendly.

The clinicians and nursing staff have been important in providing their expertise in how the ED functions. From these initial discussions, the design team has produced Room Layout Sheets which can then be presented again to the stakeholders to gain more feedback before the design is finalised.

By running several workshops with drawings at different levels of detail allows the design to be well-considered and holistic.

Public Interest

The increasing issues of the current ED continue to regularly be in the media. Significant resource is being applied by the Department of Health, RHH and Ambulance Tasmania to address systematic and process related issues, however the bulk of the issues will be able to be addressed by the expansion of capacity, which this Phase 1 work is a key component thereof.

Extensive stakeholder consultation has already been undertaken and will continue throughout both Phase 1 and Phase 2 of the project. In the short-term consultation for Phase 1 will be finalised over the coming three weeks with both clinicians and nursing staff to ensure a functional design is achieved. With regards to Phase 2, broader consultation will continue across this year to ensure the concept design and detailed designs both function well and that value for money can be achieved.

To ensure public monies are spent appropriately in the best interest of the general public in Phase 1 a process with a preferred builder has been established with reference to a specialist cost estimator which takes account of the project risk and the fact that this is a functioning hospital and the only Category 1 referral centre for the state.

PROPOSED WORKS

The design of the Expansion of the Emergency Department at Royal Hobart Hospital is in accordance with the Department of Health's Model of Care to ensure the public receive the best medical care possible.

The expansion of the ED is to be located in the area that was vacated by the Paediatrics Department on the Lower Ground Floor in H Block facing Argyle Street.

The objective of the expansion of the ED is to provide a purpose-built Short Stay Unit to provide 28 treatment points. This SSU is for the short-term care of ED patients who require observation, specialist assessment and diagnostics and whose length of hospital stay is deemed to be limited (less than 24 hours).

The proposed SSU will include:

- 28 patient bays:
 - 12 patient bays will be fully enclosed with motion sensor operated glass doors to facilitate infection control
 - 13 open patient bays
 - 3 patient bays will be classified as S-Class Bays with ensuites attached
- 2 procedure rooms
- Administration area and staff facilities
- Reception / security
- Multidisciplinary team meeting room
- Dirty Utility
- Equipment storage area
- Medication storage area
- Storage for allied health equipment

The Proposed Concept Plan (refer Attachment 2) shows the proposed layout of the new SSU.

In addition to the areas above, the project is required to provide the equipment needed to provide patient care and well as associated services work including:

- Removal of existing window on Argyle Street façade and new emergency exit door to service H Block
- Purchase of all new furniture, medical equipment, IT and general resources
- Relocation of electrical risers and distribution boards to enable the design of the SSU. This includes providing temporary power to H Block while working on the existing electrical services.
- Fire egress and safety works
- Upgrade of mechanical and hydraulic services to suit the amended layout

Health Planning and Emergency Department Design

The consulting architectural team lead by JAWS Architects has developed the layout of the new Short Stay Unit working in close collaboration with the Department of Health, RHH ED staff and NTC Architects. NTC Architects are a Melbourne-based architecture firm that has extensive specialist experience in designing hospitals and health facilities throughout Australia.

The location and design of the SSU has been carefully considered in reference to the ED Model of Care through:

- The position of the SSU has been planned to allow it to be physically separated from the rest of the hospital for pandemic preparedness
- The SSU addresses Argyle Street directly allowing for a separate entry / exit to the unit from the rest of the hospital
- The mechanical services have been designed so that negative air flow has been achieved to prevent the spread of pathogens from the patient bays

Due to the complicated nature of the services work, the consulting architectural team has worked closely with mechanical, hydraulic, fire and electrical engineers from the start of the design process.

ASC Engineers have delivered an in-depth Services Brief to identify any restraints with the proposed expansion, and to provide a feasibility summary.

Architectural Statement

The preferred health planning option has been developed in support of the RHH short stay unit model of care. Largely designed as a 'ballroom model around disaggregated staff bases, the layout provides both efficiency and flexibility within a tight footprint and within the opportunities and limitations of the existing structural grid.

There is a primary entry to the unit which is collocated with a reception/ward clerk space as a first port of call 'friendly face' as well as to manage patients, visitors and families accessing the short stay unit. The three S-Class patient bays (together with their dedicated ensuites) are located in close proximity to the unit entry to minimise the distance that patients using these room traverse the ward. The primary staff base overviews the S-class isolation bays and is in close proximity to the two procedure rooms that support efficiency within the SSU. These centralised procedure rooms provide good access from all points of the unit whilst remaining near the front of the unit for future flexibility.

The staff areas have been centralised to provide a 'one stop shop' for staff accessing clinical support areas for travel efficiency and to enable staff to spend more time at the bedside. A multidisciplinary meeting room is collocated with the second staff base in the unit which is located in close proximity to the majority of non-specialised patient bays. In addition to standard patient bays, enclosed patient bays have been provided where the site conditions enable the inclusion of a glass stacking doors. Share ensuites, patient toilets and accessible ensuites have been distributed across the unit to ensure that amenities are located easily from each group of patient bays.

A central service corridor to the unit provides easy access for the restocking of supplies and removal of dirty linen and minimises crossover with patient movements. This secondary corridor provides an alternative path of travel for patients that may require a higher degree of privacy.

Building Materials & Reference Images

Building materials have been selected as to their appropriateness for medical facilities, and where possible, are locally sourced.

The materials have been selected to be hygienic and easy to clean. The flooring materials will not allow dirt or fluids to be trapped in the surface, and be durable in order to withstand all of the foot and wheel traffic.

The interior design is to not include any unnecessary horizontal surfaces for the collection of dust.

The selection of materials has considered environmental triggers through the appropriate implementation of lighting, acoustic considerations, reflectivity and colour. Softer, calming colours have been adopted to give patients a comfortable stay, while taking away the clinical look.

Changes in materiality and colour are to show clear spatial clarity and organisation. This provides cues to the patients what are staff areas and what are for public use, along with intuitive wayfinding.

The following precedent images are examples of previous projects design by NTC Architects which have been discussed with the Stakeholders. The images show the general intent for the design of the new Short Stay Unit.



Precedent Image showing design intent of Open Patient Bays (Source: NTC Architects)



Precedent Image showing design intent of Enclosed Patient Bays (Source: NTC Architects)



Precedent Image showing design intent of Staff Stations (Source: NTC Architects)

Infection Control & COVID-19 Response

Since the beginning of the COVID-19 pandemic, it has become apparent that infection control needs to be a key feature of our society moving forward.

The new Short Stay Unit has been designed with infection control at the forefront including the following features:

- The ability to physically separate the SSU from the rest of the hospital for pandemic preparedness
- The site planning of the new SSU has allowed for a separate entry / exit from the rest of the hospital
- Increased number of handwashing stations throughout the unit with Personal Protective Equipment (PPE) available at all stations
- Creating Enclosed Patient Bays with motion sensor operated sliding glass doors to avoid the need to touch surfaces
- Creating a negative flow of air in the patient bays to keep any potential airborne pathogens within the bay
- Flooring materials have been chosen to be anti-viral to ISO 22196 and anti-bacterial to ISO 21702

Accessibility

The new SSU has been designed to comply with universal access principles for both staff and patients.

The unit is designed on one level with easy access from Argyle Street or via lifts from the rest of the hospital wards.

As a matter of compliance, all areas of the new SSU will be fully accessible. Universal access toilet facilities have been provided for both staff and patients. The corridors have been designed to be wide enough for two wheelchairs to comfortably pass each other as per the requirements in Australian Standards 1428.1.

The use of motion sensor operated sliding doors provides easy access into and out of the enclosed patient bays.

Staging of Works

The RHH ED needs to continue to function during the demolition and construction process, therefore the staging of works is important for an efficient build. There are existing services serving other parts of the hospital that run through the proposed SSU space which will need to be kept operational.

Below is a brief outline of the proposed staging of the project.

STAGE 1

- Construct hoarding and airlocks to construction site to prevent dust in other hospital areas
- Retain and protect existing Switch Room and electrical distribution boards to provide power for demolition
- Demolish existing partitions, ceilings and fixtures
- Demolish mechanical, hydraulic and electrical services to boundary of proposed SSU or isolation valve
- Retain hospital fire escape to Argyle Street
- Maintain access to existing lift lobbies
- Maintain access to existing ambulance bays

STAGE 2

- Construct temporary electrical distribution board to supply site facilities. Switch power supply to temporary board.
- Construct new fire exit door to Argyle Street

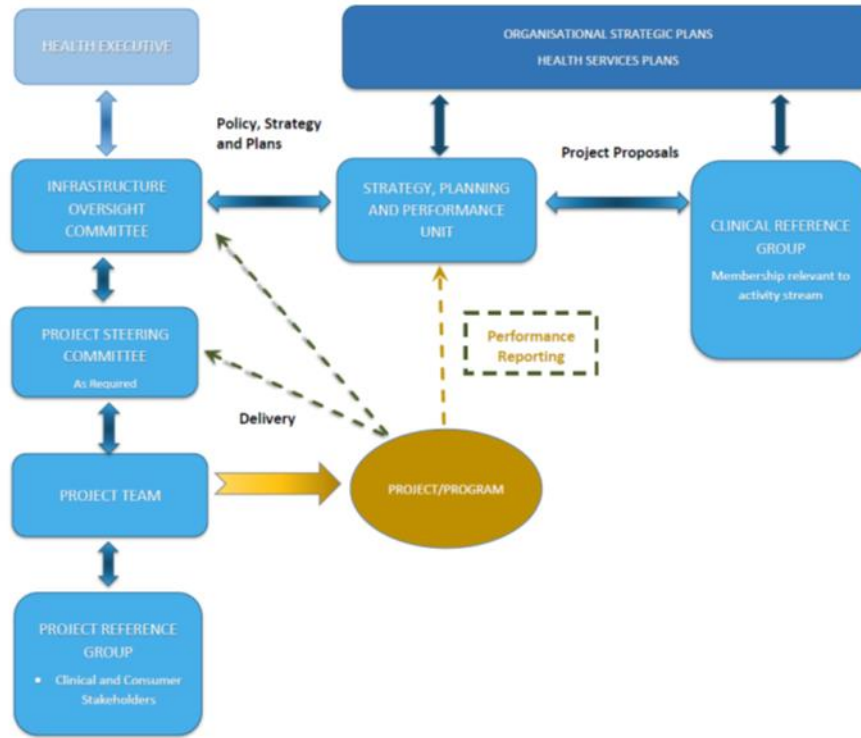
STAGE 3

- Construct new works
- Retain access to new fire escape path from rest of hospital
- Commission new services to SSU

PROJECT MANAGEMENT

Project Control and Governance

The following diagram illustrates the Infrastructure Oversight Committee (IOC) Project Team and Project Reference Group relationships.



The Infrastructure Oversight Committee has approved the RHH Redevelopment Phase Stage 2 – Scope Definition Agreement.

Design Approval Process

The design process included:

- Initial stakeholder meetings to gain further understanding on clinical, infection control, health service planning and facilities and engineering requirements.
- Ongoing meetings where concept designs were presented to the project reference group, for agreement and development and sign off of schematic design.
- Infrastructure Oversight Committee at its April 2021 meeting endorsed the RHH Redevelopment Phase 2 Scope Definition including the scope of the ED Expansion Project.
- Schematic Design was presented to the Hospitals South Capital Works Steering Committee and Project Sponsor, Susan Gannon, Chief Executive Hospitals South, as the committee chair.
- During the project lifecycle monthly Project Status Reports for the Project Sponsor and Hospitals South Capital Works Steering Committee are provided.

The design of each functional space is based on AHFG, where applicable.

Funding and Budget Estimates

A funding allocation to the amount of \$53 million has been provided by the Tasmanian State Government for the entire Emergency Department Expansion project from the RHH Redevelopment Stage 2 budget of \$200 million.

Of this \$53 million budget, Phase 1 LG H Block has been allocated \$14 million on the basis of Matrix Management's quantity survey.

Details of the preliminary cost estimate are as follows:

Phase I Budget	Cost Estimate
Construction Costs	\$9,496,998
Contingency (15%)	\$1,424,548
Post Occupancy Allowance	\$100,000
Professional Fees and Authority Fees	\$1,638,231
Information and Communication Technology Infrastructure	\$200,000
Furniture and Equipment	\$1,100,000
PHASE I TOTAL	\$13,959,777

The Tasmanian Art Scheme allocation of \$80,000 will be addressed as part of Phase 2 of the broader Emergency Department Expansion project. The Project Control Group will endorse the Tasmanian Art Scheme process and design selection as part of oversight of this project.

Project Timeline

The key upcoming dates for the project are as follows:

Project Task / Phase	Completion Date
Completion of design development	December 2021
Development Application	Exempt
Completion of Construction Documentation	March 2022
Construction Start (subject to approval)	April 2022
Practical Completion of Construction	December 2022
Commencement of operations	December 2022

CONCLUSION

The design team of NTC and JAWS architects have worked closely in association with the Department of Health and RHH ED Staff and have determined the design submitted for the new Short Stay Unit is in keeping with the Emergency Department Models of Care. In addition, the design is consistent with the recommendations of the RHH Masterplan 2020-2050, which outlines an expansion of the Emergency Department in its current location, subject to the identification of suitable space for displaced services (e.g Paediatric Outpatients Service which are to be located in Level 3 D Block).

Construction of the new expansion of the Emergency Department will provide a much-needed short-stay unit to provide assistance for the growing pressures on the Tasmanian Health System caused by the COVID-19 pandemic.

Obtaining approval from the Parliamentary Standing Committee on Public Works will provide an expanded Emergency Department capacity by the end of 2022, and the ability for fast and effective response to future pandemics.

It is therefore recommended to the Parliamentary standing Committee on Public Works that the works proposed for the expansion of the Emergency Department at the Royal Hobart Hospital proceed as detailed in this submission.

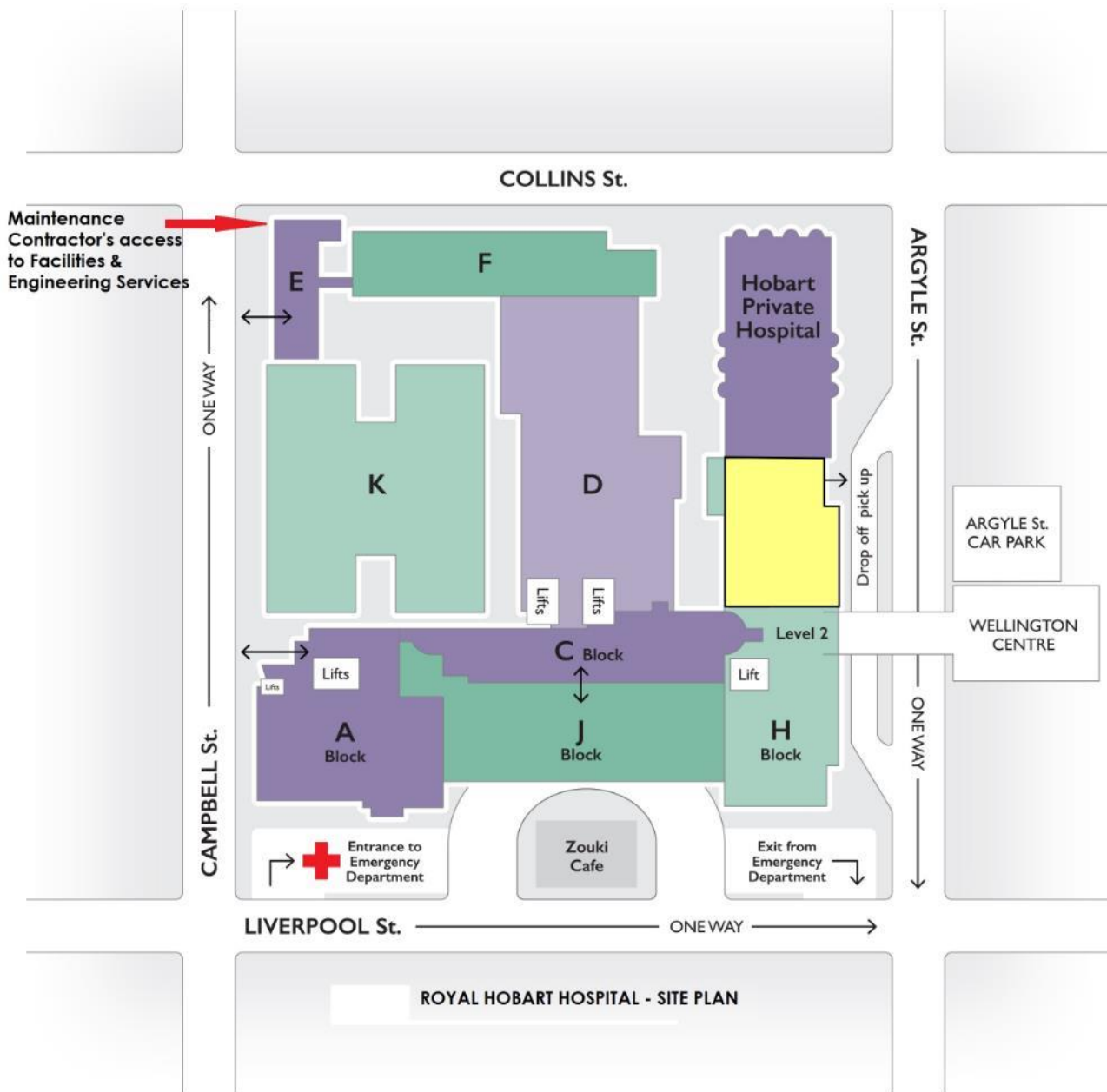
ATTACHMENTS

1. Site Plan
2. Proposed Concept Plan
3. Detailed Design Plan
4. Existing and Proposed Argyle Street Elevation



ATTACHMENT 1 – SITE PLAN





DRAWING LEGEND



Proposed Expansion of Emergency Department for Short Stay Unit on Lower Ground Floor



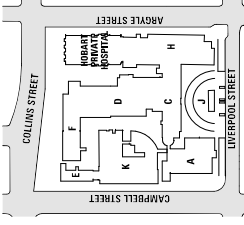
ATTACHMENT 2 – PROPOSED CONCEPT PLAN





ATTACHMENT 3 – DETAILED DESIGN PLAN





KEY PLAN

NOTE:
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DRAWING LEGEND



ED EXPANSION H BLOCK
Project Description
Royal Melbourne Hospital

For
Department of Health

DRAWING
DRAWING NAME
LOWER GROUND FLOOR - PROPOSED

19052_A2-06
DRAWING NO.
SCALE
DATE
DRAWN BY
CHECKED BY
APPROVED BY

STATUS
0 1 2 3 4 5
0 1 2 3 4 5

FOR INFORMATION
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STATUS
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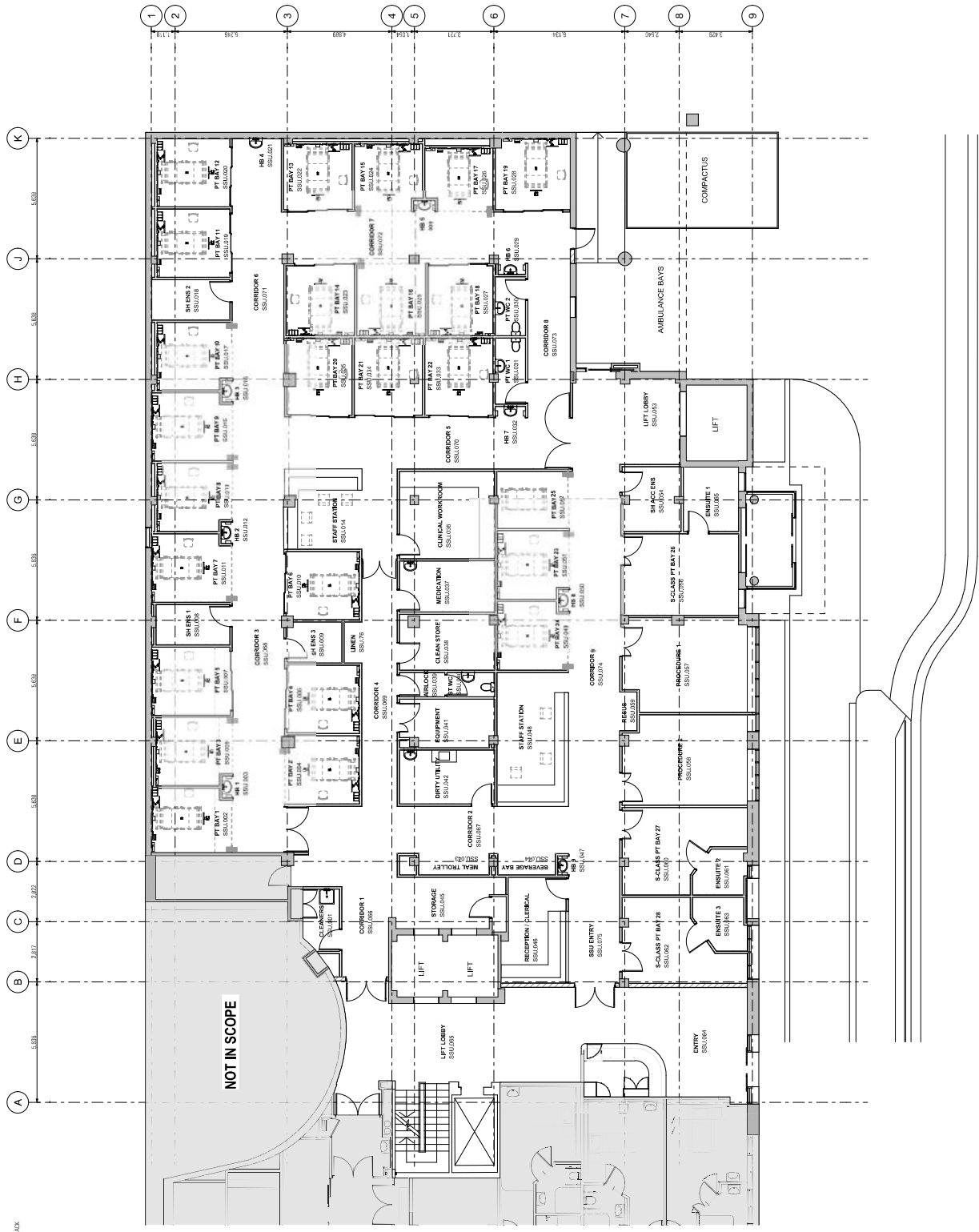
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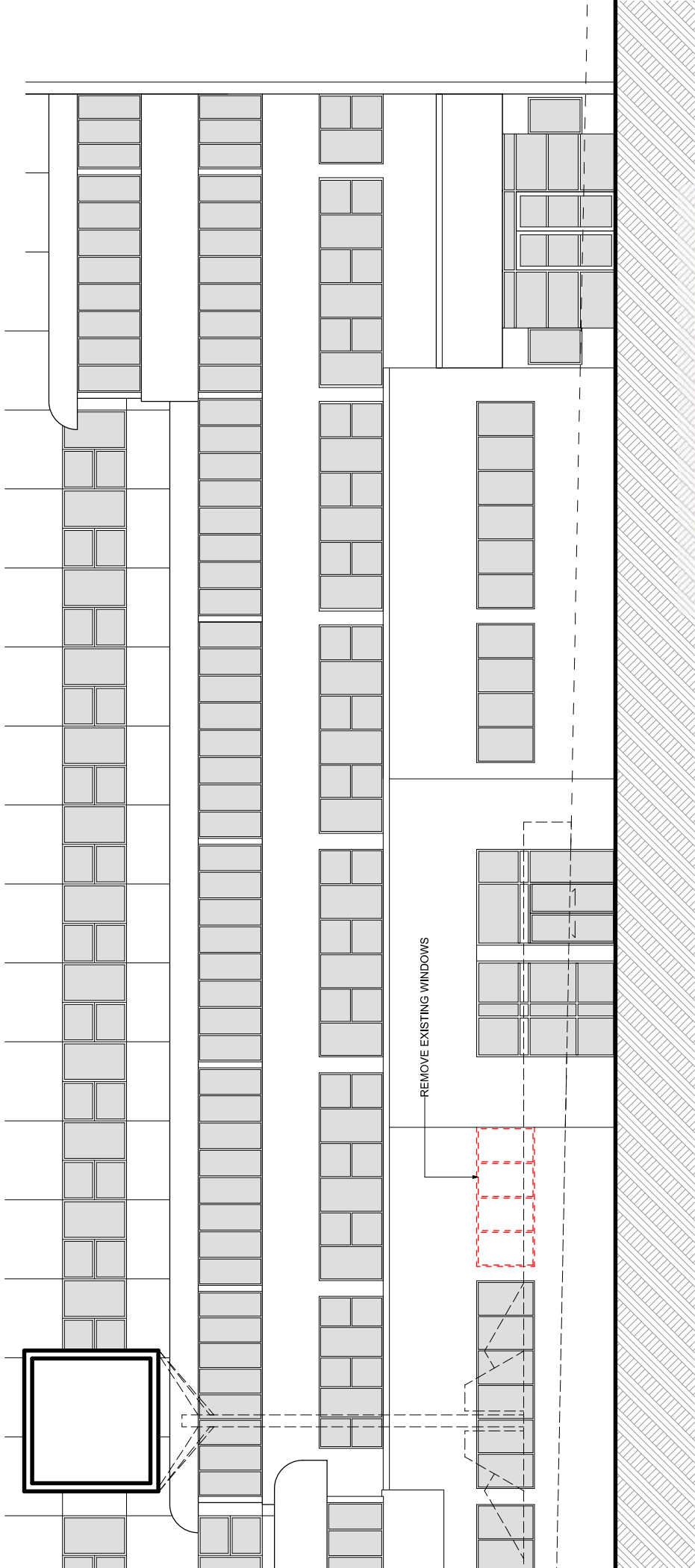


ARGYLE STREET

LOWER GROUND FLOOR - PROPOSED
Scale: 1:100

ATTACHMENT 4 – EXISTING AND PROPOSED ARGYLE STREET ELEVATION





1 ARGYLE STREET ELEVATION - EXISTING
Scale 1:100

EXEMPT
No Planning
Permit Required

City of HOBART
By: E. Wilson
Date: 17/1/2022
Permit #: PAE-22-11

19052_DA-05

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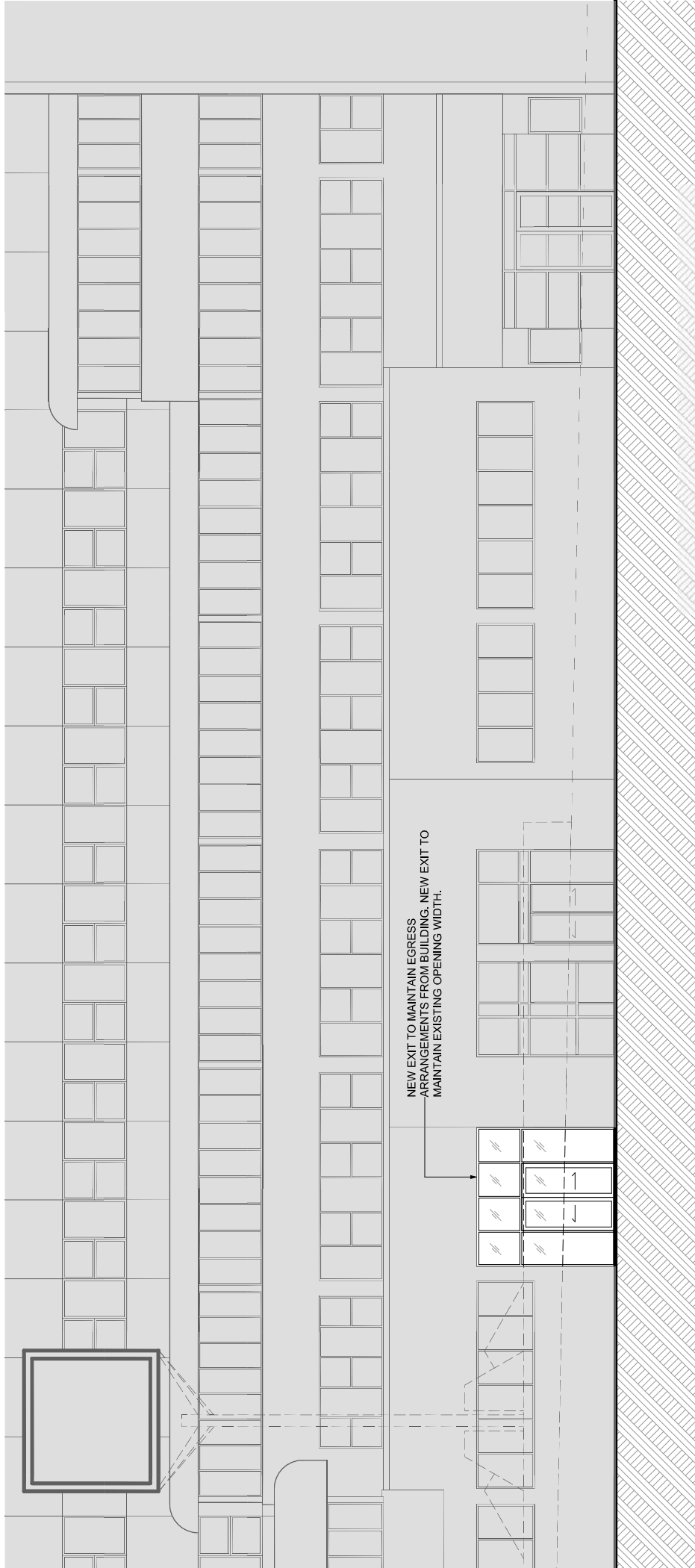
PROJECT
ED EXPANSION H BLOCK
Royal Hobart Hospital
for
Department of Health

DRAWING
STATUS
REVISION 01
DESCRIPTION
ISSUE TO COUNCIL
DATE
13/01/2022

ISSUE TO COUNCIL

ARGYLE ST ELEVATION - EXISTING
SCALE 1:100 @ A3
DATE 13/01/2022
DRAWN HL
CHECKED TN
ACCREDITED DESIGNER SV
ACCREDITED NUMBER CV54711

CAD REF P:\19052 RHH ED Expansion\14.0 DRAWINGS\14.1 Corner H Block_Permit.dwg
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NEW EXIT TO MAINTAIN EGRESS ARRANGEMENTS FROM BUILDING. NEW EXIT TO MAINTAIN EXISTING OPENING WIDTH.

1 ARGYLE STREET ELEVATION - PROPOSED
Scale 1:100

EXEMPT
No Planning
Permit Required

City of HOBART
By: E. Wilson
Date: 17/1/2022

Permit #: PAE-22-11

19052_DA-06

ARGYLE ST ELEVATION - PROPOSED

DRAWING NAME	ARGYLE ST ELEVATION - PROPOSED
SCALE	1:100 @ A3
DATE	13/01/2022
DRAWN	HL
CHECKED	TN
ACCREDITED DESIGNER	SV
ACCREDITED NUMBER	CC54711

DRAWING

STATUS	ISSUE TO COUNCIL
REVISION	DESCRIPTION
01	ISSUE TO COUNCIL
DATE	13/01/2022

PROJECT
ED EXPANSION H BLOCK
Royal Hobart Hospital
for
Department of Health

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