

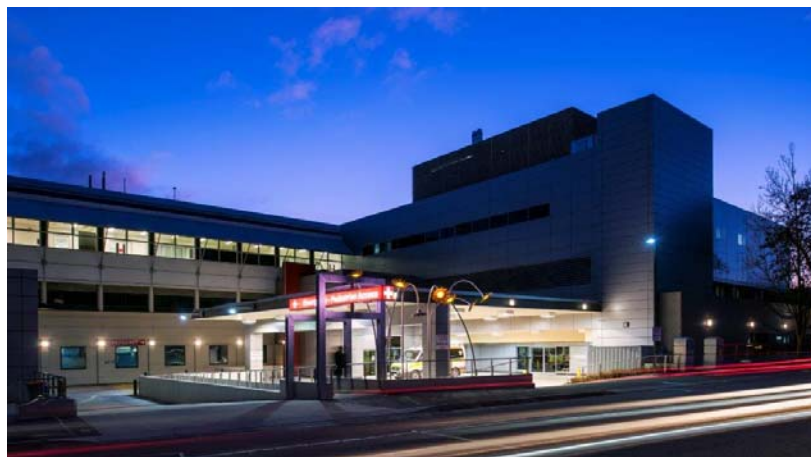
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**LAUNCESTON GENERAL HOSPITAL  
PAEDIATRIC AND MENTAL  
PAEDIATRIC INPATIENT UNIT**

**SUBMISSION TO THE  
PARLIAMENTARY STANDING  
COMMITTEE ON PUBLIC WORKS**

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*August 2017*



## **EXECUTIVE SUMMARY**

### **Document Purpose**

The purpose of this document is to inform the Parliamentary Standing Committee on Public Works of the need for the proposed project and how the design of the works will address this need.

### **Objectives**

This project is the design, expansion and refurbishment of the existing Launceston General Hospital (LGH) Ward 4K to provide an integrated facility incorporating both a Paediatric Inpatient Unit (PIU) and Paediatric Mental Health Unit (PMHU), to be known collectively as the Paediatric Inpatient Unit (PIU). The new contemporary facility will meet current standards and suit ongoing and future health service delivery for these services.

The Paediatric Inpatient Unit (PIU) will achieve a safe, accessible, contemporary and efficient environment for facility patients/ clients, staff and community members.

Key risks associated with the current ward will be eliminated (including minimising the risk of adverse clinical and/or WHS events).

The new PIU will provide:

- Contemporary building design in line with current health facility standards for delivery of both inpatient and outpatient services.
- Increased inpatient privacy and amenities with increased single rooms and access to ensuite bathrooms.
- Improved health and safety infrastructure for staff and patients with provision of ceiling lifting systems in inpatient rooms,
- Improved building security for patients and staff safety.

### **Project Budget**

The total cost of the project is estimated at \$9.64 million.

A budget of \$7.85 million is currently allocated across financial years 2016-17 to 2019-20 inclusive. The current consultants construction cost estimates for the project see the project cost being \$9.64 million. Increased costs relate to previously unidentified site infrastructure issues in respect of key electrical infrastructure, and in proceeding with the preferred option which facilitates minimal disruption on the existing operation of Ward 4K and at same time provides for future growth opportunities. Funds from the THS Infrastructure fund allocation and State-wide Critical Facility Upgrade Fund will be utilised to address the shortfall.

### **Project Program**

Design and tender documents are scheduled for completion in September 2017 with the tender to be advertised in October 2017. Subject to the required approval process, construction would commence in early 2018.

The construction program will be undertaken and is scheduled for completion by February 2019 with final completion of defects period in February 2020

### **General Project Scope**

The project scope encompasses a gross floor area of 2,252m<sup>2</sup> which comprises 975m<sup>2</sup> new build and 1280m<sup>2</sup> refurbishment.

The works will be in full compliance with contemporary standards and building codes.

## **Design Approach**

The planning approach that has been adopted is based on meeting current and predicted service requirements. Key elements are adaptable to enable the building to meet evolving needs and future changes in service and to maximise the accessibility of the facility to the community.

The Tasmanian Government has set an energy consumption reduction target of 60% across all of its Departments by 2050. This facility has been designed to incorporate integrated low energy consumption and sustainable features to support this aim.

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## **1. DOCUMENT PURPOSE**

The purpose of this document is to inform the Parliamentary Standing Committee on Public Works (PSCPW) of the needs for this project and to explain the processes undertaken during the design phase to maximise the delivery of the desired outcomes.

The document includes the following:

- Confirmation that the proposed investment in infrastructure is the most appropriate means to support improved health services delivery.
- Confirmation that the project is consistent with the Department of Health and Human Services (DHHS) Strategic Asset Management Plan.
- Evaluation of the suitability of the proposed Design.
- Discussion of 'value for money issues' relating to the design and construction of this project.

## **2. NEED FOR THE PROJECT**

The Paediatric Inpatient Unit (PIU), currently known as Ward 4K, is part of Womens and Children Services (WACS) and is currently located on the fourth floor of the LGH adjacent to the neonatal and obstetrics wards. The PIU was relocated in 1996 to the current site with only very minor infrastructure changes occurring subsequently.

The PIU provides an inpatient service to the North Midlands, North and North East of Tasmania and is the referral hospital for patients from the North West. The PIU currently has 28 inpatient beds (10 single rooms, 3 double rooms and 3 four bed rooms) and has approximately 3,000 annual separations. Age groups within the PIU are mixed including babies and adolescents in varying ratios at any one time. The ward accommodates a broad spectrum of paediatric cases, including specialised areas of paediatric surgery, ear nose and throat (ENT), child psychiatry, cystic fibrosis, paediatric oncology, sleep medicine as well as general paediatrics.

The room configuration of limited single rooms makes managing multiple infectious patients challenging for staff with competing priority for single rooms. The multiple 4 bed room configuration limits privacy for patients and does not promote a restful environment for patients and families.

Currently the PIU space has insufficient storage for both equipment and cots/beds, which presents many work health and safety issues for staff and patients.

### Paediatric Mental health

The LGH does not currently have adequate facilities to provide acute mental health care services to inpatients under 18 years old. Where possible, under 18 year olds have historically been admitted to PIU, however when a young person can't be safely nursed on the PIU the patient is currently transferred to the adult inpatient mental health unit, "Northside", adjacent to the main LGH campus.

Currently challenges are experienced when more than one mental health patient is admitted to the ward as physical space is limited to only one modified room. As numbers of patients with mental health diagnoses are admitted to PIU, greater flexibility is required for safe accommodation options and to remove them from the location of the general paediatric patient and family due to the distress, verbal aggression and physical agitation they demonstrate. These behaviours are intimidating and frightening for children and their families.

### 3. PROJECT OBJECTIVES

This project is the design, expansion and refurbishment of the existing Launceston General Hospital (LGH) Ward 4K to provide an integrated facility incorporating both a Paediatric Inpatient Unit (PIU) and Paediatric Mental Health Unit (PMHU) to be known collectively as the Paediatric Inpatient Unit (PIU). The new contemporary facility will meet current standards and suit ongoing and future health service delivery for these services.

The redevelopment plan for PIU supports greater flexibility for staff and patients by providing an increase in single rooms along with greatly improved observation of patients by staff. The project will also include the development of a high observation area. These joined single rooms will be used for acutely unwell patients who require a higher level of observation.

The redevelopment will provide a total of 36 inpatient beds comprising 20 single rooms, 6 two bed room and 1 four bed room. All single rooms will have individual ensuites. Upon completion of the project 29 beds will be completed for immediate needs. The remaining seven are for future growth and will be fitted out at a future date, upon identification of both need and being subject to available funding.

Staff amenities are currently lacking in the PIU and the redeveloped plan allows for a number of meeting spaces as well as a staff lounge. The dedicated meeting spaces for family meetings and multi-disciplinary team (MDT) meetings allows confidential information sharing in a professional setting.

Providing a staff lounge facility will provide a quiet space for staff to rest in their breaks, support work health safety standards and reduce stress in the staff. It allows a social space that protects staff privacy away from the patient and family zones, which is highly valued.

Key risks associated with the current Ward 4K will be reduced (including minimising the risk of adverse clinical and/or WHS events; reduced maintenance costs associated with patching up an ageing building; an adaptable and more community connected facility that can accommodate a range of services to meet current and future community needs etc).

#### Paediatric Mental Health Unit

Under Tasmania's White Paper, the LGH will increase the delivery of psychiatric services to child and adolescent patients, their families and carers from a Level 3 (low to moderate complexity inpatient and ambulatory care services) to a Level 5 service (moderate to high complexity and ambulatory care services). This service will be for patients from the North and North West Tasmania.

While the paediatric and mental health service will be co-located they will predominantly function independently. For the safety of staff, and all patients, the mental health unit is required to be lockable as indicated by escalating behaviors or threats of absconding. The flexibility to lock the unit down as clinically indicated should reduce the number of code blacks called for these situations. Such a well-designed environment should support greater flexibility with nursing care and supervision, allowing close observation of patients but providing privacy and independence at the same time.

Providing child and adolescent mental health services in an acute health setting has many challenges, one of which is the environment. The environment for mental health services should ideally be quiet, calming, and avoid noise, bright lights and staff through traffic. The ability to custom build and design a low stimulus environment to suit the needs of this cohort of patients will serve to improve the quality of their hospitalization experience and support recovery. The ability to provide allied health services including occupational therapy to support recovery and developing independence and life skills is highly regarded as part of the recovery model and provided for in the new facility design.

## 4. CONSULTATION AND GOVERNANCE

### 4.1 Consultation

An extensive consultation process has been undertaken to ensure all views and concerns were heard

Detailed stakeholder consultation commenced immediately following appointment of the Project Architect, Philp Lighton Architects. The process focus was foremost on developing the clinical services with further consultation to follow around design and construction of the new facility with the individual/identified services that would be operating in the facility.

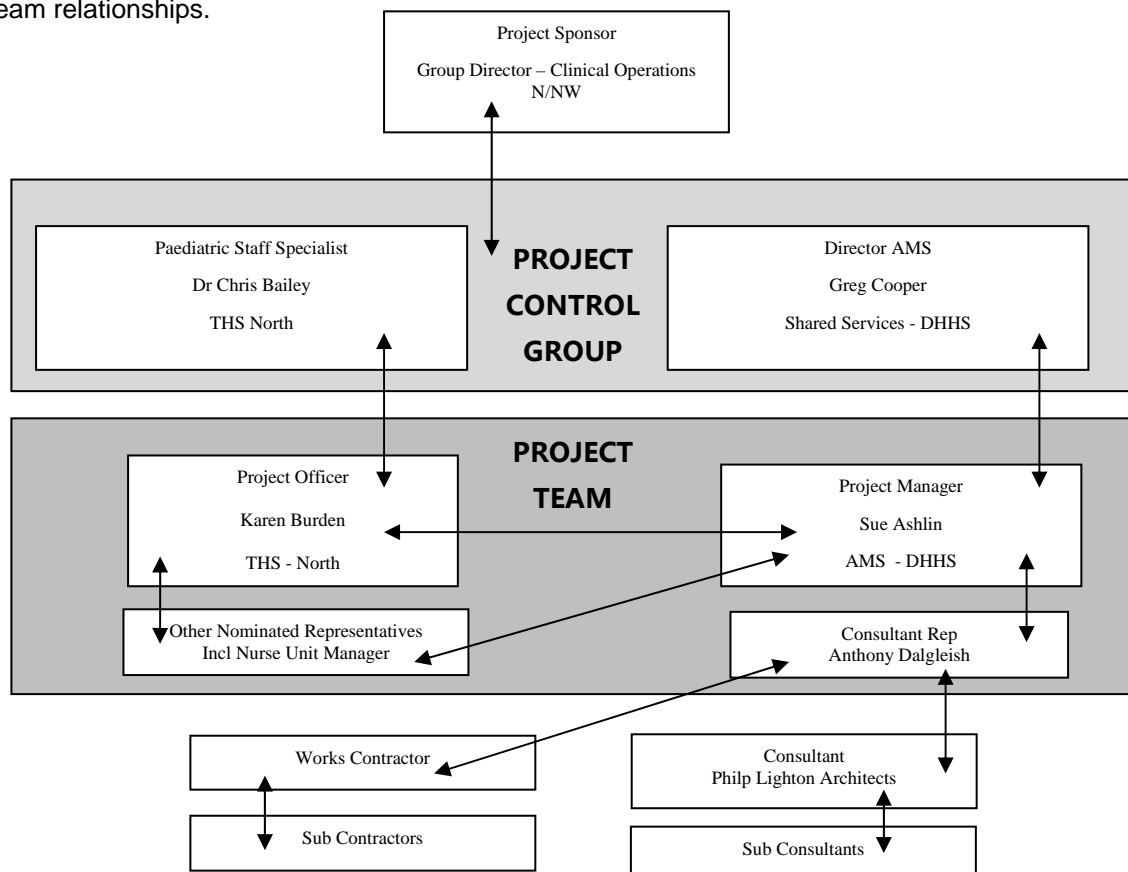
Consultation has continued to occur with all key services groups, other internal stakeholders and associated services. Stakeholder involvement has included input from:

- Women's and Children's services management and front line staff
- Paediatric Mental health unit management and front line staff
- Allied Health management and front line staff
- LGH Building and Engineering
- LGH House Cleaning
- LGH Food Servicing
- Specialist Sub Consultant team

The LGH also have a Community Advisory Council (CAC) which has been engaged and reviewed the proposed floor plan.

### 4.2 Governance

The following diagram illustrates the Project Control Group (PCG), Project Team and Consultant Team relationships.



The *Project Control Group* has been meeting as required to enable the project to evolve in line with the project timeline, providing an adequate consultation phase and sufficient time for Contract Documentation and Project Procurement.

A *Project Working Group* comprising representatives from Mental Health, Womens and Childrens Services and Allied Health has been meeting weekly during the Design Development Phase to work through the floor plans and room data sheets.

### **4.3 Design Approval**

The Project Control Group at its July 2017 meeting endorsed the project schematic design.

At these meetings to date all desired project outcomes have been tabled, discussed and then reviewed for compliance with the endorsed project brief and service model. This consultative approach has resulted in a design that allows all of the desired outcomes to be resolved and provides sufficient flexibility for future expansion.

Final sign-off of the developed plans is currently being undertaken with the services to ensure all their needs are met.



## 5. ADDRESSING THE NEED

### 5.1 Design Philosophy

The redevelopment and expansion of the PIU project will provide the Northern Tasmanian community with appropriate, contemporary hospital accommodation for, paediatric inpatients, carers, families and friends, that meets current hospital standards and will suit ongoing and future health service delivery in an integrated way.

The design philosophy adopted for this project has been based on a robust collaborative process, managed by the principal design consultant with reference to the Australasian Health Guidelines and input from a specialist health planner.

The principal whole of site themes that have informed the design philosophy adopted for the PIU are:

- The PIU is identified by the community as a unique entity catering for specific clients from the smallest children to young adults however, to be most effective, needs to be co-located and share specific services and resources with the whole of the hospital.
- The ward environment should be as non-clinical and flexible as possible to support client and future unknown operational requirements without compromising service delivery.
- This development should be future proofed to allow further site development in the future, in recognition of the strategic importance of this portion of the site, at the lowest cost and minimal disruption.
- Maintaining the highest quality and level of service delivery throughout the redevelopment is imperative.

Specific PIU development themes that will be incorporated into the new units design are:

#### Identifying with children

Create a non-threatening, welcoming, recognisable, friendly and calming environment for children.

#### Spaces for Families as Carers

Involve families in the healing process by giving them spaces to be with their children, e.g. overnight sleeping

#### Wayfinding

Provide simple, clear and effective planning, signage, lighting, detailing and colour to alleviate confusion and stress.

#### Children Scale

Design the space to respond to the size of children, to give them comfort and to reinforce their individual and personal needs.

#### Age Adaptive Design

Create spaces which can be re-configured to suit the needs of children of differing ages to ensure they feel comfortable and enabled.

#### Natural Light for Healing

Brighten interior spaces with natural light, emphasising the daylight connection to outdoors.

#### Details for a Childs Imagination

Engage children's imagination with colourful, playful forms and patterns and interactive learning.

## Delight and contemplation

Positive distraction, design themes that incorporate wayfinding. Graphics, themes and landmarks are other ways to add a sense of wonder to what can often be a scary environment.

## Site Assessment

The site for expansion of the proposed PIU/PMHU is the existing car park on the corner of Howick and Charles Streets to the south of the existing hospital. Vehicular access and egress for cars and service vehicles is via a new road off Howick Street.

Unlike other areas of the hospital, the concrete structure and framing of the original hospital has limited capacity to accept either additional loads or new floor levels over. Accordingly options to expand over and link back to other areas of the hospital are limited and likely to be cost prohibitive.

Options to expand around the perimeter of the current 4K footprint are also limited due to its location on site.

An important planning consideration is the requirement for windows. Ward areas require windows to the outside for natural light, so, just the placing of additional building area on the perimeters of the existing PIU footprint does not provide the required window area or functionality.

The resolution to this planning dilemma is a new build section/addition to the south of the existing ward in the southern most car park. The new build has a floor area of 950m<sup>2</sup>.

This new build section/addition is designed to seamlessly link into the existing ward that is to be progressively refurbished through the development. Building on the edge of the current ward allows for the completion of new floor area while minimizing the disruption to ongoing service delivery. As the new build is completed, the PIU will progressively move into the newly refurbished spaces.

Between the new build footprint and the existing 4K, a transition space consisting of an open deck, meeting rooms and walk way have been incorporated in line with the schedule of briefed areas to ensure the design fully utilizes the available space and connects seamlessly with the existing ward area.

The portion of the LGH site selected for the new build/expansion also provides opportunities for further long term development. To ensure development opportunities are not lost into the future for more ward space at level 3 and car parking at level 2 and below, deeper than usual footings and the provision of space for a full size passenger lift have been incorporated.

Public access to the PIU will continue to be via the existing main entry at level 3. Similarly Emergency admissions will continue to come through the Emergency Department.

## Staging

To avoid loss of beds during construction, the building works will require staging and decanting to successfully undertake the project. The staging plan (Attachment X) demonstrates likely 'pieces' of work to be completed and the order in which they are likely to be completed. Further staging discussions will be undertaken with the successful building contractor and the hospital prior to work commencing.

The first stage would be the construction of the new build area. Commencing in the car park site, the work would progress to the north, with new works on the existing level 4 courtyard starting towards the end of the Stage 1 build. Upon completion of Stage 1, staff and patients would be decanted into this space to free up development area in the existing building footprint.

Stage 2 would see the North Western side of the existing ward redeveloped. Hoarding setup down the main corridor would allow staff, patients and the general public to access the new and existing ward areas. The remaining Stages 3 & 4 would be redeveloped in a similar fashion, with hoardings providing safe egress through the site until all the works are complete.

Costs associated with construction staging and decanting requirements have been allowed for in the project budget.

### Car Parking

The entry and exit points to the southern car park will be permanently(?) changed from Charles Street to Howick Street to allow the development of the PIU. The change is supported by both the Launceston City Council and hospital management as the current arrangement is potentially dangerous due to the entry and exit points being too close together.

Currently the capacity of the Howick/Charles Street (southern) car park is 149 spaces. The car park is managed by a private contractor (Care Park) for the LGH. Many of the existing spaces do not meet current car parking sizes and layout standards. The greater proportion of these spaces are maintained as public spaces, however a proportion of staff still park in this area.

On completion it is expected between 135-140 fully compliant car spaces will be available depending on the final design.

A challenge for the development is the maintenance of the bulk liquid oxygen supply to the hospital. This supply is delivered via a large semi-trailer requiring large sweeping circulation and over-head clearance of 3.5m. Prior to this development, the oxygen truck entered the hospital site off Charles Street and maneuvered around the back of the Specialist Clinic's, and under the Queen Victorian undercroft entrance to the bulk liquid oxygen storage cylinder. The oxygen truck exits the site down Cleveland Street.

Through the construction of the PIU new build/extension, access via the current driveway for all vehicles including the bulk liquid oxygen truck will be unavailable. A new access point is required. In discussion with the council, the hospital and our traffic engineer, a new access off Howick Street has been planned as it also provides good access for the bulk liquid oxygen truck and safer access for private vehicles.

## **5.2 Architectural**

The PIU has a special relationship with the Launceston and Northern Tasmanian community. There is an incredibly strong bond between community and this service. This relationship stretches back to the 1890's when the first specialists 'Children's' ward was established in the children's hospital.

There is a strong history of ongoing and continuous development of improved Health services in Northern Tasmania. The latest development provides an opportunity to recognize all those works and to make reference to some of the stronger design themes that are representative of hospital design from the 1890's till now. The earliest reports of a purpose designed children's ward noted rounded corners, curved cornices and curved architraves, constructed to provide an antiseptic / easy clean, well-managed and ordered environment.

The 1930's and 40's provided new inspiration for design with art deco design features, curved stairs, rounded corners, stacked glass walls, striking cement render, and decorative wrought iron.

The PIU design seeks to reflect this historical context while remaining connected to the LGH, utilizing the same materiality but with a different interpretation.

In recognition of this relationship, the architectural treatment and style of fenestration is designed to set the PIU apart visually so that it is immediately recognizable from the vernacular of the hospital, while acknowledging that it is still an essential element of the hospital and would not operate at optimal efficiency without the support of the wider hospital network.

The provision of people, place and garden that inform and delight both children and adults to celebrate life and support family and community, are essential elements of this design.

### **5.3 Environmentally Sustainable Design**

The Tasmanian Government has set an energy consumption reduction target of 60% across all of its Departments by 2050. This facility has been designed to incorporate integrated low energy consumption and sustainable features to support this aim. The environmentally sustainable development features of this building include the following:

- A floor layout that allows for maximum day light penetration into occupied areas where appropriate.
- Orientation of high occupancy areas to limit low angle sun penetration and consequential glare problems.
- Sun shading to reduce unwanted solar heat gain in summer provided to relevant windows other than those facing south.
- Inclusion of energy efficient light systems.
- All unglazed walls, ceiling and roof cavity spaces are insulated and sealed to exceed Building Code of Australia mandatory requirements to mitigate heat loss & gain fluctuations.
- Energy efficient hot water systems to be included for all potable hot water requirements.
- Materials selection for the project will be based on low off gassing characteristics, low embodied energy and suitability for recycling.
- Appropriate use of double-glazing to avoid excess heat gain and loss.

### **5.4 Building Services Design**

#### **Mechanical**

The primary design aim of the mechanical engineering systems is to provide a safe, comfortable and energy efficient environment. This approach will allow for the following objectives to be achieved:

- To provide a safe and comfortable environment.
- To produce cost-effective solutions that offer 'best value' to the client.
- To provide solutions that supports the architectural intent for the project.
- To provide an energy efficient design.
- To provide a robust design, sympathetic to the local environmental conditions.

The Mechanical Design will allow for future flexibility where appropriate.

All mechanical services are designed to provide convenient, safe, serviceable and durable systems at all times during their use.

#### **Electrical**

Upgrades of the aging infrastructure including a new main switchboard are proposed to ensure the installation is reliable in to the future.

#### **Gas**

Located within the Howick/Charles Street car park is a natural gas valve set. This valve set controls the natural gas supply to the hospital. Gas regulations prohibit buildings beings located over high pressure gas lines, accordingly the gas installation will require relocation.

#### **Lighting**

LED Lighting will be provided throughout the facility. Lighting Levels will be provided to AS NZS 1680.2.5-1997

Lighting will be controlled by localised switching in general areas with motion sensors to rooms such as Cleaner and Store Rooms. Ward rooms will have lighting control from the patient bedside handsets.

A Single Point Exit and Emergency Lighting system complying with AS 2293 will be provided through the proposed works.

### **Power**

All patient-occupied areas will be provided with USB phone charging outlets adjacent to the patient beds and body protection in accordance with AS/NZS 3003:2011. In all other areas general purpose outlets will be provided throughout to meet the needs of the users.

The facility will be connected to a new Diesel Generator to run nominated essential services.

### **Communications**

#### Data and Communication

A new Panduit dual category 6 voice and data system will be provided utilising four pair unshielded twisted pair (UTP) cabling and RJ45 outlets in a star topology.

A New Panduit Rack with cable management system will be provided to the new communications room. This will be in accordance with DHHS IT Specifications.

#### Nurse Call

A New Hills IP Nurse Call and Duress system will be provided throughout the site which integrates into the existing site wide nurse call system. Digital Annunciator panels will be positioned throughout the ward areas.

### **Security**

A Honeywell Security, Access control and CCTV system will be provided throughout the facility.

### **Fire/Smoke Detection Systems**

A new fire detection system will be provided throughout the building complying with AS 1670.1 and a Warning system complying with AS 1670 .4.

The system will have facility to provide alarm notification to the DECT system.

## 6. PROJECT SCHEDULE & BUDGET

### 6.1 Project Schedule

A Summary of the Project Timeline is as follows;

Completion of design development	July 2017
Development Application submitted	August 2017
Completion of Construction Tender Documentation	September 2017
Construction Tender (advertising, closing and assessment)	November 2017
Construction Start	January 2018
Practical Completion of Construction	February 2019
Final Completion (Completion of Defects Liability Period)	February 2020

The Construction Phase will be undertaken as a staged process to avoid the need to decant.

### 6.2 Project Cost

A budget of \$7.85 million was originally allocated across financial years 2016-17 to 2019-20 inclusive. Subsequent detailed engineering investigations and provision of a solution which minimises impact on existing services now has the cost of the project estimated to be \$9.64 million. Funds from the THS Infrastructure fund allocation and State-wide Critical Facility Upgrade Fund will be utilised to address the shortfall.

<b>DESCRIPTION</b>	<b>SUM</b>
Construction Costs	\$7,260,000
Construction/Design Contingency	\$ 600,000
Post Occupancy Allowance	\$ 100,000
Professional Fees and associated costs	\$ 750,000
The Tasmanian Government Art Site Scheme	\$ 80,000
Electrical infrastructure	\$ 500,000
ICT Infrastructure	\$ 200,000
Decanting	\$ 150,000
<b>PROJECT TOTAL</b>	<b><u>\$ 9,640,000</u></b>

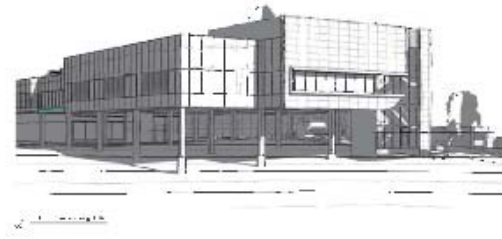
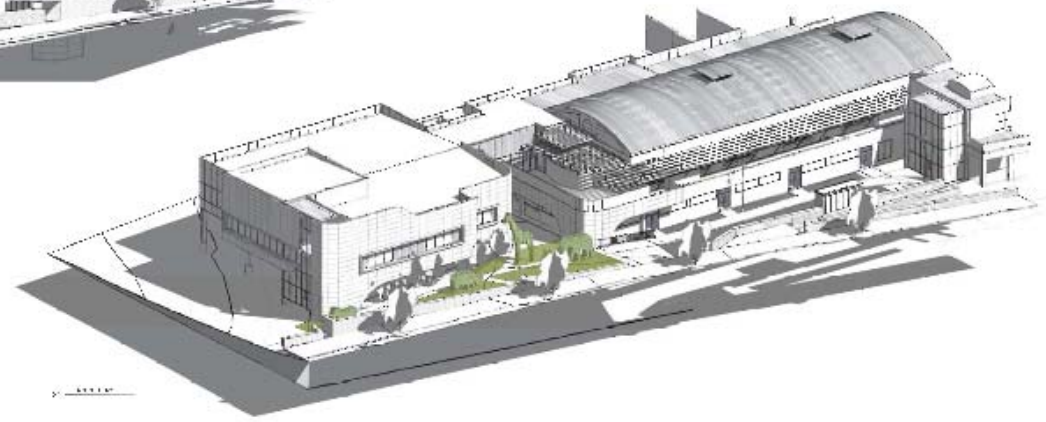
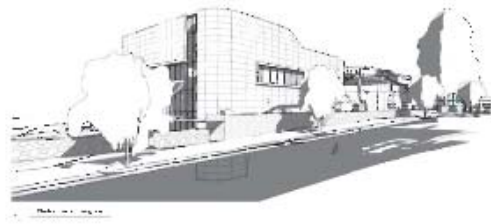
The current project costs are provided by the project Quantity Surveyor and based on reasonable allowances for the projects location and current market conditions.

## **7. RECOMMENDATIONS**

The Project Control Group and Project Team have carefully assessed and explored the options and solutions available and have determined the design submitted provides the required project outputs as determined in the project functional brief. In addition, the design is consistent with the strategic long-term direction of the Tasmanian Health Service

It is recommended that this submission be viewed favourably given the benefits it will provide to staff, patients and families.

8. APPENDIX A – ARTISTS IMPRESSION



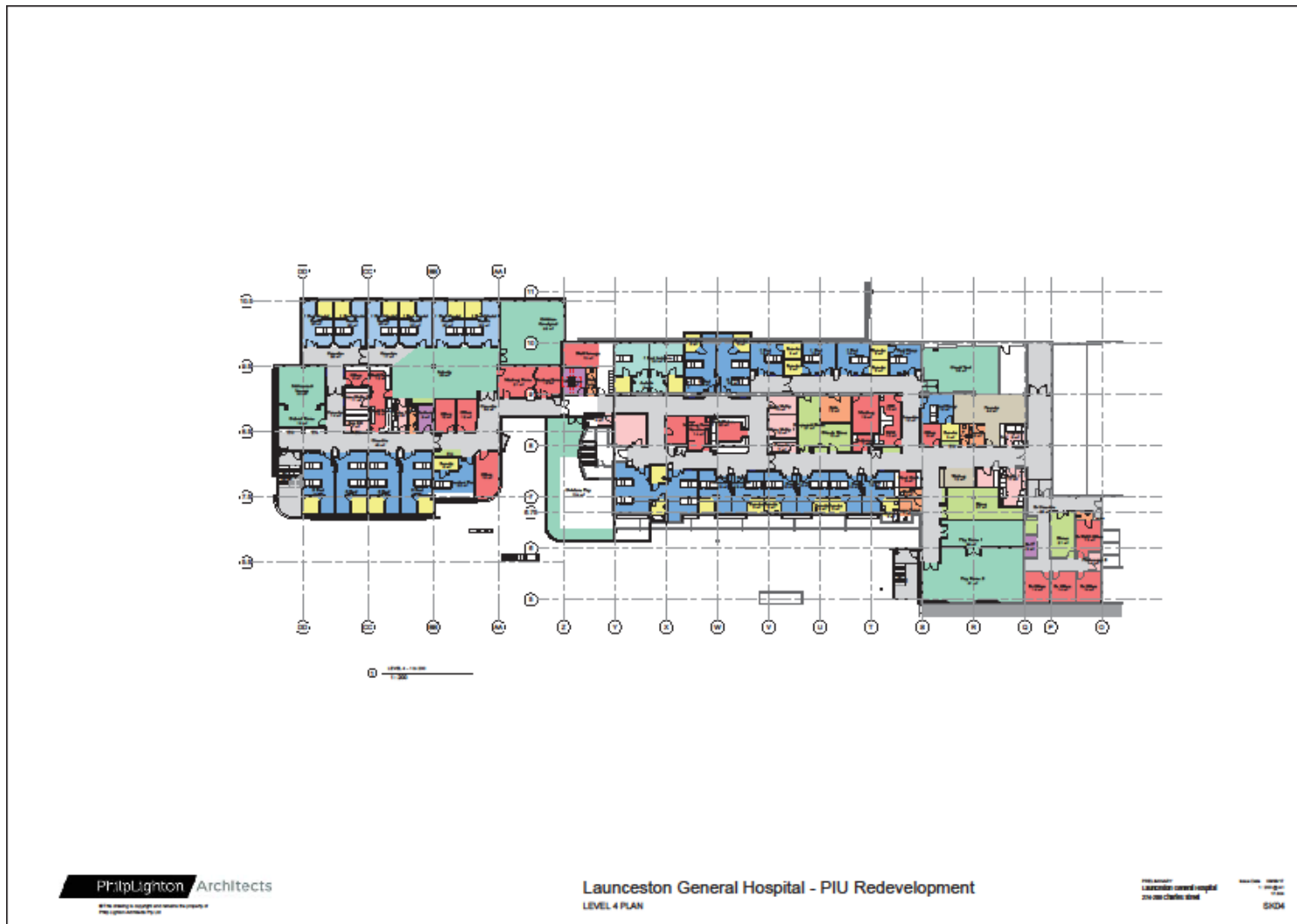
**P.LipLighton Architects**  
Architects

Launceston General Hospital - PIU Redevelopment

DATE: 15/08/2017  
SCALE: 1:100



9. APPENDIX B - FLOOR PLAN



10. APPENDIX C - CAR PARK EXTENSION

