

RHH REDEVELOPMENT PROJECT

KEY FINDINGS AND RECOMMENDATIONS

28 NOVEMBER 2014



Campbell Street | K-Block façade. Image courtesy of Lyons with Terroir.

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FOREWORD

The Royal Hobart Hospital (RHH) has been serving Tasmanians for almost 200 years. Redeveloping the site has been integral to ensuring the hospital could continue to meet the changing health needs of our community.

The RHH is again in need of redevelopment and expansion. It is well known that many of the hospital's buildings are near the end of their functional life. It is increasingly difficult to provide contemporary health services because of the condition and configuration of the current buildings. Consequentially, a Master plan was developed in 2011 to provide a longer term vision for the progressive redevelopment of the existing RHH site.

Australian and Tasmanian Governments have allocated \$586 million to the current RHH Redevelopment project (the project).

This substantial investment provides an opportunity to transform Australia's second oldest hospital so that it can deliver health services to Tasmanians into the future.

Tasmanians already have access to many new facilities and services completed under Phases 1 and 2 of the project.

The majority of the projects funded under Phase 1 were completed during 2012-13. For example, the new assessment and planning unit opened providing more streamlined assessment for acute medical patients. The new \$5.8 million production kitchen began delivering improved patient food services. The new \$9.3 million medical imaging facility opened providing new ultrasound suites and modern equipment including Tasmania's first public PET/CT scanner, funded by the Australian Government. The \$13 million Wellington Clinics were also opened, providing improved access to outpatient services.

During the 2013-14 financial year, the \$14 million Phase 1 redevelopment of the department of critical care medicine was opened providing the capacity for an additional 11 beds in larger bed bays, an external patient area, new reception area and staff facilities. The Phase 2, \$25 million THO-South Cancer Centre was also completed providing improved care for oncology patients and delivering increased access to patient support services.

Phase 3 is the proposed construction of the inpatient precinct known as K-Block.

There are significant benefits of the proposed K-Block.

Consistent with contemporary health services delivery models, improved patient care and operating efficiencies will result from bringing together services in 'precincts' such as women's, adolescents and children's services; mental health services; medical services; and surgical services. It will also allow for increased flexibility in the use of the facilities. Models of clinical care have been developed with clinicians to reflect contemporary service attributes, and improve the pathways for patients from, and back to, community settings.

A redeveloped RHH will enhance health outcomes and provide improved patient amenity via modern clinical facilities where contemporary models of care can be practiced.

Issues associated with project governance and successive design changes have frustrated progress and delayed the project. However, valuable work has been undertaken and design work in particular, is now well advanced.

But it is a complex project and a number of issues were identified which are material to ensuring that K-Block can be delivered on time, with established cost estimates that provide confidence to the budget, and with minimal disruption to existing health services. Construction can only commence after these matters are resolved.

Resolving these issues will position the project for success.

These matters formed the basis of the Terms of Reference for the RHH Redevelopment Rescue Taskforce (the Taskforce) commissioned by the Minister for Health on 7 May 2014.

The Taskforce submitted their final report to Government on 28 November 2014.

RHH Redevelopment Project Key Findings and Recommendations outlines the conclusions and recommendations from the investigation, along with details of some of the significant issues of interest to clinicians and other key stakeholders, considered by the Taskforce.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Taskforce was commissioned to resolve the outstanding issues facing the project so the new K-Block could be constructed.

To inform the investigation, the Taskforce conducted broad consultation including receiving important input from THO-South clinicians, commissioned expert advice and was supported by a Professional Reference Group of stakeholders with an interest in the project.

The findings and recommendations address the Terms of Reference of the Taskforce. They also include consideration of the two important matters which the Taskforce identified needed immediate confirmation:


- the appropriateness of pursuing the redevelopment on the current RHH site and
- the scope of the proposed K-Block design.

If the project had gone ahead earlier, it would have exposed patients, staff and the general public to significant risks.

The key findings and conclusions of the Taskforce are summarised as follows:

- The redevelopment of the RHH is feasible and can proceed.
- Substantial time, energy and money has already been invested in the redevelopment of the RHH site. Moreover, the time and costs of an alternative greenfield development are prohibitive.
- The scope of the project is consistent with the Commonwealth-State Intergovernmental Agreement (IGA) requirement to provide 195 overnight beds and other outputs.
- A new construction methodology has been determined which provides better outcomes for patients, is safer and has the shortest construction program for K-Block.
- If the new methodology is supported, the new completion date of late 2018 would need to be renegotiated with the Australian Government.
- Work could commence early in 2015, potentially sooner.

- The total cost for the three phases of project would be \$657 million or \$552 million for Phase 3. This would require a further investment of \$71.9 million. This includes the costs of decanting, an improved design for mental health services and installation of a helipad.
- The project would support the delivery of contemporary models of care for services located in K-Block. K-Block will provide enough flexibility to accommodate changes identified during health reform planning and changes to models of care over time, or in response to future demand.
- The original design of K-Block was based on significant clinical consultation but a small number of outstanding concerns remain which could be largely redressed by the design proposed by the Taskforce:
 - o an increase in single beds for women who have had caesarean or complex births could be accommodated through limited redesign and
 - o a more contemporary design for mental health inpatients would provide more outdoor recreational space.
- The inclusion of a helipad is supported by clinicians and Ambulance Tasmania and is proposed.
- Opportunities to progress the Master plan should be explored.
- The close proximity of the hyperbaric chamber to the construction site presents risks to its continued availability for patient care. It is at the end of its 25-year design-life and will need to be replaced during the period of construction of K-Block. Its replacement should be immediately progressed.
- The decanting plan required to support the preferred construction methodology would include 19 service relocations and 29 refurbishments. The implementation cost of \$51.04 million is included in the budget.



**Project Construction
Cost Estimate (PCCE)
is the figure below
which the Managing
Contractor must deliver
its GCS Offer.**

- The significant work undertaken by the Taskforce on the construction methodology, design and budget analysis means the Guaranteed Construction Sum (GCS) Offer provided by the Managing Contractor would need to be revised.
- The project would need to be reset by agreeing a contract variation with the Managing Contractor so a revised GCS Offer can be requested.
- The first step towards a revised GCS would be to agree a new Project Construction Cost Estimate (PCCE).
- Once the Managing Contractor Contract has been reset, critical works can commence including the removal of hazardous materials, refurbishments and early works. Starting these works would avoid delays to the K-Block construction program.
- A new governance framework would be needed that is suitable for a construction project. An Executive Steering Committee (ESC) is proposed that would provide strategic leadership and oversight, reporting directly to the Minister for Health and the Treasurer.
- The Project Director would be responsible to the ESC for delivery of the project.

The findings and recommendations provide a clear pathway for construction and decanting patients that would mitigate risk and optimise space for clinical services. They underpin a project that could be managed to budget and delivered on time and with minimal disruption to patients.

The recommendations reset the project so that the contract arrangements are contemporary and could take the project into the construction phase.

It is through these steps that the project could proceed and the proposed K-Block could be constructed.

The findings and recommendations are further outlined in this report.

BACKGROUND

The former ESC for the project commissioned a *Project Status Report* (April 2014) to provide advice to the Tasmanian Government about the status of the project including key risks that needed to be addressed going forward.

The *Royal Hobart Hospital Redevelopment Project, Project Governance, Authorisations and Financial Delegations Instrument Version 2* (the former Instrument) required that the former ESC recommend to the Minister whether to accept or reject the GCS Offer from the Managing Contractor.

In considering the proposed GCS Offer, the ESC agreed not to reject the GCS Offer. Instead, they identified five key issues that required resolution before a recommendation could be made that the Minister accept the GCS Offer. These were governance, risk and design management concerns, the appropriateness of the project budget as well as evidence of a comprehensive decanting and refurbishment plan. These issues are reflected in the Terms of Reference for the Taskforce.

During the period of the investigation of the Taskforce, the Managing Contractor, John Holland Fairbrother Joint Venture, agreed to hold open the intent of the GCS Offer of 5 February 2014 subject to understanding the impact of any future changes to scope and program.

Additionally, the Joint Venture agreed to work with the project team and Taskforce until the resolution of the Taskforce investigation to minimise project related risks including potential cost escalations.

Other Reports

The Tasmanian Health Commission released their report, *The Commission on Delivery of Health Services in Tasmania – Working towards a sustainable health system for Tasmania* (April 2014). It recommended that the project be placed on hold to ensure that a full and comprehensive service plan was developed in the context of resources available to build and operate the service as part of a statewide health system (Recommendation 52).

The issues raised in the ESC's report and the Tasmanian Health Commission report facilitated a decision by the Tasmanian Government to place the project on hold and to commission the Taskforce investigation.

APPROACH TO THE INVESTIGATION

Context

In his Ministerial Statement to Parliament on 7 May 2014, the Minister for Health, the Hon. Michael Ferguson MP announced the establishment of the RHH Redevelopment Rescue Taskforce. The Terms of Reference for the Taskforce can be found in Appendix I.

The Taskforce was commissioned to undertake an independent investigation and provide recommendations on how to best continue the project, reporting to Government by the end of November 2014.

The scope of these recommendations included:

- capital and operational risk profile of the project and the RHH
- construction methodology
- decanting requirements
- governance and project management
- GCS Offer presented by the Managing Contractor and
- other related matters.

Mr John Ramsay chaired the Taskforce and was joined by colleagues Ms Jo Thorley and Dr Dan Norton AO. The Taskforce was convened with the Minister for Health on 22 May 2014 and held its first business meeting on 6 June 2014. Further information on the Taskforce membership can be found in Appendix 2.

In his Ministerial Statement, the Minister for Health anticipated the costs of the Taskforce for the six month period of the investigation were not expected to exceed \$1 million. The cost of the Taskforce was \$682 194 which included member fees, and expert advice and studies commissioned to support the investigation.

Investigation Methodology

The early work of the Taskforce focused on the identification and investigation of important project issues; instituting governance arrangements and determining the parameters for the project while it was in care and maintenance; and, defining the work program for the investigation.

The work of the investigation included: governance and project management, site appropriateness, project scope, construction methodology, and capital and operating financial risks.

The Taskforce was supported by a Professional Reference Group (PRG) who provided input into the investigation.

The PRG members were: Neroli Ellis, Australian Nursing and Midwifery Federation; Dr Tim Greenaway, Australian Medical Association; Michael Kerschbaum, Master Builders Association; and Andrew Wilkie MP, Independent Federal Member for Denison.

The Taskforce commissioned work from a number of consultants to inform its advice to government. This work included: risk, governance and project management, the feasibility of installing a helipad on the roof of K-Block, contract negotiation, financial management, design and programming.

Stakeholder engagement was central to the approach of the Taskforce. Specifically, consultations with clinicians, other THO-South staff and key stakeholders informed the breadth of work conducted on the appropriateness of the scope of the project.

During the care and maintenance period, the Taskforce continued to oversight the works required to finalise Phase I of the project and works that would benefit the RHH whether or not the project was to proceed.

Work Program

The work program of the Taskforce identified five streams of work.

1. Appropriateness of Redeveloping the Current RHH Site and Scope (Alignment)

This examined the barriers to progressing the project on an alternate site. It also examined whether the proposed scope for the redeveloped RHH was aligned with relevant health and clinical services plans, and whether the project would meet the terms of the IGA between the Tasmanian and Australian Governments.

2. Scope – (Models of Care and Facilities Management Plan)

This considered the extent to which the scope of the project was appropriate in meeting the health needs of Tasmania into the future. It confirmed that clinical models of care for the new inpatient precinct had been developed previously. It also examined the opportunities for the redeveloped RHH to increase the efficiency of health service delivery in southern Tasmania.

3. Construction Methodology

This examined the risks of the two previously identified construction methodologies focusing on construction, clinical (including decanting), delivery, program and cost related risks.

4. Capital and Operating Financial Risk

This examined the level of capital and ongoing financial risk to the State related to the construction and operating costs of K-Block. It also considered how the Crown should approach the status of the GCS Offer presented by the Managing Contractor.

5. Governance and Project Management

This examined appropriate governance during the operation of the Taskforce and considered the necessary governance framework for the next stage of the project if it were to proceed.

This work program addressed the Terms of Reference of the Taskforce.

FINDINGS AND RECOMMENDATIONS

Redeveloping the RHH Site

Work undertaken for the *New Royal Project* (2006-2007) demonstrated that the preferred location of the RHH was in the vicinity of the CBD and the costs associated with a greenfield development were prohibitive. These conclusions remain valid.

While opportunities to redevelop the current RHH hospital site for commercial and retail enterprise were not tested in this investigation, a significant consequence of relocating the hospital would be the impact on the economy of Hobart's CBD.

There has been a substantial investment of time, energy and money in the design and development of the current project. Little if any of the investment in the design and related subsequent development would be transferrable to an alternate project.

There has also been a significant investment of time and commitment by the clinicians and staff of THO-South to plan for, and provide advice on the current project. For around eight years, they have continued to provide quality health care to Tasmanians whilst providing input into the work required to build a new hospital and are exhausted and frustrated by ongoing processes.

Moreover, there would be a significant delay in the construction of a new hospital if the government chose to terminate the current process and start a new procurement process.

It is also highly likely that further capital investment would be required in the existing RHH site to support tertiary services during an extended period of time required to establish an alternate hospital project.

The Taskforce concluded that the project could proceed on site.

However, the Taskforce noted that the proposed project is a substantial investment in a site that inevitably will require further redevelopment and ongoing maintenance costs for the existing building stock. In order to optimise benefits from the proposed K-Block, the redevelopment of the entire RHH site as outlined in the *RHH Master plan 2011* would need to be progressed.

Recommendation One

That considering the significant barriers of both cost and time, the significant investment in the current site, and the likely impacts on the CBD of relocation, every effort should be made to proceed with the current project.

Scope of the Project

The design of the proposed K-Block is consistent with the Commonwealth-State IGA requirement to provide capacity for an additional 195 overnight beds and other specified outputs. The use of these beds, and space vacated in other RHH buildings by the commissioning of K-Block, remains a matter for the THO-South, and the Tasmanian Government.

There are feasible options available to government to maximise the utilisation of the vacated capacity within existing RHH buildings on completion of K-Block. Further financial evaluation of these options within the context of state health reform should be undertaken before implementation.

The project design will support the delivery of contemporary models of care for services that will be located in K-Block. It will allow sufficient flexibility to accommodate any required changes identified during the health reform planning process, changes to models of care or in response to future demand. However, any future changes to the configuration of services within K-Block should seek to optimise the efficiencies gained in the current design, including the precinct model of co-locating like-services.

A number of design concerns were raised during consultation. These have or can be addressed if the advice of the Taskforce is accepted.

The proportion of single bed rooms on commissioning of K-Block is adequate. However, any future consideration of a reduction in the number of single bed rooms should be cognisant of infection control principles.

The current design for the women's, adolescents and children's services precinct is not optimal. However, there are opportunities to increase the number of single bed rooms available for women who experience caesarean or complex births consistent with contemporary models of care. There is a redesign option available that would deliver this result for minimal cost.

A redesign is also achievable for mental health inpatients that will improve the capacity to provide contemporary models of care in K-Block. The Taskforce noted that the preference for mental health inpatients is a ground floor location with increased access to outdoor space. This remains unresolved and is the basis for some sustained stakeholder concern. Access to ground floor space is not possible but it would be possible to achieve access to more outdoor recreational space on levels 2 and 3. Costs in relation to the proposed redesign are included in the revised budget for the project.

It is common for redevelopments of tertiary hospitals of this scale to include a helipad. Advice of THO-South clinicians and Ambulance Tasmania is that clinically, a helipad should be provided at the RHH as soon as possible. Engineering advice has confirmed that installation of a helipad on the roof of K-Block is feasible. The additional cost of installing a helipad is \$10.5 million.

Further information on these design issues can be found in the K-Block Design section.

The Taskforce concluded that the project could proceed on site.

A number of design concerns were raised during consultation. These have or can be addressed.

Recommendation Two


That work continues on the redesign of the women's, adolescents and children's services precinct to increase the number of single beds available for women experiencing caesarian or complex births (noting possible cost implications).

Recommendation Three

That levels 2 and 3 designated for mental health services be redesigned to deliver improved outcomes for mental health patients. This recommendation should be considered in conjunction with Recommendation Five.

Recommendation Four


That the installation of a helipad on the roof of K-Block be considered as part of the current redevelopment. This would require an additional investment.



Under methodology C, the proposed program for the construction of K-Block could commence early in the New Year and is expected to be completed in late 2018.

Decanting is used to refer to the relocation of hospital services so that B-Block can be demolished and the proposed K-Block constructed.

The investigation has increased the visibility of the true project costs. This represents a significant decrease in project risk.



Construction Methodology

Construction and clinical risks were the primary influences on the Taskforce's deliberations on a preferred construction methodology.

Two construction methodologies were considered. Construction methodology A proposed a two stage build. Construction methodology B proposed a single stage build.

On balance, in the absence of an alternative, methodology B would have been excluded on the basis of the clinical risks associated with offsite decanting of mental health inpatients and the acute older persons' unit (AOPU). However, methodology B has less construction risk and can be completed nine months earlier. On this basis, further work was undertaken to identify alternate options that would provide onsite decanting solutions for a single stage construction methodology.

A new construction methodology (methodology C) was identified by the Taskforce. It is a single stage construction methodology which includes the construction of a temporary facility above the RHH Liverpool Street forecourt to support onsite decanting during construction.

It is preferred because it has the lowest risk profile across the five risk categories considered. It has another advantage in that a further investment of an additional \$2.4 million will allow an improved design solution for mental health to be implemented. This would deliver superior clinical outcomes than what is anticipated in the existing design.

Under methodology C, the proposed program for the construction of K-Block could commence early in the New Year and is expected to be completed in late 2018.

Some stakeholders remain concerned about any design for mental health inpatients that is not located on the ground floor. Similarly, some stakeholders have expressed their preference for the rehabilitation unit to be moved to another location onsite. However, THO-South has management plans appropriate to mitigate the associated clinical risks of moving the unit offsite.

Construction will occur in close proximity to the hyperbaric chamber. The proximity presents risks to its continued availability for patient care. It is at the end of its 25-year design-life and will need to be replaced during the period of construction of K-Block.

Recommendation Five

That the project proceeds as a single stage construction methodology that includes the building of a temporary facility in the Liverpool Street forecourt that will accommodate mental health and general and women's surgery; and the reorientation of levels 2 and 3 of the K-Block design. This would require an additional investment.

Recommendation Six

That the scheduled replacement of the hyperbaric chamber be brought forward to eliminate construction risk and ensure continuity of service. This would allow for its construction to be aligned with the decanting and refurbishment program of the project.

Decanting Plan

A decanting plan to relocate hospital services has been prepared to support construction methodology C. The plan is feasible, is appropriately costed and contains minimal clinical risk to patients.

It includes 19 service relocations and 29 refurbishments, 18 of which are for long-term location of services.

The total cost of implementing the decanting plan is \$51.04 million and is included in the project budget.

Consultation with THO-South staff on operational strategies and coordinated communications between all stakeholders will be key to the successful implementation of the decanting plan.

Recommendation Seven

That the proposed decanting plan be implemented to support the preferred construction methodology.

Budget Management

The investigation has increased the visibility of the true project costs. This represents a significant decrease in project risk.

The project is expected to exceed its current budget by approximately \$61.4 million (\$71.9 million including the installation of a helipad). These increased costs are illustrative of the uncertainties that were inherent in the project before the Taskforce was commissioned.

Had the project proceeded, it is likely that it would have incurred significant delay costs associated with the Managing Contractor not being able to access the site to commence construction. These costs would likely have been at least in the order of the budget overrun predicted prior to the commissioning of the Taskforce.

Significant work undertaken to reduce the capital risks facing the project and to reduce the expected budget overrun will help provide certainty around some of the provisional sums that were included in the GCS Offers presented by the Managing Contractor in December 2013 and February 2014.

A contractor should be engaged immediately to remove hazardous materials common on sites of this age to allow construction to start as soon as possible.

ICT systems for hospitals are complex; their capability and requirements will develop over the duration of the project. It is critical that further work be undertaken to provide certainty around the ICT budget to reduce risk to the project budget. The budget management for ICT will require ongoing vigilance.

Good project management closely monitors risk through the life of the project. An external risk management specialist will also need to be engaged to undertake a regular review of the project's risks and mitigation strategies and treatment plans for the next stage of the project.

The additional \$61.4 million (or \$71.9 million including the installation of a helipad) that would be needed if the project were to proceed in accordance with the recommended design, includes \$45.2 million in contingency allowances. These contingencies must be actively managed and any savings returned to government.


Some additional operational costs are anticipated by the THO-South as a result of the additional adolescent beds and an increase in the hospital site floor plate.

It is anticipated that some of these costs will be offset by THO-South services co-locating on the RHH site, thereby achieving savings associated with offsite leases.

However, any additional operational costs will need to be carefully managed through a service agreement with the new Tasmanian Health Service (THS) on completion of the project.

Recommendation Eight

That an additional \$61.4 million be allocated to the project to allow it to proceed in accordance with the recommended design. This includes the \$2.4 million required to improve the outcome for mental health services.



The Guaranteed Construction Sum (GCS) is in the Managing Contractor's GCS Offer and is accepted by the Crown as the maximum price that may be payable to the Managing Contractor to perform all construction work in accordance with the provisions of the Managing Contractor Contract.

In lieu of a GCS Offer being available at this time, a new PCCE should be agreed with the Managing Contractor.

Guaranteed Construction Sum

The significant work undertaken on construction methodology, design and budget analysis means the project is better positioned to proceed. These developments mean the GCS Offers from December 2013 and February 2014 are no longer current. As such, it is no longer appropriate to re-engage with the Managing Contractor on the terms presented in these earlier GCS Offers.

A contract variation should be agreed with the Managing Contractor to allow the Crown to request a revised GCS Offer at the appropriate time.

In lieu of a GCS Offer being available at this time, a new PCCE should be agreed with the Managing Contractor. The agreement of a PCCE will then form the basis of the future GCS Offer.

In the period leading up to securing a revised GCS Offer, critical works should be authorised to:

- maintain momentum of the project and avoid further delays in the commencement and completion of the project and
- ensure that the project consultants are productively engaged on the project to avoid increases in the overall cost of the project.

Recommendation Nine

That a contract variation be agreed with the Managing Contractor to reset the project and allow the Crown to request a revised GCS Offer.

Recommendation Ten

The Managing Contractor be asked to agree a new Project Construction Cost Estimate as the initial step towards a revised GCS Offer.

Recommendation Eleven

That critical works are commenced as soon as possible to avoid delays to the program of works for the project. For example, the removal of hazardous materials and refurbishment works.

Governance and Project Management

Governance and project management is vital to the success of the project. Without proper oversight and decision-making, financial and construction risks can occur.

The project will require a project governance and management structure that includes:

- clearly defined roles and responsibilities
- appropriate levels of accountability to ensure empowered decision-making

- allocation of the roles of 'project owner' to DHHS and the 'client' to the THS, specifically the RHH. The THO-South will fulfil this role until the THS is established in July 2015
- ensuring the right skills mix across the project, including the procurement of specialist project management resources and
- ensuring balanced representation across the governance committees having regard to both the skills and expertise required.

The project requires direct oversight and strategic leadership after the Taskforce is decommissioned to manage ongoing contractual obligations and project requirements. Interim arrangements would be needed to progress crucial tasks while ongoing governance arrangements are established and key positions recruited. Interim governance would also be required if a decision was made to wind up the project.

Recommendation Twelve

The proposed governance and management approach be approved which is characterised by:

- an Executive Steering Committee with an independent Chair; specialist hospital construction expertise; and representation from THO-South (the client) to ensure a service delivery focus, DHHS the project and asset owner, and the Department of Treasury and Finance, given the financial significance of the project
- direct reporting from the Executive Steering Committee, through the independent Chair to the Minister for Health and the Treasurer
- a Project Director who is an employee of the State and is responsible for the delivery of the project within scope, budget and timeframes as well as project resources and processes and
- a Project Manager and project management resources with the necessary technical, contractual, and consultant and contractor management experience to deliver the project.

Recommendation Thirteen

That the interim governance arrangements be established including an interim Chair, interim Project Director and interim Deputy Project Director, in addition to the existing care and maintenance project team resources and Taskforce Secretariat.

The GCS Offer is defined in Schedule 14 of the Managing Contractor's Contract and must include the GCS, time for practical completion, design documentation that forms the basis of the GCS, a cost plan, proposed trade package break up and budget for each trade package, and a daily maximum rate for damages for delays caused by the Crown.

K-BLOCK DESIGN

Introduction

Design project management generally moves from the concept phase through an iterative process with increasing levels of detail at each stage. The Taskforce noted that the current project has transitioned through the following stages:

- the development of a sitewide Master plan (2011)
- schematic design for the project including a high level floor layout and considering high level models of care (2012-2013) and
- design development including detailed design such as room data sheets (2013-2014) which informed the Managing Contractor scope and was reflected in the GCS Offer.

Early design development included consultation with six discipline-based clinical and user groups. Each group included representation from heads of department, group managers and nurse unit managers. Beneath each group, a number of working groups were established. Meeting schedules for early 2013 provided to the Taskforce indicate a highly consultative process.

However, the design that was developed during 2013 was considerably over budget and a subsequent value management process was undertaken between May-August 2013. The Taskforce observed that this process had the most significant impact on the design, resulting in a reduction in the number of floors, a subsequent repeat of the 'blocking and stacking' of the services and a vertical slice of the building which removed 2 400 m² from the floorplate. The Taskforce noted that the reduction in clinical space was minimised through reducing the number of stairwells required as well as relocating some training and breakout spaces on each floor to a shared space.

At the time, user groups were briefed regarding the impact of the revised blocking and stacking and the vertical slice. A series of meetings were held with the relevant heads of department, nurse unit managers, group managers and clinical directors to ensure that new designs would be fit-for-purpose. Final approval and endorsement of the revised sketches were obtained from clinical leaders.

The Taskforce noted that the redesign occurred over a constrained timeframe and did not demonstrate the breadth of consultations conducted earlier. This was reflected in input from a range of stakeholders who expressed concern to the Taskforce that the consultation process was inadequate and that the new design was a compromise from the design negotiated previously.

The impact of these changes included the reduction of some rooms, combined functionality of some rooms and the reduction of staff areas on individual wards. However, the Taskforce noted that the overall design concept changed minimally and an additional staff amenity area on level 2 of K-Block was included to redress the loss of this space on individual wards. Notwithstanding, the Taskforce identified that a number of clinical areas had outstanding concerns regarding the design of their areas.

The issues raised by clinicians and some stakeholders in consultation included the alignment of the design with infection control principles, provisions in the women's, adolescents and children's precinct, the appropriateness of the design for mental health inpatients and the fact that the helipad was not included in the current stage of the *RHH Master plan*.

Infection Control

The reduction in the floor plate by 2 400m² reduced the single bed ratio across K-Block. Maximisation of the number of single bed rooms within acute care facilities is considered by some clinicians to be an essential infection control measure and is supported by specialist infection control clinicians within THO-South.

The Taskforce was advised that, on balance, the single bed ratio in most wards would be satisfactory on commissioning. Exceptions noted by THO-South clinicians included medical subspecialties (with a single bed ratio of 38 per cent) and neurosurgery (single bed ratio of 50 per cent) given the complex nature of the patients usually accommodated on these wards. The Taskforce noted that the flexibility in relation to the configuration of the neurosurgery ward, including six high dependency beds, would increase the number of single bed rooms available daily.

The Taskforce also noted that the design of K-Block would provide an increased number of negative pressure rooms to assist in restricting the spread of airborne pathogens. In addition, an eight bed isolation area within the general medical ward could be completely isolated from the rest of the ward if required.

The THO-South were asked to confirm the number and ratio of single bed rooms in K-Block on commissioning and agreed that the proportion of single bed rooms at 67 per cent was appropriate. Their advice to the Taskforce was that the single bed ratio was appropriate because of factors including:

- it is in the hospital's best interests to maximise the number of single beds
- the RHH has no current funding for additional beds
- there has been no indication in forward estimates to open additional RHH beds and
- operational policies for single room usage would be actioned and reviewed as appropriate.

The design that was developed during 2013 was considerably over budget.

The Taskforce was advised that, on balance, the single bed ratio in most wards would be satisfactory on commissioning.

Women's, Adolescents and Children's Services (WACS)


The Taskforce was advised that the reduced floor plate following the vertical slice, and co-location with both transition to home and women's surgery negatively impacted the ability for WACS to deliver a contemporary model of care.

The Taskforce was advised that around 30 per cent of presentations to maternity result in caesarean section. In the current design, women presenting with a normal birth would be accommodated in the eight birthing rooms and women with complex births including caesarean section being placed on the ward. The maternity ward will comprise 17 beds, one of which is in a single bed room. Given a longer length of stay and increased chance of complications with caesarian and complex births, advice was that contemporary practice is for women who have had caesarians or complex births to have access to single rooms.

On the request of the Taskforce, the project team considered the viability of relocating the transition to home beds from level 7 to the space currently occupied by the allied health gym on level 6. This would free up three single bed rooms, increasing the number of single bed rooms within the maternity ward to four.

Relocation of the allied health gym within K-Block poses some difficulties, however two viable options have been presented:


- relocate renal dialysis to the transit lounge area of lower ground, A-Block, allowing the allied health gym to move to level 10 or
- fit out a shell space on either level 2 or 3, made available by a reorientation of the lower levels of K-Block through the proposed redesign in the preferred construction methodology.



A swing area is a section of the mental health inpatient ward that can be closed off from access by other patients. It is primarily used to provide a clinically appropriate and safe treatment environment for vulnerable patients, such as young people.

A step down/step up model of care matches the phase of a patient's recovery with clinical input at the appropriate level of intensity.

An option for the redesign of levels 2 and 3 of K-Block that delivers an improved outcome (including outdoor space) for mental health patients has been identified and costed.



Cost estimates from the project's quantity surveyor indicate that the second option is likely to cost upwards of \$0.9 million, excluding design consultant costs. A cost estimate is yet to be sought for the first option; however, early advice is that it is likely to be a cost neutral solution. Any additional cost incurred through a redesign of WACS has not been included in the budget. Further advice from THO-South will be important ahead of a final decision being made.

Mental Health Services (MHS)

A number of mental health stakeholders including the Australian Medical Association (AMA) and Australian Nursing and Midwifery Federation (ANMF) made representations to the Taskforce on the appropriateness of the consultation process and the fit-for-purpose design of the MHS precinct in K-Block.

The Taskforce did not find evidence to indicate the consultation on the MHS design was inappropriate or inconsistent with other K-Block design consultation.

However, the Taskforce was of the opinion that there was considerable uncertainty about the MHS design. The key issues were: the location of MHS, the amenity and fit-for-purpose design of the Psychiatric Intensive Care Unit (PICU), recreational space including outdoor space, an area for vulnerable patients, bed configuration and a number of more minor matters.

The project team reviewed the detailed design at the request of the Taskforce. Overall, the review noted that the K-Block design would deliver improved amenity over the current inpatient facility including through the provision of natural light, views through large windows, more single rooms with ensuites and scaled domestic spaces. Additionally, the total bed numbers are not inconsistent with the current MHS bed numbers.

It also confirmed that the approved design exceeded the Australian Health Facilities Guidelines for indoor recreational space but did not meet the outdoor space guidelines. However, it did identify an unallocated or void space that could be used as an additional indoor recreational space in the PICU. It noted that the current design also allowed for a swing area for vulnerable patients.

The Taskforce met with MHS management to discuss the appropriateness of the K-Block design who confirmed stakeholder concerns that the design was not well aligned with contemporary practice. Their previous support for the design had been contingent on their understanding that stage two of the Master plan would be expedited where a purpose-built mental health inpatient is planned.

The Taskforce requested further consideration of the MHS design and facilitated a design meeting with MHS management representatives and the design consultants where a number of amendments were proposed in a redesign of the inpatient facility to better align it with contemporary care for mental health inpatients.

The redesign proposes a move away from the PICU to a step down/step up model with high dependency beds. The current statewide service function would be incorporated into the secure unit. The redesign would provide an additional bed (from four to five beds) and incorporate a de-escalation area in the high dependency unit, reduce shared offices and co-locate some space for RHH hotel services. It would also incorporate a swing area for the treatment of vulnerable patients that can be made secure from the rest of the ward.

An important issue was the number of single rooms on the open unit of level 2. The redesign proposed would increase the number of single rooms from five to ten. The increase in single rooms has the effect of reducing the total number of beds on level 2 by a maximum of three and a minimum of one – creating a 12-14 bed ward with 10 single bed rooms and two rooms that have capacity for two beds each. The second bed in each of these rooms would not be commissioned unless absolutely necessary. A number of amendments are proposed to staff work spaces and two additional interview rooms were added into the design.

The THO-South advised the Taskforce that flex capacity needed to be maintained in how beds are used across the open and closed wards.

The Taskforce noted that the redesign would encroach on the shared staff amenity area on level 2 by removing the resource room and replacing this with one single bedroom.

The outstanding issue remains the location of mental health inpatients.

The AMA provided the Taskforce with a discussion paper, *The Royal Hobart Hospital Redevelopment, and a proposal of a 'Centre of Excellence' for psychiatric inpatients in Southern Tasmania, October 2014*. This presented three options in order of preference:

- close beds at the Millbrook Rise Centre and a new centre housing both acute and medium beds be built at a greenfield site
- close beds at the Millbrook Rise Centre and both acute and medium beds be housed at the current RHH site, at a new facility to be determined and
- house only acute patients in K-Block after completely redrafting the floor plans. With additional new medium term units provided close by.

The Taskforce noted that the first two options were not within the scope of the Taskforce investigation.

The AMA (in conjunction with a number of key stakeholders) subsequently wrote to the Taskforce to formally note their concerns, chiefly that mental health inpatients were not accommodated on the ground floor with access to open or green spaces. It recognised that treatment in the community was the ultimate goal for mental health patients however inpatient beds should be maintained while investment in the community was increased.


The Taskforce agreed that the preferred location for mental health inpatients would be in a ground floor design but that this could only be incorporated in a subsequent stage of the Master plan. On this basis, the Taskforce noted that opportunities to progress the Master plan should be explored so as to provide the most appropriate level of contemporary care to mental health inpatients.

In the interim, the Taskforce has identified an option for the redesign of levels 2 and 3 of K-Block that delivers an improved outcome (including outdoor space) for mental health patients that has been costed at \$2.4 million.

Helipad

On the basis of representations from some senior clinicians, the Taskforce agreed to review the decision not to include a helipad in stage 1 of the Master plan (the project). Clinicians advised that the consultation regarding the appropriateness of the helipad was inadequate, and that the decision not to include it in the project was a financial decision, rather than a decision based on patient welfare.

The Taskforce is aware that the installation of a helipad has previously been identified as appropriate (*Tasmanian Medical Retrieval Services External Review, 2007*), and the *RHH Master plan* contemplated its inclusion in a future phase as funding became available. The Taskforce reviewed the considerations of previous project governance bodies. A previous decision by a RHH-led management committee rated installation of a helipad as a low priority. Subsequent governance bodies ratified this decision, noting that provision had remained in the design for future installation of a helipad.



However, noting both the acoustic and rotorwash considerations, further analysis should be undertaken before a final decision to install a helipad was made.

To review the previous work on this issue, the Taskforce requested advice from Ambulance Tasmania which supported the clinical need for a helipad. PSNK Aeronautical Services (in conjunction with the project's design consultants) were also commissioned to undertake a feasibility study for inclusion of a helipad within the scope of the project. The costing estimates were reviewed by the quantity surveyor.

PSNK Aeronautical Services advised the Taskforce on acoustic issues (impact of helicopter landing noise for K-Block, other adjacent hospital buildings and neighbouring buildings) and rotorwash, which is the physical impact of a helicopter arriving and departing on other adjacent hospital and neighbouring buildings.

The Taskforce understands that while the acoustic impact across most of the hospital can be mitigated with acoustic treatments, there are some areas that would not achieve the nominated noise level criteria. However, THO-South advised that the sound levels would be manageable.

In the absence of Tasmanian noise guidelines for helicopters, the acoustic impact on neighbouring buildings is less clear. However, the Taskforce was advised that the general Australian noise standards are considered too stringent to apply to surrounding buildings, especially given the likely infrequent use of the helipad and the community benefits anticipated.

PSNK Aeronautical Services advised that in regard to rotorwash, the addition of the helipad appears feasible, with wind velocities associated with an incoming and departing helicopter anticipated to be within normal construction standards for buildings in Hobart. However, noting both the acoustic and rotorwash considerations, further analysis should be undertaken before a final decision to install a helipad was made.

The quantity surveyor advised the Taskforce that installation of a helipad would cost \$10.5 million. This cost would include installation of a helipad deck, extension of concrete columns, acoustic treatments to K-Block, lift shaft fitout, provision of services, precast concrete for lift shaft and escape stairs, contractor and consultant fees as well as a contingency and escalation allowance.

The Taskforce noted that there would be additional ongoing recurrent costs associated with an expanded aeromedical retrieval service. The Taskforce did not seek further advice on this matter. The nature of any new service would need to be developed by Ambulance Tasmania and DHHS in the context of any revised health service plan and the funding issues addressed through the usual budgetary processes.

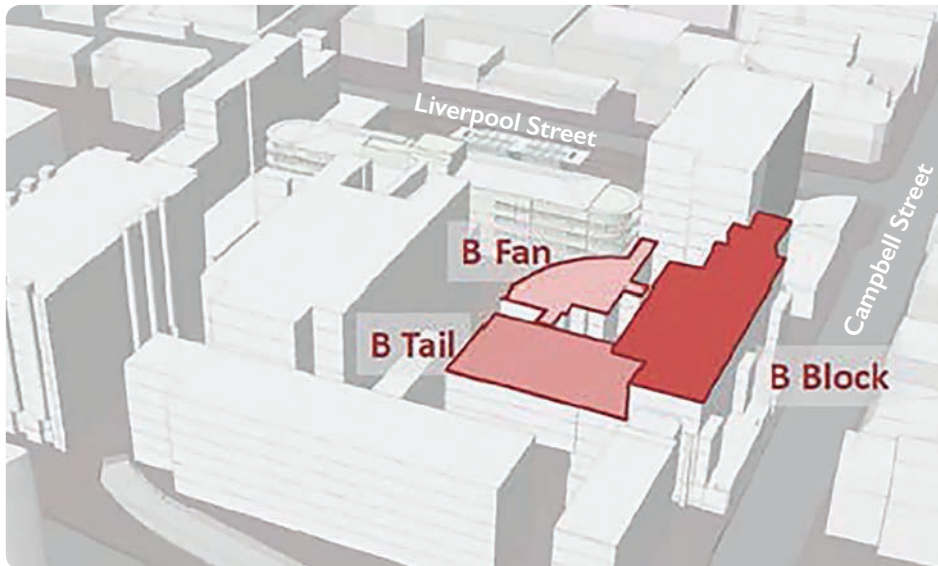
The Taskforce noted that planning approval would be required from Hobart City Council.

CONSTRUCTION METHODOLOGY

Introduction

The construction of K-Block requires the demolition of B-Block which comprises three sections: B-Fan, B-Tail and B-Block, as shown in figure 1.

Figure 1 – Position of B-Block on the RHH Site



Two methodologies were identified as appropriate for the construction of K-Block. The distribution of risk between these two methodologies has been a matter of public discussion and the primary focus of the Taskforce during its investigation of the project.


A two stage construction methodology (methodology A) was developed to facilitate onsite works with minimal disruption to the existing hospital. This was a requirement of the RHH at the time. In response to concerns regarding construction risks associated with the two stage methodology, an alternate single stage methodology (methodology B) was developed.

However, construction methodology B increased the cost and clinical risks for those services that would have to be relocated offsite due to space constraints onsite. The most significant concern was the capacity to manage acute mental health patients and acute older persons in offsite facilities.

Investigation on the Construction Methodology

Undertaking this review, the Taskforce sought to understand:

- the two construction methodologies, including the key differences
- the construction, clinical, delivery, programming and financial risks of the two construction methodologies
- how these risks could be mitigated through adoption of alternate options
- the difference in cost impact between methodologies and
- the residual risk profile for the project.



The project's design consultants provided a construction methodology feasibility study in consultation with the Managing Contractor. This examined the technical differences between the two proposed construction methodologies. Issues considered included: project context, engineering requirements, construction programs, façade design, safety, infrastructure requirements, hospital loading provisions, required decanting program, entry wayfinding, clinical review, structural engineering, and re-documentation requirements.

The Taskforce commissioned an analysis of the costs and benefits of the construction methodologies by an independent team of experts not previously engaged by the project. This brought together high-level clinical, construction, engineering and financial skills.

KPMG were engaged to undertake this work. The primary focus included construction, clinical, delivery, programming and financial risks. KPMG were supported by construction firms, Johnstaff (construction and construction delivery), and Taylor Thomson Whitting Structural Engineers (TTW; engineering expertise). KPMG also had senior health and financial management expertise on staff.

Construction Methodologies Outlined

Methodology A

Methodology A comprised the following steps:


- decanting of B-Fan
 - demolition of B-Fan
 - erection of safety trusses across B-Block, facilitating lift of materials from Campbell Street onto the site
 - erection of spanning structure across B-Tail (see figure 2) and
 - build K-1 (see figure 3)
 - decant from B-Tail and B-Block into K-1
 - demolition of B-Tail and B-Block
 - build K-2, and therefore completion of K-Block (see figure 4)
 - refurbishment of wards in K-1 consistent with final blocking and stacking and
 - decant services into K-Block.
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Figure 2 – Spanning Structure Across B-Tail

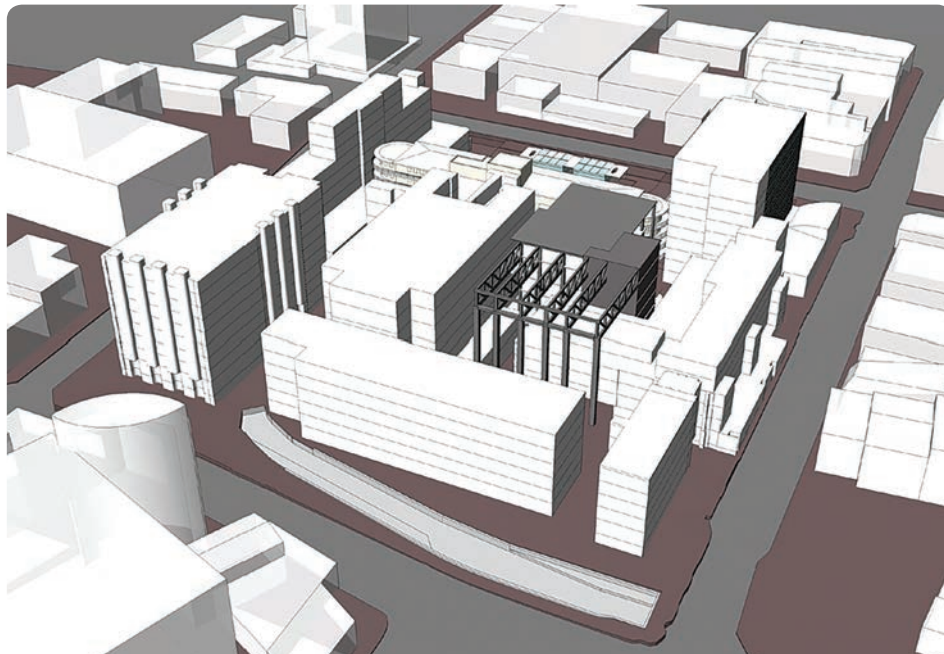
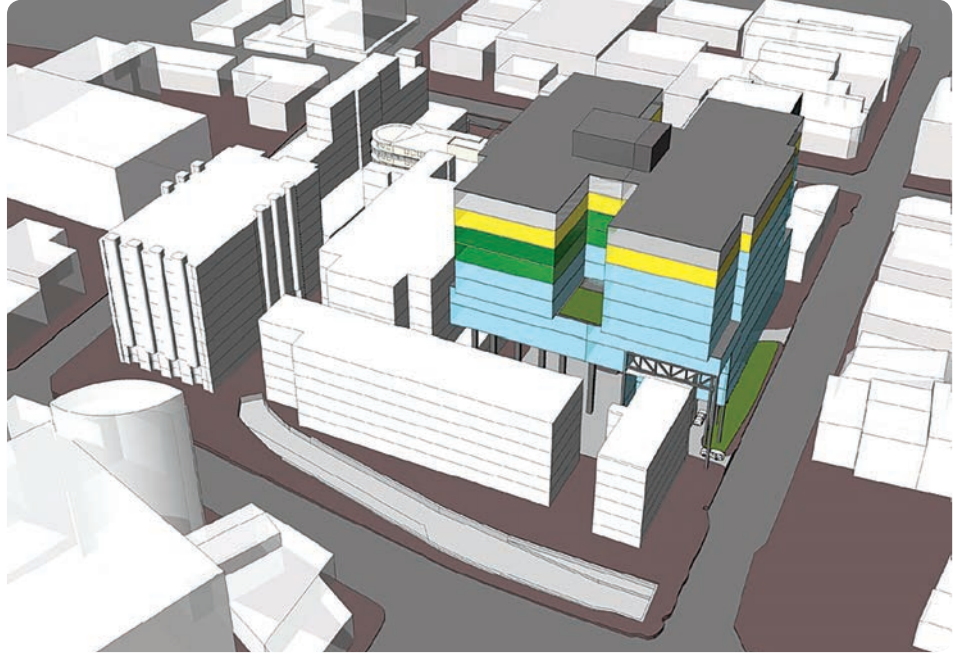


Figure 3 – Build K-I



Figure 4 – Build K-2 and Complete K-Block



Methodology A would accommodate ongoing delivery of services located in B-Tail and B-Block. In the first stage of construction, K-1 would be built directly over the top of B-Tail. Completion of K-1 allowed the necessary decanting prior to the demolition of the B-Tail (and remaining B-Block). A void under K-Block reflected the space that the B-Tail occupied prior to its demolition.

The base case decanting plan for methodology A required MHS to move temporarily to level 7 of K-1 before moving back into levels 2 and 3 of K-Block. These lower levels (all floors beneath level 4 of K-Block) would have a reduced floor plate as a result of the void, and would preclude a direct decant of MHS into their final location.

Methodology B

There were fewer steps required in methodology B because it involved the upfront demolition of B-Block. The process is as follows:

- refurbish numerous sites to support decanting of B-Block
- decant all services from B-Block (including some offsite decanting of acute services)
- demolish B-Block
- construct K-1 and K-2 concurrently and
- decant services into K-Block.

Risk Assessment Findings

Construction Risk

The assessment of construction risk was considered including: lifting over occupied buildings; noise, dust and vibration; and hazardous materials.

Methodology A presents a unique construction method without known precedent in that it constructs over but not attached to an existing building. However, there are many precedents of major redevelopments to existing hospitals over the past ten years, in which construction works have been completed in close proximity, around and above operating hospitals in other jurisdictions.

The Taskforce noted the KPMG advice that the risk of a crane dropping its load during a lift above an operating hospital was considered very low, with the risk further reduced by the spanning structure (gantry) considered under methodology A. The Taskforce received advice that the Managing Contractor's proposal to install a gantry over large portions of B-Block would mitigate construction risks beyond industry standards and further, had not been considered necessary for similar projects nationally. The resultant residual risk was considered very low and not a significant factor in assessing the preference of construction methodology A or B.

The Taskforce noted that noise, vibration and dust were assessed by KPMG as the most significant comparative risk. Every hospital redevelopment creates noise, dust and vibrations with potentially significant serious clinical risks. While these risks could not be eliminated totally, effective mitigation strategies are implemented routinely in hospitals across the country. The Taskforce was satisfied with the advice that these measures were sufficiently well established nationally to effectively mitigate these risks for the project.

The Taskforce noted that the shorter program associated with methodology B would reduce exposure to noise, dust and vibration. However, there is a converse risk that the increased decanting requirements associated with a single stage methodology would increase exposure to hazardous materials without appropriate mitigation strategies. Early laboratory test results indicate the presence of asbestos in concealed locations through a number of areas that require refurbishment to support the decanting plan. The Taskforce recommends that procurement of a contractor to remove hazardous materials be expedited to minimise delay damages.

The Taskforce recommends that procurement of a contractor to remove hazardous materials be expedited to minimise delay damages.

Hyperbaric Chamber

The Taskforce commissioned additional work on the risk associated with the hyperbaric chamber.

The hyperbaric chamber is located within 2-3 metres of the proposed K-Block pillars. Concerns have been expressed regarding stress from construction activity, the impact of noise and vibration on patients and staff and the potential for a crane drop to cause catastrophic failure of the chamber.

Advice provided indicated that any pipe fracture and/or compromise to the integrity of the chamber could cause rapid decompression of the chamber and decompression illness for patients and clinical staff. At worst case, death of the chamber occupants would occur.

In the event of an explosive decompression, the likely impact is significant and could include damage to surrounding buildings, human injury and death. There could also be an impact on the hospital's oxygen tower.

The Taskforce sought advice from the project's engineers, AECOM, on the construction risks to the hyperbaric chamber.

AECOM provided a range of recommendations to address potential noise and vibration impacts on staff and patients and risks arising from falling materials. They advised that piling or excavation for the foundations near the hyperbaric chamber should be undertaken outside of the hyperbaric chamber's operating hours. Further investigation should also be undertaken to assess the noise and vibration impacts from nominated construction activities prior to the commencement of works.

With regard to the risks associated with falling material, AECOM advised that an overhead gantry should be installed above the hyperbaric chamber, similar to those installed where cranes are working over footpaths.

AECOM engaged a specialist engineer, Tawfik, to assess the risks associated with metal fatigue in pipes under pressure. Tawfik was not able to provide definitive advice on these risks but advised that further engineering investigations would be warranted before construction commenced.

Notwithstanding the advice from AECOM that the risks can be managed (at significant cost), the Taskforce noted that the hyperbaric chamber has been in clinical operation since 1991. The chamber was built and installed under the then current Australian and international standards which allows the chamber to continue to operate under a grandfather clause. The chamber no longer complies with current standards in many areas.

The hyperbaric unit advised that the chamber will be beyond its design life by 2016 and would need to be replaced. Furthermore, should any part of the unit or chamber be modified or altered in any way, it will be necessary to adhere to the current standards. The hyperbaric unit has received advice that it is not possible to refit and modify the chamber to comply with current requirements of hospital hyperbaric facilities. There is a significant risk, therefore, that a relatively minor fault could cause the chamber to shut down permanently or for a prolonged period of maintenance.

If the hyperbaric chamber was unavailable for any period of time, there would be no provision of medical treatment for hospital patients or emergency care for diving incidents and the like. This would have a significant impact on the Tasmanian aquaculture, abalone, dive training and recreational diving industries.

The hyperbaric unit advised that the cost of moving the current facility to F-Block and replacing the hyperbaric chamber is \$3 to 4 million. Further costs could be incurred if a new purpose built facility is required (up to \$9 million).

As it appears that the hyperbaric chamber will need to be replaced during the period of construction of K-Block the Taskforce recommends that planning proceeds for its replacement as a matter of priority so that the work can be progressed during the project's decanting and refurbishment period (during 2015). This would avoid unnecessary costs associated with delays in the main construction program caused by risk mitigation measures during the operation of the hyperbaric chamber, ongoing inspections of the hyperbaric chamber infrastructure or conflicts between the construction program for K-Block and any construction required to eventually house a new hyperbaric chamber.

Clinical Risk

On the request of the Taskforce, the THO-South provided a base case decanting plan which provided sufficient information to KPMG to assess the clinical risk of decanting. This focused on the offsite decanting of: MHS, the rehabilitation unit, AOPU, and the transitional care program. It also considered the proposed service change which would replace PICU with an eight bed Psychiatric Assessment and Planning Unit (PAPU) because of a reduction in floor space available to MHS in methodology A initially proposed.

The Taskforce concurred with the concerns raised by the ESC in its *Project Status Report*, regarding the decanting plan.

KPMG determined that the key considerations for offsite decanting included legislative and/or accreditation standards, role delineation, emergency response capacity and service efficiency.

Both construction methodologies require service relocations. The key difference between the methodologies is the requirement for methodology B to decant significant acute clinical services offsite. However, the Taskforce noted that while MHS would remain onsite during construction under methodology A, the PAPU would be relocated adjacent to the emergency department.

The key clinical concern was the proposal to locate acute mental health services offsite. The Taskforce received advice that there was no current comparable example from South Australia, Victoria or New South Wales for locating inpatient mental health beds standalone and separate to an acute hospital site. In its report to the Taskforce, KPMG noted significant concerns with regards to accreditation requirements, resourcing and the safety of staff and patients. Safety was also a serious concern raised by consumers and clinicians during stakeholder consultation, who did not feel confident in the development of appropriate mitigation strategies.

KPMG further advised the Taskforce that decanting of the rehabilitation and AOPU to the Repatriation Centre, while not desirable was considered manageable.

The Taskforce noted that the key clinical risk identified by KPMG with methodology B was the impact of offsite decanting to respond appropriately to service emergency calls. This was also highlighted to the Taskforce during stakeholder consultations. The key risks are code black, threat to personal safety in MHS and code blue, a medical emergency, for both AOPU and MHS.


There are significant staffing costs associated with facilitating appropriate non-medical emergency response services (for codes black, escort and patient assist) at offsite locations. Medical emergency response services (code blue and the Medical Emergency Team) would require ambulance transport to the RHH. The Taskforce noted this could be a particular risk for acute older persons who may experience significant adverse consequences as a result of not being collocated with the hospital.

Delivery Risk

Delivery risk includes risks associated with the skills and resources required to manage the construction and decanting programs (including clinical staff).

The Taskforce noted the advice that there was little difference in delivery risk between the two construction methodologies and noted the previous success of joint ventures in Tasmania between John Holland and Fairbrother such as the new University of Tasmania medical science precinct. However, KPMG did caution that methodology B may be associated with increased clinical delivery risk given that recruitment of additional clinical and support staff for offsite locations may be difficult, especially for highly specialised roles.

Whilst both methodologies could be delivered, it was noted that methodology A would involve a longer construction program. The construction methodology feasibility study undertaken by the design consultants in consultation with the Managing Contractor indicated that labour availability would be more easily managed over a longer program (including site amenities) and that there would be a requirement for shared access to the site and emergency planning due to the integration of works associated with a single stage construction (methodology B).



Hazardous materials represented a significant program risk for both methodologies and had the potential to delay the project.

Programming Risk

KPMG advised that a *Part 6 Asbestos and Hazardous Materials Audit* needed to be conducted because its advice represented a significant program risk for both methodologies and had the potential to delay the project. Moreover, this risk could be mitigated by expediting the procurement of a contractor to remove the hazardous materials that had been identified.

The Taskforce commissioned the *Part 6 Asbestos and Hazardous Material Audit*.

The Taskforce noted that methodology A faced the greatest risk to delayed project completion. This was due to the staging of refurbishment works and decanting, specifically the commissioning of K-1 to allow for demolition of B-Block, before K-2 could be built.

Conversely, methodology B faces greater upfront programming risk due to the increased complexity associated with decanting refurbishment work that must be completed in advance of commencing the full demolition of B-Block.

Given the complexities of the risks associated with both methodologies A and B, there is no clear preference to a construction methodology based on programming risk. All of these risks would need to be considered carefully and managed to prevent an extension in the project's program.

Notwithstanding, the Taskforce noted that adoption of methodology B would have a net program reduction of nine months when compared with methodology A.

It is estimated that the single stage methodology will take 44 months to complete. If the project is to proceed and a new program negotiated, a new completion date would need to be negotiated with the Commonwealth Government.

Financial Risk

Financial risk across the two construction methodologies included capital cost and operating cost during the life of the project.

Based on the scope of the base case decanting plans, the capital cost for decant refurbishment for construction methodology B is higher than methodology A. This is largely due to the significant operational costs associated with establishing decanted acute services at St John's Park and the Repatriation Centre proposed in the base case decanting plan. With these costs included, the costs for methodology B would be significantly higher.

The capital cost for decanting and refurbishment for methodology A is lower, due to the smaller program of works required. However, this should be considered in the context of an estimated increase in the costs of the construction of K-Block in two stages due to the longer program and more complex construction process. The operational costs for decanted services as part of a two stage methodology would only be marginally higher than current RHH operational costs. If offsite decanting was required the operational costs are significantly increased.

Summary of Risk Profile

The Taskforce agreed that construction methodology B was the preferred construction methodology. However, the clinical risks associated with offsite decanting were detrimental and an alternative should be found. The clinical risks relate to the need to provide emergency medical and security responses to acute older persons and mental health inpatients.

Methodology A had fewer decanting issues and it was considered that the construction risks would be manageable. However it would take longer by nine months, there was a risk of mid-program delay and would have increased impacts from noise, vibration and dust.

During the KPMG assessment hybrid alternatives for both methodologies were identified. The Taskforce determined that further exploration of the hybrids were warranted.

The clinical risks associated with offsite decanting were detrimental and an alternative should be found.

Methodology A Hybrid – Demolish B-Tail

The investigation of the Taskforce led to the development of hybrid methodology A which would involve the early demolition of the B-Tail building and avoid the cost of the protective structures required if the building remained in place. It would also allow for the construction of a larger floorplate to accommodate MHS in its final location earlier in the program.

The costs uniquely attributable to building over B-Tail building and undertaking a temporary decant for MHS are \$1.63 million in additional fitout costs and \$1.54 million in works to build a gantry over B-Tail.

Construction risk can be minimised and the outcome for MHS improved by exploring a refinement to methodology A. This would provide additional floor space and remove the need for trusses to span B-Tail required by this methodology. This hybrid can be summarised in the following steps:

- decant B-Fan and B-Tail
- demolish B-Tail and B-Fan concurrently
- reorient the lower levels of K-I to provide additional floor space and an optimised mental health floor plan at a cost of approximately \$2.4 million and
- decant Mental Health earlier, avoiding a double decant.

The design consultants advised that the option is feasible. The quantity surveyor advised that there is a net cost reduction to construction methodology A of \$0.8 million. THO-South advised the Taskforce that the proposal has preferable clinical outcomes.

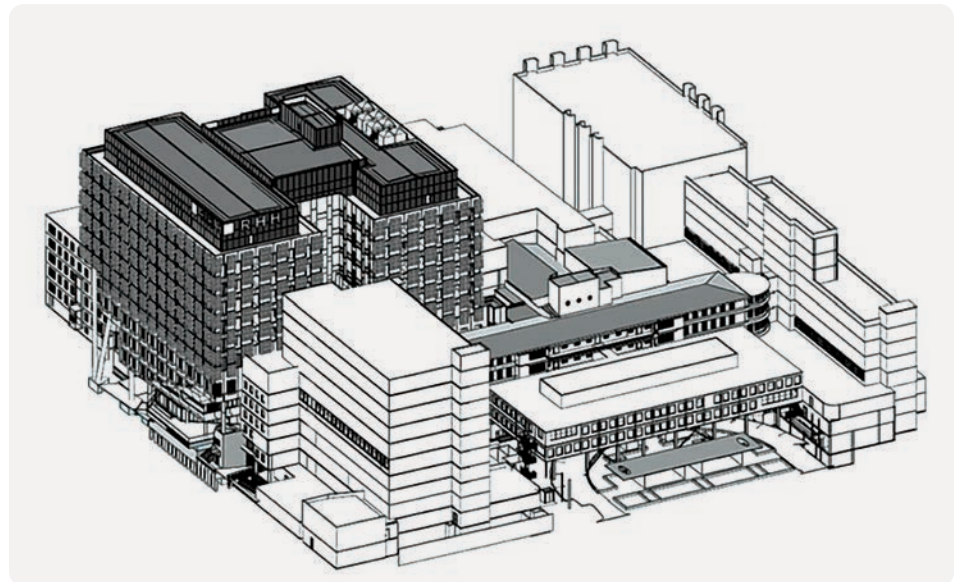
Methodology B Hybrid – Accommodate MHS and AOPU Onsite

The investigation of the Taskforce led to hybrid methodology B (single stage) which would involve constructing a temporary facility above the Liverpool Street forecourt (see figure 5).

Identification of an onsite option to decant MHS and the AOPU would mitigate the key clinical risks facing the project and allow for the adoption of a single stage construction methodology. The significant costs associated with delivery of services at an offsite location would also be avoided.

The Taskforce has received advice that MHS and the AOPU could be accommodated in a temporary two storey facility to be constructed above the Liverpool Street forecourt of the hospital.

Figure 5 Temporary Facility in the Liverpool Street Forecourt



The design consultants considered the feasibility of a temporary facility and advised that there are no structural or engineering impediments to the construction of a two storey temporary accommodation facility. The temporary facility would be limited to two storeys because of the structural integrity of the Liverpool Street forecourt.

The key features of the temporary facility are:

- it can be constructed offsite reducing timeframes and consequently onsite disruption
- it can be connected directly to C-Block
- similar facilities have been used on other hospital campuses and
- it can be readily dismantled and relocated when required.

The estimated cost of the temporary facility is around \$18 million but it will avoid capital and operating costs totaling \$29.6 million. This represents a net benefit to the methodology B costs of \$11.6 million.

Methodology C – The Preferred Methodology

Methodology C takes the best aspects of the previous methodologies. This is a single stage construction methodology that includes the construction of a temporary facility in the Liverpool Street forecourt and the reorientation of levels 2 and 3 of K-Block design. Methodology C capitalises on the shorter construction duration of methodology B and optimises clinical outcomes for patients both during construction, and in the design for K-Block.

The construction of the temporary facility significantly reduces clinical risk because it allows MHS and AOPU to remain onsite during construction.

Methodology C would provide more contemporary health planning outcomes for MHS and WACS by optimising available space in the reoriented lower levels of K-Block. This will enable the delivery of improved models of care including providing additional outdoor recreational space for mental health patients.

The proposed change responds to the majority of concerns identified regarding outcomes for MHS in the design of K-Block at a cost of \$2.4 million.

The proposed program for the construction of K-Block could potentially commence early in the New Year and is expected to be completed in late 2018. It includes:

- two months for initial start-up and to commence refurbishment documentation (February to March 2015)
- 12 months for decant and refurbishment (running in parallel with design documentation April 2015 to April 2016)
- three months demolition of B-block (April 2016 to June 2016)
- 11 months for construction of foundations and lower levels of K-1 (July 2016 to June 2017) and
- 15-16 months for completion of K-1 and K-2 and the façade (June 2017 to September 2018).

Preliminary advice from the Managing Contractor is that this program would not be affected by the construction of a temporary facility above the Liverpool Street forecourt or the revision of the design for levels 2 and 3 of K-Block. This would, however, need to be confirmed in advance of considering a revised GCS Offer.

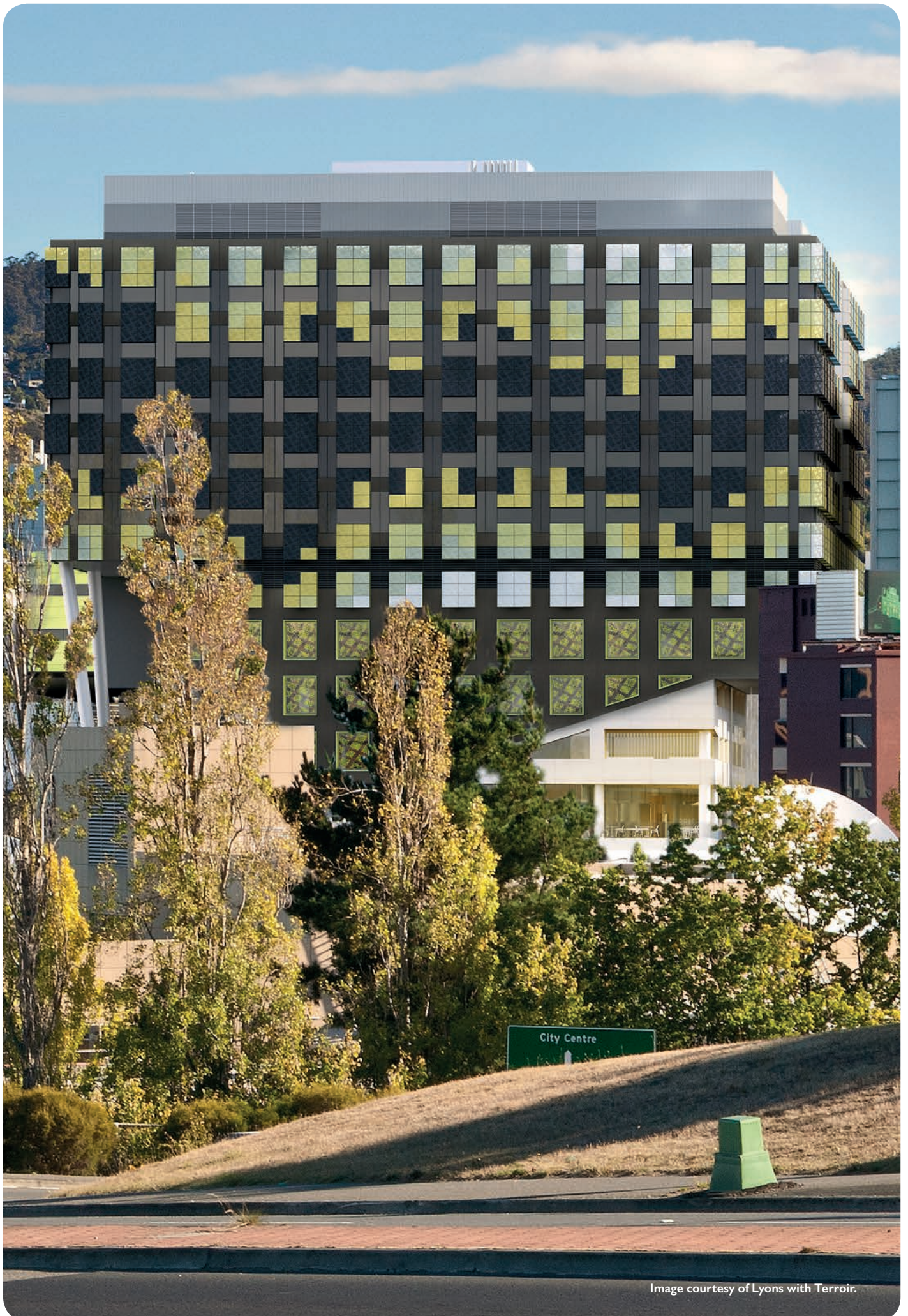


Image courtesy of Lyons with Terroir.

DECANTING PLAN

Introduction

Relocating services is not an unusual business requirement of hospital management. However, the decanting required to build K-Block is more detailed. This is because of the number and sequencing of moves, and the breadth of refurbishments necessary including the removal of hazardous materials. Additionally, it must all take place on an operational hospital site.

The proposed decanting plan was based on the single stage base case developed by THO-South to support the KPMG risk assessment commissioned by the Taskforce. This was subsequently revised by the project team and the design consultants at the request of the Taskforce to reflect the requirements of construction methodology C.

The decanting plan for the proposed new methodology requires 19 service relocations.

Service Relocations During Construction

The decanting plan for the proposed new methodology requires 19 service relocations. This involves the relocation of three services to offsite locations: the 1 800 mental health hotline from Mistral Place to make way for the clozapine clinic and the relocation of the rehabilitation unit to the Peacock Building at the Repatriation Centre, Davey Street, Hobart. A small number of relocations also occurred prior to the commissioning of the Taskforce.

A critical feature of the recommended decanting plan is the construction of a 3 000 m², temporary building in the Liverpool Street forecourt above the main entrance and drop-off point of the RHH. This will allow acute mental health patients and the AOPU to remain onsite, negating the significant clinical risk associated with moving these patients offsite. It will also relocate mental health longer stay inpatients from the immediate construction site, significantly reducing the day to day disruption they would have experienced if they had remained in B-Block under the two stage methodology.

The Department of Psychiatric Medicine would be located on level 1 of the temporary building with PICU and general and women's surgical inpatients on level 2. The temporary facility would provide a minimum of 29 mental health beds including five PICU beds, and seclusion and de-escalation areas. It would also include a minimum of 21 surgical beds and a plant room. The facility would have access directly into C-Block at levels 2 and 3 enabling lift access to the emergency department and other clinical services.


The Liverpool Street RHH entrance would be closed during construction of the temporary facility, and disassembly and relocation after K-Block was commissioned. The temporary facility can be dismantled and relocated or sold once it is no longer needed.

Table 1 identifies key clinical service and offices, their current location and new locations for these services to allow the decanting and demolition of B-Block under the proposed plan.

Table 1 – Key Service Relocations During Construction

Service	Current Location	Service Relocation During Construction
Clozapine Clinic (outpatients)	Lower Ground, B-Block, opening onto Campbell Street	Ground Floor, Mistral Place, Liverpool Street
Mental Health – Psychiatric Intensive Care Unit (PICU)	Lower Ground, B-Block, opening onto Campbell Street	Level 2, temporary building, Liverpool Street forecourt (access to Level 3, C-Block)
Mental Health – Department of Psychiatric Medicine	Ground Floor, B-Block	Level 1, temporary building, Liverpool Street forecourt (access to Level 2, C-Block)
General Medicine, Respiratory and Infectious Diseases Inpatients	Level 1, B-Block North	Level 9, A-Block plus open additional beds in the APU on Lower Ground, H-Block
Iodine Therapy Inpatients (2 rooms)	Level 1, B-Block North	Level 6, A-Block*
Q-Class Rooms	Level 1, B-Block North	Level 1, H-Block (DCCM)
Sub-Specialty Medicine Inpatients	Level 1, B-Block South (B-Tail)	Level 7, A-Block
Rehabilitation Unit including the Rehabilitation Gym	Level 7, A-Block	Level 2, Peacock Building, Repatriation Centre, 90 Davey Street
General and Women's Surgical Inpatients	Level 2, B-Block North	Level 2, temporary building, Liverpool Street Forecourt (access to Level 3, C-Block)
Stomal Therapy	Level 2, B-Block North	Level 4, C-Block
Orthopaedic Inpatients	Level 2, B-Block South	Level 5, A-Block (with Surgical Specialties)
High Volume Short Stay (HVSS)	Level 5, A-Block	Level 4, C-Block North (Becomes Extended Day Surgery)
Day of Surgery Admissions (DOSA)	Level 4, C-Block North	Level 4, C-Block South
Neurology Offices, Neurophysiology Offices, Endocrinology Offices	Level 3, B-Block	Level 3, C-Block
Pre-Operative Surgical Interventions (POSI) and Spinal Assessment Centre (SAC)	Level 3, B-Block	Level 2, H-Block
Ambulatory Care Centre (ACC)	Level 4, B-Block	Level 2, C- and D-Block
Acute Renal Dialysis	Level 4, B-Block	Lower Ground, A-Block (Transit Lounge)
Cardiothoracic and Cardiology Offices	Level 2, C- and D-Blocks	Level 2, C-Block
Cardiac Rehabilitation Gym	Level 2, C- and D-Blocks	Level 2, H-Block

*A variation to the location of Iodine Therapy Inpatients is currently under consideration. The proposed decanting plan may be amended to move this service to Inpatient Oncology Level 2, A-Block.



A number of other minor and short term decants of administrative and other spaces are also required.

Clinical services and offices are currently located in A-, B-, C-, D-, and H-Blocks of the RHH. The blocking and stacking of the hospital campus demonstrates how services are located across floors and buildings to maximise efficiencies in service delivery and make best use of available assets.

The decanting of B-Block would require the relocation of some services from other buildings for optimal blocking and stacking. It includes a number of co-dependencies where wards or offices relocate to make room for the relocation of other wards or offices.

There are a number of additional administrative decants required which would occur in E- and F-Blocks.

The decanting feasibility study produced by the design consultants (September 2014) noted that the decanting and refurbishments would be unlikely to occur without some level of disruption to the operations of the RHH. Staging of refurbishment works would be necessary to minimise this impact.

While construction methodology C is shorter in construction duration it would require a longer refurbishment and decanting program including the construction of the temporary building in the Liverpool Street forecourt.

There are 29 sites that would be refurbished and the majority of works are classified as heavy refurbishments. Heavy refurbishments refer to works to an existing building that include minor demolition of all walls, ceilings, floor coverings and building services with a total refit of the area including new building services and plant.

Due to the staging required to support the decanting plan, refurbishment works would be staged prior to the demolition of B-Block and construction of K-Block. Many refurbished areas would be used by services in the long term.

The total cost estimate to implement the decanting plan is \$51.04 million. This includes a provision of 20 per cent for the removal of hazardous materials, and consultant fees.

Current blocking and stacking at the RHH and new locations during construction are depicted in figures 6 and 7.

Figure 6 – Current RHH Clinical Services Blocking and Stacking

Level 9	Vacant for Future Decant				
Level 8	Day Oncology/ Allied Health Inpatients				
Level 7	Rehabilitation				
Level 6	Acute Older Person's Unit				
Level 5	Surgical Specialties/ HVSS			Pharmacy	Doctors Quarters
Level 4	Day Surgery/ Endoscopy	Ambulatory Care Centre/ Acute Renal Dialysis	Theatres/ Surgical Services Offices/ DOSA	Theatres/ CSSD	Anaesthetics Depart/ Surgical Offices
Level 3	Paediatrics Unit	Neurology/ Neurophysiology/ Endocrinology/ POSI/ SAC	Vacant for Future Decant (ex-WACS)	Maternity/ Birthing/ NPICU/ TTH	WACS Offices
				Decanting Space	Decanting Space
Level 2	Oncology Inpatients	General Surgical/ Gynae/Gynae Onc Surg/ Orthopaedics	Vacant for Future Decant	Cardiology Offices/ Cardiothoracic/ Cardio Gym	Physio/ Physio Store
Level 1	Oncology Clinics	General Medicine/ Respiratory/ Subspecialty Medicine	Chapel + Misc. Offices	Pathology	Neurosurgery/ Neurology
				DCCM Offices	DCCM
Ground	Holman Clinic	DPM	Entrance/ Communications	Kitchen/ Cafeteria	Medical Imaging
Lower Ground	Extended Stay Unit	PICU/ Clozapine Clinic		Mortuary/ Supply/ Environmental Services	APU/ EMU
	Campbell Street Entrance				Paediatrics Clinics
	A Block	B Block	C Block	D Block	H Block

Note:

- E- and F-Blocks are not depicted because they do not accommodate clinical services or offices.

Legend

WACS

Other

Mental Health

Medicine


Surgery

Figure 7 – Construction Clinical Services Blocking and Stacking

Level 9	General Medicine/ Respiratory/ Infectious Diseases				
Level 8	Day Oncology/ Allied Health Inpatients				
Level 7	Sub-Specialty Medicine				
Level 6	Acute Older Person's Unit/				
	Iodine Therapy (2 rooms)				
Level 5	Surgical Specialties Orthopaedic Inpatients		Pharmacy		Doctors Quarters
Level 4	Day Surgery/ Endoscopy		Theatres/ Surgical Services Offices/ Stomal Therapy/ Extended Day Surgery (ex-HVSS) (North)/ DOSA (South)	Theatres/ CSSD	Anaesthetics Depart/ Surgical Offices
Level 3	Paediatrics Unit	General and Women's Surgical	Neurology Offices/ Neurophysiology Offices/ Endocrinology Offices	Maternity/ Birthing/ NPICU/ TTH	WACS Offices
		PICU			
Level 2	Oncology Inpatients	DPM	Cardiology Offices/ Cardiology/ Cardiothoracic/	Physio/ Physio Store Cardio Gym/ POSI and SAC	
			Ambulatory Care Centre		
Level 1	Oncology Clinics	Chapel + Misc. Offices		Pathology	Neurosurgery/ Neurology
				DCCM Offices	DCCM/ Q-Class Room
Ground	Holman Clinic	Entrance/ Communications		Kitchen/ Cafeteria	Medical Imaging
Lower Ground	Extended Stay Unit		Mortuary/ Supply/ Environmental Services		APU/ EMU
	Acute Renal Dialysis/ Campbell Street Entrance				Paediatrics Clinics
					General Medicine, Respiratory/ Infectious Diseases
A Block		Forecourt	C Block	D Block	H Block

Notes:

- E- and F-Blocks are not depicted because they do not accommodate clinical services or offices.
- Clozapine Clinic relocate to Mistral Place, Liverpool Street.
- Holman Clinic meeting room, staff room and offices to Ground Floor of A-Block.
- Rehabilitation unit including rehabilitation gym to Level 2, Peacock Building, Repatriation Centre.
- Women's ante-natal clinic was relocated to 329 Main Road, Glenorchy prior to commissioning of the Taskforce.
- Continence Clinic was relocated to the Clarence Integrated Care Centre prior to the commissioning of the Taskforce.
- Refurbishment works to relocate the cardiology offices were completed prior to the commissioning of the Taskforce.
- Refurbishment works to relocate the 1800 Mental Health number at the Peacock Centre, Elphinstone Road, North Hobart have occurred.



Management of bed capacity is normal business and THO-South will continue to implement a bed management plan to ensure adequate beds are available for patients.

Effects of the Decanting Plan on Bed Capacity

The project team provided advice regarding the number of beds that would be available if the decanting plan was implemented. The project team advised that there would be a small decrease in the number of flexible beds during the construction of K-Block.

However, the majority of these beds are MHS beds and the K-Block design similarly reduces MHS bed numbers. Moreover, THO-South advised the Taskforce that an early reduction of MHS beds had already occurred. In real terms there will be one less flex bed available during decanting.

The ANMF have raised concern regarding the bed capacity of the RHH resulting from the relocation of services and reduced hospital capacity. The THO-South has confirmed the management of bed capacity is normal business and they will continue to implement a bed management plan to ensure adequate beds are available for patients.

Implementation of the Decanting Plan

The decanting plan will take approximately 12 months to implement. Detailed design requirements will occur in parallel during this time and would be managed by the Managing Contractor.

Coordinated communications between THO-South, the project team, and the Managing Contractor would be essential.

Consultation was a feature of the decanting plans developed by THO-South earlier this year and then again for the base case proposals used in the construction methodology risk assessment. This process sought advice on the issues and risks related to the decanting plans. The Taskforce noted that while consultation involved representative staff groups, further and broader consultation with staff focusing on the effective implementation of the approved decanting plan may be required. Specifically, THO-South have an agreement with industrial organisations to develop formal change proposals to ensure that change and project management is systematically implemented.

RECOMMENDATIONS

RECOMMENDATIONS

Recommendation One

That considering the significant barriers of both cost and time, the significant investment in the current site, and the likely impacts on the CBD of relocation, every effort should be made to proceed with the current project.

Recommendation Two

That work continues on the redesign of the women's, adolescents and children's services precinct to increase the number of single beds available for women experiencing caesarian or complex births (noting possible cost implications).

Recommendation Three

That levels 2 and 3 designated for MHS be redesigned to deliver improved outcomes for mental health patients. This recommendation should be considered in conjunction with Recommendation Five.

Recommendation Four

That the installation of a helipad on the roof of K-Block be considered as part of the current redevelopment. This would require an additional investment.

Recommendation Five

That the project proceeds as a single stage construction methodology that includes the building of a temporary facility in the Liverpool Street forecourt that will accommodate mental health and general and women's surgery; and the reorientation of levels 2 and 3 of the K-Block design. This would require an additional investment.

Recommendation Six

That the scheduled replacement of the hyperbaric chamber be brought forward to eliminate construction risk and ensure continuity of service. This would allow for its construction to be aligned with the decanting and refurbishment program of the project.

Recommendation Seven

That the proposed decanting plan be implemented to support the preferred construction methodology.

Recommendation Eight

That an additional \$61.4 million be allocated to the project to allow it to proceed in accordance with the recommended design. This includes the \$2.4 million required to improve the outcome for MHS.



Recommendation Nine

That a contract variation be agreed with the Managing Contractor to reset the project and allow the Crown to request a revised GCS Offer.

Recommendation Ten

The Managing Contractor be asked to agree a new Project Construction Cost Estimate as the initial step towards a revised GCS Offer.

Recommendation Eleven

That critical works are commenced as soon as possible to avoid delays to the program of works for the project. For example, the removal of hazardous materials and refurbishment works.


Recommendation Twelve

The proposed governance and management approach be approved which is characterised by:

- an Executive Steering Committee with an independent Chair; specialist hospital construction expertise; and representation from, the THO-South (the client) to ensure a service delivery focus, DHHS the project and asset owner, and the Department of Treasury and Finance, given the financial significance of the project
- direct reporting from the Executive Steering Committee, through the independent Chair to the Minister for Health and the Treasurer
- a Project Director who is an employee of the State and is responsible for the delivery of the project within scope, budget and timeframes as well as project resources and processes and
- a Project Manager and project management resources with the necessary technical, contractual, and consultant and contractor management experience to deliver the project.

Recommendation Thirteen

That the interim governance arrangements be established including an interim Chair, interim Project Director and interim Deputy Project Director, in addition to the existing care and maintenance project team resources and Taskforce Secretariat.



APPENDIX I – TERMS OF REFERENCE

APPENDIX I – TERMS OF REFERENCE

Objective

The Taskforce is established by the appointment of members by the Minister for Health under Crown Prerogative instruments to review key elements of the Royal Hobart Hospital Redevelopment Project and provide advice and recommendations to the Minister for Health on its future.

Scope

The Taskforce is to undertake a process of review, investigation and refinement of the Project that:

1. Examines and makes recommendations regarding the overall capital and operating financial risk profile of the Project and the hospital following completion of the works.
2. Examines the construction methodology of the Project and evaluates its achievability, level of risk to patients, costs implications and timeframes against viable alternative methods of construction and makes a recommendation about the preferred construction methodology for proceeding with the Project.
3. Recommends a comprehensive, costed and implementable decanting plan that supports the preferred construction methodology identified through its work.
4. Recommends a project governance and management structure sufficient and able to effectively and efficiently govern and manage the next stage of the project.
5. Provides an overall recommendation on whether to proceed with the acceptance of the GCS Offer presented by the Managing Contractor, to reject that offer or to proceed with another course of action.
6. Examines and makes recommendations on any other matters related thereto.

In undertaking its work, the Taskforce must consider the role of the Royal Hobart Hospital Redevelopment in the broader context of Tasmania's health care system in to the future.

The final output of the Taskforce will be a report to Cabinet, through the Minister for Health, addressing the issues outlined above.

The Taskforce will also oversee care and maintenance aspects of the project and provide strategic advice to the Minister for Health about matters relating to this to ensure that new and emerging risks are not arising in an environment separate from the review and are capable of being addressed.

Timeframe

It is envisaged that the Rescue take no longer than six months to complete from the time of commencement.

Reporting

The Taskforce will report to the Minister for Health and will provide monthly reports to Cabinet and the Australian Government during this period through the Minister for Health.

APPENDIX 2 – MEMBERSHIP OF THE TASKFORCE

John Ramsay

Taskforce Chair, Mr Ramsay, has significant experience in health and human service delivery in Tasmania.

He is the Director and Principal of John Ramsay and Associates Pty Ltd which provides consulting services in health and human services and a former Secretary for the Tasmanian Department of Health and Human Services.

He has legal qualifications and is the Chairperson of the Board of the Environmental Protection Authority of Tasmania and Member of the Tasmanian Planning Commission and Board of the Menzies Research Institute Tasmania.

Jo Thorley

Ms Jo Thorley, Taskforce Member, brings significant experience in major hospitals redevelopment, project direction, and health services and facility planning, supported by dual qualifications in nursing and architecture.

She is currently the Project Director for WA Country Health Service \$1.5+ billion dollar program of capital works, has provided project direction of the \$1.2 billion Royal North Shore Hospital and Community Health Services Redevelopment, St Leonards NSW and Facility Planning Management of the \$440 million Central Sydney Area Health Service Resource Transition Program Redevelopment. She is currently Director Aurora Projects.

Dr Dan Norton AO

Dr Dan Norton AO, Taskforce Member, has worked in major infrastructure industries, central government and international commodity marketing. His extensive experience includes financial management reform, health research, health services, ICT, public sector management and commercial negotiations.

Dan was Chairman, Menzies Research Institute Tasmania during its redevelopment. He is currently Chairman of TasPorts, Chairman of TasNetworks, Deputy Chairman of TasWater and a Director of WinEnergy Pty Ltd and consulting company Trinitas Pty Ltd. He is also an associate of dandolopartners.

His former positions include Secretary, Department of Premier and Cabinet and Deputy Secretary, Department of Treasury and Finance in Tasmania.



Waterfront façade. Image courtesy of Lyons with Terroir.

