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ACT Health Directorate

Canberra Hospital Masterplan Phase 2 Implementation Business Case

28 February 2024

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Project name:	Canberra Hospital Master Plan Phase 2 Project
Tier:	Tier 1
Risk assessment (high/med/low):	[REDACTED]
Total estimated project capital cost (P90, \$m, nominal):	[REDACTED]
Whole-of-life cashflow (P90, \$m, nominal):	[REDACTED]
Funding requested (\$m):	[REDACTED]
Recommended delivery model:	[REDACTED]
Sponsoring Agency:	ACT Health Directorate
Sponsoring Minister:	Rachel Stephen Smith
Contact officer:	Liz Lopa, Deputy Director General ACT Health Directorate liz.lopea@act.gov.au
Business Case advisors:	Ernest and Young (EY)

Sign-off

27 | 3 | 24

Liz Lopa

Print Name

Signature

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Glossary

Abbreviation	Description
ACT	Australian Capital Territory
ACTHD	Australian Capital Territory Health Directorate
ACTIA	Australian Capital Territory Insurance Authority
ALOS	Average Length of Stay
ANU	Australian National University
AOD	Alcohol and other drugs
ARV	Asset Replacement Value
AUSHFG	Australasian Health Facility Guideline
BHSP	Building Health Services Program
BMD	Bone Mineral Density
BOH	Back of House
CAPEX	Capital Expenditure
CCU	Critical Care Unit
CH	Canberra Hospital
CHMP	Canberra Hospital Master Plan
CHS	Canberra Hospital Services
CHMPP2	Canberra Hospital Master Plan Phase 2
CHWC	Canberra Hospital Women and Children Hospital
CO2	Carbon Dioxide
COVID-19	Coronavirus Disease 2019
CSB	Critical Services Building
CSSD	Central Sterile Supply Department
CHWC	Centenary Hospital for Women and Children
CPI	Consumer Price Index
CT	Computed Tomography
DCOM	Design Construct Operate Maintain
DCM	Design Construct Maintain
DCO	Design Construct Operate
DG	Diagnostic Genomics
DLP	Defect Liability Period
D&C	Design and Construct
ECI	Early Contractor Involvement
ED	Emergency Department
EOF	Extra Over For
EOL	End of Life
ESD	Environmentally Sustainable Development
FATO	Final Approach and Take Off
FDB	Functional Design Brief
FFE	Furniture, Fixtures and Equipment
FM	Facility Management
FTE	Full-time Equivalent
FY	Financial Year
GBA	Gross Building Area
GDA	Gross Departmental Area
GFA	Gross Floor Area
GEHU	Gastroenterology and Hematology Unit
GP	General Practitioner
HCCA	Health Care Consumers Association
HIT	Health Infrastructure Trade
HITH	Hospital-in-the-Home
HIS	Health Information Services
HV	High Voltage
HVAC	Heating Ventilation and Air Conditioning

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Abbreviation	Description
ICA	Independent Commissioning Agents
ICU	Intensive Care Unit
ICT	Information and Communications Technology
ILM	Investment Logic Map
IPC	Infection Prevention and Control
IPU	Inpatient Unit
JMO	Junior Medical Officers
MC	Managing Contractor
MCA	Multi-Criteria Analysis
MHSSU	Mental Health Short Stay Unit
MI	Medical Imaging
MIS	Medical Imaging Services
MPC	Major Projects Canberra
MRI	Magnetic Resonance Imaging
MSSB	Mechanical Services switchboards
MVA	Mega Volt Amp
NATA	National Association of Testing Authorities
NH	North Canberra Hospital
NDIS	National Disability Insurance Scheme
NHRA	National Health Reform Agreement
NPV	Net Present Value
NSW	New South Wales
OPEX	Operational Expenditure
OT	Occupational Therapy
O&A	Offer and Acceptance
PAP	Principal Authorised Person
PBS	Pharmaceutical Benefit Scheme
PCG	Project Control Groups
PCSS	Pathology and Clinical Support Services (PCSS) Building
PET	Positron Emission Tomography
PMA	Project Management Agreement
POC	Point of Care
PPP	Public Private Partnership
PSI	Preliminary Site Investigation
PSP	Preliminary Sketch Plan
QLD	Queensland
RRFOC	Received Free of Charge
SAMP	Strategic Asset Management Plan
SOA	Schedule of Accommodation
SPECT	Single Photon Emission Computed Tomography
UCH	University of Canberra Hospital
UPS	Uninterruptible Power Supply
VfM	Value for money
VRF	Variable Refrigerant Flow
WHS	Work, Health and Safety
WoL	Whole of Life Cost
WPI	Wage Price Index
WSI	Whole Slide Imaging

0. ACT Health Briefing Note

0.1 Purpose

1. The Canberra Hospital Master Plan (CHMP) was released in December 2021 and outlines a path for the redevelopment of the Canberra Hospital (CH) campus over 20 years to 2041. Implementation of the CHMP is occurring in stages to ensure operational continuity with minimal disruption to the clinical, clinical support and administrative functions delivered on the campus. This includes progressive decommissioning and demolition of infrastructure and deployment of modern, fit-for-purpose assets across the campus.
2. The Phase 2 of implementation of the CHMP (CHMPP2) will support the government's priority for accessible healthcare through the development of modern, fit-for-purpose infrastructure, enabling the CH campus to meet growing demand from population growth and changing patient demographics. The new PCSS Building and a new Inpatient and Outpatient Building will future proof the provision of inpatient/outpatient, pathology, and other clinical support services supporting improved clinical adjacencies and coordination between services, critical for enabling person-centred care and maximising the benefits of the Critical Services Building (CSB).
3. The business case covers CHMPP2 and includes the planning and development of a new Pathology and Clinical Support Services (PCSS) Building and a new Inpatient and Outpatient Building. These buildings will be built to function together with the CSB and integrate seamlessly and efficiently with the broader campus.
4. The Business Case seeks [REDACTED] to undertake a final stage of detailed planning and development of the preferred project option [REDACTED]. The Business Case also provides for extension of life activities works (capital funding for critical façade remediation works and a small provision of planning and development funding to maintain service continuity during project delivery) as well as enabling works ahead of the construction phase. Indicative project costs are provided to inform government decision making in the future phases of the project.
5. CHMPP2 will support the ACT's transition to a net-zero health sector by 2040 – shifting buildings off natural gas, improving the climate appropriateness of new buildings, and upgrading back-of-house infrastructure to enable the electrification of facilities.
6. Ongoing and future planning and development will need to consider the service distribution and planning of the North Canberra Hospital (NCH) and ensure alignment in meeting the healthcare demands of the Territory and surrounding NSW regions.

0.2 Issues

7. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
8. While extension of life works can offer a short-term solution, it would almost always realise a sub-optimal result – both clinically and operationally. The feasibility of extension of life works are also limited to the extent that they comply with modern building standards (for example, the building structure of ageing assets would likely be subject to durability testing and may not meet IL4 seismic requirements).
9. Ageing assets will increasingly undermine the efficiency and effectiveness of services delivered, posing a significant risk to community health outcomes. Given the criticality of these buildings, a major building failure could impact the continuation of services delivered across the CH campus. If CH were to

undertake extensive extension of life works, they would need to be staged to maintain operational continuity which would create further delays increasing an already unacceptable risk to safety across the precinct.

10. Failure to implement redevelopment activities in CHMPP2 constrains the ability of ACT Health to deliver subsequent stages of the CHMP and realise benefits available to the territory through a single operator model and eliminates the ability for CH to increase its capacity in line with projected demand growth.
11. CH campus is a major emitter of carbon emissions, making up almost 30% of total ACT Government carbon emissions. Implementation of the CHMP and electrification of the campus is key to reducing emissions.
12. A summary of the scope is below and further detailed in the Business Case.
 - a. Option 1 Base case - Do Minimum
 - i. Maintain building 1, 3, 10 and 12 and associated extension of life activities.
 - b. Option 2: Replace and Upgrade – Preferred
 - i. Replaces all existing points of care across primarily B1 and B10.
 - ii. Delivers new buildings to allow the progression of the CHMP.
 - iii. Allows B1 to be decommissioned.
 - iv. Allows B10 to be decanted and demolished.
 - c. Option 3: Future Demand (2041)
 - i. Same as Option 2 but builds in growth to meet 2041 demand.
 - ii. Future proofs the campus and relieves pressure/spending on demolishing B1 to make way for another development.
13. Option 2 has been identified as the preferred option for CHMPP2, providing a staged and efficient approach to capacity uplifts, which maximises utilisation of CH infrastructure. [REDACTED]
[REDACTED]. The summary table (Table 1) provides a detailed scope and cost breakdown:

[REDACTED]

16. There is also opportunity to consider hybrid options under Option 2 that sees a 'pick and mix' from the above table – for example Government could choose not to do the energy node and the arts strategy but choose to build 3 levels of carparking and increase the capacity in Building 10 or any combination of the above table. It is recommended in all options that the Western Bus Stop be delivered as it provides access to the hospital – rather than having people walk from Yamba Drive.

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Inclusion of Building 7 in scope

18. In September 2023, CHS agreed to include Building 7 in the scope for demolition as part of CHMPP2. Building 7 is a high priority asset, housing essential clinical services (Alcohol and Drug Services Withdrawal Unit (ADS WU). A building condition assessment in 2017 identified a remaining useful life up to approximately 2024. Consultation with CHS identified that Building 7 services could also be delivered at a future North Canberra Hospital. Future locations for the functions in Building 7 has been raised as part of the broader service planning work as it is beneficial and logical to examine Building 7 as part of the current CHMPP2.
19. A feasibility study was undertaken to determine a preferred temporary site at CH. The high-level review was based on suitability and adaptability of the available floor plates at CH, extent of refurbishment or demolition required and indicative costs. Three locations were explored.
- Option 1: Building 3 – Decant and refurbish 11A and 11B for ADS WU whilst relocating the Geriatrics services currently located in B3 11A/B into Building 1 (temporary only)
 - Option 2: Gaunt Place – refurbishment or new construction (temporary or permanent location)
 - Option 3: Building 12 – refurbishment (temporary only)
20. Option 1 has a greater scope of work compared to Option 2 and 3 and is assumed to require the largest Capital Investment. Option 2 and 3 have been costed using comparable \$/m2 rates but would require formal costing by a Quantity Surveyor during the next phase of planning and development. Following the advice of this high-level test fit, further discussion is required with the clinical service in Building 7. To ensure there's funding provision allowed for the design, decant and relocation of Building 7, [REDACTED]

21. [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

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Stage 1 (FY2024–30)	PCSS enabling and early works, including decanting and demolition of Building 7; Development of the Western Entry and associated (as part of the CHE Project); and Extension of life activities.
Stage 2 (FY2026–30)	Development of the new PCSS on the consolidated Building 6, 23 and 7 footprint. Delivery of Stage 1 of the precinct wide energy node infrastructure.
Stage 3 (FY2029–31)	Inpatient and Outpatient Services Building enabling and early works; Building 4 enabling and early works; and Delivery of Stage 2 of the precinct wide energy node infrastructure.
Stage 4 (FY2029–34)	Development of a new Inpatient and Outpatient Services Building, including a 2-level basement carpark.
Stage 5 (FY2034)	Decanting of services from the existing Building 1 and Building 12 to the newly completed Inpatient and Outpatient Services Building.

23. [REDACTED]
24. A summary of the key milestones and anticipated date of completion is set out in Project Timeline Chapter. All indicative dates listed are subject to several factors, including submission of documentation to government and confirmation of funding release regarding the CHMPP2 project and delivery.
25. The concurrent development of the northside hospital project is likely to impact the delivery approach for CHMPP2. There may be opportunities to coordinate procurement activities or test innovative approaches with the market across both campuses. Following finalisation of scoping and concept design for both sites, a targeted market sounding process is recommended to support this outcome.
26. With CHS as the operator of both the CH and NCH, there is an opportunity to plan and deliver a public hospital network under a single operator. A single operator will deliver efficiencies and improve effectiveness in our public health services. It will offer better mobility of services and opportunities for staff across the CH, NCH, the University of Canberra Hospital (UCH), and clearer clinical governance across all public hospitals.
27. ACTHD has been analysing the best infrastructure delivery program across the Territory to meet project demand to 2041. The findings of this work are being progressed in Cabinet Submission 24-065, Territory-wide public hospital infrastructure and new northside hospital scope of services. This work provides the ability to analyse timing, scope and service distribution to identify ideal scenarios and redevelopment pathways. CHMPP2 has been developed to support core project objectives but also supports the outcomes of this work should recommendations be agreed.

0.3 Communication, Work Health and Safety and Benefits/Sensitivities

Communications, media and engagement implications

28. ACTHD has engaged Becscomm to work with the Health Infrastructure Communications and Engagement team to develop a Territory-wide health infrastructure communication and engagement

strategy that aligns with the health infrastructure planning program. This has been provided as part of the Business Case at Appendix R1.

29. This overarching strategy will be supported by a number of sub-plans outlining the specific approach for each program of work including communication and community engagement activity. The subplan for CHMPP2 has been provided as part of the Business Case at Appendix R2.

Consultation

Internal

30. ACTHD Infrastructure Communication and Engagement, Health System Innovation and Performance, Strategic Finance and Digital Solutions Division have provided advice and input.

Cross-directorate

31. ACTHD has consulted with Canberra Health Services, Major Projects Canberra and Treasury. Progress of the Business Case is reported at the cross-Directorate Canberra Hospital Expansion Project Control Group (PCG) and Board meeting and CHMP PCG.
32. Consultation has involved engagement with CHS medical professional, administrators, service specialists and support staff. This collaborative approach has ensured the concept design to date aligns with the needs of the healthcare team, optimising patient care and operational efficiency.
33. Design workshops and open communication channels were essential throughout the concept design process involving comprehensive evaluation, discussions, cost analyses, and considerations of functionality, safety, and consumer needs, is serving as the foundation for the CHMP business case submission in FY2024-25 and address concerns. The next planning and development stage of the CHMP will include more detailed design informed through design user group workshops.

External

34. ACTHD project team have worked with Aspex consulting, Ernest and Young, Silver Thomas Hanley Health Architecture to develop a block and stack building diagram, FDBs and SOAs for the project. ACTHD have presented proposed site plans to ACT Fire & Rescue to seek early feedback on the design. ACTHD remains committed to working closely with the community and consumers to ensure health facilities are designed to meet the needs of Canberrans now and into the future.

Work Health and Safety

35. A risk assessment and quantification process has been undertaken in developing this Business Case. The approach has aligned with the ACT Government Risk Management Policy 2021 and Capital Framework guidance and has involved workshops with key stakeholders and advisors from across ACT Government (ACTHD, CHS and MPC) and external advisors. Refer to the risk analysis chapter and risk register at Appendix N.

Benefits/Sensitivities

36. The social economic analysis identified the following benefits of this Project:
- a. improved asset efficiency and sustainability.
 - b. improved workforce environment.

- c. Improved safety and amenity
- d. Improved patient health

37. [REDACTED]
[REDACTED]

0.4 Summary and Recommendation

38. ACTHD seeks funding of [REDACTED] to be committed and released to enable the next stage of planning and development to continue. The funding required for this stage is outlined in the business case, and it is over 5 years. The Business case outlines [REDACTED] to be committed and released at a later date. ACTHD will return to ERC with the confirmed construction funding following further design and scoping work.
39. Alongside the development of the business case, ACTHD has been analysing the best infrastructure delivery program across the Territory acute hospitals to meet project demand to 2041. The findings of this work are being progressed in CAB24-065 Territory-wide public hospital infrastructure and new northside hospital scope of service.
40. Scenario 5 of that submission provides a pathway for the efficient Territory wide delivery of clinical services across the new northside hospital and Canberra Hospital. This model embeds the Canberra Hospital as the regions tertiary/trauma hospital and provides for the development of centres of excellence at each campus. This strategic approach to the delivery of ACT hospital services will require ongoing work by CHS to support operationalising the Centres of Excellence and efficiencies suggested for Hospital in the Home and reduction in Average Length of Stays. The CHMPP2 Business Case Option 2 supports the implementation of Scenario 5 and value managed options in the submission.
41. Option 2 considers a capital investment for the replacement and upgrade of existing functional capacity and provides only an additional 19 Points of Care (POC) in the Pathology and Clinical Support Services Building an additional 82 POC in the new Inpatient and Outpatient Services Building.
42. [REDACTED]
[REDACTED]
[REDACTED]
43. Option 3 factors in broader service planning work to meet future demand by investing in the required capacity for the CH campus in 2040/41 now, rather than later. If the growth option is not implemented, planning for the redevelopment of Building 1 would need to commence within a minimum of two years to meet projected demand for 2040.
44. Provisioning for this growth in the new Inpatient and Outpatient Building gives the ACT Government greater choice about how to treat Building 1 in the future. An expansion of the new Inpatient and Outpatient Services Building would accommodate the additional capacity needed to avoid a more costly redevelopment of Building 1. This would translate in redevelopment and escalation costs associated with Building 1, or at least a reprieve of these costs in the short term. It would also remove timing delays on projects if staging across the ACTHD profile is required. [REDACTED]
[REDACTED]
45. There are alternative opportunities to include and exclude scope as part of this project. Table 3 below summarises the scope of the project and opportunities for inclusions and exclusions.

Table 3: Summary of scope of the project and opportunities for inclusions/exclusions.

Scope	Packages	Inclusion/Exclusion	Cost advice (total end cost including contingency and escalation etc.)	Pros/Cons
Extension of life critical façade remediation works		Option 1/base/minimum	Nil	
Extension of life planning and development funding for a business case		Option 1/base/minimum	Nil	
Western bus stop		Option 1/base/minimum	Nil	
Lease costs for historical medical record archives (Mitchell site)		Option 1/base/minimum	Nil	
Decant, decommission and demolish B7 (including relocation of AOD)		Opportunity to be excluded		Significantly reduces B6/23 foot print; If B7 were excluded, any consideration for a vertical extension would infringe upon the existing helicopter flight path obstacle limitation surface (OLS). If B7 is not included, and unless the flight path can be moved (subject to planning approval), the design and yield of the site would be heavily restricted. [REDACTED] [REDACTED] [REDACTED]
Redevelop B6/23/7** into new Pathology and Clinical Support Services Building		Included		Building 7 would also require a refurbishment or new building to replace it in the short term. So the deferral will likely add complexity and escalation to the cost.

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Decant pathology and other clinical support services and demolish B10	Included			
Demolish B4, relocate ANU medical space into new PCSS and redevelop into new open space	Included		Alternative option/location for B10 – pending feasibility; Future expansion/growth of CH; [REDACTED] [REDACTED] [REDACTED]	
	Excluded		[REDACTED] Can be vacant space if ANU relocates elsewhere on campus.	
Redevelop B10 into the new Inpatient and Outpatient Building	Included			
B10 Basement Carparking	Included			
	Excluded		Unable to retrofit/construct later; Carpark will have to be supplied elsewhere on campus, this will increase the physical requirements of alternative projects in turn imposing greater capital impact; May impact Development Approval. Poorer outcomes for Womens and Children's patients who will lose direct access and parking to the CHWC;	

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					No future underground/basement connection to future B1,2 and 3 redevelopments.
Decant B1 and B12 to the newly completed B10 (inpatients / outpatients)		Included			
Growth capacity up to FY41 (area for Inpatients and Discharge / Ambulatory and Day Med)		Included			Allows for efficient fit-out works later; Minimum disruption to clinical services.
		Excluded			
Other scope					
Art and cultural strategy allowance		Excluded			
Mental Health expansion and demolition of Childcare Centre feasibility study		Excluded			
Precinct wide energy node		Excluded			It is understood that the delivery of the energy node is in line with the Territory's electrification initiative to transition all assets to a new high voltage power supply.

1. Executive Summary

Introduction

- Canberra Hospital (CH) is the largest public hospital and tertiary referral centre in the region. It provides trauma services and most major medical and sub speciality services to more than 500,000 people.
- With much of the CH campus built in the 1970s, significant investments have been made over the last two decades in new and upgraded infrastructure. This includes the Canberra Hospital Expansion Project, which will deliver a new Critical Services Building (CSB) in 2024.
- Released in 2021, the Canberra Hospital Master Plan (CHMP) is the next stage in transforming the CH campus and providing world class healthcare that meets community and stakeholder ambitions.
- Phase 2 of the CHMP (CHMPP2) will deliver a new Pathology and Clinical Support Services (PCSS) Building, and a new Inpatient and Outpatient Building to function together with the CSB. CHMPP2 supports the staged relocation of acute services to minimise disruptions and maintain service continuity on a capacity constrained campus.
- The purpose of this Tier 1 Business Case is to provide a robust basis for the ACT government to make an informed decision about investing in CHMPP2.
- The Business Case seeks the immediate release of funding to undertake a final stage of planning and development of the preferred project option identified. The funding related components of this Business Case also budget for extension of life works (including capital funding for critical façade remediation works and a small provision of planning and development funding to maintain service continuity during project delivery) as well as enabling works ahead of the construction phase. Indicative project costs are provided to inform government decision making in the future phases of the project.

Needs Analysis

- The CH is Canberra and the region's main tertiary trauma hospital which provides trauma services and most major medical and sub-speciality services.
- With much of the hospital campus built in the 1970s, CH facilities are ageing and deteriorating, becoming increasingly unfit-for-purpose, increasingly costly to maintain and unable to meet growing demand in modern fit for purpose facilities or spaces.
- An Investment Logic Mapping (ILM) workshop was undertaken with key stakeholders to identify the problems and outline recommended responses. Three key problems were identified from the workshop including:
 1. Aged infrastructure has exceeded its useful life, is costly to maintain and presents a risk of catastrophic failure.
 2. Current infrastructure is poorly configured and no longer fit-for-purpose. This has resulted in inefficient and fragmented services and creates unacceptable risks to staff, visitors and patients alike.
 3. Insufficient capacity to meet demand puts the health of Canberrans and the broader catchment at risk and jeopardises benefits of the CSB.

Strategic and Policy Alignment

- As part of its Territory-wide strategy to improve access to health infrastructure, the ACT Government has implemented an agenda for modern, person-centric healthcare that provides the community the right services, at the right place, at the right time.
- CHMPP2 will support the government's priority for accessible healthcare through the development of fit-for-purpose infrastructure, enabling the CH campus to meet growing demand influenced by population growth and changing patient demographics.
- The new PCSS and Inpatient and Outpatient buildings will include modern, fit for purpose facilities to future proof the provision of inpatient/outpatient, pathology, and other clinical support services. Failure to undertake the staged roll-out of capacity envisaged through the redevelopment of Building 10 and Building 6 will stall the roll out of the CHMP.
- Designed to integrate with the new CSB and to enable the co-location of clinical support services, the new buildings will support improved clinical adjacencies and coordination between services, critical for person-centred care and maximising the benefits of the CSB.
- CHMPP2 will support the ACT's transition to a net-zero health sector by 2040: shifting buildings off natural gas, improving the climate appropriateness of new buildings, and upgrading back-of-house infrastructure to enable the electrification of facilities.
- Ongoing planning and development will continue to consider the service distribution and planning of the northside hospital (NH) and ensure alignment in meeting the healthcare demands of the Territory and surrounding NSW regions. Early planning works undertaken to date suggests minimal impacts on the redevelopment of the PCSS Building.

Options Analysis

Three options, aligned to the needs of the CHMPP2 project, were assessed using a Multi-Criteria Analysis (MCA) structured around economic and social (wellbeing); financial and implementation evaluation criteria.

Option 1 – 'Do minimum' Base Case

Option 1 involves no modifications to existing POCs, estimated areas, or functional upgrades of the CH campus. Given its inability to meet current or future demand or enable contemporary service models, the option scored the lowest in the MCA.

Redevelopment of the campus is inevitable, as buildings approach end of life and demand for health services grows. Option 1 includes ongoing maintenance of existing assets and urgent façade works to maintain safety and continuity of service delivery until redevelopment activities are implemented. The option also includes:

- Extension of life works including (1) capital funding for urgent façade works to Buildings 1 and 3, in line with advice provided in recent building façade inspection reports, and (2) a small amount of planning and development funding to (2a) undertake further building audits of Buildings 1, 2, 3, 7, 10, 12 and 20, and (2b) develop a business case to formalise a request for additional extension of life funding based on the outcomes of the building audits.
- Capital funding for off-site storage of historical HIS archives.

- Top-up capital funding for the development of the Building 2 Western Entry Bus Stop and other associated works – which is being developed and delivered separately as part of the on-going CHE project.

Note: The Building 2 Western Entry Bus Stop and other associated works need to be reinstated to restore essential public amenity that was removed when Hospital Road was closed off due to the construction of the CSB. Several requests for the reinstatement of this site have been made by the ACT Disability Reference Group and the Health Care Consumers Association. The design of these works have been funded by the CHE project and has received unanimous board support.

Option 2 – ‘Replace and upgrade’ [REDACTED]

Building on Option 1, Option 2 provides the replacement and upgrade of existing functional capacity to align with AusHFG requirements, [REDACTED]

Option 2 features the redevelopment of Buildings 6/23/7 into the new PCSS Building and the redevelopment of Building 10 into the new Inpatient and Outpatient Building, accommodating demand from the early 2030s. Under this option, the fit-out of pathology services will be staged, with 100% of the pathology shell space and 55% of the fit-out completed needed for like for like replacement.

Option 2 includes the demolition of Building 4 and replacement of the site with open space in the short term, until such time as further redevelopment is required to accommodate future growth in demand. For example, the accommodation of greater acute service capacity closer to Building 5. The open space may serve as churn space for the decanting of services during implementation or construction site overflow, if required.

The ANU Medical School, currently residing in Building 4, will be relocated in the new PCSS Building. The co-location and consolidation of learning, teaching and research services in the new building will allow for ease of student access and foster increased collaboration, innovation, and utilisation through its integrated layout. Further, the decanting of Building 4 services will reduce disruption when Building 1 is redeveloped, given its proximity.

- Option 2 also involves the delivery of:
- Stages 1 and 2 of a new precinct-wide **energy node** required to meet the energy needs of the campus and enable progressive electrification of facilities.
- Development of an **Arts and Cultural Strategy** which will inform the integration of culturally considered and urban design principles into future CH infrastructure.
- Development of a **feasibility study into the expansion of the Adult Mental Health Unit** and other mental health services through the demolition of the CH Childcare Centre (an ageing asset) in alignment with the CHMP’s vision for a Mental Health Precinct.
- **Extension of life activities** to maintain the continuity of operations in buildings approaching end of life before they can be decanted and redeveloped as well as other CHMPP2 **enabling works** such as the disconnection of services prior to demolition.

¹ Australasian Health Facility Guidelines (2023). <https://www.healthfacilityguidelines.com.au/australasian-health-facility-guidelines>. Retrieved on 18 January 2024.

Option 2 is a strong option, serving the dual purpose of meeting urgent demand, whilst future proofing the campus for longer-term demand. [REDACTED]

[REDACTED] While Option 2 and Option 3 scores were comparable, Option 2 has been identified as the preferred solution for CHMPP2, providing a staged and efficient approach to capacity uplifts, which maximises utilisation of CH infrastructure. From an affordability perspective, Option 2 helps to balance the need for investment across NH and the CH campus and has been identified as the indicative preferred by ACT Treasury.

Option 3 – ‘Capacity to meet future demand’ [REDACTED]

Option 3, [REDACTED]

[REDACTED] Building on Option 2, Option 3 includes: 100% fit-out of the pathology department, two additional floors of capacity for inpatient and discharge as well as ambulatory and day medical services; and Stages 3 & 4 of the precinct-wide energy node.

Investment in capacity uplift to meet FY40-41 demand in acute services is inevitable. The choice for government is whether to delay this investment until when it is needed (Option 2) or invest marginally more now in increased capacity in Building 10 (Option 3), saving substantial future costs associated with the redevelopment of Building 1 to deliver the additional acute services capacity required for FY40-41.

The ACT Government may wish to consider a hybrid option between Option 2 and Option 3, which provides the necessary shell space in the new Inpatients and Outpatients building to accommodate FY40-41 demand, only fitting those spaces out when capacity uplifts are required. Although not evaluated under this Business Case, the hybrid option is likely to be a more efficient, less disruptive and less expensive way of meeting FY40-41 demand, especially compared to the alternative of redeveloping Building 1. This option may be evaluated during future planning and development.

Project Scope

The scope of the Preferred Option (2) comprises:

- Delivery of two purpose-built facilities on the CH site:
 - A new PCSS Building [REDACTED]. The PCSS will be located on a consolidated footprint currently occupied by Buildings 6, 23 and 7.
 - A new Inpatient and Outpatient Services Building [REDACTED]. The Inpatient and Outpatient Services Building will be located on the existing Building 10 site. The building will also deliver two levels of basement carparking providing patients with direct and discreet access to key clinical areas.
- The demolition and redevelopment of Building 4, with its existing footprint to be used as green open space in the short term, until such time as further redevelopment is required to accommodate future growth in demand. The ANU Medical School, currently residing in Building 4, will be relocated in the new PCSS Building.
- Extension of life activities, including (1) capital funding for urgent façade works to Buildings 1 and 3, in line with advice provided in recent building façade inspection reports, and (2) a small amount of planning and development funding to (2a) undertake further building audits of Buildings 1, 2, 3, 7, 10, 12 and 20, and (2b) develop a business case to formalise a

request for additional extension of life funding based on the outcomes of the building audits.

- A range of sustainability and urban design features, including:
 - The transition of all assets to a new high voltage power supply as part of the Territory's electrification initiative.
 - The utilisation of low water use equipment, fixtures and fittings in line with the compliance requirements of the National Construction Code 2022.
 - A building and landscape design approach which seeks to deliver an environment based on wellness and healing as integral to patient care.
- [REDACTED]
- Top-up funding to complete the development and delivery of the new Building 2 Western Entry Bus Stop and other associated works.
- The delivery of the Preferred Option (2) will involve a staged approach comprising five (5) sequential stages. This accounts for key interdependencies including (but not limited to):
 - The decanting, decommissioning and demolition of Building 7 to enable the optimal design and development of the PCSS. The existing AOD service in Building 7 would be decanted to a newly developed facility on the Gaunt Place site providing a bespoke and fit-for-purpose facility to meet the unique requirements of the AOD service.
 - The upfront delivery of the PCSS to enable the decanting of Pathology and clinical support services from Building 10 allowing the timely commencement of the Inpatient and Outpatient Services Building.
- The preferred option has been developed in line with the core principles of the ACT Health Services Plan 2022-2030, which includes the key elements of the Canberra Health Services Vision comprising a series of overarching system-wide drivers for change and service innovation.

Risk Analysis

- The ACT Government Risk Management Policy 2021 has been adopted for the identification and assessment of critical project risks.
- Based on the risk assessment undertaken to date, the following risks have been identified as high risk and/or material to project delivery:
 - That planning processes and demand modelling for Territory-wide hospital projects need to be aligned with the CHMPP2 Project.
 - That planning processes and designs do not adequately consider service and infrastructure integration and connectivity with existing and new facilities, including the CSB (new Building 5).
 - That planning and approvals processes take longer than anticipated or impose unforeseen conditions on the Project.²

² It should be noted that, although this risk is well-understood and able to be mitigated, it was assessed as material to project delivery due to its high delay consequence rating of "catastrophic", which equates to a potential delay of greater than six months (refer to Table 27).

- That the proposed decanting strategy, particularly with respect to Building 7, is inadequate and there are insufficient contingencies provided for delays.
- That the enabling works and extension of life buildings are not appropriately scoped, funded and implemented impacting on the ability to commence construction and the continuity of service provision at adjacent buildings.
- Risk associated with utilities, such as unanticipated utilities/services upgrades are required or that unknown utilities/services are discovered onsite.
- Mitigation strategies to address critical risks include:
 - Detailed project management and planning to understand sequencing, dependencies, and approvals processes.
 - Early and ongoing engagement with key stakeholders, including clinicians, community groups, planning agencies, operational commissioning teams and utilities providers.
 - Detailed technical surveys and site investigations.
 - Detailed design definition stage, including ensuring that Functional Design Briefs (FDB's) are incorporated into the tender for design.
 - Incorporating sufficient time for planning, design and decanting in the Master Program.
- The Programme Director, Project Control Groups (PCGs) and the Executive Steering Committee will be responsible for monitoring project risks throughout planning and implementation phases within existing project governance committee structures.

Delivery Model Analysis

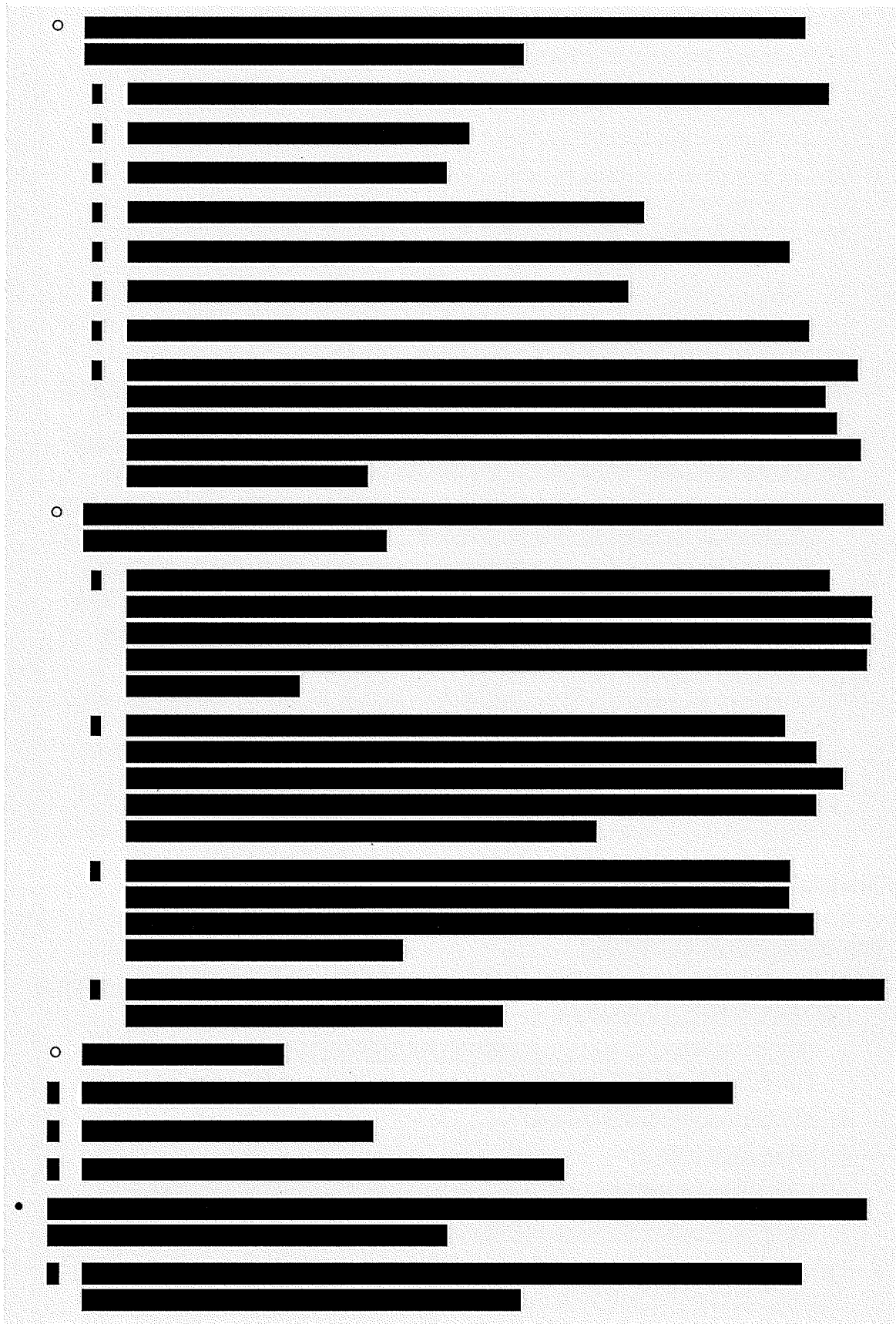
- Delivery model analysis considered traditional and non-traditional models as well as packaging options to effectively deliver a project of this scale. The recommended packaging approach for the preferred option (Option 2) includes:
 - **Package 1: Building 2 Western Entry Bus Stop and other associated works package** including design and construction of the new bus stop and associated works located adjacent to the main entry of the Inpatient and Outpatient Building and the ED.
 - **Package 2: Building 7 decanting and demolition.**
 - **Package 3: Precinct Energy Node Infrastructure** comprising development of Stage 1 and 2 of the precinct-wide energy node.
 - **Package 4: PCSS Building enabling, early works and main construction works package** comprising enabling works, new building works, refurbishment works, FF&E provisions, and infrastructure services upgrades and utilities for the new PCSS Building, as well as relocation of the ANU Medical School to the new PCSS Building.
 - **Package 5: Extension of life works package**, including (1) capital funding for urgent façade works to Buildings 1 and 3, in line with advice provided in recent building façade inspection reports, and (2) a small amount of planning and development funding to (2a) undertake further building audits of Buildings 1, 2, 3, 7, 10, 12 and 20, and (2b) develop a business case to formalise a request for additional extension of life funding based on the outcomes of the building audits.
 - **Package 6: Building 10 decanting and relocation of services package.**

- **Package 7: Building 10 and Building 4 demolition package.**
- **Package 8: Inpatient and Outpatient Building enabling, early works and main construction works package** comprising enabling works, new building works, refurbishment works, FF&E provisions, and infrastructure services upgrades and utilities for the new Inpatient and Outpatient Building.
- The decanting, relocation and demolition of Buildings 6 and 23 are funded from the CHMPP2 implementation (concept design and business case) appropriation and in an existing contractual arrangement for mid-2024 and have not been included in the packaging approach outlined in this chapter.
- The operations and maintenance components will continue to be delivered using existing arrangements including existing insourced services and contractual arrangements with the private sector (i.e., FM contracts).
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- The concurrent development of the NH project is likely to impact the delivery approach for CHMPP2. There may be opportunities to coordinate procurement activities or test innovative approaches with the market across both campuses. Following finalisation of scoping and concept design for both sites, a targeted market sounding process is recommended to support this outcome.

Financial Analysis

[REDACTED]	
■	[REDACTED]
	[REDACTED]
■	[REDACTED]
	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
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- [illegible]

- The economic merits of this Project have been assessed through a socio-economic and wider economic benefit analysis. The benefits have been informed by the ILM.
- The social economic analysis identified the following benefits of this Project:
 - Improved asset efficiency and sustainability will be supported through the replacement of ageing facilities with modern, more efficient, and sustainable facilities. Modern hospital facilities are built with the latest sustainable technologies, including more durable materials which are easier to maintain and more resistant to wear and tear.
 - An improved workforce environment, including investment in digitally enabled health infrastructure, will streamline workflows and operations, increasing the efficiency and effectiveness of care delivered.
 - Improved safety and amenity of site will be achieved through the redevelopment of existing facilities in line with contemporary safety and building standards that prioritise

the safety, comfort and experience of staff and patients alike. Extension of life investments will ensure that ageing assets are kept operational and safe before services can be decanted into the new buildings. The clearing of the existing Building 4 site and the subsequent transformation of the site into open green space presents an opportunity to enhance overall amenity offering of the campus.

- Improved patient health outcome, site access and flow, and satisfaction through a range of project features, including:
 - Improving capacity to reduce current waitlists and accommodate future growth;
 - Future proofing the Canberra Hospital by developing flexible spaces that can adapt to changes in demand over time;
 - Supporting person-centric care by creating more clinical adjacencies which seek to minimise patient travel and maximise the timeliness of care delivered;
 - Improving site accessibility and patient flow by providing linkways between high traffic areas and more building access points to mitigate bottlenecks;
 - Enabling the CH to incorporate more service innovations, including automation of workflows to provide quicker and more effective care; and
 - Supporting research and teaching activities to promote the development of new clinical policies and practices.

- [REDACTED]

Project Governance, Stakeholder Engagement Plan & Advisor Engagement Plan

- During the development of the Business Case, stakeholders were extensively consulted to articulate a clear case for change, test viable delivery models and undertake a robust assessment of project options to enable informed government decision-making ahead of detailed delivery planning post this Business Case. Design and technical advisors were engaged to co-develop key project inputs, such as Service Models, Functional Design Briefs (FDB's), Schedule of Accommodations (SOA's), and Concept Design.
- After the Business Case phase, ACT Government remains committed to working closely with the community, stakeholders, consumers, and our workforce to ensure health facilities are designed to meet the needs of Canberrans now and into the future. Feedback will be considered and used during this phase to contribute to the development of facilities and services for the people of Canberra and the surrounding regions.
- Community and stakeholder involvement in the delivery of the *CHMP* will enable improved healthcare infrastructure outcomes, including optimal performance for healthcare workers, alignment with First Nations cultural values, better patient treatment and recovery, and more supportive spaces for families.
- Post-Business Case, a new governance framework will be established. This framework will include cross-directorate executive leadership from ACT Health, Canberra Health Services (CHS), Major Projects Canberra (MPC), and ACT Treasury. The Executive Steering Committee will function as the key decision-making body. MPC will lead implementation.

Project Timeline

- CHMPP2 Delivery Program is set out for the preferred option for the project scope for the business case which is Option 2 “Replace and Upgrade”.
- CHMP2 Delivery Program is anticipated to have the following key milestones, with submission of business case scheduled to be on 16th February 2024:
 - Stage 0A: Final Planning and Development (inc. PSP Design) (FY24-35).
 - Stage 0B: Project Establishment (FY24-25).
 - Stage 1: Building 6 Enabling and Early Works (FY24-30).
 - Stage 2: New Pathology and Clinical Support Services Building (B6/23/7 Site) (FY24-30).
 - Stage 3: Building 10 and Building 4 Enabling and Early Works (FY28-31).
 - Stage 4: New in-patient building on site of Building 10 (FY29-34).
 - Stage 5: Building 1 and 12 Decanting (FY33-34).
- All indicative dates listed are subject to several factors, including submission of documentation to government and confirmation of funding release regarding the CHMPP2 project and delivery.

2. Introduction

Key messages

- Canberra Hospital (CH) is the largest public hospital and tertiary referral centre in the region. It provides trauma services and most major medical and sub speciality services to more than 500,000 people.
- With much of the CH campus built in the 1970s, significant investments have been made over the last two decades in new and upgraded infrastructure. This includes the Canberra Hospital Expansion Project, which will deliver a new Critical Services Building (CSB) in 2024.
- Released in 2021, the Canberra Hospital Master Plan (CHMP) is the next stage in transforming the CH campus and providing world class healthcare that meets community and stakeholder ambitions.
- Phase 2 of the CHMP (CHMPP2) will deliver a new Pathology and Clinical Support Services (PCSS) Building, and a new Inpatient and Outpatient Building to function together with the CSB. CHMPP2 supports the staged relocation of acute services to minimise disruptions and maintain service continuity on a capacity constrained campus.
- The purpose of this Tier 1 Business Case is to provide a robust basis for the ACT Government to make an informed decision about investing in CHMPP2.
- The Business Case seeks funding to undertake detailed planning and development of the preferred project option identified. The funding related components of this Business Case also budget for extension of life activities (to maintain service continuity during project delivery) as well as enabling works ahead of the construction phase. Indicative project costs are provided to inform government decision making in the future phases of the project.

2.1 Overview and Background

2.1.1. ACT Health Context

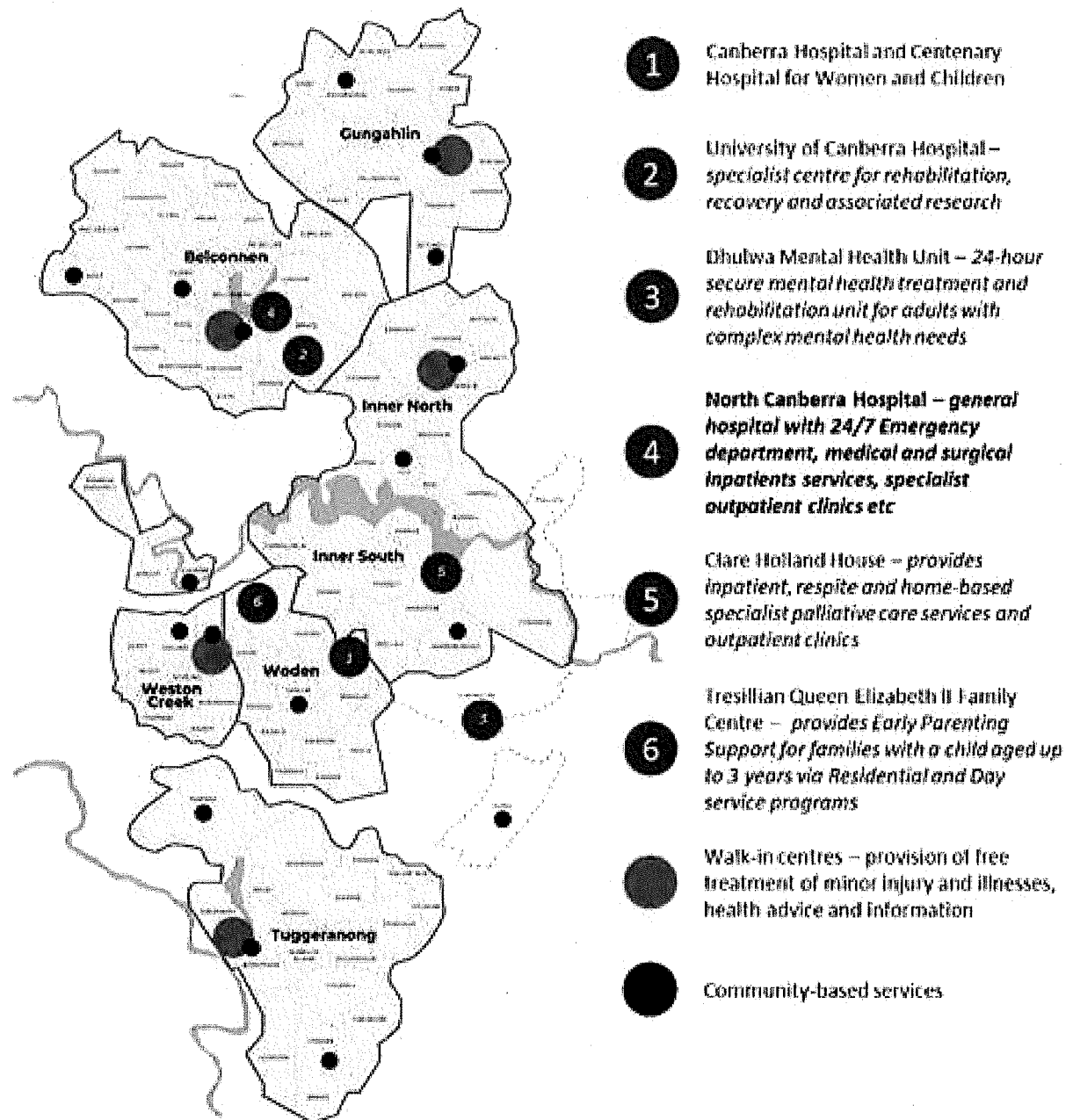
The Australian Capital Territory (ACT) Government's vision is for a public health system that is accessible, accountable, and sustainable.³ In line with this vision, the ACT Health Services Plan establishes the system-wide priorities for service development and redesign of ACT-Government funded health services over the next 10 years.

Figure 1 illustrates the system of key Canberra Health Services, including medical precincts, walk-in centres, and community-based services.⁴ As the largest public hospital and tertiary referral centre, CH (numbered 1 in **Figure 1**) plays a leading role in serving ACT's health care priorities.

³ ACT Government (2021). Canberra Hospital Master Plan 2021-2041. Retrieved on 1 October 2023 from <https://health.act.gov.au/sites/default/files/2021-12/Canberra%20Hospital%20Master%20Plan.pdf>.

⁴ ACT Health Directorate (2022). ACT Health Services Plan 2022-2030. Retrieved on 23 August 2023 from <https://www.health.act.gov.au/sites/default/files/2022-09/ACT%20Health%20Services%20Plan%202022%20to%202030.pdf>.

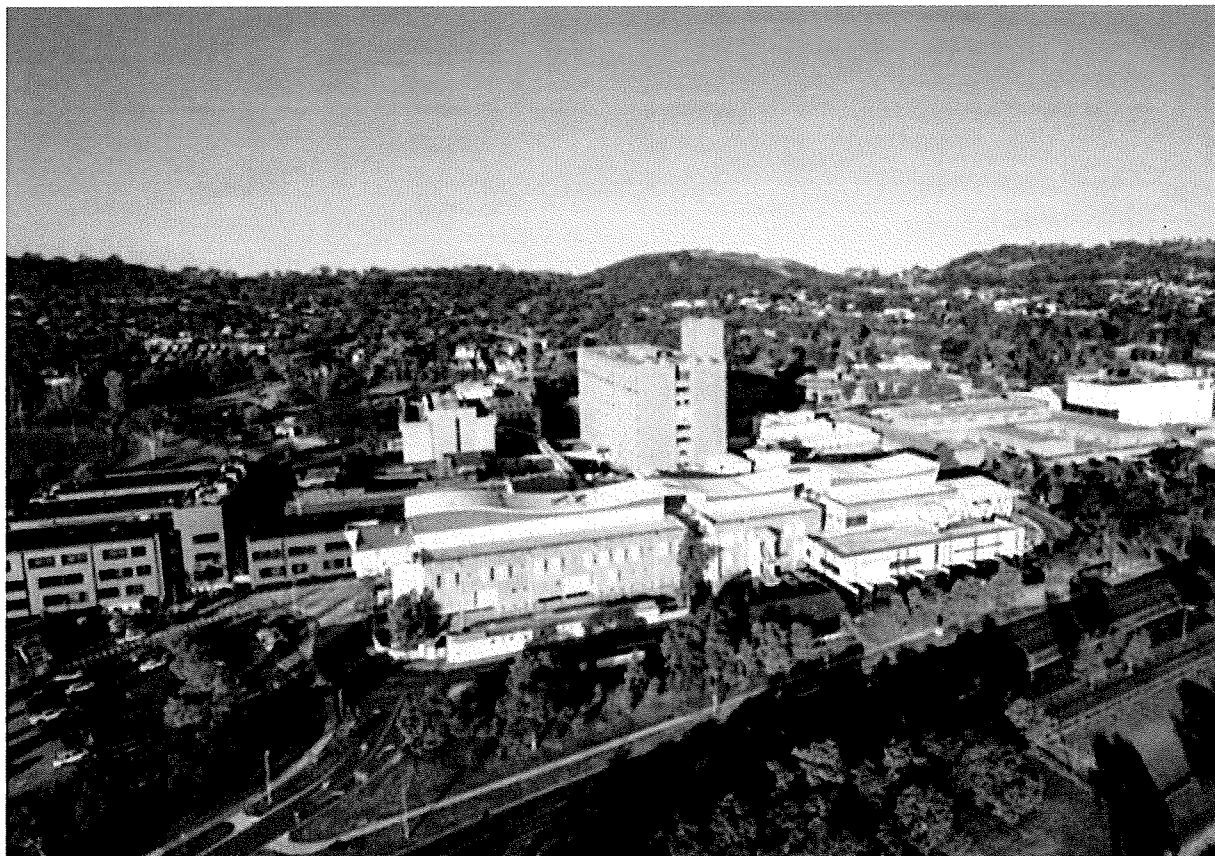
Figure 1: ACT Health Services Map



2.1.2. Canberra Hospital

For 50 years, CH has been serving its local community at the Woden Valley site and the broader hospital catchment area (shown in **Figure 2**). CH is the largest public hospital and tertiary referral centre in the region. It provides trauma services and most major medical and sub speciality services to more than 500,000 people.¹

Figure 2: Canberra Hospital Campus



Each year, CH's staff manage approximately 90,000 patient admissions. Staff members work across 28 buildings at the hospital's 21.7-hectare site located in Garran (in Canberra's Woden Valley) to provide a range of services including medical, surgical, specialist outpatient clinics and other clinical support services including pathology services.⁵

CH has two primary roles:

- To service the 500,000 plus people living in its primary catchment including the ACT and the South-eastern Region of New South Wales.
- To be the principal teaching hospital in partnership with Australian National University (ANU), Australian Catholic University, Canberra Institute of Technology and University of Canberra.

⁵ Australian Government (n.d.). AIHW Canberra Hospital Report & Data. Retrieved on 1 October 2023 from <https://www.aihw.gov.au/reports-data/myhospitals/hospital/h0742>.

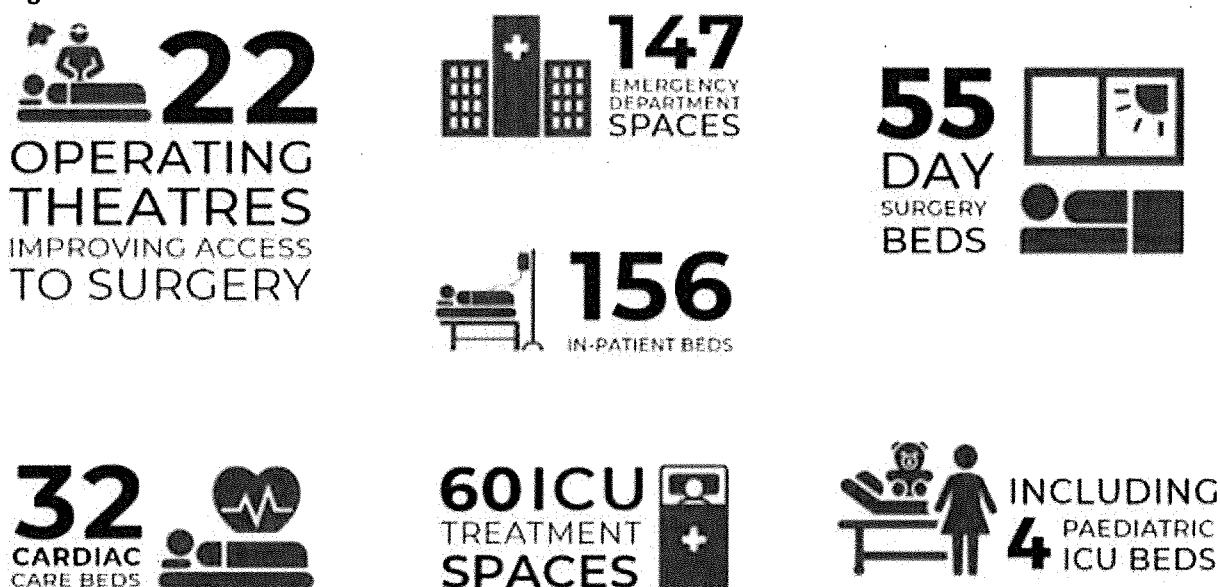
2.1.3. Critical Services Building

With much of the CH campus built in the 1970s, significant investments have been made over the last two decades in new and upgraded infrastructure including the Canberra Hospital Expansion Project. The Project will deliver a new Critical Services Building (CSB) – planned for completion in 2024 – and is examining options for a new on-campus carpark, which is currently in feasibility and early design.

The CSB will deliver increased capacity across CH's adult intensive care, paediatric intensive care, surgical, coronary care, and emergency services, as illustrated by **Figure 3**. The building will seamlessly integrate with existing services and buildings on campus, ensuring a smooth connection.

As the capacity of the CSB expands over time, other buildings and services will also need to adjust their capacity to accommodate the growing population, ageing demographics, and increased healthcare demand. This may entail refurbishment, expansion, or redevelopment of these facilities.

Figure 3: CSB Services



2.1.4. Canberra Hospital Master Plan

The CHMP is the next step in transforming the CH campus and providing world class healthcare that achieves the ambitions expressed by community and stakeholders. Released in 2021, the CHMP will guide the redevelopment of the campus into a functional and efficient environment over the next 20 years.⁶

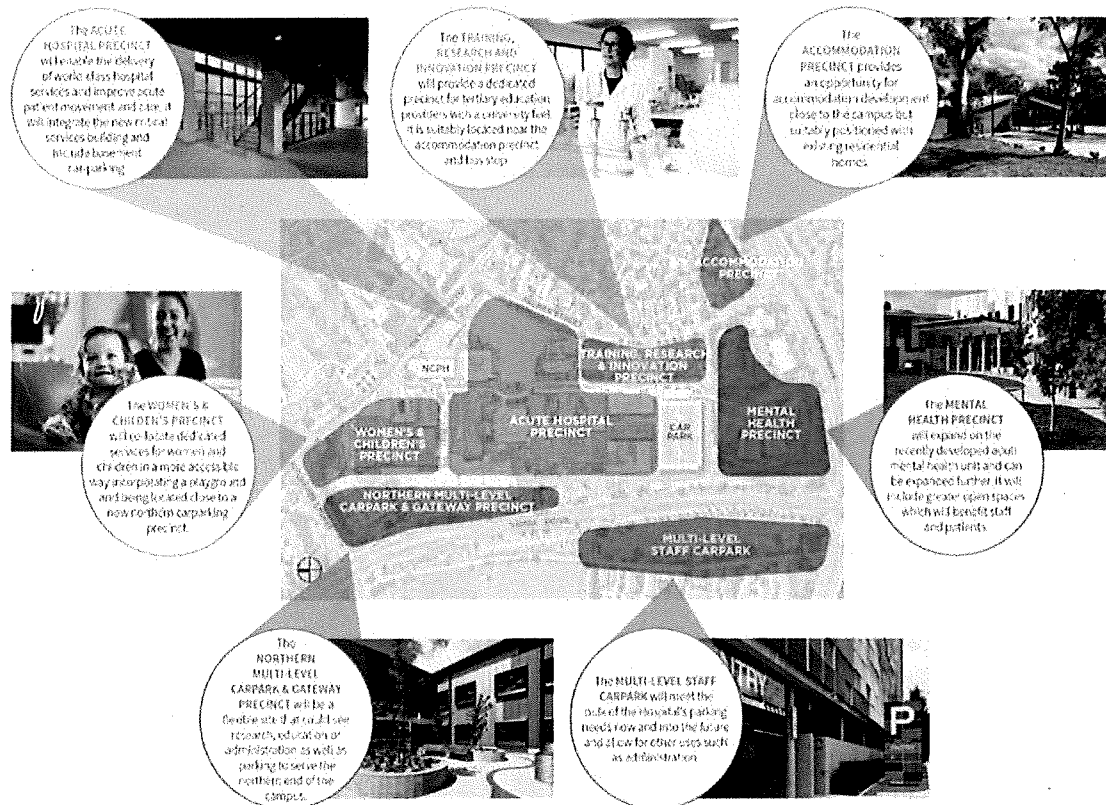
As pictured in **Figure 4**, the CHMP identifies the redevelopment and renewal of the campus including:

- An expanded Emergency Department (ED) and an expanded Pathology Building;
- An ambulatory Care and Inpatient Building;
- A welcome pavilion;
- A new Gateway building;
- A multi-storey carpark proposing safer skybridge access to the Campus;

⁶ ACT Government (n.d.). Master Plan sets out future development at Canberra Hospital Campus. Retrieved on 14 November 2023 from [Master Plan sets out future development at Canberra Hospital campus - Chief Minister, Treasury and Economic Development Directorate \(act.gov.au\)](#).

- A new expanded logistics centre; and
- A new childcare centre.

Figure 4: Canberra Hospital Master Plan



2.2 Project Purpose and Scope

2.2.1. Project Purpose

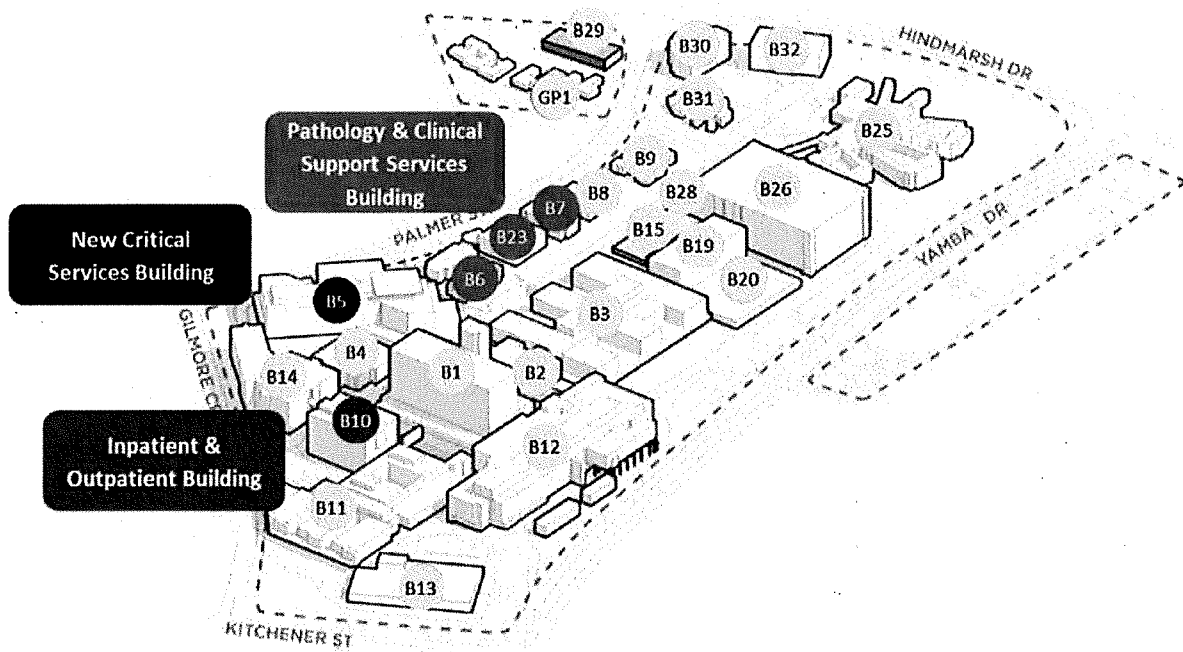
This Project – Canberra Hospital Master Plan Phase 2 (CHMPP2) – will deliver a new PCSS Building and a new Inpatient and Outpatient Building (shown in **Figure 5**) to support growing demand for acute services and seamlessly integrate with the CSB and broader campus.

CHMPP2 is critical for supporting the staged relocation of acute services into fit for purpose buildings. CHMPP2 supports the staging of upgrades across the CH campus to minimise disruptions to the delivery of acute services from brownfield construction on a significantly capacity constrained campus.

The purpose of this Business Case is to provide a robust basis for the ACT Government to make an informed decision about investing in CHMPP2. The Business Case seeks funding to undertake detailed planning and development of the preferred project option identified. The funding related components of this Business Case also budget for extension of life activities (to maintain service continuity during project delivery) as well as enabling works ahead of the construction phase. Indicative project costs are provided to inform government decision making in the future phases of the project.

This Business Case has been prepared in accordance with the Capital Framework guidance and in consultation with key stakeholders through regular workshops.⁷

⁷ ACT Government (n.d.). The Capital Framework. Retrieved on 14 November 2023 from <https://www.treasury.act.gov.au/capital-framework/about-the-framework/the-capital-framework>.

Figure 5: Project Scope

2.2.2. Project Scope

The project scope aligns to the vision set out in the CHMP and includes the redevelopment of the campus to include:

- A new Pathology and Critical Support Services Building;
- A new Inpatient and Outpatient Services Building;
- Building 4 demolition and redevelopment;
- Extension of life works for Buildings 1, 3, 10 and 12; and
- Supplementary scope items including works associated with the Building 2 Western Entry Bus Stop and other associated works and a precinct-wide energy node.

The project includes related enabling works, including demolition and decanting of services.

2.2.2.1. Pathology and Clinical Support Services Building

Designed to modernise clinical support services on the CH campus and enable the CSB to meet growth in acute service demand across the Territory and broader region, a new PCSS Building is proposed adjacent to the CSB on the site of existing Buildings 6, 23 and 7, as indicated by **Figure 5**.

Pathology services currently occupy the majority of Building 10, however, share the space with other clinical support services including research, morgue, industrial waste treatment, and various administrative areas. Increasingly capacity constrained, pathology services do not have the space to meet growing demand or implement new technologies in line with contemporary service delivery models.

The new PCSS building will have direct public access onto Hospital Road and internal access from the CSB via levels 1, 2 and 3. The building will also enable pneumatic and physical connections to allow for the efficient and safe transfer of samples between the buildings.

The building will also incorporate cutting-edge technology and include modern fit-for-purpose infrastructure. These advancements will enhance operational efficiency and facilitate the delivery of contemporary models of service, ensuring the provision of effective high-quality services for both the Territory and the surrounding region.

2.2.2.2. Inpatient and Outpatient Services Building

On the site of the existing Building 10, a new Inpatient and Outpatient Services Building will accommodate existing services to be decanted from Buildings 1 and 12 including medical and surgical inpatient units – which is considered essential given that both buildings are past the end of their useful life and pose a significant risk to the delivery of quality and safe patient care. The new Inpatient and Outpatient Services Building will serve as a cornerstone facility in delivering acute tertiary care, providing efficient high-quality, person-centric care within an environment that integrates the latest developments in technological advancements and models of care.

2.2.2.3. Building 4 demolition and redevelopment

CHMPP2 includes the demolition and redevelopment of Building 4, with its existing footprint to be used as green open space in the short term, until such time as further redevelopment is required to accommodate future growth in demand. The open space may serve as churn space for the decanting of services during implementation or construction site overflow, if required. Further, the inclusion of such space will offer flexibility for NH planning, future-proofing for various scenarios yet to be approved by ACT Government.

The ANU Medical School, currently residing in Building 4, will be relocated in the new PCSS Building. The co-location and consolidation of learning, teaching and research services in the new building will allow for ease of student access and foster increased collaboration, innovation, and utilisation through its integrated layout.

2.2.2.4. Extension of Life Works

To maintain the continuity of operations in buildings approaching end of life for the duration of the delivery of the new buildings, CHMPP2 includes extension of life activities in Buildings 1, 3, 10 and 12. Extension of life activities include (1) urgent façade works to Buildings 1 and 3, in line with advice provided in recent building façade inspection reports, and (2) a small amount of planning and development funding to (2a) undertake further building audits of Buildings 1, 2, 3, 7, 10, 12 and 20, and (2b) develop a business case to formalise a request for additional extension of life funding based on the outcomes of the building audits.

2.2.2.5. Supplementary scope items

Other scope components include:

- The development of the **Building 2 Western Entry Bus Stop and other associated works** at Bateson Road to maintain access to the CSB and the broader CH campus.
- Stages 1 and 2 of a new precinct-wide **energy node** required to meet the long-term energy needs of the campus and enable the progressive transition from natural gas to an all-electric campus.
- Off-site relocation and **storage of Health Information Services archives** at the temporarily leased Mitchell site to prepare for the redevelopment.
- Development of an **Arts and Cultural Strategy** which will inform the high-level integration of culturally considered and deliberate urban design principles into future CH infrastructure.
- Development of a **feasibility study into the expansion of the Adult Mental Health Unit** and other mental health services through the demolition of the CH Childcare Centre (an ageing asset) in alignment with the CHMP's vision for a Mental Health Precinct.

2.2.2.6. Limitations

To acknowledge the Territory's increasing demand for healthcare services due to the growing and ageing population, the ACT Government has funded a new Northside Hospital (NH) at Bruce.

Planning for the new NH and the distribution of services between NH and CH is currently underway and the subject of a separate submission to Government

While this Business Case does not consider service distribution and/or planning for NH, work on the NH scoping is unlikely to affect the new PCSS building as these services are being moved from elsewhere on the CH campus and need to remain on the tertiary site. Any impacts on the new Inpatient and Outpatients Services Building are also likely to be minimal, as that development serves to decant buildings 1 and 12 with a small increase in capacity depending on the scope options chosen.

3. Needs Analysis

Key messages

- The CH is Canberra and the region's main tertiary trauma hospital which provides trauma services and most major medical and sub-speciality services.
- With much of the hospital campus built in the 1970s, CH facilities are ageing and deteriorating, becoming increasingly unfit-for-purpose, increasingly costly to maintain and unable to meet growing demand in modern fit for purpose facilities or spaces. Without a systematic redevelopment – as outlined in the CHMP Master Plan – there is no feasible way for CH to respond to increasing demand.
- An Investment Logic Mapping (ILM) workshop was undertaken with key stakeholders to identify the problems and outline recommended responses. Three key problems were identified from the workshop including:
 1. Aged infrastructure has exceeded its useful life, is costly to maintain and presents a risk of catastrophic failure.
 2. Current infrastructure is poorly configured and no longer fit-for-purpose. This has resulted in inefficient and fragmented services and creates unacceptable risks to staff, visitors and patients alike.
 3. Insufficient capacity to meet demand puts the health of Canberrans and the broader catchment at risk and jeopardises benefits of the CSB.

3.1 Problems and Strategic Responses

As Canberra and the region's main tertiary trauma hospital, CH has a crucial role in delivering health care services to the residents of Canberra and surrounding regions of New South Wales (NSW). Since many of the buildings across the campus were built in the 1970's, many of its facilities are now showing age and deteriorating, making it increasingly difficult to:

- Respond to changing clinical, functional and operational requirements; and
- Accommodate demand based on the projected population growth across CH's catchment.

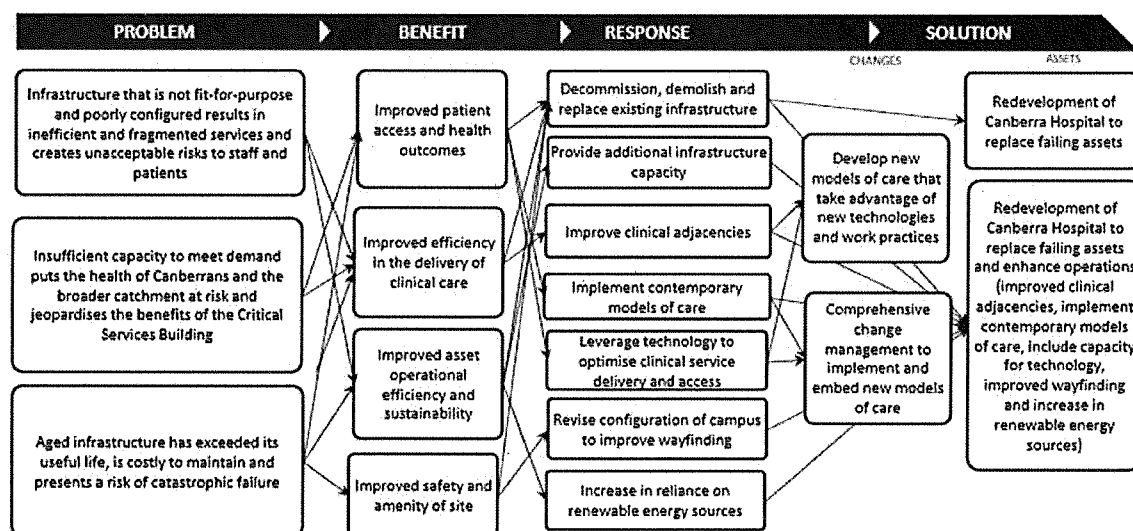
Increasing maintenance works – due to the frequency and severity of identified building faults – are presenting both a financial and operational challenge to CHS. In a capacity constrained hospital, the need for significant unplanned maintenance and repairs could lead to the shutdown of entire floors or even buildings, leading to significant service disruptions and putting the health of people at risk.

Project scope

The project scope considers Phase 2 of the CHMPP2. This proposes planning and development of a new PCSS Building and a new Inpatient and Outpatient Services Building. The delivery of these Buildings needs to minimise the disruption of existing service delivery through a fit-for-purpose enabling works program to create a safe and operationally functional construction site including the installation of hoarding, designation of appropriate set-down areas for vehicle ingress and egress, and the installation of temporary linkways to maintain critical building connections during construction. The Project would also need to consider the provision for life extension works to maintain services in existing assets during Project delivery and adhere to the critical path of the implementation of the CHMP. **Buildings within the scope of CHMPP2 (including some replacements and some extension of life) include 1, 3, 6, 7, 10, 12 and 23.**

An ILM workshop was held with key stakeholders to identify the problems, benefits, responses and recommended strategic solutions, as outlined in Figure 6.

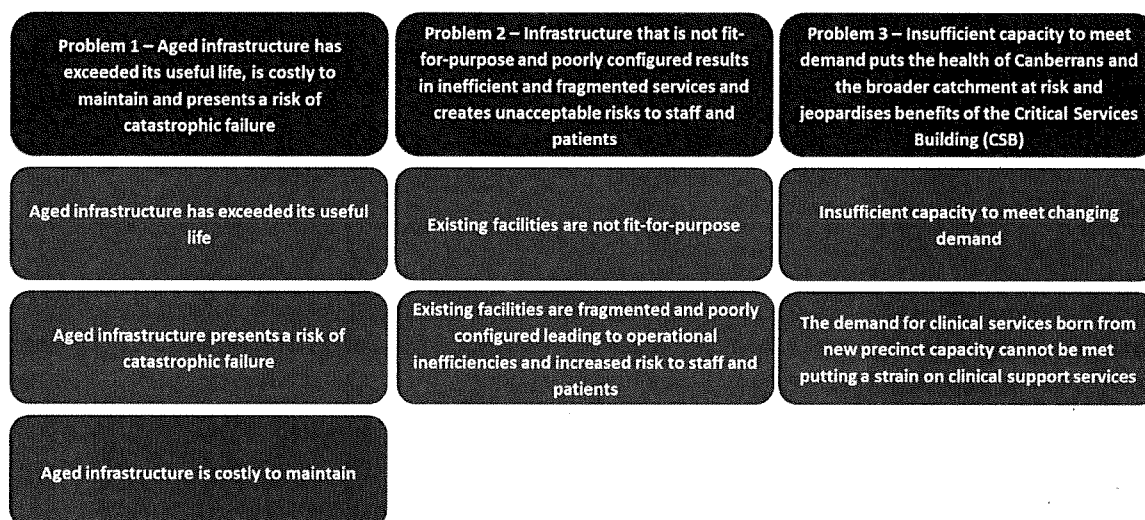
Figure 6: Investment Logic Map



The three problem statements included in the ILM have been supported by evidence statements. This is set out in

Figure 7 and then expanded on in the sections thereafter.

Figure 7: Problem statements



ILM supporting documentation can be found in Appendix A. The detailed ILM is included in Appendix B Investment Logic Map.

3.1.1. Problem 1 – Aged infrastructure has exceeded its useful life, is costly to maintain and presents a risk of catastrophic failure

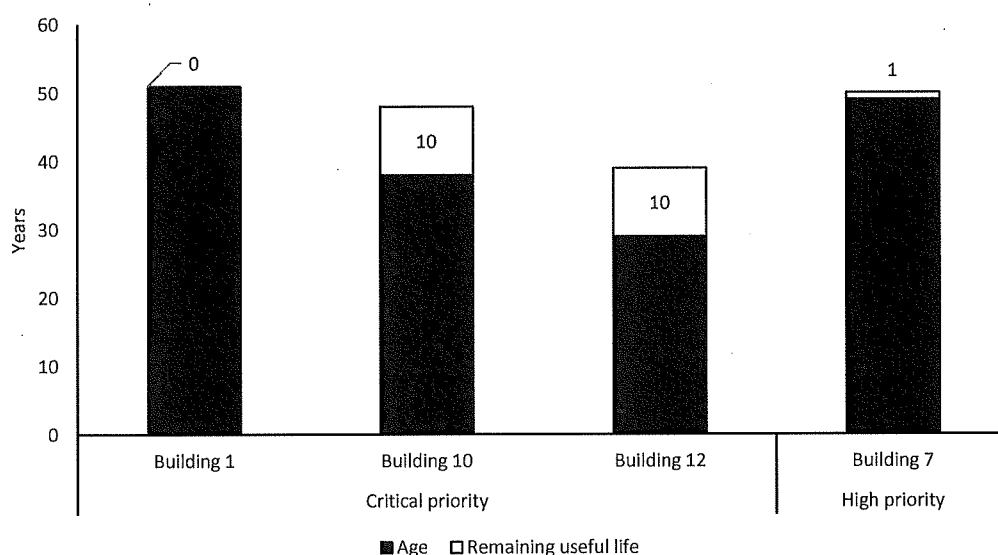
Since most of the CH was constructed in the 1970's, many of its buildings are nearing, or at, the end of their useful life. It is generally accepted that building performance, including functionality and efficiency, declines with age.⁸ This can introduce a risk to the quality and consistency of patient care, where the physical environment is no longer equipped to support the delivery of contemporary care. These buildings are also prone to non-compliance with the latest hospital and building standards which in turn can introduce a risk to public safety. For many buildings that have reached the end of their useful life, it is appropriate, both financially and operationally, to consider the full replacement of the asset rather than attempting complex and costly remediations for a likely limited extension of its life, which may remain restricted in its capacity to deliver the standard and level of care expected across the Territory.⁹

As identified in section 3.1.1.1, all critical and high priority assets in-scope for this project are falling below their target condition and functionality standards.

3.1.1.1. Evidence 1.1 – Aged infrastructure has exceeded its useful life

Almost all buildings in-scope will reach the end of their useful life in the next 10 years, with Buildings 1 and 7 already at, or close to, the end of their useful life. The age of the buildings are shown in **Figure 8**.

Figure 8: Age of buildings and remaining useful life¹⁰



** The services originally housed in Building 6 and Building 23 (hospital administration) have been decanted. As a result, the priority of these buildings has shifted to greater importance. Note that the assessment of the remaining useful life has been performed in August 2017 with the development of the Strategic Asset Management Plan. All values have been amended to reflect the current remaining useful life as of early 2024.*

In addition, the existing fittings, fixtures and equipment in these buildings have exceeded their design life with some examples identified as more than double their expected design life. This is particularly problematic for Building 1, which includes some heating, ventilation and air conditioning (HVAC) equipment that has not been replaced since it was built in 1972, as shown in Table 2.

⁸ Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023

⁹ Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023

¹⁰ Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023. Calculated to 2023 figures.

Table 2: HVAC equipment expected design life and age in Building 1¹¹

Equipment	Expected design life	Age in CH Building 1 (2023)
Ductwork and fittings	20-30 years	51 years
Fans	15-20 years	51 years
Kitchen equipment	15-20 years	51 years
Pipework and valves	20-25 years	51 years
Pumps	20-25 years	51 years
AHU – custom built	20 years	51 years
Automatic controls and instrumentation	20-25 years	51 years

While extension of life works can offer a short-term solution to “keep the lights on”, it would almost always realise a sub-optimal result – both clinically and operationally. The cost of these works can also be substantial and do not negate the need for a replacement of the asset in the medium to long-term. The feasibility of extension of life works are also limited to the extent that they comply with modern building standards (for example, the building structure of ageing assets would likely be subject to durability testing and may not meet IL4 seismic requirements). Therefore, extension of life works present an opportunity cost to the ACT Government. While appropriate in certain circumstances, the ACT Government needs to balance the sunk cost of remediation against the upfront affordability of replacement. Delivering a replacement in the short term would realise savings for the ACT Government over the long-term.

3.1.1.2. Evidence 1.2 – Aged infrastructure presents a risk of catastrophic failure

Several buildings have deteriorated such that further remediation and upgrades to make safe and bring them in line with modern building and compliance standards are no longer feasible. The risk of failure – for example, loose and damaged façade – presents an unacceptable risk to public safety. The impact of such a risk event being realised would be catastrophic. This presents Canberra Health Services with the reality of forced closures where buildings are no longer safe to occupy, which would in turn place a significant risk on the hospital’s ability to maintain service continuity.

Various assets and systems located within these buildings are also at the end of their useful life, including the sewer stack network, fire safety compliance systems, air supply, building façade and electrical infrastructure. This contributes to a higher likelihood of building faults leading to risk events. The current condition of these assets and systems are outlined in Table 3.

Table 3 Aged infrastructure and risks of failure

Issue	Space / locations in scope	Description	Consequences
Sewer stack network	Building 1	The sewer stack pipe network which is used for the discharge of fluid and solid waste and to trap and vent sewer gases is at the end of its useful life. The sewer stack is in poor condition, and recent investigations found pitting and corrosion. The sewer stack is brittle and cannot be maintained effectively. ¹² The current condition of the sewer stack pipework in	The sewer stack pipes are in such poor condition that they cannot be cleaned to remove corrosion. The works cannot be conducted iteratively, as entire wards need to be closed, even for small works. Replacement is needed urgently however rectifying these issues would require closures to the building, causing significant disruption to services and impact on patient outcomes. There is no

¹¹ Source: ARUP. 2017. HVAC Services Audit. Accessed on 30 November 2023.

¹² Source: ACT Health, building condition workshop materials, Accessed 21 November 2023

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Issue	Space / locations in scope	Description	Consequences
		Building 1 is considered an extreme risk per the draft 2023 CHS Infrastructure Plan¹³. Failing sewer stack pipe network has resulted in property damage, constant back-ups required and unpleasant sewer odours impacting clinical areas and service delivery.	where on the campus nor at NH to accommodate patients while work is underway, leading to a severe deficit in the availability of inpatient beds and the need to reduce services such as elective surgeries.
Fire safety compliance	Buildings 1, 7, 10 and 12	Upgrades are required for fire compliance systems including fire detection systems, fire indicator panels, fire suppression systems, fire dampers and deluge systems. This is considered a high risk per the draft 2023 CHS Infrastructure Plan.¹⁴ Mechanical pressurisation systems require upgrade, balancing and commissioning across Building due to age, refurbishment of areas and penetrations in fire and smoke rated walls. In a fire event, smoke exhaust systems may be ineffectual. Fire dampers, central fire stairs, and hydrant and hose reel locations are non-compliant with Australian standards.	A lack of compliance with fire safety standards poses a significant risk for the uncontrolled spread of fire and smoke in critical patient buildings. In the event of a fire or smoke event, these systems may be ineffectual, representing a significant safety risk to building occupants. The external façade of Building 12 cannot be remediated to meet current standards and requires replacement of the entire façade.
Air supply	Buildings 1, 10 and 12	Current air supply assets are over 50 years old, including HVAC systems which are past the end of their useful life and at increasing risk of failure. An audit was undertaken of the HVAC systems in Building 1 in 2022 which were rated a 3 for their likelihood and consequence of failure ('highest risk' and 'most critical' respectively).¹⁵ This includes the air handling system, fan coil units, cooling towers, ductwork, mixing boxes and Variable Refrigerant Flow (VRF) systems. This is considered a high risk per the draft 2023 CHS Infrastructure Plan.¹⁶	General patient care areas such as medical and surgical wards can operate in an environment without air conditioning for a longer period of time, but the potential spread of infections between patients post-surgery – particularly those with wounds or who are immunocompromised – increases significantly as temperature, humidity and ventilation are affected. This can lead to a rise in infections, increased use of antibiotics, longer lengths of stay and potentially patient death; as well as reduced patient and staff satisfaction.
Building façade	Building 1	Building façade is in poor condition, with several extreme risks requiring immediate mitigation. The façade is showing signs of bowing, cracking and general displacement. A case study of this is shown in Figure 9. The windows are fitted with non-compliant glass, with evidence of corrosion to frames and damaged or missing seals.¹⁷	Without remediation, façade failure or collapse will occur resulting in property damage and safety risks to people in and around Building 1.
Electrical infrastructure	Building 1, 7, 10, 12	Assets are approaching the end of their useful life within the next five years. Replacement is required for electrical services including distribution boards, mechanical services switchboards (MSSBs), emergency and general lighting, Uninterruptible Power Supply (UPS)	This presents a higher risk of failure, including increased risks of power outages and equipment malfunction and downtime which would result in

¹³ Source: ACT Government Health, Draft CHS Infrastructure Plan 2023, accessed 27 November 2023

¹⁴ Source: ACT Government Health, Draft CHS Infrastructure Plan 2023, accessed 27 November 2023

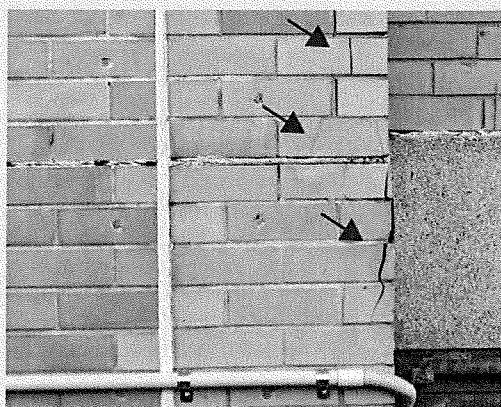
¹⁵ Source: ACT Health. Canberra Hospital Studies HVAC Services Unit. 11 September 2017. Accessed 1 December 2023.

¹⁶ Source: ACT Government Health, Draft CHS Infrastructure Plan 2023, accessed 27 November 2023

¹⁷ Source: ARUP, Façade Inspection Report – Building 1, 19 September 2022, accessed 30 November 2023

Issue	Space / locations in scope	Description	Consequences
		and generator replacement (not applicable to Buildings 1, 10 or 12). This is considered a high risk per the draft 2023 CHS Infrastructure Plan¹⁸. There is currently no funding for the upgrade of MSSBs which are needed for HVAC services and mitigation of a fire risk. Lighting throughout Building 1 is beyond end of life and requires replacing. Aged lighting represents an increase to maintenance activities and spend, with low light levels presenting a patient safety risk.	significant impacts to clinical service delivery.

Case Study: Façade faults in Building



An inspection of the façade brickwork in Building 1 in 2022 found deteriorating brickwork areas, including severe cracking and bowing in various locations, particularly where the brickwork surrounds concrete components and at building corners. Façade systems usually have a service life of 50-years, and this has now reached the end of life. Major maintenance to remedy these issues were highly recommended across façades²⁰.

Figure 9: Cracks to brick walls in Building 1¹⁹

3.1.1.3. Evidence 1.3 – Aged infrastructure is costly to maintain

Aged infrastructure is more costly to maintain and operate in comparison to modern infrastructure. With much of the infrastructure at the end of its useful operating life, and as evidenced Table 3, the maintenance and capital renewal costs for buildings within the scope of this project are prohibitively high.

For example, the total annual maintenance and capital renewal costs for Buildings 1, 6, 7, 10, 12 and 23 is \$6.67 million with Building 1 accounting for more than 58% (\$3.91 million) of the total annual maintenance cost. This is in part due to the size of Building 1 which accounts for ~22% of the campuses Gross Floor Area (GFA) excluding car parks.²¹

The 2017 Strategic Asset Management Plan (SAMP) notes that to maintain financial sustainability, maintenance expenditure in relation to the management of asset portfolios should range between 1% to 2% of asset replacement value (ARV), and a range of 4% to 6% of ARV for asset refurbishment or

¹⁸ Source: ACT Government Health, Draft CHS Infrastructure Plan 2023, accessed 27 November 2023

¹⁹ AECOM (2022). Canberra Hospital. Façade Existing Condition Inspection Report. Building 1

²⁰ As above.

²¹ GFA obtained from 2022-23 Canberra Health Services Annual Report. (https://www.canberrahealthservices.act.gov.au/_data/assets/pdf_file/0017/2301209/CHS_Annual-Report-2022-23_AAA-DIGITAL-FAMA.pdf). Accessed on 1 December 2023.

replacement. Investment below these benchmarks would lead to the deterioration of the asset portfolio and accruals of long-term backlog maintenance requirements.

Over the 10-year period to 2017, the average annual maintenance spend as a percentage of ARV was 0.48% and 0.37% for capital renewal spends over a 4-year average period, which was well below the benchmarked thresholds.²² The 2017 SAMP also found that the financial sustainability of the required maintenance spend was considered high-risk²³ and that funding required for proposed maintenance and capital renewal would not be affordable. The impact of this includes the continued deterioration of the hospital's assets, increasing the likelihood of failures and closures which would risk disruption to service continuity. Based on the early evidence from the 2023 SAMP, the condition of the gross floor area has deteriorated from 75% of gross floor area being good or better condition in 2017 to 37% – in 2023.

If CH were to undertake extensive extension of life works, (1) they would need to be staged to maintain operational continuity which would create further delays increasing an already unacceptable risk to safety across the precinct, and (2) it would not provide any additional capacity for CH to meet growing demand.

3.1.2. Problem 2 – Infrastructure that is not fit-for-purpose and poorly configured results in inefficient and fragmented services and creates unacceptable risks to staff and patients

Some of the buildings within the scope of CHMPP2 have been in operation since the 1970's and as a result are increasingly difficult and costly to refurbish to support the delivery of contemporary models of care. As a result, evolving technology and health care delivery practices are retrofitted into unsuitable environments, which impacts the efficacy of the service delivered. This is due to the poor configuration and inflexibility of existing infrastructure, which cannot adequately adapt to the latest service requirements. These factors hinder the overall benefit realised from implementing new technologies and the more advanced treatments they promise to deliver. Further, risks may emerge around the expected versus actual efficacy of treatments delivered which could impact the health outcomes for patients.

3.1.2.1. Evidence 2.1 – Existing facilities are not fit-for-purpose

The 2017 SAMP sets the framework for the management of CH's asset portfolio. A functionality assessment was undertaken by the SAMP to determine a buildings fitness to deliver the required services. This found that the functionality of 9 out of the 28 Canberra Hospital Campus buildings are rated as 'poor'.²⁴ Buildings 1, 7, 10 and 12 are considered high-priority or critical assets²⁵ wherein the assets are deemed vital to the continuity of CH's service delivery and must be kept in an acceptable condition where only minimal/minor deterioration is tolerated.²⁶

A summary of the condition and functionality assessments is provided in **Figure 10**. In the SAMP, all critical or high-priority assets were found to be below the target condition and functionality rating. Assets below the target condition rating indicate they are at a level of deterioration that does not meet the targeted needs of CH, while assets below the target functionality rating indicate they are at a condition below the target fitness-for-purpose. This includes aspects across spatial relationships (scale, layout), amenity, environmental comfort, legislative compliance, aesthetics and adaptability.

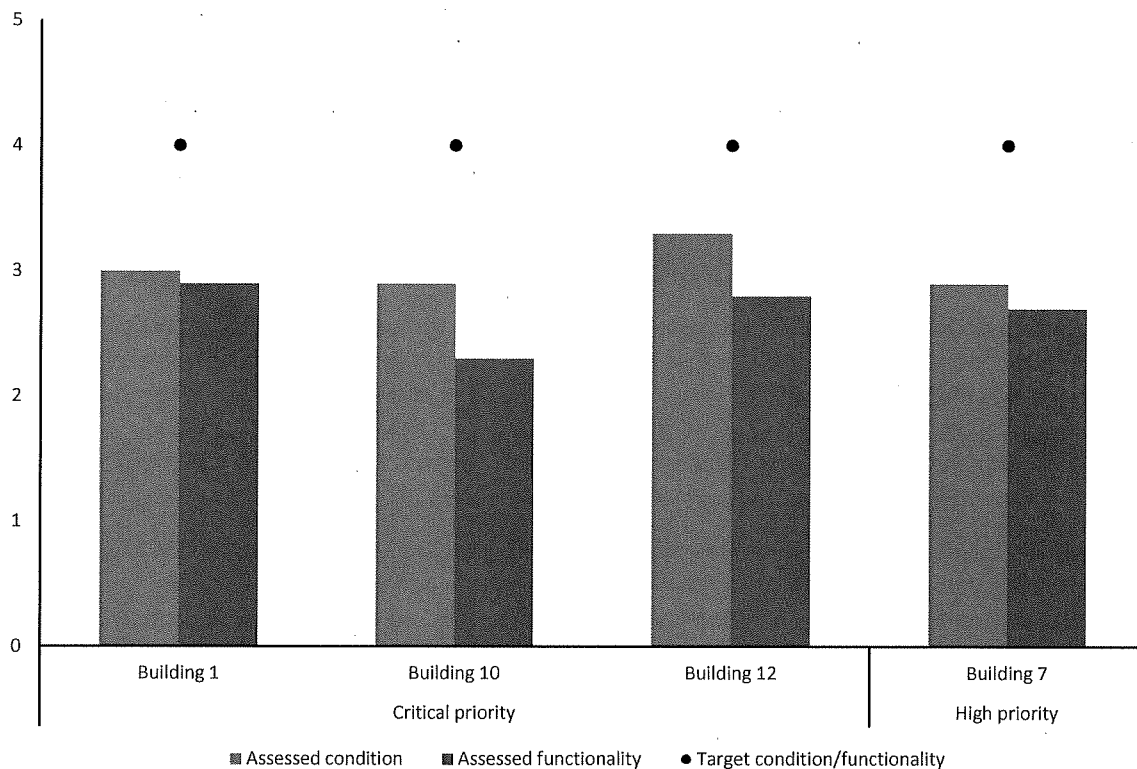
22 Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023

23 Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023

24 Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023

25 The SAMP uses an asset priority index which determines the relative strategic importance or mission alignment of each asset. An asset priority description of critical asset is the highest level of asset priority.

26 Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023

Figure 10: SAMP Condition and Functionality Assessment²⁷

Outdated buildings with poor condition and functionality can lead to:

- Inability to deliver contemporary models of care in modern and safe environments;
- Restrictions in effectively implementing new technologies to support pathology, endoscopy, imaging and pharmacy services;
- Inability to support sustainability goals in line with *ACT Climate Change Strategy 2019-2025* and *CHMP Zero Emissions Strategy*;
- Inability to meet the growth and demand of the community;
- Insufficient clinical service delivery; and
- Catastrophic failure of assets.

The impact on CH if this problem is not addressed are outlined further below.

Inability to deliver contemporary models of care

The design philosophy that guided the development of existing buildings reflect an outdated model of care. Generally, these buildings were not future proofed or physically equipped to be able to respond to the challenges and demands of current and future health care delivery. However, over time, CH has undertaken conversions and modifications to respond to changes as best as the existing infrastructure would allow. As a result of continual change, several services are currently being delivered in settings that are no longer suitable, and any further upgrades and modifications to the existing structures would likely deliver a sub-optimal result and only hinder the implementation of contemporary models of care. These challenges and impacts are outlined in Table 4.

²⁷ Source: ACT Government Health, The Canberra Hospital Strategic Asset Management Plan 2017, accessed 29 August 2023

Table 4: Key examples of services in settings that are no longer fit-for-purpose

Service and location	Issue	Consequences
Clinical services for digestive and liver diseases include gastroenterology and hepatology offering services to a wide range of digestive system diseases and disorders (of the bowel, intestines, stomach, oesophagus, liver, and pancreas). Such services also rely on an endoscopy, a procedure used to screen and treat disease using an endoscope to observe the inside of the body. These services are currently located in CH Building 1, Level 2.	The current endoscopy suites are unable to meet the growing demand for endoscopy services that are essential for the diagnostic requirements of the gastroenterology and hematology units. These suites also do not meet current infection control standards.²⁸ Nearly 8,000 people are on the public endoscopy waiting lists with 78 per cent waiting longer than the clinically recommended timeframe.²⁹ In addition to an inability to meet growing demand, the current configuration of the endoscopy suites at CH are limited in their ability to support more complex procedures.³⁰ This includes insufficient procedure rooms and support spaces such as recovery area to support these types of procedures.	The bottlenecks arising from poor building configurations lead to inefficiencies, increasing average length of stay (ALOS) and reducing throughput. This will continue to worsen as demand for these services grows, resulting in avoidable delays in the detection of treatable diseases and consequently, longer stays in hospital, and avoidable healthcare costs.
Pathology is the study and diagnosis of diseases through the examination of tissues, organs and bodily fluids. These services are currently located in CH Building 10.	With the pathology service at CH being in operation for almost four decades, it is currently accommodated in ageing infrastructure which lacks the space to expand and meet increasing demand over time. The limited space restricts the integration of new technologies which can be used to increase the speed and volume of testing undertaken. This is one measure that would be of substantial benefit to CH in meeting growing demand. Demand for pathology services will continue to increase due to several factors. This includes a backlog of demand since the COVID-19 pandemic, a growing and ageing population with an increasing prevalence of chronic disease. The pathology service at CH is the only public pathology service in the ACT, servicing the ACT and surrounding NSW communities with a broad range of testing capabilities. Without an expansion, the quality, consistency and efficiency of the service may fall behind other states and compromise patient care. Building 10 presents a high-level risk to Work, Health and Safety (WHS), with the electrical switchboard requiring a recent upgrade due to an extreme risk of failure. In addition, the Level 3 – Anatomical Pathology Unit is currently being upgraded due to extreme WHS risks to staff. Many other WHS-related risks remain in Building 10.	The impact is a sub-optimal level of service including issues associated with quality, consistency, accuracy and timeliness which are all factors that could affect health outcomes. There is also the potential for service disruption due to building faults. In the event of an identified WHS risk forcing the closure of Building 10, the Pathology service would be rendered inoperable while repairs are carried out. This presents an unacceptable risk to service continuity across the Territory. In preventing closure, there is a significant financial burden associated with the increasingly frequent maintenance required to keep B10 operational.

28 Source: Aspex Consulting, Canberra Hospital Redevelopment Draft Service Model 7 August 2023, accessed 7 August 2023

29 Source: ACT Health, Expanding Territory-wide endoscopy service 2023-24 Budget – Business Case, accessed 27 November 2023

30 Source: ACT Health, Expanding Territory-wide endoscopy service 2023-24 Budget – Business Case, accessed 27 November 2023

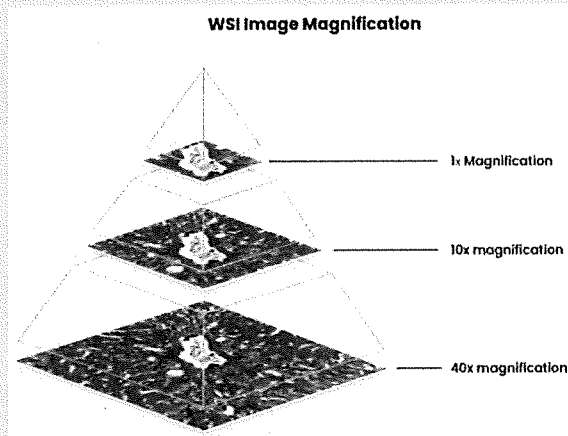
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Service and location	Issue	Consequences
The Pharmacy Service is a core clinical support function, which supports the safe and effective dispensing and use of drugs to support the delivery of clinical care. These services are currently located in CH Building 1, Level 2.	Given the height constraints of the existing building, robotics cannot be integrated into the current pharmacy service and cannot be resolved through upgrades. This would require the redevelopment of the buildings structure which would be an inefficient use of resources compared to a replacement of the existing asset. There are also known areas containing hazardous materials. However, due to the existing building configuration, these areas are hard to reach and cannot be addressed without shutting down the building.	Robotics offer improvements in dispensing volumes, turnaround times, and error mitigation. Without robotics, there is an increased likelihood of medication errors and associated waste as well as higher turnaround times. This can lead to an increased ALOS and avoidable readmissions. Currently, medication disposal and waste costs CH \$2.4 million per year. Manual handling also increases the risk of contamination and the transmission of hospital acquired infections.
Nuclear medicine involves the use of radioactive substances in the diagnosis and treatment of disease. These services are currently located in CH Building 12, Level 2.	Despite investments in advanced medical imaging technology for faster scanning, waiting times have not reduced. This is partly driven by an insufficient number of holding bays and a lack of space needed to increase patient intake.	Without additional holding bays, the benefits associated with the recently upgraded medical imaging equipment. This results in increased waiting lists and delayed detection of potentially treatable diseases, in turn incurring avoidable health costs.
Inpatient Units (IPUs) provide accommodation for patients who need to be admitted to hospital for procedures or more acute care and monitoring. IPUs are currently located in CH Building 1.	Existing IPU wards are ineffective in delivering contemporary models of care, as they cannot accommodate modern Australasian Health Facility Guideline (AusHFG) design guidelines and standards.	Ageing IPUs that do not align to current AusHFG guidelines can become non-compliant with existing hospital and building standards, which can compromise the quality and consistency of care delivered.
The discharge lounge provides a designated area for patients to wait to be picked up without needing to occupy an inpatient bed. The discharge lounge is currently located in CH Building 12.	Demand for the existing discharge lounge is often at or over capacity. When the discharge lounge is at capacity, any additional patients deemed medically ready for discharge (i.e., those who will be discharged within the business day or are due to be transferred to another hospital) must wait in an acute care bed. This can create a blockage where incoming patients requiring a bed may need to wait longer than is clinically advisable or even lead to a cancellation of elective surgery procedures.	The use of acute beds by patients ready for discharge affects CH's ability to admit patients from the ED and the Operating Theatre, causing bottlenecks and delays in the provision of services in both areas of CH.

Restricted ability to implement new technologies to support pathology services

The healthcare industry has undergone significant changes in the way care is delivered, including the adoption of remote care models, increased automation, and the utilisation of AI in diagnosis and care delivery pathways. Adopting these technologies is crucial to meet the growing demand for healthcare services and maintain delivery of high-quality healthcare.

Case Study: How AI technology is transforming pathology



Source: Mobidev³¹

AI is playing a crucial role in addressing workforce shortages in pathology and enabling the delivery of more effective diagnoses and timely care to individuals.

In particular, Whole Slide Imaging (WSI) is transforming the Anatomical Pathology field, enabling the magnification of high resolution, large format scans of human tissue (as illustrated in the adjacent figure).

However, the Category 7 cabling needed to install WSI and the transmission of large volumes of data cannot be retrofitted into Building 10, without significant redevelopment. Therefore, the benefits from such technology cannot be realised until the appropriate infrastructure is made available.

In the Canberra Health Services Strategic Plan 2020-23,³² technology is recognised as both an opportunity and an enabler for exceptional healthcare. However, with outdated facilities – including the underlying services infrastructure such as power, data, water etc. – the ability to effectively implement and utilise new technology is constrained.

There has been a marked shift in the use of technology to increase the efficiency of hospital operations and improve patient outcomes. For example, robotics is fundamentally reshaping the operations of pathology laboratories and pharmacy dispensaries. Manual handling is being replaced with automation, standardising workflows, improving reliability and increasing throughput. However, the current state of Building 10 is unable to support the effective implementation health technologies that could improve patient outcomes.

Outdated pathology facilities also place a restriction on the range of in-house testing performed, and in some cases forcing the health service to outsource more specialised tests which are costly and time-intensive to undertake. As a result, CH incurs a cost, rather than a revenue source for these types of tests. Expanded capacity to accommodate new equipment could enable CH to undertake these tests in-house.

Inability of existing infrastructure to support sustainability goals

The ACT Government is committed to achieving net-zero emissions by 2045 and has outlined a Climate Change Strategy, including a milestone target in 2025, which seeks to reduce emissions from Government operations from 2020 levels by 33 per cent without the use of offsets.³³ For the health sector, this includes establishing and implementing a pathway towards achieving net zero emissions by 2040. However, the current state of the CH campus prevents it from reaching this goal due to the deteriorating condition of building façades and the significant reliance on natural gas to power hospital services.

The CH campus is a major emitter of carbon emissions, accounting for 7,164 tonnes of carbon dioxide (CO₂) from natural gas sources in 2019. The total carbon emitted by the CH makes up almost 30 per cent of

31 Source: Anthony Kantseml. 19 July 2022. How AI Helps in Whole Slide Image Analysis for Cancer Detection. (<https://mobidev.biz/blog/ai-digital-pathology-helps-whole-slide-imaging-for-cancer-detection>)

32 Source: Canberra Health Services. Canberra Health Services Strategic Plan 2020–2023, (https://www.canberrahealthservices.act.gov.au/__data/assets/file/0005/1933178/CHS-Strategic-Plan-2020-23_AA-DIGITAL-FA.pdf)

33 Source: ACT Government. ACT Climate Change Strategy, (<https://www.climatechoices.act.gov.au/policy-programs/act-climate-change-strategy>)

total carbon emissions from ACT Government operations, which includes a range of public facilities across health, education, public transport, utilities and general offices. As outlined in **Table 5**, older buildings, including Building 1, contributed to over half of the carbon emissions emitted by the CH site.

Table 5: Natural gas CO2 emissions (tonnes) (2019 calendar year)³⁴

Building**	CO2 emitted from Natural Gas (tonnes) (2019 calendar year)	Proportion of whole site CO2 emissions (tonnes) (2019 calendar year)
Building 1*	3,806	53%
Building 10	0	0%
Building 12*	84	1%
Whole site	7,164	100%
Comparison to ACT Government CO2 emissions	The whole of the ACT Government operations (public health facilities, public education facilities, public transport facilities, public utilities and general offices) emits 25,352 tonnes of CO2 (2019 calendar year). Canberra Hospital Campus emits 28% of the whole of the ACT Government operations	

* Figures represent CO2 emitted from a plant shared between Buildings 1 and 12.

** Buildings 7 and 23 have no emissions according to the ACT Government's emissions calculations and Building 6 doesn't have any submetering to attribute campus gas consumption.

The CH currently relies on natural gas to power various equipment and functions including hot water systems, air conditioning units, heating plants, steriliser steam generators, and cooking facilities. To achieve the vision of the climate change strategy, existing natural gas plants will need to be replaced with electric plants. This is currently unachievable due to insufficient available area in existing buildings to support required plant upgrades.³⁵

In addition, the power usage and efficiency of existing buildings is well below existing building standards. Building façades – including for Buildings 1, 10 and 12 – have reached the end of their usable lives, resulting in uncontrolled exchange of air and leakage. This affects the efficiency of heat pumps, increasing electrical load and the need for defrost measures.

An audit of the HVAC systems undertaken in 2017³⁶ noted that the HVAC systems in Building 1 are antiquated and well below current-day energy efficiency requirements resulting in excess power consumption to maintain and regulate air supply. These units are at the end of their design life which contributes to the poor energy performance of the existing infrastructure.

The construction of new plant rooms with more sustainable heating processes would support the ACT Government to meet its sustainability goals. However, the delivery of these works would require the temporary diversion of electrical services to the effected buildings. This would likely result in the interruption of existing clinical and non-clinical functions unless appropriate decanting and relocation arrangements are put in place. This indicates that a campus-wide solution is needed to sustainably manage the hospital's long-term energy needs.

³⁴ Silver Thomas Hanley. Canberra Hospital Master Plan – Zero Emissions Strategy – Building Services Design Report. <https://www.health.act.gov.au/sites/default/files/2021-12/Canberra%20Hospital%20Master%20Plan%20-%20Zero%20Emissions%20Strategy.pdf>. Accessed on 1 December 2023.

³⁵ Silver Thomas Hanley. Canberra Hospital Master Plan – Zero Emissions Strategy – Building Services Design Report. <https://www.health.act.gov.au/sites/default/files/2021-12/Canberra%20Hospital%20Master%20Plan%20-%20Zero%20Emissions%20Strategy.pdf>. Accessed on 1 December 2023.

³⁶ Arup. 11 September 2017. Canberra Hospital Study – HVAC Services Audit.

3.1.2.2. Evidence 2.2 – Existing facilities are fragmented and poorly configured leading to operational inefficiencies and increased risk to staff and patients

Poorly configured and fragmented facilities in Buildings 1, 12, 10, 6, 23 and 7 lead to operational inefficiencies and adverse patient outcomes (e.g., increasing ALOS) driven by:

- Poor coordination and collaboration between key functional relationships;
- Difficulty in enabling separation of users and secure paths of travel; and
- Inefficient use of space and equipment.

The need to address these challenges are discussed further in the following sections.

Poor coordination and collaboration between key functional relationships

Pathology and clinical support services face significant challenges due to the layout of the existing infrastructure. Currently, pathology is accommodated over multiple levels within Building 10, which compromises the ability to collaborate with, and coordinate across, key functional adjacencies.

There is an increased trend towards collaborative Diagnostic Genomics (DG) approaches between genomic experts, haematologists, anatomical pathologists, microbiologists, and infectious disease experts, highlighting the shortcomings of the existing functional distribution of laboratory units across Building 10.

At present, the current laboratory space for DG is not fit-for-purpose and does not meet all of the National Association of Testing Authorities (NATA) requirements including the need for appropriate clean and dirty separations. This compromises the effective treatment of patients, especially those with metastasised cancer or other life-threatening and/or rare diseases. Further examples of poor coordination and collaboration between key functional relationships is outlined in Table 6.

Table 6: Issues with current clinical support service adjacencies and consequences

Clinical Service	Adjacency required	Issue with existing infrastructure	Consequences
Immunopathology	Collocated with Specimen Reception, Haematology and Chemical Pathology	Immunopathology was moved to Level 6.	Staff must travel between four floors to collect and deliver samples. This results in delays in sample processing and affects the overall efficiency of the pathology service, which could lead to longer waiting times.
Subspecialties of Pathology (e.g., Anatomical Pathology, DG, Microbiology and Molecular Pathology)	Collocated with other subspecialties of Pathology across a limited number of floors	The subspecialties are spread over 6 floors.	Limited operational efficiency, space efficiency and synergy between subspecialties. Resources such as equipment, personnel and supplies may need to be duplicated or divided among different locations leading to suboptimal resource allocation. The fragmentation of the subspecialties may also result in challenges to effective communication and coordination. This could restrict efficient decision-making and impact patient outcomes.
Mortuary	Collocated with Pathology	The mortuary is located in a separate building requiring body transfer through hospital grounds.	Currently the deceased are transferred between buildings using public spaces, including lifts. Such public pathway invades the privacy of the deceased and their families and pose the public at risk of infection transmission.
Diagnostic Genomics	Collocated with other Pathology specialties	Current laboratory space is too small to meet NATA accreditation requirements.	A lack of space to hold new equipment, such as Next Generation Sequencing, restricts the hospital's ability to keep up with advancements in medical technology that may improve overall operational efficiency and patient outcomes.

There are challenges across inpatient and outpatient services as outlined in Table 7.

Table 7: Issues with current Inpatient and Outpatient clinical adjacencies and consequences

Clinical Service	Adjacency required	Issue with existing infrastructure	Consequences
Maternity	Collocated with operating theatres	Maternity ward and birthing suites are too distant from operating theatres.	The distance between these services restricts the hospital's ability to manage emergency caesareans and other emergency procedures in the event of complications. This could increase the risk of avoidable clinical deterioration resulting from the delay in administering emergency care.
Endoscopy	Collocated with operating theatres	Endoscopy suites are not collocated with operating theatres.	Collaboration, communication and coordination of patients between gastroenterologists and colorectal and upper GI surgeons is challenging. This can lead to delays in treatment and avoidable clinical deterioration, particularly if patients need to be transported between the two areas.

In addition, a poor working environment – including for example, ageing and dilapidated building fabric, as well as configuration, lighting, ventilation and accessibility issues – raises significant safety and operational risks in conflict with existing work and health safety (WHS) policies. CH has a duty of care to its current staff to provide a safe and conducive working environment to deliver quality patient care, as well as making CH an attractive destination for the ongoing development of the next generation health workforce.

Difficulty in enabling separation of users and secure paths of travel

The configuration of, and interconnection between, existing buildings make it difficult for patients and staff to navigate the campus creating disorientation and confusion.

The current configuration of buildings also creates challenges in separating and maintaining the privacy of different patient groups being transferred between buildings. For example, deceased persons are currently transferred to the mortuary via hospital corridors and grounds shared with the general public. Access from Intensive Care Unit (ICU), Occupational Therapy (OT), Critical Care Unit (CCU), ED, is via the Building 12 Level 3 corridor into Building 1 Level 3 staff lifts. Access from Building 3 is gained via Building 2 Level 3 pathway into the Building 1 Level 3 lifts. It is essential to establish designated and secure pathways for the transfer of deceased persons within the hospital premises to maintain the dignity of the deceased and the privacy of their families and to mitigate potential risks associated with contamination.

Greater separation of users and secure paths of travels are required to reduce the risk of infection. For example, in 2023, a COVID-19 outbreak in Building 1, led to the transmittal of the virus to 22 patients and several staff members.³⁷ Building 2 creates a physical bottleneck and infringes on patient flow due to the limited amount of public waiting spaces in its current layout. Internal foot traffic converges with courier, community and patient traffic which increases congestion. The substantial flow of patients transiting through Building 2 to access services in other buildings, particularly 19, 20 and 3, and further to 10 and 12 (imaging department) increases the risk of spreading infections. This poses a risk for all patients, however the consequences can increase for patients with a compromised immune system, including cancer patients who regularly transit high-traffic public areas to access imaging services.

Improved separation of users, secure pathways and efficient inter-building linkages are needed to support wayfinding, maximise privacy and security and reduce the risk of infection spread.

³⁷ Source: Lizzie Waymouth, 1 June 2023, UPDATE: COVID restrictions back in place in CHS facilities as alert level raised to amber. Accessed on 29 November 2023, (<https://the-riotact.com/chs-implements-additional-safety-measures-after-covid-19-outbreak-at-canberra-hospital/666659>).

Inefficient use of space and equipment

The fragmented layout of the hospital's buildings has led to spaces on campus that are not utilised effectively, for example:

- Common spaces and administration areas such as educational spaces, meeting rooms, staff rooms and break rooms, are located far from clinical areas, requiring staff to walk to different buildings to access these facilities. This makes it difficult for staff to efficiently reach these spaces within allocated break times.
- In the absence of procedure rooms within inpatient units and outpatient service areas, patients undergoing minor operations or medical imaging services must be transferred to surgical rooms since sterility cannot be maintained on the wards due to a lack of procedure rooms.
- Existing specialised wards (e.g., the stroke unit) do not accommodate the ACT mandated ratios of one nurse for every four patients for morning or evening shifts and one to three for all patients with an acute stroke condition, which were introduced in 2022.³⁸ The configuration of these specialised wards results in inefficient nursing allocations, with services continuing to operate outside of the guidelines at one nurse to every two or four patients.

3.1.3. Problem 3 – Insufficient capacity to meet demand puts the health of Canberrans and the broader catchment at risk and jeopardises benefits of the CSB

The ACT community has changed significantly since the CH facilities were built over 50 years ago. The ACT Health Services Plan indicates that the Territory's population increased by 14% between 2016-21 and is projected to increase by a further 10% over the decade to 2030³⁹

Furthermore, the Territory's population in the 70+ age category increased by 34% between 2016 to 2021. This is forecast to rise by a further 23% by 2030, which is more than double the growth rate for the population as a whole.⁴⁰ Older age groups have a higher prevalence of chronic diseases and other health conditions, resulting in higher rates of hospital admission and extended lengths of stay.⁴¹

Chronic conditions are the leading contributors to the burden of disease across the ACT, with one in two adults in the ACT having a chronic condition such as asthma, arthritis, cancer, diabetes or mental illness.⁴² Canberrans living with complex chronic disease often have multiple co-morbidities,⁴³ which requires a coordinated healthcare approach and has put further strain on hospital resources. For example, the rise in obesity cases in the ACT is increasing demand for bariatric services, which are challenging to deliver due to a shortage of dedicated facilities and equipment within CH to serve these patients.

Changing climate conditions have also seen a spike in comorbidities and heat-related conditions which are increasing the strain on existing services across the Territory. Global evidence suggests that a 1 degree increase in temperature is associated with a 0.5% increase in emergency hospital admissions.⁴⁴ With climate events increasing in frequency and severity, the demand for health services is likely to increase.

38 ACT Health. Nurse/midwife-to-patient ratios. Accessed on 8 December 2023. (<https://www.health.act.gov.au/health-professionals/nursing-and-midwifery-office/nurse/midwife-patient-ratios>)

39 Source: ACT Government Health, ACT Health Services Plan (2022-2030) (https://www.health.act.gov.au/sites/default/files/2022-09/ACT%20Health%20Services%20Plan_2022%20to%202030.pdf), accessed 23 August 2023

40 Source: ACT Government Health, ACT Health Services Plan (2022-2030) (https://www.health.act.gov.au/sites/default/files/2022-09/ACT%20Health%20Services%20Plan_2022%20to%202030.pdf), accessed 23 August 2023

41 Source: ACT Government Health, ACT Health Services Plan (2022-2030) (https://www.health.act.gov.au/sites/default/files/2022-09/ACT%20Health%20Services%20Plan_2022%20to%202030.pdf), accessed 23 August 2023

42 As above

43 As above

44 Guo, C., Ge, E., Lee, S. et al. Impact of heat on emergency hospital admission in Texas: geographic and racial/ethnic disparities. *J Expo Sci Environ Epidemiol* (2023). <https://doi.org/10.1038/s41370-023-00590-6>

While there is increasing service demand more broadly for elective and emergency surgery, chronic disease management, cancer treatment, and mental health, these have been exacerbated by COVID-19.⁴⁵

The demand for health services will also continue to rise as life expectancy and the prevalence of chronic and multi-morbid conditions increase. The forecasted demand for services for inpatient and outpatient services, as well as pathology and clinical support services at CH is discussed in Table 8.

Table 8: Forecasted demand for services

Service	Demand forecasted to increase
Inpatient & Outpatient services	The increasing burden of disease along with a growing and ageing population will drive an increase in demand for inpatient and outpatient services.⁴⁶ There has also been significant growth in demand for surgeries, which has seen public hospital theatres operating at or near capacity.⁴⁷ With CH as the primary referral hospital in the region, demand is forecasted to increase across both same day and multi-day admissions: • Same-day admissions will increase by approximately 3.7% per annum to 2030.⁴⁸ • Multi-day admissions will increase by approximately 3.1% per annum to 2030.⁴⁹ Demand for public services at Canberra hospitals (including CH and North Canberra Hospital) are also forecast to increase over the period to FY31. • Demand for medical services is forecasted to increase by 3.5% per annum to 62,625 separations by FY31. FY41 separations will reach 75,495.⁵⁰ • Demand for palliative care services is forecasted to increase by 3.7% per annum to 1,159 separations by FY31. FY41 separations will reach 1,397.⁵¹ • Demand for surgical services is forecasted to increase by 2.6% per annum to 49,002 separations by FY31. FY41 separations will reach 57,951.⁵² With inpatient and outpatient services already at capacity, this will further increase waiting times.
Pathology & Clinical Support Services	As a result of increasing inpatient and outpatient same-day, multi-day stays as well as ED presentations, the demand for pathology services will continue to increase. As at FY20, ACT Pathology perform 2.5 to 2.6 million testing annuals each year.⁵³ Pathology at CH is a Territory-wide service, with the CH expected to become the primary pathology provider (to a capability Level 6), supporting other major health facilities such as NH and UCH. With the expansion at NH, there will be additional demand for pathology services at CH. The demand for pathology services is forecasted to increase per the following from FY23: • For anatomical pathology, demand for surgical/procedural separations is expected to increase by 33.7% FY36, resulting in an additional 7,973 anatomical pathology examinations.⁵⁴ • For tests other than anatomical pathology, it is expected that these will increase by 37.7% growth in demand, or 631,990 additional tests by FY36.⁵⁵

45 Source: Aspex Consulting, Canberra Hospital Redevelopment Draft Service Model 7 August 2023, accessed 7 August 2023

46 As above

47 As above

48 Source: Aspex Consulting, Canberra Hospital Redevelopment Draft Model of Care – Pathology and Clinical Support Services Building (June 2023), accessed 7 August 2023

49 Source: Aspex Consulting, Canberra Hospital Redevelopment Draft Model of Care – Pathology and Clinical Support Services Building (June 2023), accessed 7 August 2023

50 Source: EY analysis for Aspex provided demand figures. Accessed 7 December 2023.

51 Source: EY analysis for Aspex provided demand figures. Accessed 7 December 2023.

52 Source: EY analysis for Aspex provided demand figures. Accessed 7 December 2023.

53 Source: Aspex, Canberra Health Capital Planning Pathology Functional Design Brief. 4 September 2023. Accessed on 7 December 2023.

54 Source: Aspex, Canberra Health Capital Planning Pathology Functional Design Brief. 4 September 2023. Accessed on 7 December 2023.

55 Source: Aspex, Canberra Health Capital Planning Pathology Functional Design Brief. 4 September 2023. Accessed on 7 December 2023.

Service	Demand forecasted to increase
	Routine tests are forecasted to increase by 28.3% or 259,665 tests by FY36.⁵⁶

Appendix G - Aspex Consulting (2023). SoA Canberra Hospital Capacity detail 2021-22 Phase 2 scope 23Nov 1

The anticipated number of Points of Care (POCs) required for two key inpatients and outpatient services to meet FY31 and FY41 demand through 'Like for Like' Replacement is outlined in Table 9.

Table 9: POC demand FY31 and FY41

Service	Current	FY31	FY41
Inpatients and discharge	254	276	402
Ambulatory and Day Medical Services	12	31	70

3.1.3.1. Evidence 3.1 – Insufficient capacity to meet changing demand

Current median waiting times for specific CH services have escalated beyond the recommended timeframes, highlighting the need to address an already capacity-constrained hospital campus. Analysis of specific high-demand services are outlined as follows:

- The waiting time for semi-urgent surgery was 102 days, exceeding the recommended admission timeframe of 90 days. This represents a 13.33% increase from FY18;^{57,58}
- Demand for endoscopy services across the Territory has outstripped supply since 2006, with public patients having to wait on average 399 days. This includes 78% of patients waiting longer than the clinically recommended timeframe. In the early months of 2023, 92 procedures were diverted from CH to Queanbeyan;⁵⁹
- Only 38% of urgent care emergency department patients received treatment within the recommended time of 30 minutes;⁶⁰ and
- Just 49% of semi-urgent patients received care within the suggested 60 minutes.⁶¹

As outlined in Problem 1, the discharge lounge implemented to support the turnover of inpatient beds is at demand for the existing discharge lounge is often at or over capacity restricting its effectiveness given the overflow are remaining in inpatient beds slowing the overall bed turnover rate.

3.1.3.2. Evidence 3.2. The demand for clinical services born from new precinct capacity cannot be met, putting a strain on clinical support services

The development of the CSB has increased the capacity to treat patients with additional theatre suites and an expanded ED. The ICU will double the number of beds from 30 to 60⁶² while the new ED will increase its

⁵⁶ Source: Aspex. Canberra Health Capital Planning Pathology Functional Design Brief. 4 September 2023. Accessed on 7 December 2023.

⁵⁷ Source: Australian Government Australian Institute of Health and Welfare. (The Canberra Hospital - Australian Institute of Health and Welfare (aihw.gov.au)). Accessed 23 January 2024.

⁵⁸ Source: ACT Government. Public elective surgery and the surgical waiting list. (Public elective surgery and the surgical waiting list - Canberra Health Services (act.gov.au)). Accessed 23 January 2024.

⁵⁹ Source: ABC. ACT public waiting list for endoscopy services to prevent possibly fatal cancers blows out to 6,000. (ACT public waiting list for endoscopy services to prevent possibly fatal cancers blows out to 6,000 - ABC News). Accessed 23 January 2024

⁶⁰ Source: Australian Government Australian Institute of Health and Welfare. (The Canberra Hospital - Australian Institute of Health and Welfare (aihw.gov.au)). Accessed 23 January 2024.

⁶¹ Source: Australian Government Australian Institute of Health and Welfare. (The Canberra Hospital - Australian Institute of Health and Welfare (aihw.gov.au)). Accessed 23 January 2024.

⁶² Source: ACT government. Key features of the Canberra Hospital Expansion's new Critical Services Building. (<https://www.act.gov.au/canberrahospitalexpansion/features/features>). Accessed on 30 November 2023.

treatment spaces by 72 new spaces to 147.⁶³ There will be 22 new operating theatres and two additional wards with 64 surgical inpatient beds,⁶⁴ significantly increasing service levels from current operations.

While the increased supply of clinical areas in the form of inpatient beds, operating theatres and additional wards will address some of the demand requirements, CH also requires a proportional increase in the supply of clinical support services for the additional clinical areas to function efficiently and effectively. Without a proportional increase in support services, this will lead to bottlenecks and reduced operational efficiency, such as increased duration of stay. Furthermore, this will increase the risk of clinical deterioration due to a delay in the provision of care.

Furthermore, the poor location and distribution of clinical support services mean that delays often occur between the request and fulfillment of services, such as pharmacy, leading to potential delay and disruption in patient care. The responsiveness of clinical staff may also be affected by the increased distance between different areas of the hospital, resulting in delays and potential avoidable clinical deterioration. This lack of synergy can also contribute to a longer length of stay for patients and in turn longer waiting times.

A broader opportunity exists to improve the operational efficiency of CHS to manage demand

The Business Case will consider the immediate infrastructure needs to maintain the delivery of existing services and to meet demand for a growing and ageing population. While this in and of itself would serve to deliver significant clinical, social and economic benefits, there are other service planning and model of care opportunities that could result in a more significant step-change in clinical and operational efficiency. These would enable CHS to deliver more services to meet greater demand without the need for additional physical infrastructure. While such service enhancements would be subject to further planning and development outside of this Business Case, they could include (but would not be limited to):

- Increasing Hospital-in-the-Home (HITH) capacity to deliver more care outside of the hospital walls which will ensure that patients needing hospital-based care have access when they need it.
- Reducing the ALOS by leveraging new technologies that allow diagnostics and treatments to be delivered more efficiently and effectively, implementing effective discharge planning, and enhancing care coordination. These strategies can improve the efficiency of capital investment and reduce the need for investments over the long term.
- Developing a more efficient distribution of services across the Territory's major hospitals - including CH, NH and UCH - to meet the changing demand and demographic profile across the Territory's population. This would mean that the location and volume of services are optimised to ensure that patients have timely access to the services they need close to where they live.⁶⁵

⁶³ Source: ACT government. Key features of the Canberra Hospital Expansion's new Critical Services Building. (<https://www.act.gov.au/canberrahospitalexpansion/features/features>). Accessed on 30 November 2023.

⁶⁴ Source: ACT government. Key features of the Canberra Hospital Expansion's new Critical Services Building. (<https://www.act.gov.au/canberrahospitalexpansion/features/features>). Accessed on 30 November 2023.

⁶⁵ At the time of writing, this is subject to the outcomes of a separate project to assess the merits of a network-based approach to the Territory's service delivery model.

4. Strategic and Policy Alignment

Key messages

- As part of its Territory-wide strategy to improve access to health services, the ACT Government has implemented an agenda for modern, person-centric healthcare that provides the community with access to the right services, at the right place, at the right time.
- CHMPP2 will support the government's priority for accessible healthcare through the development of fit-for-purpose infrastructure, enabling the CH campus to meet growing demand influenced by population growth and changing patient demographics.
- The new PCSS and Inpatient and Outpatient buildings will include modern, fit for purpose facilities to future proof the provision of inpatient/outpatient, pathology, and other clinical support services. Failure to undertake the staged roll-out of capacity envisaged through the redevelopment of Building 10 and Building 6 will stall the roll out of the CHMP and, therefore, the ability of the tertiary hospital to increase capacity to respond to demand.
- Designed to integrate with the new CSB and to enable the co-location of clinical support services, the new buildings will support improved clinical adjacencies and coordination between services, critical for person-centred care and maximising the benefits of the CSB.
- CHMPP2 will support the ACT's transition to a net-zero health sector by 2040: shifting buildings off natural gas, improving the climate appropriateness of new buildings, and upgrading back-of-house infrastructure to enable the electrification of facilities.
- Ongoing planning and development will continue to consider the service distribution and planning of the NH and ensure alignment in meeting the healthcare demands of the Territory and surrounding NSW regions. Early planning works undertaken to date suggests minimal impacts on the redevelopment of the PCSS Building.

4.1 Alignment with Commonwealth Government policies

The Commonwealth Government has national leadership and coordination responsibilities for the health system, overseeing a suite of initiatives, such as Medicare, Pharmaceutical Benefits Scheme (PBS), the Disability Insurance Scheme (NDIS), aged care subsidies and private health insurance rebates.⁶⁶

In May 2020, the Commonwealth contributed \$133.6 billion in funding to states and territories for public hospital services. Through the Addendum to the National Health Reform Agreement (NHRA),⁶⁷ the Commonwealth and jurisdictions agreed to four strategic priorities to guide the health system reform:

- Improving efficiency and ensuring financial sustainability;
- Delivering safe, high-quality care in the right place at the right time;
- Prioritising prevention and helping people manage their health across their lifetime; and
- Driving best practice and performance using data and research.

⁶⁶ Australian Government Department of Health and Aged Care (n.d.). The Australian health system. Retrieved on 12 October 2023 from The Australian health system | Australian Government Department of Health and Aged Care.

⁶⁷ Australian Government Department of Health and Aged Care (2020). National Health Reform Agreement (NHRA). Retrieved on 13 October 2023 from 2020–25 National Health Reform Agreement (NHRA) | Australian Government Department of Health and Aged Care.

Whilst CHMPP2 is not seeking federal funding, the project is expected to contribute to the national healthcare reform. CHMPP2 is also aligned to other Commonwealth healthcare policies and strategies including the National Health and Climate Strategy, National Digital Health Strategy and National Preventive Health Strategy.

4.2 Alignment with ACT Government policies

The ACT Government is responsible for the administration and management of CH, the provision of ambulance and emergency services and the regulation, licensing and monitoring of health premises. The key Territory commitments and policies relevant for CHMPP2 are described in Table 10.

Table 10: Alignment with ACT Government policies and commitments

Policies	Author	Description	Alignment with the CHMPP2 Project
Health Services Commitments and policies			
Accessible, Accountable, Sustainable: A Framework for the ACT Public Health System 2020-2030⁶⁸	ACT Health Directorate	The Framework provides a common vision for the policy and planning activities that will shape the future direction of the ACT health services for the next decade. The Framework is built around three strategic goals. These include: • Access • Accountability • Sustainability	<u>Accessibility</u> CHMPP2 will enable CHS to modernise and expand inpatient/outpatient, pathology as well as other clinical support services, to provide accessible health services to meet growing demand and evolving community expectations around care. <u>Sustainability</u> Under CHMPP2, modern and sustainable facilities will replace aged facilities, which supports delivering Strategic Goal 3: Strategic investment to support health services now and into the future.
ACT Health Services Plan 2022 – 2030⁶⁹	ACT Health Directorate	The Plan is an eight-year roadmap, which identifies priorities for redesigning, developing and investing in the health services funded by the ACT Government. The Plan articulates four key areas of reform as follows: • Addressing key areas of service demand and reform • Transitions of care • ACT's role as a local, Territory and regional service provider • Strengthening core ACT Government-funded clinical support services	By providing modern, fit-for-purpose, integrated and tech-ready facilities, the project will strengthen core ACT Government-funded clinical support services and future proof them to meet growing demand for clinical services. Clinical support services within scope of the CHMPP2 include: • Medical Imaging Services (MIS) • Pharmacy • Learning and teaching • Research • Administration and related support services
ACT Health Quality Strategy 2018 – 2028⁷⁰	ACT Health	The Strategy identifies strategic priorities and	<u>Quality</u>

⁶⁸ ACT Health Directorate (2020). Accessible, Accountable, Sustainable: A Framework for the ACT Public Health System. Retrieved on 9 October 2023 from Accessible, Accountable, Sustainable: A Framework for the ACT Public Health System 2020-2030 | Health.

⁶⁹ ACT Health Directorate (2022). ACT Health Services Plan 2022-2030. Retrieved on 23 August 2023 from https://www.health.act.gov.au/sites/default/files/2022-09/ACT%20Health%20Services%20Plan_2022%20to%202030.pdf.

⁷⁰ ACT Health Directorate (2018). ACT Health Quality Strategy 2018-2028. Retrieved on 9 October 2023 from [Quality Strategy Booklet.pdf \(act.gov.au\)](#)

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Policies	Author	Description	Alignment with the CHMPP2 Project
	Directorate	measures to monitor performance in: - Improving person centred care - Proactively reducing harm - Provide evidence based, effective and reliable care	CHMPP2 will develop a purpose-built PCSS building and Inpatient and Outpatient building to facilitate the latest applications in health technologies, support key clinical support service adjacencies critical to delivering effective and person-centre care, and in line with evidence-based delivery models. <u>Safety</u> CHMPP2 will proactively reduce harm to patients and staff by redeveloping deteriorating infrastructure prone to building faults. CHMPP2 will also develop secure paths of travel which allow the separation of users in line with modern, evidence-based infection controls.
ACT Wellbeing Framework 2020⁷¹	ACT Chief Minister, Treasury and Economic Development Directorate	The Framework comprises twelve domains of wellbeing, reflecting key factors that impact on the quality of life of Canberrans. Examples of domains include health, safety, access, and connectivity.	CHMPP2 will support the wellbeing of the community by supporting the provision of the right care, in the right place, at the right time. CHMPP2 will provide inpatient & outpatient services and pathology & clinical support services which meet the growing and changing demand of the ACT community. A Wellbeing Impact Assessment is provided in Appendix C.
Child and Adolescent Clinical Services Plan 2023 – 2030⁷²	ACT Health Directorate	The Plan sets out a holistic roadmap for children's health services funded by the ACT Government. It aims to work across ACT's health and early childhood systems to improve and strengthen existing services and programs for children, adolescents and their families.	CHMPP2 aligns with the objectives of the Plan, by improving care in ACT public hospitals including those for children and adolescents, improving care and services for children and complex conditions, improving care in outpatient settings and enabling the health system to respond better to the needs of children and families.
Digital Health Strategy 2019-2029⁷³	ACT Health Directorate	The Strategy presents a vision and direction to guide future activities and investments in technology across the Territory. The Strategy outlines the direction for the ACT public health system in	CHMPP2 aligns with the themes of the Strategy by enabling the provision of contemporary health technologies and modern Information and Communications Technology (ICT) infrastructure that support service innovation and improved

71 ACT Chief Minister, Treasury and Economic Development Directorate (2020), ACT Wellbeing Framework. Retrieved on 9 October 2023 from [ACT Government Wellbeing Framework](#).

72 ACT Health (2023). ACT Child and Adolescent Clinical Services Plan. Retrieved on 24 January 2024 from Child and Adolescent Clinical Services Plan 2023 – 2030.

73 ACT Health (2019). Digital Health Strategy 2019 – 2029. Retrieved on 24 January 2024 from Digital Health Strategy 2019-2029.pdf (act.gov.au).

CABINET

Policies	Author	Description	Alignment with the CHMPP2 Project
		building the digital capabilities needed to support a sustainable, innovative and world-class health system for the ACT.	patient care. In line with the proposed redevelopment of the new PCSS building into a tech-ready building, pathology is identified by the Strategy a priority area of investment, highlighting the importance of contemporary digital platforms for pathology.
Disability Health Strategy 2024-2033⁷⁴	ACT Health Directorate	The Strategy aims to ensure people with disability have equitable and appropriate access to healthcare in the ACT. It is one of the plans building on the ACT Disability Strategy 2024-2034.	CHMPP2 aligns with the principles included in the Strategy including person-centred care, ensuring that information, systems and services are best designed to meet patient needs. It also aligns with universal design to guide the planning, design and delivery of facilities, equipment and services to maximise accessibility for all people.
Infrastructure commitments and policies			
ACT Government Infrastructure Plan 2024–Health Update 2023⁷⁵	ACT Treasury	The Plan provides an update on the 2019 Infrastructure Plan. It provides key policies and strategic approaches in addressing the development of health infrastructure in the Territory. The Plan identifies continued investment in the CH campus as priority in the next five years to future proof health care provision in the Territory.	Inpatient/outpatient, pathology and other clinical support facilities were built for the clinical and design standards of their day. Over time, service delivery models and standards have evolved, with CHS facilities yet to catch up to these. CHMPP2 enables the redevelopment of aged facilities in compliance with the latest standards, future-proofing the ability of the CH Campus to support safe, efficient and effective person-centred care.
ACT Budget 2023-24⁷⁶	ACT Treasury	The 2023-24 Budget has three priorities: • Protect the health of the community • Deliver on election commitments • Turbo-charge economic recovery post COVID-19. This Budget sets out a \$870 million investment into health infrastructure.	In line with priorities to protect the health of the community, the Budget notes the commitment to deliver investments in health infrastructure including additional endoscopy, outpatient and paediatric services and elective surgeries, the design and construction of a 12-bed palliative care ward at CH, upgrades and expansions of endoscopy services, and upgrades of critical communications infrastructure, nurse call systems and fire duress alarms. It also provides \$64 million for the design of a new NH.

⁷⁴ ACT Health (2023). Disability Health Strategy 2024-2033. Retrieved on 21 December 2023 from Digital Health Strategy

⁷⁵ Built for CBR (2023). ACT Government Infrastructure Plan Health Update. Retrieved on 9 October 2023 from ACT Government Infrastructure Plan. ACT Government Infrastructure Plan Health Update.

⁷⁶ ACT Treasury (2022). ACT Budget 2021-2022. Retrieved on 9 October 2023 from [Home - Budget 2021-22 \(act.gov.au\)](#).

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Policies	Author	Description	Alignment with the CHMPP2 Project
Canberra Hospital Masterplan (CHMP) 2021 – 2041⁷⁷	ACT Health Directorate	<i>CHMP</i> is a campus-wide view of CH and sets out the next steps in redeveloping the campus over the next 20 years. The <i>CHMP</i> will significantly increase the capacity of CH to address current and future demand pressures.	CHMPP2 is Phase 2 of the <i>CHMP</i> and aligns with its vision for redeveloping outdated CH buildings.
Canberra Hospital Masterplan: Zero Emissions Strategy⁷⁸	ACT Health Directorate	<i>CHMP</i> contains a <i>Zero Emissions Strategy</i> which outlines how the CH campus will deliver emissions reduction. It also provides a supporting building services strategy.	CHMPP2 delivers on the sustainability vision of the <i>CHMP</i> .
Health Infrastructure Communication and Engagement Strategy⁷⁹	ACT Health Directorate	The overarching communication and engagement approach for the health infrastructure program. There is also a supporting <i>CHMP</i> communication and engagement overview.	Communication and engagement approach for next phase of the <i>CHMP</i> .
ACT Climate Change Strategy 2019-2025⁸⁰	ACT Government Environment Planning and Sustainable Development Directorate	The Strategy commits the ACT to reducing emissions to net zero by 2045 for the whole of the Territory. The <i>Zero Emissions Government Framework</i> commits the ACT Government including Canberra Health Services, to achieving zero emissions from Government operations earlier, by 2040. This reduction is limited to emissions from electricity and gas consumption with an initial target of 33% reduction by 2025.	The CHMPP2 will align with the ACT Government's pathway for an environmentally friendly and sustainable health sector. The CHMPP2 is the next phase in CHS' net-zero emissions pathway for the CH campus at Woden. It is a critical component for CHS to meet the ACT Government's 2040 net-zero commitment. CHMPP2 will adhere to future-driven sustainability practices and improved energy protocols, including shifting buildings off natural gas, improving climate appropriateness of buildings and upgrading back-of-house infrastructure to support electrification. CHMPP2 aligns to the CHS vision for sustainable built environments as articulated by the Statement of Commitment and Sustainability Plan.
CHS Sustainability Statement of Commitment and Plan⁸¹	Canberra Health Services	The CHS executive endorsed the Statement in December 2023. The Statement identifies areas of focus, enablers and objectives for CHS' sustainability work going forward. The vision for the built environment is to create, maintain and rehabilitate facilities that are accessible and designed to integrate ecosystem health and human health and comfort, are energy	

77 ACT Government (n.d.) Canberra Hospital Masterplan 2021-2041. Retrieved on 23 February 2024 from [Canberra Hospital Master Plan.pdf \(act.gov.au\)](#)

78 Silver Thomas Hanley Pty Ltd (n.d.). Canberra Hospital Master Plan Zero Emissions Strategy Revision E. Retrieved on 9 October 2023 from [Canberra Hospital Master Plan - Zero Emissions Strategy.pdf \(act.gov.au\)](#).

79 Information received from ACT Health Directorate

80 ACT Government Environment Planning and Sustainable Development Directorate (2019). ACT Climate Change Strategy 2019-2025. Retrieved on 9 October 2023 from ACT Climate Change Strategy to 2019 to 2025 - Summary.

81 Information received from CHS

Policies	Author	Description	Alignment with the CHMPP2 Project
		efficient, climate resilient, utilise passive design strategies, reduce urban heat island impacts, integrate sustainable resources and offset energy demands.	

4.3 Interdependencies with other ACT Government projects

ACT Government currently has two critical projects which directly impact CHMPP2 - the CSB and new northside hospital. This Business Case has been planned and developed with consideration of the opportunities that will arise from the new northside hospital.

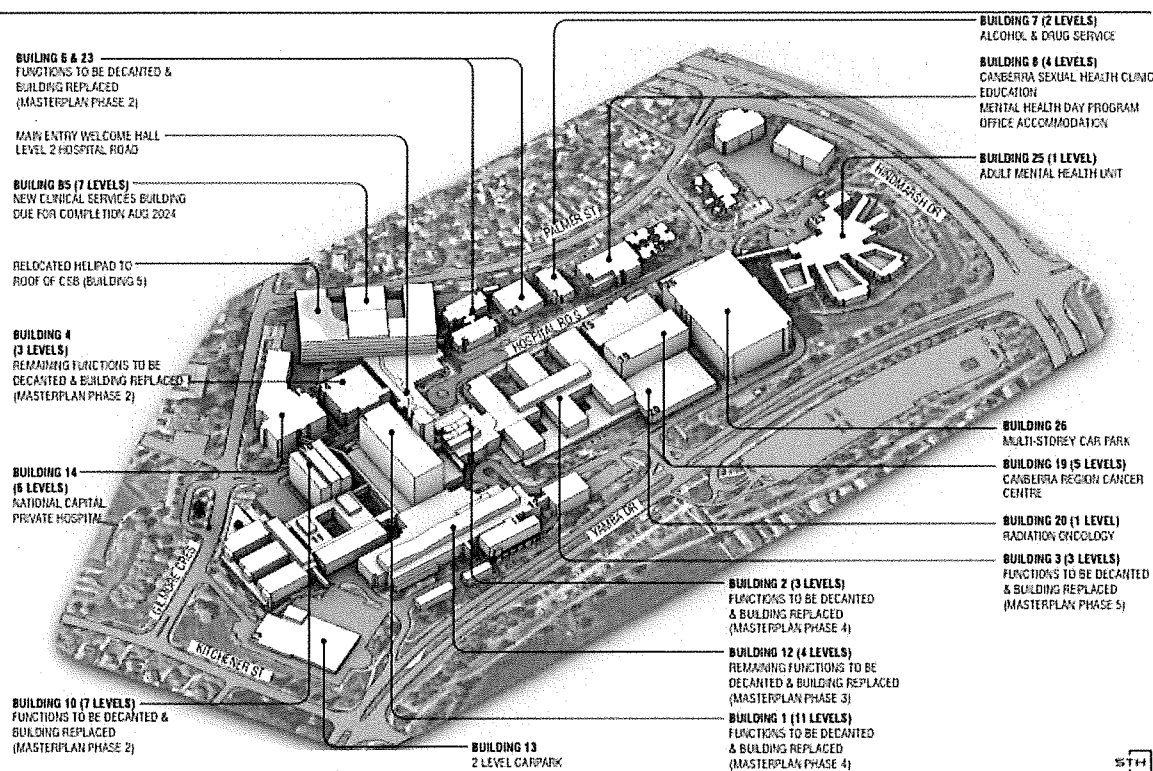
4.3.1. Canberra Hospital Expansion Project – New Critical Services Building (CSB)

The ACT Government is working with ACT Health, CHS and Major Projects Canberra (MPC) to construct the new CSB to increase capacity to treat and support patients. The CSB will deliver new critical and acute tertiary care infrastructure, including additional theatre suites and expanded ED. Currently, construction is expected to be completed by mid-2024.

The new PCSS Building will include cutting-edge technology to bolster pathology services and include modern fit-for-purpose infrastructure. The new PCSS Building is adjacent to the new CSB and will have direct public and internal access, as well as pneumatic and physical connections to allow efficient and safe transfer of samples.

The proposed Inpatient and Outpatient Building will accommodate exiting services from Buildings 1 and 12 including medical and surgical inpatient units. The new building will deliver acute tertiary care and provide high-quality, person-centric care. Given its approximately 290 metres from the new CSB, this will allow for greater integration of services between the buildings.

The service distribution and reference design of the buildings proposed in CHMPP2 have been developed in response to the services and design of CSB to ensure integration and appropriate linkages. **Figure 11** outlines the CH Campus.

Figure 11: Canberra Hospital Campus Map

4.3.2. Northside Hospital

ACT Health is currently working with MPC to scope and plan the delivery of a new hospital in the northside of Canberra. The new hospital will replace ageing infrastructure, improving resilience and capacity of the Territory-wide health system. It will also bring together a range of contemporary hospital services, holistic consumer-centred care and flexible models of care to meet the growing and changing needs of the community now and into the future. CHS will operate the new NH, providing an opportunity for the Territory to plan and deliver a public hospital network under one operator.

Planning work relating to the service distribution for the new NH is currently being undertaken. To date, planning work shows minimal impact on the redevelopment of the PCSS Building but will inform the merits of Option 3 outlined in Chapter 5 – Options Analysis.

To ensure successful planning of and delivery of healthcare services, synergy between the project teams of the CHMPP2 and NH will be leveraged during the next phase of detailed planning and development (to follow this business case). This will ensure that both projects efficiently and effectively cater to the Territory-wide health outcomes and priorities to increase accessibility.

4.4 Canberra Hospital policies

There are several Canberra Hospital specific policies that support the operation of the campus. These specific policies include:

- SAMP⁸² that provides strategic guidance on asset management and renewal activities at CH; and

⁸² ACT Government (2020), Canberra Hospital Strategy and Framework. Retrieved on 14 November 2023 from <https://www.canberrahealthservices.act.gov.au/about-us/strategy-and-frameworks>.

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- Canberra Hospital Master Plan Zero Emissions Strategy that includes a high-level plan to achieve net zero emissions and a supporting building services strategy for the Canberra Hospital Campus.

The Business Case has drawn on these policies to establish the case for change and to ensure alignment of the project options with the priorities of CHS.

5. Options Analysis

Key messages

- The preferred solution – Option 2 – ‘replace and upgrade’ – identified for the CHMPP2 Project is the result of an options identification and evaluation process underpinned by the ILM described in Chapter 4 – Strategic and Policy Alignment.
- Three options, aligned to the needs of the CHMPP2 project, were assessed using a Multi-Criteria Analysis (MCA) structured around economic and social (wellbeing); financial and implementation evaluation criteria.

Option 1 – ‘Do minimum’ Base Case

Option 1 involves no modifications to existing POCs, estimated areas, or functional upgrades of the CH campus. Given its inability to meet current or future demand or enable contemporary service models, the option scored the lowest in the MCA.

Redevelopment of the campus is essential, as buildings approach end of life and demand for health services grows. Option 1 includes:

- Funding for extension of life works including (1) capital funding for urgent façade works to Buildings 1 and 3, in line with advice provided in recent building façade inspection reports, and (2) a small amount of planning and development funding to (2a) undertake further building audits of Buildings 1, 2, 3, 7, 10, 12 and 20, and (2b) develop a business case to formalise a request for additional extension of life funding based on the outcomes of the building audits.
- Capital funding for off-site storage of historical HIS archives.
- Top-up capital funding for the development of the Building 2 Western Entry Bus Stop and other associated works – which is being developed and delivered separately as part of the on-going CHE project.

Note: The Building 2 Western Entry Bus Stop and other associated works need to be reinstated to restore essential public amenity that was removed when Hospital Road was closed off due to the construction of the CSB. Several requests for the reinstatement of this site have been made by the ACT Disability Reference Group and the Health Care Consumers Association. The design of these works have been funded by the CHE project and has received unanimous board support.

Option 2 – ‘Replace and upgrade’

Building on Option 1, Option 2 provides the replacement and upgrade of existing functional capacity to align with AusHFG requirements, with an investment in an additional 101 POC and 21,359m² in area (relative to Option 1),⁸³ to meet the spatial needs of contemporary service delivery models. The additional POC are delivered as follows:

- An additional 19 POC in the new PCSS Building, including:
 - +6 Mental Health Short Stay Unit (MHSSU) POC
 - +3 Pharmacy POC

⁸³ Australasian Health Facility Guidelines (2023). <https://www.healthfacilityguidelines.com.au/australasian-health-facility-guidelines>. Retrieved on 18 January 2024.

- +5 GEHU POC
- +4 Endoscopy POC
- +1 Pathology POC
- An additional 82 POC in the new Inpatient and Outpatient Services Building, including:
 - +12 Perioperative POC
 - +1 Dialysis
 - +19 Day Med Services/HITH POC
 - +1 Discharge POC
 - +6 Sleep Lab POC
 - +23 Outpatient POC
 - +21 Inpatient POC
 - -1 Medical Imaging POC (noting the reduction from 3 CT's to 2 CT's)

Option 2 features the redevelopment of Buildings 6/23/7 into the new PCSS Building and the redevelopment of Building 10 into the new Inpatient and Outpatient Services Building, accommodating demand from the early 2030s. Under this option, the fit-out of pathology services will be staged, with 100% of the pathology shell space and 55% of the fit-out completed needed for like for like replacement.

Option 2 includes the demolition of Building 4 and replacement of the site with open space in the short term, until such time as further redevelopment is required to accommodate future growth in demand. For example, the accommodation of greater acute service capacity closer to Building 5. The open space may serve as churn space for the decanting of services during implementation or construction site overflow, if required.

The ANU Medical School, currently residing in Building 4, will be relocated to the new PCSS Building. The co-location and consolidation of learning, teaching and research services in the new building will allow for ease of student access and foster increased collaboration, innovation, and utilisation through its integrated layout. Further, the decanting of Building 4 services will reduce disruption when Building 1 is redeveloped, given its proximity.

Option 2 also involves the delivery of:

- Stages 1 and 2 of a new precinct-wide **energy node** required to meet the energy needs of the campus and enable progressive electrification of facilities.
- Development an **Arts and Cultural Strategy** which will inform the integration of culturally considered and urban design principles into future CH infrastructure.
- Development of a **feasibility study into the expansion of the Adult Mental Health Unit** and other mental health services through the demolition of the CH Childcare Centre (an ageing asset) in alignment with the CHMP's vision for a Mental Health Precinct.
- **Extension of life activities** to maintain the continuity of operations in buildings approaching end of life before they can be decanted and redeveloped as well as other CHMPP2 **enabling works** such as the disconnection of services prior to demolition.

Option 2 is a strong option, serving the dual purpose of meeting short-term demand, whilst future proofing the campus for longer-term demand, [REDACTED]. While Option 2 and Option 3 scores were comparable, [REDACTED].

Option 2 has been identified as the preferred solution for CHMPP2, providing a staged and efficient approach to capacity uplifts, which maximises utilisation of CH infrastructure. From an affordability perspective, Option 2 helps to balance the need for investment across NH and the CH campus and has been identified as the indicative preferred by ACT Treasury.

Option 3 – ‘Capacity to meet future demand’ [REDACTED]

Option 3, [REDACTED], delivers an additional 166 POC and 8,696m² in area (relative to Option 2) to meet longer term growth to FY41. Building on Option 2, Option 3 includes: 100% fit-out of the pathology department, two additional floors of capacity for inpatient and discharge as well as ambulatory and day medical services in the new Inpatient and Outpatient Services Building; and Stages 3 and 4 of the precinct-wide energy node.

Investment in capacity uplift to meet FY41 demand in acute services is essential. The choice for government is whether to delay this investment until when it is needed (Option 2) or invest marginally more now in increased capacity in the new Inpatient and Outpatient Services Building (Option 3), saving substantial future costs associated with the redevelopment of Building 1 to deliver the additional acute services capacity required to meet projected demand to FY41.

The ACT Government may wish to consider a hybrid option between Option 2 and Option 3, which provides the necessary shell space in the new Inpatients and Outpatients building to accommodate FY41 demand, only fitting those spaces out when capacity uplifts are required. Although not evaluated under this Business Case, the hybrid option is likely to be a more efficient, less disruptive and less expensive way of meeting FY41 demand, especially compared to the alternative of redeveloping Building 1. This option may be evaluated during future planning and development.

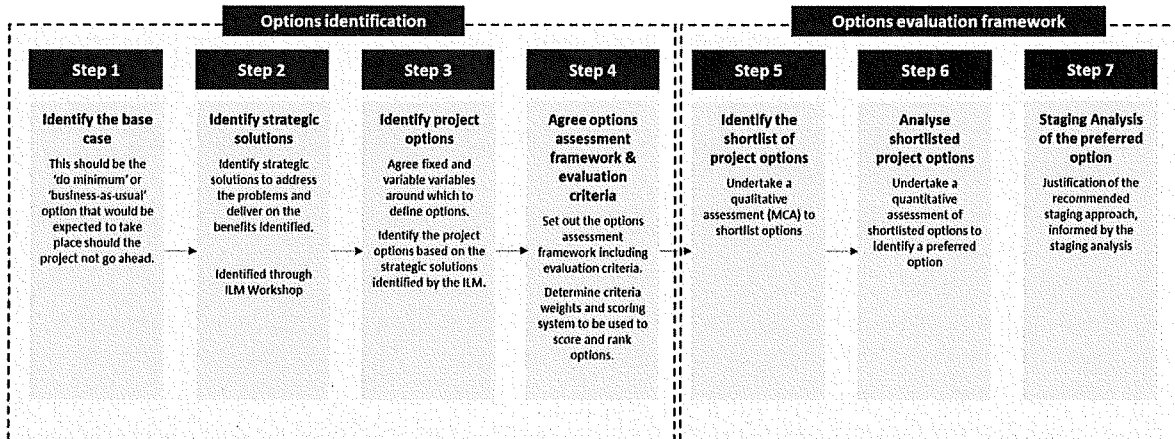
The following appendices provide a detailed breakdown of POC and GBA of the three identified options:

- Appendix F –B6 Schedule of Accommodation
- Appendix G –B10 Schedule of Accommodation

5.1 Options Assessment Approach

The preferred solution identified for the CHMPP2 Project was the result of a comprehensive option identification and evaluation process underpinned by the ILM. Figure 12 summarises the seven steps followed to identify and assess project options.

Figure 12: Approach to identifying and evaluating project options



During this process, a series of optioneering workshops were facilitated involving the Projects' key stakeholders and specialist technical experts and representatives, as listed in Appendix A – ILM Supporting Documentation for attendees. The purpose of these workshops was to gather the diverse views of stakeholders in line with the strategic objectives of the Project. Participants included representatives from ACT Treasury, ACT Health, CHS, and MPC.

5.2 Strategic Solution

As shown in Figure 13, ILM participants identified a number of responses to address the problems identified in Chapter 3 – Needs Analysis and two Strategic Solutions to enable these responses through the CHMPP2 Project:

Figure 13: ILM problems, responses and asset solutions

Problems		
Infrastructure that is not fit-for-purpose and poorly configured results in inefficient and fragmented services and creates unacceptable risks to staff and patients	Insufficient capacity to meet demand puts the health of Canberrans and the broader catchment at risk and jeopardises the benefits of the CSB	Aged infrastructure has exceeded its useful life, is costly to maintain and presents a risk of catastrophic failure
Responses		
Decommission, demolish and replace existing infrastructure	Provide additional infrastructure capacity	Improve clinical adjacencies
Implement contemporary models of care	Leverage technology to optimise clinical service delivery and access	Revise configuration of campus to improve wayfinding
Increase in reliance on renewable energy sources		
Asset Solutions		
Redevelopment of Canberra Hospital to replace failing assets		
Redevelopment of Canberra Hospital to replace failing assets and enhance operations (improved clinical adjacencies, implement contemporary models of care, include capacity for technology, improved wayfinding and increase in renewable energy sources)		

The first Strategic Solution explored by this Business Case is the redevelopment of CH to replace failing assets. CHMPP2 will strategically decommission, demolish and replace ageing facilities before they reach end of life. With each year, the risk of failures and costs to maintain these assets grows, presenting an unacceptable risk to staff, patients, visitors and the continuity of service operations.

Built for the design standards of their day, ageing facilities are increasingly not-fit-for purpose. The second Strategic Solution of focus for this Business Case is the redevelopment of the CH Campus to enhance operations. Purpose-built facilities will be developed under CHMPP2 to:

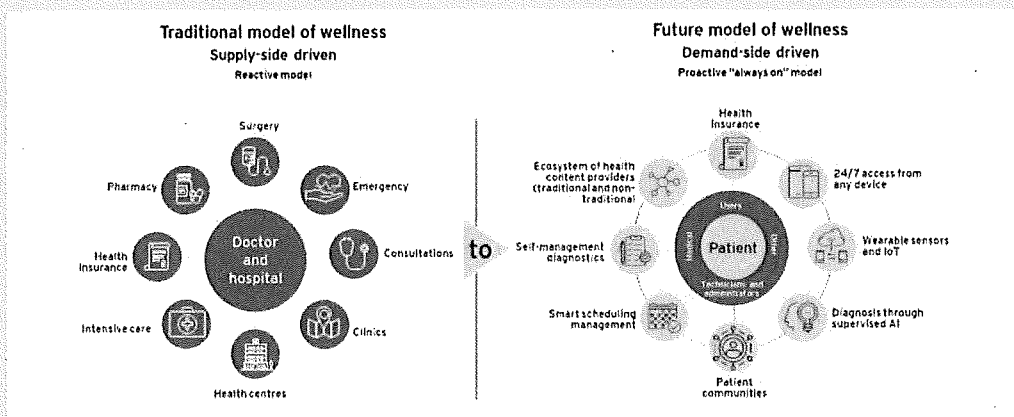
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- Enable the critical path of redevelopments that need to occur to fully implement the CHMP;
- Support integration with the CSB and support CHS to meet growing acute service demand;
- Enable contemporary models of person-centred care;
- Improve adjacencies between key clinical and non-clinical support services;
- Deliver modern ICT and improve capacity for the latest in health technologies;
- Improve the patients' experience through improved campus configuration and wayfinding;
- Increase support transitions to renewable energy sources; and
- Support reduced ALOS.

Under this strategic solution, CHMPP2 will also establish and implement strategies to manage growth in demand including:

- Providing additional infrastructure capacity to meet short to medium demand and future proofing CH assets to support longer-term growth.
- Building in flexibility to enable different service planning scenarios. For example, the findings of this Business Case will need to be revisited to consider outcomes of NH Service Planning, currently occurring in parallel to this Business Case; and
- Supporting access to alternative service delivery models of care including virtual care and HITH enabled through the scale-up of a virtual command centre and the rollout of data to enhance HITH performance.

Case Study: How virtual care is used to manage demand growth



Source: EY

Given the global changes in demand and workforce in the context of increasing health care costs, evidence suggests successfully integrating virtual and in-person care can free up staff and hospital beds, reduce costs and improve outcomes as health systems try to treat an older, sicker population, with proportionally fewer health workers.

Emboldened by the acceleration of uptake during the pandemic, ACT Health has started to deliver virtual care in a number of settings across the Territory. Virtual care can support the whole continuum of care from first response and emergency care and back into the community. Virtual care can also enable better multidisciplinary/connected team care from specialists, allied health, and primary care.

5.3 Project Options

ILM participants identified that at a minimum CHMPP2 should future-proof campus capacity to ensure that short-term demand is met through a 'like for like' replacement (Option 2), as well as evaluate cost implications of meeting further demand to 2041 (Option 3). This led the business case to assess the following options, as summarised below and in Table 11:

- **Option 1 – 'Do minimum' Base Case** [REDACTED] [REDACTED] [REDACTED]
 [REDACTED]: Under the 'do minimum' there will be no modifications to existing POCs or GBA on the CH campus. The 'do minimum' Base Case includes continued maintenance of existing assets and urgent façade works to ensure safe continuity of operations and uninterrupted services until implementation of redevelopment activities. The 'do minimum' also includes planning and development funding for a business case to quantify additional extension of life works required in the short term, capital funding for the redevelopment of the Building 2 Western Entry Bus Stop and other associated works, and capital funding for the off-site relocation and storage of the historical HIS archive.
- **Option 2 – 'Replace and upgrade'** [REDACTED] [REDACTED] [REDACTED]
 [REDACTED]: Building on Option 1, Option 2 considers a capital investment for the replacement and upgrade of existing functional capacity, including the expansion of pathology services, to align with the AusHFG.⁷ This option features the redevelopment of Building 6/23/7 into a new PCSS building and the redevelopment of Building 10 into a new Inpatient and Outpatient building. Within the new PCSS building, Option 2 includes 100% of the pathology shell space and 55% of the fit-out to meet 'like-for-like' capacity requirements. Option 2 also includes the demolition of Building 4 and replacement of the site with open space in the short term, until such time as further redevelopment is required to accommodate future growth in demand. Other scope items include the delivery of Stages 1 and 2 of the precinct-wide energy node; a funding allowance for the development of an Art and Cultural Strategy as well as a Mental Health Expansion Feasibility Study.
- **Option 3 – 'Capacity to meet future demand'** [REDACTED] [REDACTED] [REDACTED]
 [REDACTED]: Building on Option 2, Option 3 provides two floors of additional capacity in Building 10 to accommodate projected demand in inpatient and outpatient services to 2040/41 and, in particular, growth in inpatient and discharge as well as ambulatory and day medical services. As per Option 2, Option 3 includes the redevelopment Building 6/23/7 into the new PCSS Building. In addition, Option 3 delivers 100% fit-out of the pathology department to meet projected longer-term demand. In addition, Option 3 includes the completion of the precinct wide energy node (i.e., inclusion of additional stages 3 and 4).

Table 11: CHMP22 project options

Scope Items ***	Scope Sub-Items	Option Parameters		OPTION 1 Base Case – Do Minimum	OPTION 2 Replace and Upgrade	OPTION 3 Capacity to Meet Future Demand
		Capacity	Points of Care	Minimum investment needed to maintain existing operations	Replacement of existing assets 'like-for-like' in line with existing AHFG requirements and compliance guidelines	Replacement of existing assets with increased areas to accommodate POC growth
N/A	N/A		Gross Building Area (m²) – exc. carpark	448 POC* 47,935m²*	548 POC 69,294m²	714 POC 77,990m²
1.0	1.1	Extension of life – critical façade remediation works		✓	✓	✓
	1.2	Extension of life – planning and development funding for a business case		✓	✓	✓
2.0	2.1	Building 2 Western Entry Bus Stop and other associated works		✓	✓	✓
3.0	3.1	Lease costs for historical medical record archives (Mitchell site)		✓	✓	✓
4.0	4.1	Decant, decommission and demolish B7 (including relocation of AOD to the new Gaunt Place facility)			✓	✓
	4.2	Redevelop B6/23/7** into new Pathology and Clinical Support Services Building			✓ (Pathology 100% shell / 55% fit-out)*	✓ (Pathology 100% shell / fit-out)
	4.3	Demolish B4, relocate ANU medical space into new PCSS and redevelop into new open space ✦			✓ (+3,063m² GBA)	✓ (+3,063m² GBA)
	4.4	Decant pathology and other clinical support services and demolish B10			✓	✓
5.0	5.1	Redevelop B10 into the new Inpatient and Outpatient Building			✓	✓
	5.2	B10 Basement Carparking			✓ (x2 levels)	✓ (x3 levels)
	5.3	Decant B1 and B12 to the newly completed B10 (inpatients / outpatients)			✓	✓
6.0	6.1	Art and cultural strategy allowance			✓	✓
7.0	7.1	Mental Health expansion and demolition of Childcare Centre feasibility study			✓	✓
8.0	8.1	Precinct wide energy node ✦			✓ (Stage 1 and Stage 2 only)	✓ (All stages)
9.0	9.1	Growth capacity up to FY41 (area for Inpatients and Discharge / Ambulatory and Day Med)				✓ (+165 POC / 8,696m² GBA)

* Indicative estimates based on available information only.

It is estimated that 55% of the proposed Pathology Unit in B6/23/7 is needed to provide a 'like-for-like replacement' and 45% is extra-over.

** It is assumed that Building 7 is decanted prior to this occurring.

*** Scope items include all dependent sub-scope items. Therefore, each scope item can be delivered independently from other scope items.

✦ Scope items can be moved interchangeably between Option 2 and Option 3.

5.3.1. Option 1: Base Case / Do Minimum

Option 1 (the 'do minimum' Base Case) assumes there will be no modification to existing POCs or GBA at the CH campus, with minimal efforts directed towards continuous capital renewal and maintenance of facilities, to ensure the safety of both patients and hospital staff, and the uninterrupted operation of services during implementation.

Under the 'do minimum' Base Case, existing buildings would be retained to continue the delivery of their existing services. This includes Building 4, a facility affiliated with the ANU, which will continue to accommodate teaching, research and development activities.

Under the Base Case, capital renewal and maintenance activities focus on preventing failures and mitigating the risk of incidents to the extent feasible. Examples of such activities include:

- Proactive maintenance performed to retain an item or asset in its operational condition through systematic inspection, identification and prevention of potential failures.
- Maintenance initiated as a result of routine or ongoing monitoring.
- Maintenance required to comply with statutory requirements.
- Reactive maintenance performed due to a failure in an item or asset.

To maintain the continuity of operations in buildings approaching end of life, Option 1 includes critical extension of life activities in Buildings 1, 12, 3 and 10. The critical works comprise façade remediation works to Buildings 1 and 3, in line with building façade inspection reports discussed in Chapter 3 – Needs Analysis. This is needed to address the catastrophic risk to human life as a result of falling debris outside these buildings. While these works cannot wait, there is a significant amount of additional work that would be needed in the immediate term to extend the life of these assets. Therefore, this option also includes a small provision of planning and development funding to (1) undertake further building audits of existing building assets, and (2) develop a business case to formalise a request for additional extension of life funding based on the outcomes of the building audits. Preliminary estimates developed by CHS assume that these works will require [REDACTED]. It is expected that these works could only provide a very short-term solution only and would likely deliver a highly sub-optimal outcome compared to other options described in this business case. It is also unlikely that further extension of life works would be sufficient to bring these buildings in line with existing compliance codes and may only allow for maintaining operations for the duration of a new development. This is particularly pertinent with respect to IL4 seismic requirements which would be subject to further durability testing.

Option 1 would also provide top-up capital funding for the development of the Building 2 Western Entry Bus Stop and other associated works – which is being developed and delivered separately as part of the on-going CHE project. The Bus Stop will maintain access to the CSB and the broader precinct. Construction of the CSB required the removal of a bus stop along Hospital Road. With the CSB closing Hospital Road to through traffic, patients have lost the amenity of having a bus stop at the hospital's entrance, doubling the distance to the closest bus stop at Yamba Drive/Gilmore Crescent. This necessitates the construction of a bus stop at Bateson Road, to maintain safe and quick access to the CSB Welcome Hall and broader CH campus, in line with the proposed location in the CHMP.

Option 1 also includes funding for the off-site relocation and storage of Health Information Services (HIS) archives at the temporary leased Mitchell site to prepare future redevelopments necessitated in the future.

Under the 'do minimum', the average condition rating and functionality of buildings under the scope of CHMPP2 will continue to deteriorate over the next four years. As shown by Table 12, Buildings 1, 6 and 7 will reach the end of their useful lives within the delivery period of this project, whilst Buildings 10 and 12 will reach the end of their useful lives in the next decade.

Ageing assets will increasingly undermine the efficiency and effectiveness of services delivered, posing a significant risk to community health outcomes. Given the criticality of these buildings, a major building failure could impact the continuation of services delivered across the CH campus,⁸⁴ impacting over 500,000 people living in the ACT and the South-eastern region of NSW. These ageing assets also pose a physical health and safety risk to staff and patients which will continue to deteriorate if immediate action, including asset replacement, isn't taken.

As the buildings age, they will continue to deteriorate increasing the risk of failure and the need for future redevelopment. Continuing to maintain and renew these assets as per status quo arrangements, constitutes an investment in aged assets that are no longer fit for purpose. Should these buildings be redeveloped shortly after renewal and maintenance works, the return on investment for keeping them operational is reduced. Moreover, failure to implement redevelopment activities in CHMP2 could (1) constrain the ability of ACT Health to deliver subsequent stages of the CHMP and (2) eliminate the ability for CH to increase its capacity in line with projected demand growth.

Table 12: Current status of CH assets⁸⁵

Building	B1	B4	B6	B7	B10	B12	B23
Services/function ⁸⁶	Central Outpatients Department/ Tower Block / Pharmacy	ANU Medical School	Clinical Forensic Medical Services and Diabetes	Alcohol and Drug Unit	Pathology	Emergency, Diagnostics and Treatment / Mental Health Short Stay Unit / Clinical Records Service	Administration and clinical services
Importance	Critical	Low	Low	High	Critical	Critical	Low
Remaining life	Reached end of life	34 years	2 years	2 years	11 years	11 years	Unknown (built in 2009)
Current performance (target = 3)							
Condition	3.0	3.8	2.5	2.9	2.9	3.3	3.1
Functionality	2.9	4.0	2.6	2.7	2.3	2.8	3.1
Legislative compliance	3.0	4.0	2.5	3.0	2.0	3.0	3.0
Projected performance in 2027 (target = 3)							
Overall Quality Rating in 2027*	2.4	3.3	2.0	2.2	2.1	2.6	2.4

* Overall Quality Rating is determined by combining the overall condition rating with the overall functionality rating of the asset.

5.3.2. Option 2: Replace and upgrade

Option 2 considers a capital investment for the replacement of pathology and clinical support services, and inpatient and outpatient functional capacity, in line with the AusHFG requirements. It allows for the redevelopment of the campus to begin, in line with the CHMP.

Notably, Option 2 accounts for a replacement and upgrade of services rather than a direct replication of existing areas. Given the emergence of new standards, guidelines, and contemporary practices, larger, modern spatial requirements are needed to deliver existing services compared to the 1970s, when work on the construction of the campus commenced.

The option features the redevelopment of Building 6, 7 and 23 into a new PCSS Building. Whilst not originally identified by the CHMP for this phase, the inclusion of Building 7 provides a larger floorplate for

⁸⁴ ACT Government Health (2017). The Canberra Hospital Strategic Asset Management Plan 2017. Retrieved on 29 August 2023.

⁸⁵ ACT Government Health (2017). The Canberra Hospital Strategic Asset Management Plan 2017. Retrieved on 29 August 2023.

⁸⁶ ACT Government Health (2021). Canberra Hospital Campus Map. [Canberra Hospital Campus Map June 2021 \(act.gov.au\)](https://www.act.gov.au/canberra-hospital-campus-map). Retrieved on 6 December 2023.

the new PCSS Building, supporting greater co-location of pathology and clinical support services. Given Building 7 is also at the end of its useful life and not well configured for its current use it is recommended for inclusion. Further justification can be found in Chapter 6 – Project Scope.

Option 2 also includes the redevelopment of Building 10 into a new Inpatient and Outpatient Building including two levels of basement carparking. Hospital carparking is a regular point of feedback from the community. For example, 23% of feedback from a 2022 YourSay Survey for ACT Public Health Services related to amenities and access – including parking, transport and wayfinding. Feedback from the survey showed that the most important factors for carpark design and delivery are ease of navigation, accessibility and the request for free parking.

In line with community feedback, Option 2 would provide 107 on-site carparks under the new Inpatient and Outpatient Services Building, in close proximity to the hospital main entrance and clinical services. Compared to a surface carpark, options for which are being assessed through other investments, the basement carparking represents a direct, safer and more accessible option for patients, staff and visitors to the precinct. It is considered that basement carparking located directly underneath Building 10, is the most advantageous location as it would allow for a continuous carpark between the new Inpatient and Outpatient Services Building and a future B1 (subject to further planning and development to confirm its replacement). The addition of basement carparking in the new Inpatient and Outpatient Services Building, would enable a broader basement solution to be considered in the *CHMP* and would reduce the total number of spots needed to be delivered as part of other carpark development project work.

[REDACTED]

[REDACTED]

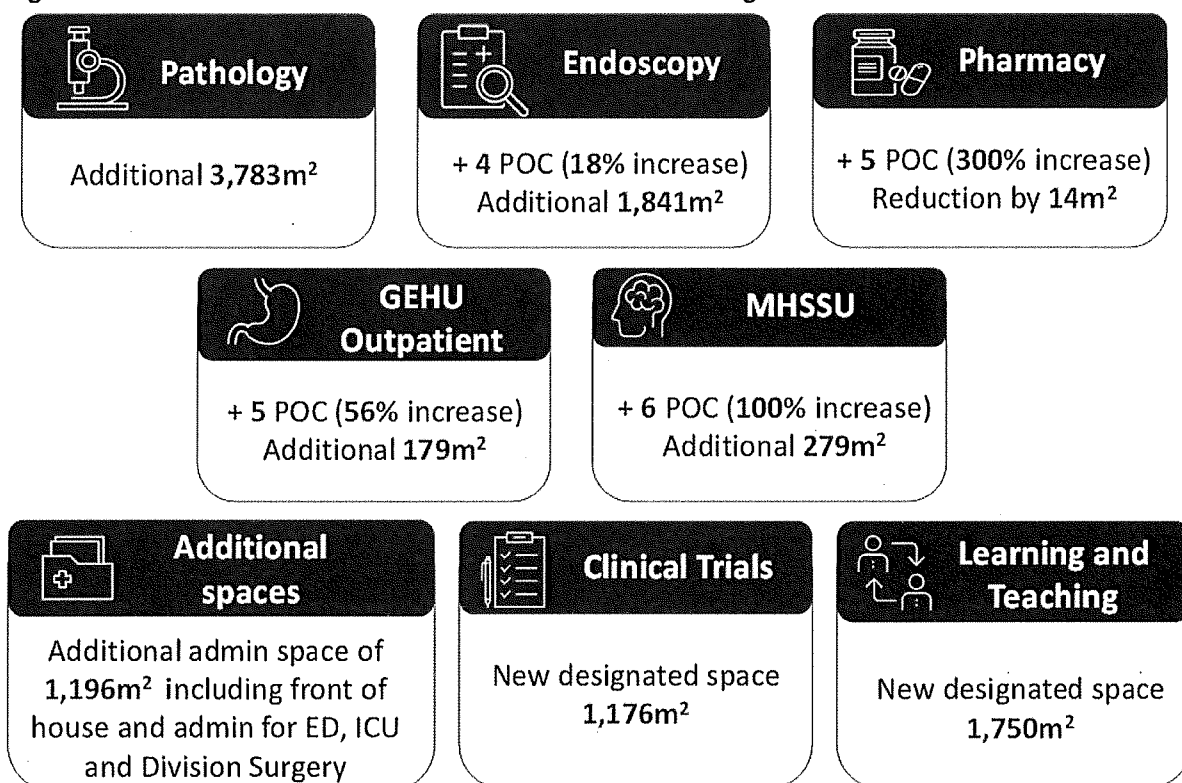
[REDACTED]

Under Option 2, the replacement and upgrade of services includes a total growth in spatial requirements of 44.5% or 21,359m² (GBA). Roughly half of this additional capacity (10,160m²) will be absorbed by the new PCSS Building. As summarised by Figure 14, this includes an additional:

- 3 POT (Point of Treatment) for pharmacy services;
- 3,783m² increase for pathology and mortuary services;
- 1,841m² and (4 additional POC) for endoscopy services;
- 279m² (6 additional POC) for the Mental Health Short Stay Unit (MHSSU);
- 179m² (5 additional POC) for the Gastroenterology and Hepatology Unit (GEHU) Outpatients; and
- Increased spaces for various departments including Emergency, Infection Control, ICU, Division of Surgery and Surgical Bookings, ensuring efficiency with services being delivered in building 5.

The PCSS Building will be built over nine (9) levels (including plant level) housing pathology and other clinical support services such as mortuary and pharmacy. The fit out of the pathology space will be staged over time, enabling rapid expansions to meet demand, as it is needed, while reducing upfront costs and maximising utilisation of assets. Option 2 will deliver 100% of the pathology shell space and 55% of the fit-out of this space, in line with estimates that 55% of the proposed pathology unit is required to provide a 'like for like' replacement and 45% is extra-over to future proof the unit for growth to FY41.

Figure 14: Additional POC and GBA for services the PCSS building

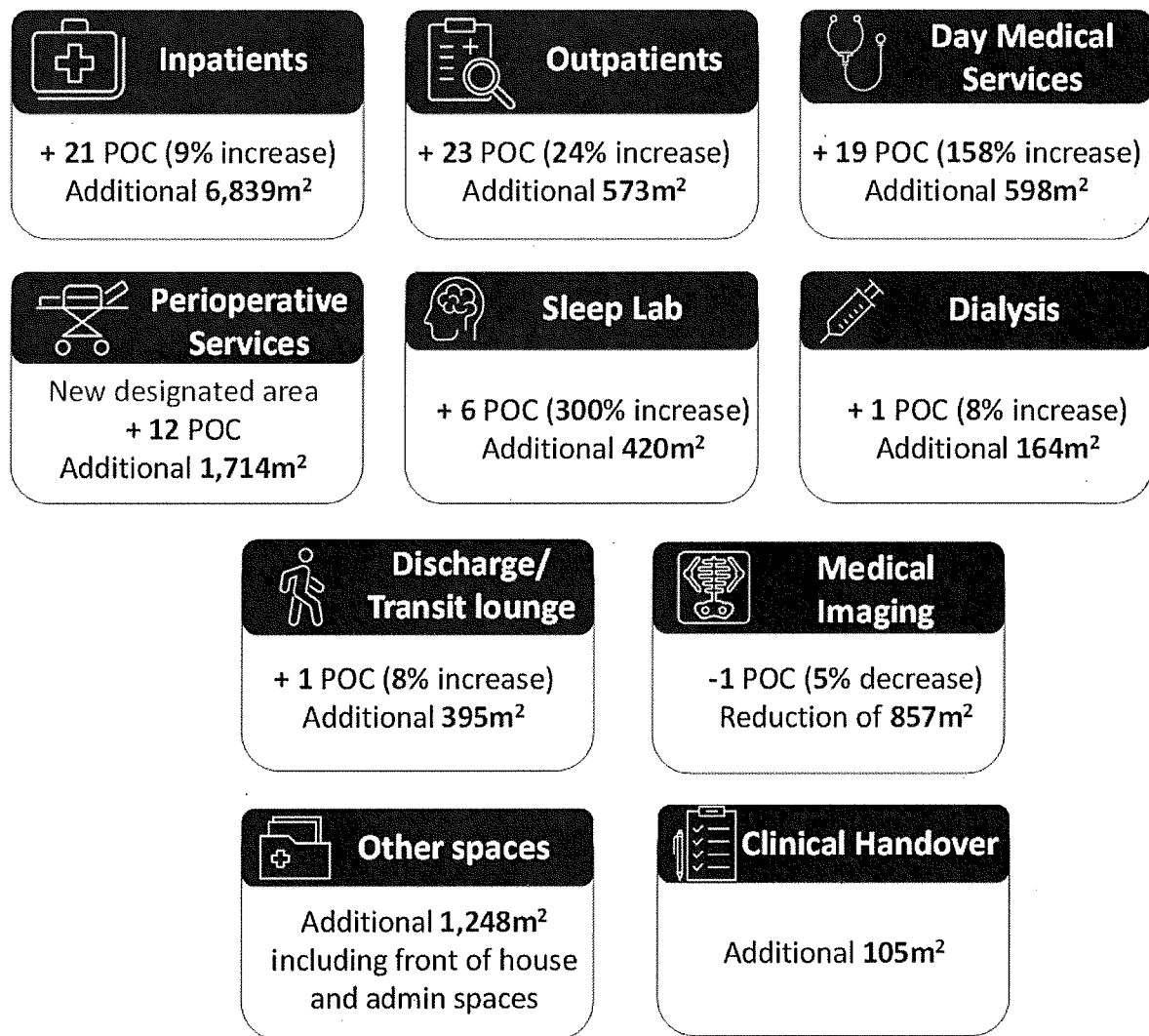


The remaining area growth (11,199m²) is in the new Inpatient and Outpatient Services Building. As summarised by Figure 15, this includes:

- A new space for perioperative services and sterilisation units – providing essential emergency birthing theatres currently housed in Building 12;
- Increase in POC by 158% for day medical services including additional space and equipment for treatment bays;
- A 24% increase in POC for outpatient services, including increased capacity for cardiology services and increases in clinical spaces; and
- A 9% increase in POC for inpatient services, including palliative care.

The Inpatient and Outpatient Building will be built over 11 levels to accommodate inpatient and outpatient services, including a medical imaging unit, sleep laboratory and dialysis. Option 2 yields nine fully fitted Inpatient Units (IPUs), across five floors, plus one shell space on the fifth floor in the inpatient unit. Within the outpatient unit, Option 2 features four fully fitted IPUs across three floors plus one shell space on the third floor.

Figure 15: Additional POC and GBA for services in Building 10



Option 2 includes the demolition of Building 4 and replacement of the site into open space in the short term, until such time when there is a clear clinical use or building considered a preferred development outcome for CHS and the Territory. For example, in the longer term, open space could also be used as the site of further redevelopment as envisaged in the CHMP, accommodating future growth in demand for acute services in closer proximity to Building 5 than Building 10 and/or expansion of clinical services to complement the CSB.

Noting that the demolition of Building 4 is not CHMP dependent, its redevelopment into open space in the short term aligns with the vision of the CHMP for a greener campus, as well as the community's interest to have greater access to areas for respite and recuperation.⁸⁷ It is expected that additional green open space will improve the amenity of the CH campus for patients, staff and other visitors.

In the short term, the open space may facilitate site establishment works for neighbouring redevelopments, such as Building 10. It may also serve as churn space during the decanting of services during implementation or overflow of services, if required. In the longer-term, the inclusion of such space

⁸⁷ ACT Government (2021). Canberra Hospital Master Plan 2021-2041. Retrieved on 1 October 2023 from <https://health.act.gov.au/sites/default/files/2021-12/Canberra%20Hospital%20Master%20Plan.pdf>.

The ANU Medical School, currently residing in Building 4, will be relocated in the new PCSS Building. The co-location and consolidation of learning, teaching and research services in the new building will allow for ease of student access and foster increased collaboration, innovation, and utilisation through its integrated layout. Further, the decanting of Building 4 services will reduce disruption when Building 1 redevelopment is undertaken given its proximity.

- Energy Node:** A new precinct-wide energy node is required to meet the long-term energy needs of the campus and enable the progressive transition from natural gas to an all-electric facility. The energy node will upgrade power supplies needed to cater for new heat pumps and electric boilers. Consultant advice is to undertake the upgrades in four stages, with Option 2 to include the first two stages to meet the energy needs of the new buildings and wider campus.⁸⁸ The inclusion of the energy node in the scope of this Business Case represents a significant cost, however it has been deemed necessary in line with the site's ageing High Voltage (HV) infrastructure, Territory's electrification initiative and the power authority's (Evo Energy) transition of the hospital to a HV tariff.
 - It should be noted that the upgrade of the sites' HV infrastructure is not essential to deliver the proposed development of the new PCSS and Inpatient and Outpatient Building's. There is an opportunity to defer the establishment of the precinct-wide energy node to post-CHMPP2. If deferred, however, the PCSS Building and Inpatient and Outpatient Building would need to be constructed with their own new HV feeds and generators, which would be located within the plant rooms of the new buildings. The need for more standby generators would increase maintenance liabilities until the energy node is built. At a later date, these generators would then be removed, facilitating the buildings' connection to the new node. Building the energy node now would save the ACT Government substantial costs associated with the need for more standby generators in the short term, only then to unwind work and remove these generators once the energy node is built.
- Environmentally Sustainable Development (ESD):** An allowance of 2.5% is also included in Option 2 for the implementation of ESD initiatives, including provisions for solar infrastructure to support the electrification of the campus.
- Arts and Cultural Strategy Allowance:** In accordance with CHS' Arts in Health Program,⁸⁹ Option 2 includes the development of an arts and cultural strategy which informs the high-level integration of culturally considered and deliberate art and design principles into future CH infrastructure projects.
- Feasibility study into mental health expansion:** Option 2 includes funding for the development of a feasibility study relating to the expansion of the Adult Mental Health Unit and other Mental Health services through the demolition of the CH Childcare Centre (an ageing asset) in alignment with the CHMP's vision for a Mental Health Precinct. This feasibility follows significant work that has been undertaken on the distribution of mental health beds across the Territory.

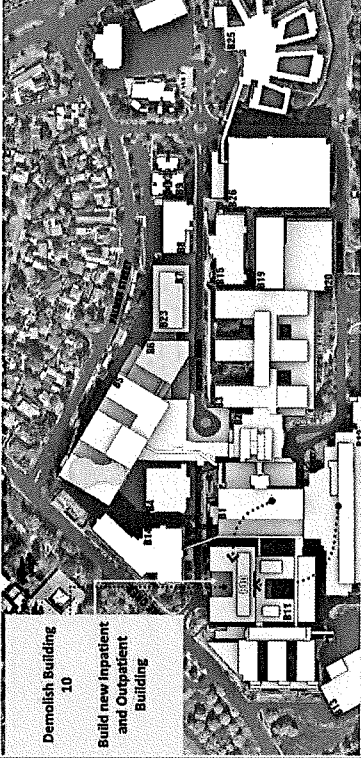
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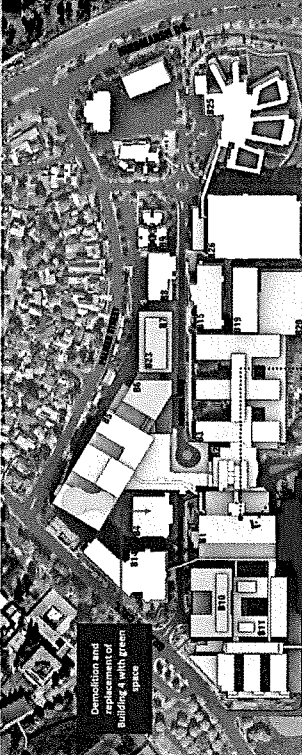
Building on Option 1, Option 2 also includes provision for the Building 2 Western Entry Bus Stop and other associated works, extension of life activities and storage costs for HIS records discussed in the 'do minimum' Base Case above.

Key scope components of Option 2 are summarised in Table 13 below. A detailed decanting strategy for Option 2 can be found in Chapter 6 – Project Scope.

Table 13: Option 2 key scope components

Key activities	Services to be accommodated by new building	Key scope
Redevelop Buildings 6/23/7 into a new Pathology and Clinical Support Services Building (February 2028 to November 2029) 	• Entry/Reception/Waiting/Multifaith • Pathology (including Mortuary) • Endoscopy • General Response Hospital Outpatient Unit • Pharmacy • Emergency Department Administration • Infection Control Administration • Mental Health Short Stay Unit • Surgical Bookings/Preadmission • Intensive Care Unit Administration • Division of Surgery Administration (Building 6) • Bone Lab • Research • Clinical Trials • Animal House • Learning and Teaching • Command/Control Centre • ANU medical school	• Construction of a 9-level building on the North-eastern flank of the Building 6/7/23 site to accommodate pathology and clinical support services. • Decanting of Pathology and other clinically support services from existing Building 10 to the new PCSS building. • Building 7 decant and the relocation of Alcohol and Other Drug to Gaunt Place. • Demolition of Building 7. • Enabling and early works on the Building 6/23 site.* • 100% of the pathology shell space and 55% of the fit-out. • Furniture, Fixtures and Equipment (FFE) in Building 6/23/7 includes: • Robotic pharmacy <i>* Note these are being undertaken as part of a separate contract.</i>

Key activities	Services to be accommodated by new building	Key scope
Demolish and redevelop Building 10 into a new Inpatients and Outpatients Building (May 2031 – April 2033)  Demolish Building 10 Build new Inpatient and Outpatient Building	• Entry/Reception/Waiting/Commercial/Multifaith • Inpatients • Palliative Care • Outpatients • Sleep Laboratory • Discharge/Transit Lounge • Clinical Handover • Day Med Services (Hospital in The Home) • Dialysis • Perioperative Services (WYC Obstetric Theatres) • Central Sterile Services Department • Medical Imaging • Junior medical officer Lounge • Building 1 Administration • Building 6 Administration (non-Division Surgery) • Physician Training Office • Medical Officer Support, Credentialing, Employment & Training Unit • Central Equipment Store • Transport Pool • Voluntary Assisted Dying (VAD)	Enabling and early works on Building 10 site including: • Site preparation works such as: • Safety procedures. • Preparing alternate temporary building accessways. • Early works to prepare for construction: • Decanting of services/functions from the existing Building 10 to the newly completed PCCS. • Decommissioning works of the existing building including services (utility) disconnection and diversion to maintain site services. • Hazardous material removal from existing buildings where applicable (e.g., asbestos). • Demolition and site clearing. • Ground decontamination (where applicable). • Access road construction and designation of identified set down areas. Construction of new Inpatients and Outpatients Building • Construction of a 12-level (including plant and excluding basement carparking) multi-purpose facility including both inpatient and outpatient accommodation. • Decanting of services from the existing Buildings 1 and 12 to the Inpatient and Outpatient Building. • Other scope includes: • Pneumatic tube system • Robotic automation • Bariatric lifts • Two levels of basement carparking

Key activities	Services to be accommodated by new building	Key scope
 <i>Demolition and replacement of Building 4: August 2029 – to May 2030 (pictured above)</i> <i>Facade works: January 2025 – January 2028</i> <i>Off-site relocation and storage of HIS: September 2029</i>		

5.3.3. Option 3: Capacity to meet future demand

Building on Option 2, Option 3 provides additional capacity – in the form of increased areas for two inpatient and outpatient services- to accommodate growth in demand to 2040/41.

Option 3 factors in broader service planning work to meet future demand by investing in the required capacity for the CH campus in 2040/41 now, rather than at a later date. If the growth option is not implemented, planning for the redevelopment of Building 1 will need to commence within a minimum of two years to meet projected demand for 2040.

Provisioning for this growth in the new Inpatient and Outpatient Building gives the ACT Government greater choice about how to treat Building 1 in the future. An expansion of the new Inpatient and Outpatient Services Building would accommodate the additional capacity needed to avoid a more costly redevelopment of Building 1. This would translate in redevelopment and escalation costs associated with Building 1, or at least a reprieve of these costs in the short term. It would also remove timing delays on projects if staging across the ACT Health Directorate (ACTHD) profile is required.

Option 3 builds on Option 2 with the following key differences:

- Expanded capacity of inpatient and outpatient services to meet projected growth in demand to 2040/41, including:
 - An additional 5,207m² in area (+126 POC) for inpatient and discharge services; and
 - An additional 1,005m² in area (+39 POC) for ambulatory and day medical services.
- Completed fit-out of an additional 14 IPUs.
- Additional 45% of pathology fit-out (accumulating in a total 100% shell and fit-out).
- Completion of all stages (including, stages 3 and 4) of the precinct-wide energy node, in line with development of capacity in the PCSS Building and Inpatient and Outpatient Building.
- An additional level of basement carparking developed in Building 10 to meet growth in demand and visitation to FY41 (164 carparks) and likely mandated under planning authority.

As reflected in demand analysis undertaken to inform project CHMPP2 project scope (see Appendix G –B10 Schedule of Accommodation) overnight annual separations⁹⁰ are estimated to rise from 24,147 in 2021 to 33,590 in 2041 (growth of 39.1%), while same-day ambulatory separations⁹¹ are projected to rise from 44,826 in 2021 to 61,146 in 2041 (growth of 36.3%).

To accommodate this service demand, Option 3 will increase POCs in the new Inpatient and Outpatients building by 59.4% to 714 POC in total, including additional multi-day and same-day beds, compared to Option 2. The GBA of the new Inpatient and Outpatient Building will also expand by 62.7% (compared to Option 2), resulting in a total 77,990m² GBA that incorporates additional areas for inpatient and discharge and ambulatory and day medical services (5,207m² and 1,005m² GBA, respectively). A summary of growth areas proposed under Option 3 is presented in Table 14.

Table 14: Option 3 growth relative to Option 2 for the Inpatient and Outpatient Building, FY21-41

Service category/function	POC Growth	Estimated area Growth
Inpatients and Discharge	126	5,207
Ambulatory and Day Medical Services	39	1,005

⁹⁰ Total number of patients who are admitted and stay at least one night.

⁹¹ Total number of patients with admission and discharge on the same day.

Service category/function	POC Growth	Estimated area Growth
Gross Departmental Area (GDA)	165	6,212
Travel and Plant @ 40%		2,485
GBA		8,696

5.4 Multicriteria Analysis

The MCA approach has been used to assess the alignment of options against a holistic range of criteria, providing a clear structure to support decision making.

5.4.1. Evaluation Criteria

Options were assessed by the MCA against three impact categories – implementation, financial and social/economic – and seven corresponding evaluation criteria, as summarised by Table 15.

Table 15: Multicriteria assessment

Category/Criteria	Description	Weight
Economic & Social Wellbeing		
ILM Benefit 1	Extent to which the option can improve asset operational efficiency and sustainability.	10%
ILM Benefit 2	Extent to which the option can improve safety and amenity of the campus.	10%
ILM Benefit 3	Extent to which the option can improve workforce conditions and efficiency in the delivery of care including the ability of the project option to support critical clinical adjacencies.	15%
ILM Benefit 4	Extent to which the option can improve patient access, health outcomes and satisfaction. This includes the ability of the option meet current and future demand where, and when it is needed.	15%
Financial		
Value for money (VfM)	Based on asset changes, extent the option is likely to optimise whole of life benefits relative to estimated project costs.	25%
Implementation		
Stakeholder acceptance	Extent to which stakeholders have shown/are likely to show acceptance of the project option.	10%
Operational risks	Extent option minimises current and future impacts on business continuity and operations during construction. This includes avoiding the need to decant facilities more than once as well as the need to unwind and/or redo capital works undertaken by the project at a future date.	15%

Weights applied in the MCA reflect the relative importance of each criterion, as discussed at the ILM (in relation to benefits) and subsequent workshop attended by ACT Health, CHS and ACT Treasury. Economic and social wellbeing criteria are assigned the highest weighting of 50%, given this is the key driver for the redevelopment of ageing assets and the CHMPP2 Project as identified in the CHMP. These impacts consider the economic and social outcomes from a combination of health, social and wellbeing impacts likely to be generated as a result of investment. Implementation related criteria (i.e., stakeholder acceptance and operational risks), and VfM are weighted equally at 25%, respectively.

5.4.2. Scoring

The MCA utilised a four-point scale ranging from zero to three, with a score of three signifying that the option aligns best with the criteria, while a rank of zero indicates a lack of support for the criteria. The scale is summarised in Table 16.

The MCA allows for the assessment of each project option against each evaluation criterion through a weighted scoring system.

Table 16: Descriptions of MCA scores

Score	Description
0	Does not contribute to the criterion
1	Low contribution to the criterion
2	Somewhat contributes to the criterion
3	Strong contribution to the criterion expected

5.4.3. Overview of MCA Results

The final results of the MCA are summarised in Table 17. Option 2 and Option 3 scores were comparable, at 2.7 and 2.65 respectively. The 'do minimum' Base Case, or Option 1, scored the lowest at 0.2. According to this analysis, both Option 2 and Option 3 merit consideration by ACT Government.

5.4.3.1. Option 2

Option 2 is a strong option, serving the dual purpose of meeting demand in the next 10 years, whilst future proofing the campus for longer-term demand (e.g., by investing in an expanded pathology shell), [REDACTED]

While Option 2 and Option 3 scores were comparable, Option 2 has been identified as the preferred solution for CHMPP2, providing a staged and efficient approach to capacity uplifts, which maximises utilisation of CH infrastructure. From an affordability perspective, Option 2 helps to balance the need for investment across NH and the CH campus and spreads out investment across the forward estimates, supporting the government through a constrained fiscal environment. Consultations with ACT Treasury, ACT Health and MPC have identified Option 2 as the indicative preferred option.

Option 2 also includes the demolition of Building 4 and conversion of the site into open space in the short term, until such time as further redevelopment is required to accommodate further growth needs of the campus. The MCA identifies both pros and cons of this scope component.

On the one hand, it may be considered that Building 4, which still has roughly 30 years of functional utility remaining, is relatively new, and as a result, the demolition of Building 4 is not necessarily "mission-critical". On the other hand, it is envisaged that the site would still need to be redeveloped during a later phase of the CHMP. Doing it now, may provide some added benefits in providing space for (1) temporary accommodation to manage patient overflows during decanting works, and (2) surge capacity during times of increased demand. The interim open space is also in keeping with the vision for the CHMP for a greener campus, providing more opportunities for patients, workers and other visitors to be active, with commensurate benefits to their physical and mental wellbeing.

5.4.3.2. Option 3

Option 3 delivers an additional 166 POC and 11,759m² in area (relative to Option 2) to meet longer term growth to FY41, [REDACTED]

[REDACTED] While delivering additional capacity, redeveloped assets, alongside other scope items such as the complete precinct-wide energy node and additional level of basement carparking in Building 10, will not be effectively maximised until FY41, reducing the scores of the option.

However, investment in capacity uplift to meet FY41 demand in acute services is inevitable. The choice for government is whether to delay this investment until when it is needed (Option 2) or invest marginally more now in increased capacity in Building 10 (Option 3), saving substantial future costs associated with the redevelopment of Building 1 to deliver the additional acute services capacity required for FY41.

The ACT Government may wish to consider a hybrid option between Option 2 and Option 3, which provides the necessary shell space in the new Inpatients and Outpatients building to accommodate FY41 demand, only fitting those spaces out when capacity uplifts are required. Although not evaluated under this Business Case, the hybrid option is likely to be a more efficient, less disruptive and less expensive way of meeting FY41 demand, especially compared to the alternative of redeveloping Building 1. This option may be evaluated during future planning and development.

The provision of FY41 growth now rather than later does provide the ACT Government with greater choice and flexibility with respect to accommodating different NH service planning scenarios;⁹² reducing the need to bring forward other redevelopment projects like Building 1 and reducing the operational risk of redevelopment activities on the CH campus.

5.4.3.3. Option 1

Option 1 is deemed unfeasible as it doesn't deliver any additional capacity or functional upgrades to existing facilities. This option will not enable CH to meet current or future demand. As a result, future redevelopments, represented in Options 2 and 3 or a hybrid of both options, will become inevitable to ensure CH assets align with contemporary service delivery standards and meet projected demand. Moreover, as buildings age the risk of failure increases, including the costs to maintain these buildings in an operational state. Option 1 scored the lowest across the three MCA categories.

⁹² The preferred approach to meet projected demand in the next 10 years is subject to the scenario modelling currently in progress, which assesses the overall ACT Health hospital network including the NHC, CH and the University of Canberra Hospital.

Table 17: Assessment of project options

Criteria		Weight	O1	O2	O3	Description
Economic & Social Wellbeing						
ILM Benefit 1	Extent to which the option can improve asset operational efficiency and sustainability.	10%	1	3	3	- Other than reducing the energy loss through façade works for Buildings 1 and 3, Option 1 has limited contribution to the operational efficiency and sustainability of the CH campus. Option 2 will replace ageing and gas-reliant facilities with modern, more efficient and sustainable facilities. Option 2 will target 5-star Green Star buildings through significant investments in the electrification of both facilities and Stages 1 and 2 developments of the precinct-wide energy node. Buildings will be constructed with the latest in technologies including materials that are more resistant to wear and tear, easier to maintain and last longer. Option 3 will achieve a similar level of asset efficiency and sustainability as Option 2. However, Option 3 features the completion of stages 3 and 4 of the precinct-wide energy node to meet FY41 energy needs.
ILM Benefit 2	Extent to which the option can improve safety and amenity of the campus.	10%	1	3	3	Option 1 will deliver urgent façade works, a Business Case to identify other urgent extension of life works necessary and a new Building 2 Western Entry Bus Stop and other associated works, which in combination will bring some improvements to the safety and amenity of the CH campus. - Building on Option 1, Option 2 mitigates safety risk by redeveloping Buildings 6/23/7 and 10 in accordance with modern safety and building standards – e.g., ventilation, and filtration standards – which prioritise the safety, comfort and experience of staff, patients and visitors alike. In terms of amenity, wayfinding will become more intuitive under Option 2 owing to user-centric design principles. The option also places an additional two levels of underground parking, extends potential amenity through the development of an Art and Cultural Strategy and the additional open space at the Building 4 site. Option 3 builds on Option 2 with the inclusion of an extra level of underground parking, catering to project demand up to 2040/41.
ILM Benefit 3	Extent to which the option can improve workforce conditions and efficiency in the delivery of care	15%	0	3	3	Under Option 1 services will continue to be delivered in the context of ageing facilities, built for the service standards of their day, and which are increasingly unfit for purpose. Option 2 will improve workforce conditions and enable workforce efficiencies in the delivery of care through the provision of purpose-built facilities, designed for contemporary service models including the workflows of each Department. Buildings and floor plans have been designed to maximise synergies between functional areas with key clinical adjacencies. This includes co-locating key services (e.g., medical and surgical IPUs) and improving links to the CSB, to enable efficient movements and coordinated care. Option 2 invests in the latest health technologies (e.g., PillPick Automated Packaging and Dispensing) and enabling infrastructure (e.g., modern ICT), further driving improvements in workforce efficiency and productivity. Option 3 would be expected to achieve similar levels of benefits under this criterion than Option 2.
ILM Benefit 4	Extent to which the option can improve patient access, health outcomes and satisfaction. This includes the ability of the project option meet current and future demand where,	15%	0	2	3	Option 1 does not deliver any additional capacity or functional upgrades to existing facilities. Under this option CH will not be able to meet current or future demand. Option 2 supports improved patient access, health outcomes and satisfaction through the following project features: - Sufficient capacity to reduce current wait times and meet FY31 demand. - Built-in flexibility through the provision of shell space in both facilities to meet FY41 demand. - Purpose-designed facilities to meet contemporary service delivery models and standards. - Investments in modern ICT and health technologies affording the opportunity to pursue service innovations. - Modern buildings designed to improve clinical adjacencies, supporting coordinate/patient-centric care. Option 3 factors in broader service planning work to meet future demand by investing in the required capacity for the CH campus in FY41 now, rather than at a later date. Provisioning of this growth now provides ACT Government with greater choice around when it wants to invest/can afford to redevelop Building 1.

Criteria		Weight	O1	O2	O3	Description
Economic & Social Wellbeing						
	and when it is needed.					
Financial		25%	0	3	2	- While the Capex cost of Option 1 [REDACTED], it is viewed as the most unfavourable based on VfM considerations. In particular, operating ageing, unfit-for-purpose and increasingly cost-inefficient buildings nearing the end of their serviceable lives over a prolonged period is considered undesirable. Option 2 is regarded as achieving the most favourable balance between financial costs and whole of life benefits. [REDACTED]. Option 2 provides 'like for like' functional capacity uplifts to meet urgent demand, stages investments in critical enabling assets for the precinct (e.g., the energy node), and provides the shell space to enable further rapid expansions of capacity, to meet future demand, as it is needed. - Representing the most comprehensive scope, Option 3 delivers more scope to meet longer term demand to F41, [REDACTED]. However, since this capacity is not currently required, redeveloped assets under this option will not be maximized until FY41. Consequently, in the present context, this option is perceived to deliver lower VfM. Option 2 and Option 3 include the demolition and redevelopment of Building 4, [REDACTED]. Given Building 4 has around 30 years of life remaining, there is a risk that the demolition of the building for open space, without concrete plans for its future use, may not be perceived as "mission critical" or value for money by stakeholders.
Value for money						
Implementation						
Stakeholder acceptance	Extent to which stakeholders have shown/are likely to show acceptance of the project option.	10%	0	3	2	- Considering the government's endorsement and approved funding for CHMP2, Option 1 is likely to be poorly received if chosen. The interdependent nature of redevelopments in the CHMP means that undertaking Option 1 would obstruct future CHMP phases. - Given alignment with the CHMP, which has been broadly accepted by government and community stakeholders alike, it is expected that Option 2 would face little opposition. Staging investments under the option serves the dual purpose of meeting urgent demand, whilst future proofing the campus for longer term demand, [REDACTED]. During consultations with ACT Treasury, MPC and ACT Health, stakeholders accepted the option based on its affordability and ability to balance investment between NH and CH. Option 3 delivers additional capacity that would not be maximised until FY41.
Operational risks	Extent to which the option minimises current and future impacts on business continuity and operations during construction	15%	0	2	3	- Under Option 1 services will continue to be delivered in the context of ageing facilities, which are increasingly prone to failures, representing a high risk to the safety of users and the continuity of service operations. - While Option 2 provides staged capacity to meet demand in the next 10 years it does not meet longer term demand. This means that planning activities to redevelop Building 1 would need to start in the next couple of years to meet FY41 targets, with significant disruption to campus operations during delivery expected. - Provisioning for FY41 growth now under Option 3 means less disruption associated with Building 1 redevelopment. The open space also provides a potential overflow areas for decanting and construction activities, reducing disruption to the campus and ongoing service delivery.
Total			0.20	2.7	2.65	

6. Project Scope

The scope of the Preferred Option (2) comprises:

- Delivery of two purpose-built facilities on the CH site:
 - A new PCSS Building delivering 32,436m² to accommodate a total of 70 POC. The PCSS will be located on a consolidated footprint currently occupied by Buildings 6, 23 and 7.
 - A new Inpatient and Outpatient Services Building delivering 36,858m² to accommodate a total of 478 POC. The Inpatient and Outpatient Services Building will be located on the existing Building 10 site. The building will also deliver two levels of basement carparking providing patients with direct and discreet access to key clinical areas.
- The demolition and redevelopment of Building 4, with its existing footprint to be used as green open space in the short term, until such time as further redevelopment is required to accommodate future growth in demand. The ANU Medical School, currently residing in Building 4, will be relocated in the new PCSS Building.
- Extension of life activities, including (1) undertaking further building audits to confirm the extent of extension of life works required and development of a further business case to request funding for the works identified, and (2) immediate critical façade remediation works to sustain existing assets including, Buildings 1, 3 and 12 in line with current building and safety standards.
- A range of sustainability and urban design features, including:
 - The transition of all assets to a new high voltage power supply as part of the Territory's electrification initiative.
 - The utilisation of low water use equipment, fixtures and fittings in line with the compliance requirements of the National Construction Code 2022.
 - A building and landscape design approach which seeks to deliver an environment based on wellness and healing as integral to patient care.
- [REDACTED], including provisions for solar infrastructure to support the electrification of the campus.
- Top-up funding to complete the development and delivery of the Building 2 Western Entry Bus Stop and other associated works.
- The delivery of the Preferred Option (2) will involve a staged approach comprising five (5) sequential stages. This accounts for key interdependencies including (but not limited to):
 - The decanting, decommissioning and demolition of Building 7 to enable the optimal design and development of the PCSS. The AOD service accommodated in the existing B7 building would be decanted and relocated to the newly developed facility on the Gaunt Place site.
 - The upfront delivery of the PCSS to enable the decanting of Pathology and clinical support services from Building 10 allowing the timely commencement of the Inpatient and Outpatient Services Building.

The preferred option has been developed in line with the core principles of the ACT Health Services Plan 2022-2030, which includes the key elements of the Canberra Health Services Vision comprising a series of overarching system-wide drivers for change and service innovation.

6.1 Overview

Following the 2021 development of the Canberra Hospital Master Plan, the Territory is undertaking Phase 2 which focuses on the redevelopment of buildings to accommodate a new PCSS, as well as a new Inpatient and Outpatient Services Building.

The outcome of the process to develop and assess the project options, described in Chapter 5 – Option Analysis, was the identification of the Preferred Option 2 (Replace and Upgrade) which has informed the development of the project scope. This solution will deliver two new purpose-built buildings to replace outdated infrastructure and are designed to sustain the current provision of health services in the immediate term. This will ensure that these services are delivered in world-class facilities, providing staff and patients with an advanced and fit-for-purpose environment to deliver and receive the latest treatments to the highest quality and standards.

Preferred Option 2 – Replace and Upgrade

The new PCSS Building and Inpatient and Outpatient Services Building will total 69,294m² (GBA⁹³) accommodating 548 POC. The project will be delivered across five (5) sequential stages, including:

- Stage 1 (FY25-30)
 - PCSS enabling and early works, including decanting of services (Alcohol and Other Drug Unit) from the existing Building 7 and relocation to the newly developed Gaunt Place facility and decommissioning and demolition of the existing Building 7.
 - Continued development of the Building 2 Western Entry Bus Stop and other associated works (as part of the ongoing CHE Project).
 - Extension of life activities, including (1) undertaking further building audits to confirm the extent of extension of life works required and development of a further business case to request funding for the works identified, and (2) immediate critical façade remediation works to sustain existing assets including, Building 1, 3 and 12 in line with current building and safety standards.
 - The relocation of historical medical record archives off-site through a temporary lease at the proposed Mitchell site.
- Stage 2 (FY26-30)
 - Development of the new PCSS on the consolidated Building 6, 23 and 7 footprint.
 - Delivery of Stage 1 of the precinct wide energy node infrastructure.
- Stage 3 (FY29-31)
 - Inpatient and Outpatient Services Building enabling and early works, including preparation of the site (e.g., provision of temporary linkways, hoardings, set-down areas and traffic arrangements), decanting of services from the existing Building 10 to the newly completed PCSS, and decommissioning and demolition of the existing Building 10.
 - Building 4 enabling and early works, including decanting and relocation of the ANU Medical School (to the new PCSS Building) and demolition.
 - Delivery of Stage 2 of the precinct wide energy node infrastructure.
- Stage 4 (FY29-34)
 - Development of a new Inpatient and Outpatient Services Building, including a 2-level basement carpark.

⁹³ GBA = Gross Building Area (GBA) = Gross Departmental Area (GDA) + 40% for travel, plant and central energy plant (CEP)

- Stage 5 (FY34)
 - Decanting of services from the existing Building 1 and Building 12 to the newly completed Inpatient and Outpatient Services Building.

This chapter describes the scope and sequence of deliverables required to deliver the preferred solution at the Canberra Hospital. The proposed solution is governed by a set of Functional Design Briefs (FDB's) – which inform the physical requirements needed to deliver hospital services and functions in line with regulatory and compliance guidelines – and a Schedule of Accommodation (SOA) which defines the number of services required (points of care) and the associated areas (m²) needed to accommodate those services in a given building. These documents reflect ACT Health and Canberra Health Services' current understood service requirements for the Canberra Hospital, however they are subject to further refinement and changes following submission of this document. All relevant identified technical reports are provided in Appendix D, E, F, G, H, I, J and K.

6.2 Scope of works summary

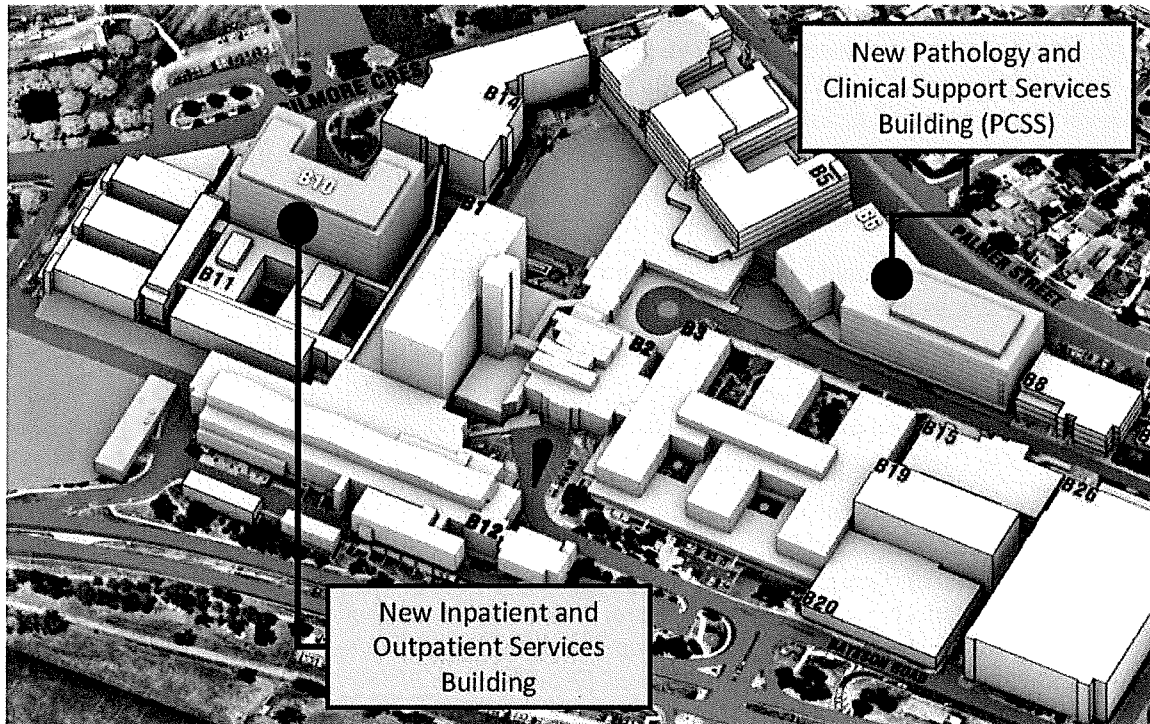
The delivery of Phase 2 would be undertaken across five (5) sequential stages (as outlined in Figure 16 and Figure 17), including:

- Stage 1 (FY24-30) – Enabling and early works package including the decanting, decommissioning and demolition of Building 7 to enable the development of the new PCSS. The decanting program includes the relocation of the Alcohol and Other Drug Unit from Building 7 to the new Gaunt Place facility.
 - *Note: Through additional analysis, it has been identified that the preferred permanent option to relocate AOD would be the CH's nearby Gaunt Place facility (in lieu of an earlier decision, this business case has costed the more expensive Building 3 option). A short term/temporary relocation to B12 before a final relocation off-site has also been considered. An update of the costs to reflect the savings of the preferred Gaunt Place option will be undertaken during the final stage of Planning and Development.*
- Stage 2 (FY24-30 inclusive of design, procurement, construction and commissioning activities) – Constructing a new purpose-built PCSS comprising 9-floors (including plant level). This will be located on a consolidated footprint currently occupied by Buildings 6, 23 and 7. Stage 2 will also deliver the first stage of the Precinct Wide Energy Node, including all building works, installation of the diesel storage tank (for redundancy requirements), and the required high voltage feeder and genset infrastructure to produce the estimated 4.5MVA (Mega Volt Amp) of electrical capacity required to power the site from 2026. Appendix M provides further details around the energy node.
- Stage 3 (FY28-31) – Enabling and early works package including the decanting, decommissioning and demolition of the existing Buildings 10 and 4. The decanting program includes the relocation of Pathology and other support services from the existing Building 10 and the ANU Medical School from Building 4 to the newly completed PCSS. This will enable the subsequent decommissioning, demolition and site clearing of the Building 10 site. Stage 3 will also deliver the second stage of the Precinct Wide Energy Node, including installation of additional feeders and gensets to increasing the sites electrical capacity to an estimated 9.0MVA by 2030.
- Stage 4 (FY29-34 inclusive of design, procurement, construction and commissioning activities) – Construction of the new Inpatient and Outpatient Services Building, comprising 11-floors of clinical and functional area as well as an additional 2-floors of basement carparking. The Inpatient and Outpatient Services Building will accommodate a combination

of inpatient services, including increased theatre and bed capacity, and outpatient services, key clinical support services such as imaging and dialysis, and space for a range of non-clinical and administrative functions.

- Stage 5 (FY34) – Relocation of clinical functions from Building 1 and Building 12 to the newly built Inpatient and Outpatient Services Building when it is fully operational.

Figure 16: CHMPP2 Development of the new PCSS (highlighted yellow) and new Inpatient and Outpatient Services Building (highlighted blue)



STAGES OF THE CHMP22

STAGE 1: Enabling and early works*

FY24

Planning and development (2024/25 works)

FY26

FY28

FY30

FY32

FY34

STAGE 2: Design, procurement, construction and commissioning works

FY24-30

Commissioning and development of Building 7, including the removal of the existing building and the construction of the new building (2024/25 works)

STAGE 3: Enabling and early works

FY26-31

Removal of the existing building and the construction of the new building (2026/27 works)

STAGE 4: Design, procurement and commissioning activities

FY28-33

Construction of a new building (2028/29 works)

STAGE 5: Relocation and finalisation

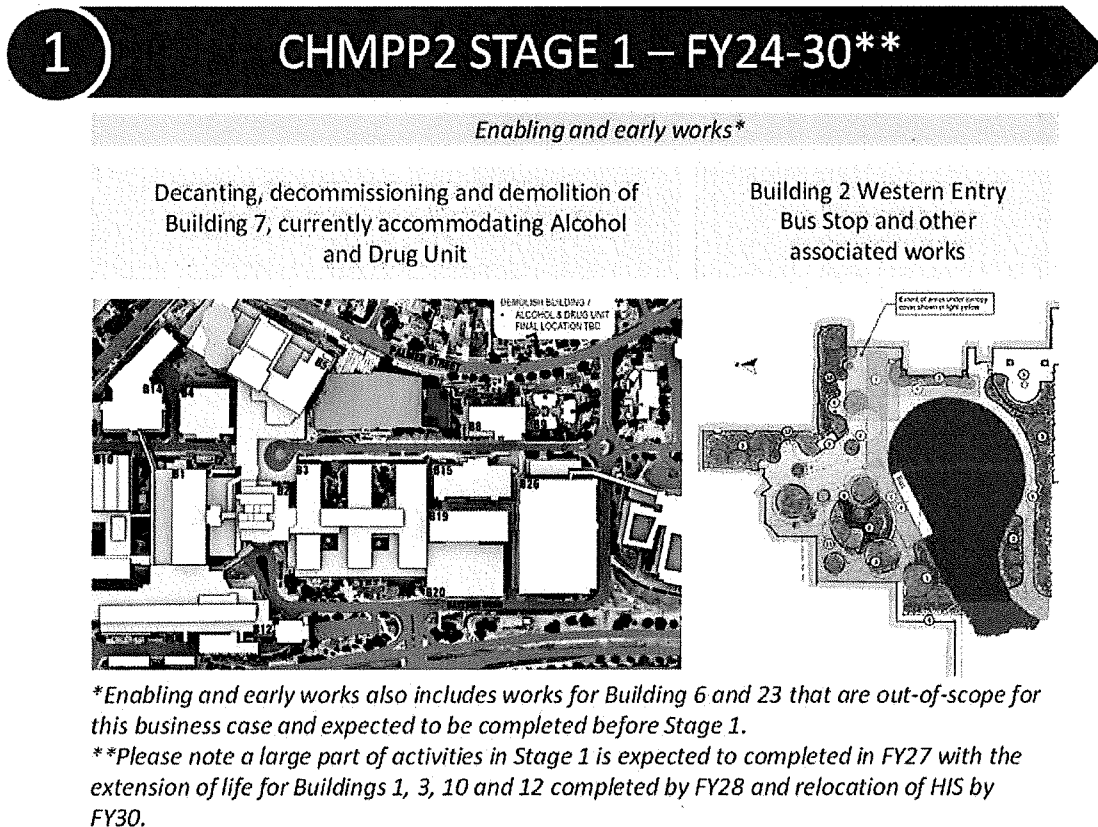
FY32

Removal of the existing building and the construction of the new building (2032/33 works)

6.3 Stage 1

Stage 1 comprises the decanting, decommissioning and demolition of the existing Building 7 (noting that Building 6 and 23 have been decommissioned and are currently being demolished). This will enable the development of the new PCSS on a consolidated footprint currently occupied by these three buildings. The included works are outlined in Figure 18 and described further below.

Figure 18: Overview of Stage 1



6.3.1. Building 6 and 23 enabling and early works (out-of-scope for this business case)

The decanting, decommissioning and demolition works for Buildings 6 and 23 are commissioned as part of a separate project and will be completed prior to the commencement of Phase 2, Stage 1.

6.3.2. Building 7 works

The proposed PCSS development includes the additional footprint of the existing Building 7 site which is located adjacent to the current Building 23. The inclusion of Building 7 in the new PCSS development would require the decanting, decommissioning and demolition of the existing Building 7. As Building 7 is approaching the end of its useful life, the removal of the building would deliver the following benefits:

- **PCSS design and functionality:** increasing the available footprint for the new PCSS development would enable all pathology services to be co-located together on one floor;
- **Optimal vehicle access:** the existing Building 7 leaves insufficient clearance between the building and the Palmer Street retaining walls. The removal of B7 and an optimised design of The PCSS would enable vehicle access to the new PCSS from Palmer Street; and

- **Reduced recurrent costs:** Building 7 is at the end of its useful life and its replacement would avoid the increasing cost and frequency of maintenance to extend the life of the asset. It would also (1) mitigate the risk of closures due to maintenance, and (2) allow for the development of a bespoke facility on the Gaunt Place site to meet the unique functional requirements of the AOD service.

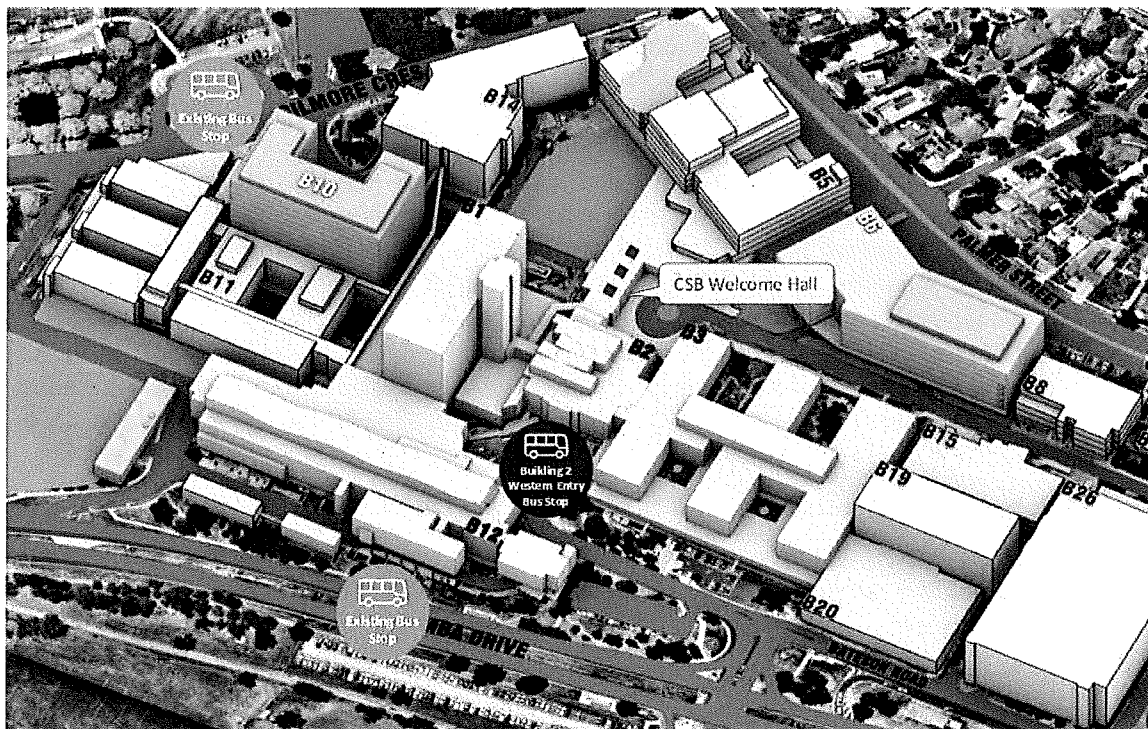
The proposed scope of works to clear the Building 7 site comprises:

- The decanting and relocation of the Alcohol and Other Drug Unit (AOD) from Building 7 (totalling 1,288m² GFA) to a bespoke designed facility on the nearby Gaunt Place site (subject to further feasibility). This would involve the replacement of the existing asset on the Gaunt Place site with a fit-for-purpose facility designed to accommodate the unique functional requirements of the AOD service. An assessment was undertaken on alternate locations based on a range of clinical and functional parameters, including a requirement for the service to remain on-site, maintain ground floor access to an outdoor area, and include a combination of beds and general office spaces. The outcome of the assessment was made in line with the following considerations:
 - Meeting the functional design requirements of the AOD service; and
 - Mitigating a double decant – where the preferred relocation of AOD would displace another service resulting in both the cost and program impacts of multiple decants and area refurbishments.
- The decommissioning of Building 7 including the disconnection of existing plant and service connections (e.g., power, water and gas utilities).
- The final assessment and removal of any existing hazardous material (e.g., asbestos) from B7 – the assessment would comprise a Division 6 Building Audit or similar.
- The demolition and site clearing of the B7 site to enable the commencement of the Stage 2 development of the new PCSS.

6.3.3. Building 2 Western Entry Bus Stop and other associated works

The Building 2 Western Entry Bus Stop and other associated works will be developed in close proximity to the new CSB and the new Inpatient and Outpatient Services Building (Further described in Stage 4) to provide equitable access to the Canberra Hospital Campus as illustrated in Figure 19. The purpose of the Building 2 Western Entry Bus Stop and other associated works is to provide an accessible path of travel from public transport to the new Welcome Hall and the broader hospital campus. The requirement follows the removal of the bus stop along Hospital Road that was decommissioned as part of the CSB development which closed off one end of Hospital Road. Following the commencement of the CSB development, the Disability Reference Group have received confirmation from the Minister which committed to the development of public transport access to the Canberra Hospital campus.

Figure 19: Public Transport Access and Building 2 Western Entry Bus Stop and other associated works

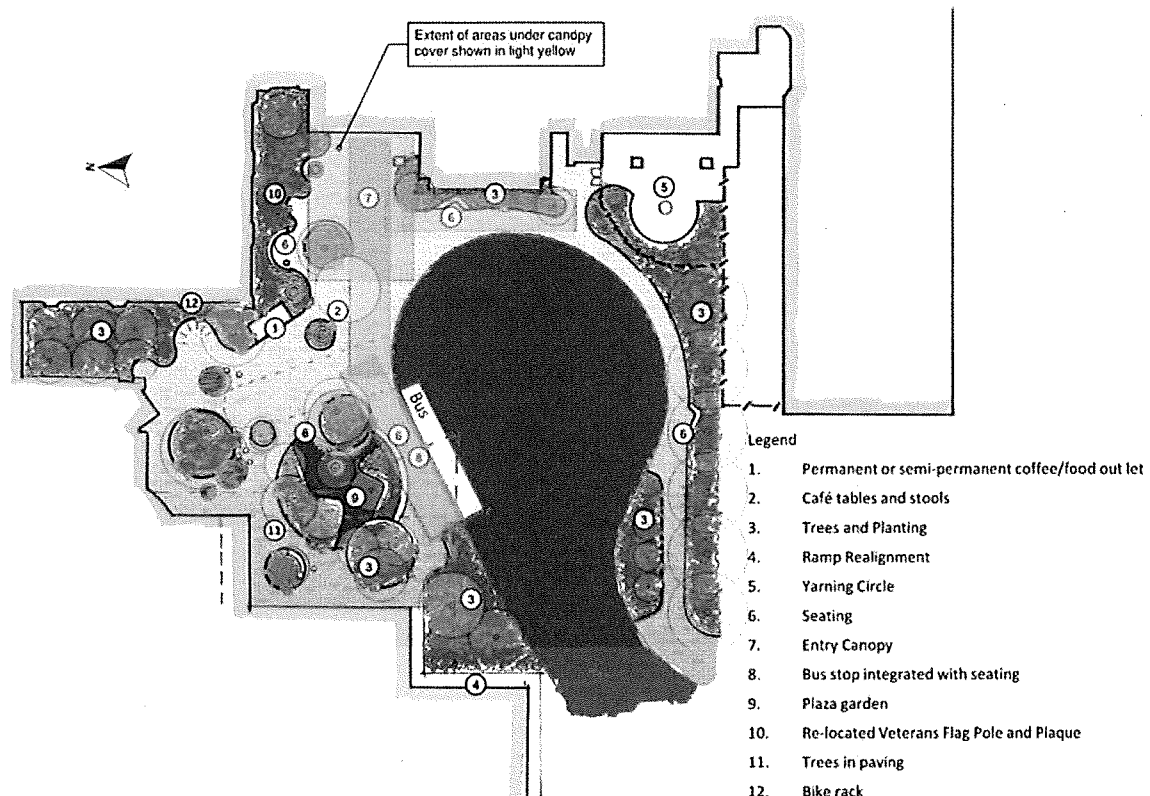


A design exercise has been undertaken to create a more welcoming experience, including green outdoor spaces and bus transport to and from the hospital in close proximity to a central entry point. The design team continued to refine the schematic design in consultation with the Territory and a wider stakeholder group including Transport Canberra and City Services, Disability Reference Group, Health Care Consumers Association, Australian Federal Police, ACT Corrective Services, ACT Ambulance, NSW Ambulance and ACT Fire and Rescue. The proposed design scheme meets the Territory's brief for a bus drop-off and is code-compliant in terms of pedestrian gradients, especially for visitors living with physical disabilities.

To enable the revised turning head to provide compliant bus access, a number of building structures will be demolished that are associated with the existing (and soon to be redundant) ambulance bay and ED whose functions will move to the CSB. This will open up the space and provide opportunities for enhanced landscaping, planting and additional bike parking. Work is also proposed to provide a Yarning Circle and landscaped outdoor space for the Aboriginal and Torres Strait Islanders Lounge and other minor works associated with the completion of the CSB.

Figure 20 presents a schematic design of the proposed Building 2 Western Entry Bus Stop and other associated works. *Note: The design is in draft form and is being developed concurrently as part of the CHE project.*

Figure 20: Schematic design of the proposed Building 2 Western Entry Bus Stop and other associated works



6.3.4. Extension of life works

The Canberra Hospital SAMP and CHMP concluded that the remaining useful life of Buildings 1 and 3 is less than 1 year; and less than 10 years for Buildings 10 and 12. Further information on the technical findings of recent building audits is provided in Chapter 3 – Needs Analysis.

The forecasted timeframes have forced CHS to invest in immediate upgrades to extend the life of these assets to ensure compliance with building and safety standards. The requested scope of extension of life activities includes immediate façade remediation works to make safe Buildings 1, 3 and 12. Further capital planning and development funding is requested to refine the scope, program and budget for further extension of asset service life works as outlined in Table 18.

These works are now critical and cannot be delayed due to the significant risks posed to patients, staff and the general public, including (but not limited to):

- Risk of building failures and elements of the external façade falling which could have catastrophic consequences;
- Risk of building closures, reducing capacity and delaying patient access to timely care, which in turn may increase the risk of avoidable clinical deterioration and hospitalisations;

Table 18: Extension of Life Activities

Category	Title	Requested Scope
Extension of Asset Service Life	Planning and development, including continuous auditing of infrastructure asset condition	To maintain the continuity of operations in buildings approaching the end of their useful life, planning and development funding is requested, including a consultancy engagement to complete an audit of Buildings 1, 3, 7, 10 and 12. The purpose of these audits is to evaluate the buildings general condition, based on available information, inspections and review against Australian standards and regulatory compliance requirements. The findings will be assessed and documented, to enable a subsequent Business Case to be prepared as part of the FY26 Budget cycle. The deliverable of this engagement will provide: • An overarching master remediation plan for implementation; • Identified remediation priorities packaged into their related engineering disciplines; • Recommended actions and associated documentation to enable the engagement of a Managing Contractor to deliver the works; and • Cost estimates to carry out the works. Services include, but are not limited to: • Hydraulic & Heating Ventilation Air Conditioning – Immediate Concern, Replacement of ageing building HVAC and hydraulic systems that are at the end of their useful life and at immediate risk of failure, or no longer compliant with Australian Standards. Addressing this issue will reduce the risk of failure of building conditioning systems, sewer systems, and hot and cold-water services for inpatient wards; • Fire – Immediate Concern, addressing this issue will reduce the risk of uncontrolled spread of fire and smoke throughout critical patient buildings requiring extensive evacuation in a significant fire event; • Electrical, Medical Gas, ICT – Outline the findings of the audit and make recommendations on whether the equipment audited should be replaced, refurbished and/or re-allocated to optimise building performance and ensure the continuity of the service for the expected life cycle; and • Building Fabric and Finishes – Consultancy to review condition of existing building fabric and finishes (wall linings, flooring, internal partitions, internal glazing, fixtures and fittings) to ensure internal components will remain fit-for-purpose for building lifespan. If not, provide a cost estimate and staged remediation plan for the ongoing renewal of these components.
	Infrastructure asset condition works	Through annual engagements with external consultancies since 2016/17, CHS has undertaken a range of façade inspections for Buildings 1, 2, 3, 10 and 12. The purpose of the inspection was to perform a general, visual, non-intrusive risk and condition assessment of the façade elements to confirm current conditions and identify deficiencies with impact on safety and/or performance of the asset. Following the inspections, a considerable number of defects and deficiencies have been identified within each building, placing the site at several extreme risks, and requiring immediate attention. This is particularly relevant within buildings 1 and 3 that are approaching the end of their useful life. As part of this Business Case, capital funding is requested to undertake the necessary works in line with the building façade inspection reports. The most extreme and high-risk issues include (but are not limited to): • General displacement, bowing and cracking of brickwork and concrete parapets; • Crushed and spalled sections of precast concrete elements; • Windows are at the end of their useful life with non-compliant glass, corrosion to frames and damaged or missing seals in buildings 1 and 3; • Rusted brackets and fixings to Building 12 fin system; and • Non-compliant brick ties with excessive spacing and lack of embedment within Buildings 1 and 3.

Category	Title	Requested Scope
Engineering Services de-commissioning of existing buildings	Make safe Building 1, 10 and 12 vacant spaces	Secure and make safe Building 1, 10 and 12 vacant spaces, including decommissioning and removal of redundant equipment, associated services and on-going statutory maintenance, i.e.: • Updating signage; • Allowance for hoardings; • Make safe links and stairwells; and • Allowance for make good where required. <i>Note: the cost of these works are not budgeted for in this business case. The final scope and cost of these works are subject to further planning and development. Funding to undertake the planning and development works (including building audits and a business case) are included in this business case.</i>
Decommissioning activities	Building Engineering and Logistics and Services De-coupling	Disconnection of engineering services, including the decommissioning of logistic services, to enable the new Buildings and demolition of existing buildings. <i>Note: the scope and cost of these works are included as part of the enabling and early works program.</i>

6.3.5. Relocation of historical medical record archives

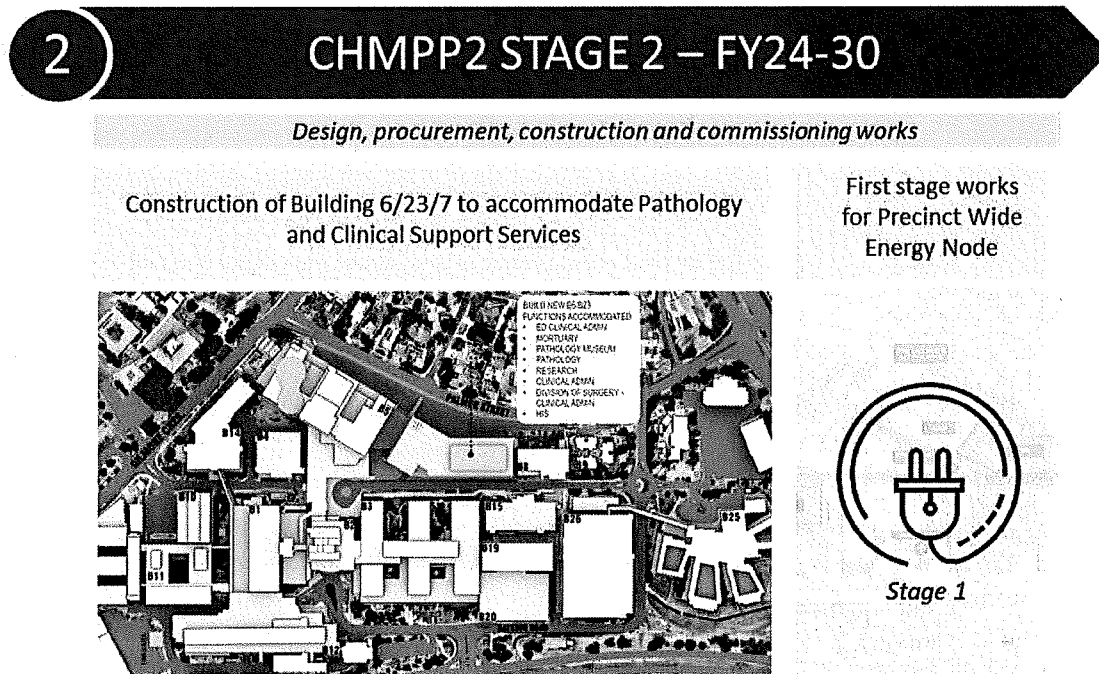
HIS manage all patient records in line with national privacy laws.⁹⁴ This requires the retention of records for 7 years or, in the case of a child, until the child turns 25. With an increasing archive at Canberra Hospital, there is a need to expand the capacity for HIS archives which are currently located in Building 12. While CHS is working on the future digitisation of its medical records, HIS will temporarily relocate a portion of its historical archives off-site. It is proposed that the archives will be relocated to a space at the proposed Mitchell site via a 2-year lease. Additional space has been retained in Building 12 to provide HIS with additional space during the implementation of Phase 3 of the Masterplan.

⁹⁴ Privacy Act 1988. Accessed on 15 January 2024 from <http://www.legislation.gov.au/Series/C2004A03712>

6.4 Stage 2

Stage 2 will be undertaken from FY24 to FY30 and include the design, procurement and construction works for the development of the PCSS. An overview of Stage 3 activities is presented in Figure 21.

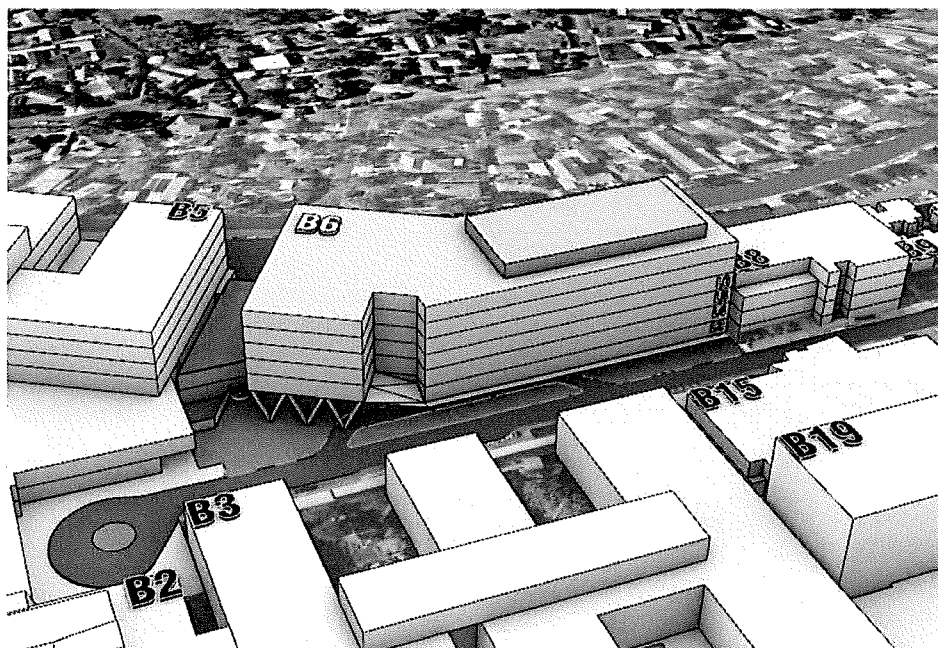
Figure 21: Overview of Stage 2



6.4.1. PCSS: construction works

Stage 2 will deliver the new purpose-built PCSS comprising 8-levels for Pathology and clinical support services as illustrated in Figure 22 and Figure 23. This would be located on a consolidated footprint following the decanting, decommissioning and demolition of Buildings 6, 23 and 7, as outlined in Stage 1 above in sections 6.3.1 and 6.3.2.

Figure 22: Overview of Pathology and Clinical Support Services Building



6.4.1.1. Clinical scope

A service planning activity undertaken in 2023 analysed the clinical and functional requirements for the proposed PCSS development. Table 19 outlines the output Schedule of Accommodation (SOA) from this work which defines the proposed scope for the new PCSS development.

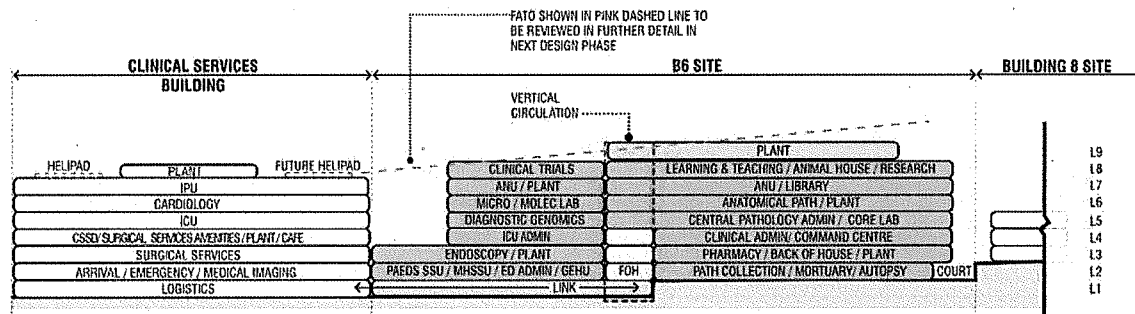
Table 19: PCSS summary Schedule of Accommodation

Department	Points of Care (POC)			Area (m ²)		
	Current State POC	Preferred Option 2 POC	Incremental POC	Current State Area (m ²)	Preferred Option 2 Area (m ²)	Incremental Area (m ²)
Front-of-House (inc. Multifaith)	0	0	0	0	262	+262
Pathology (inc. Mortuary)	6	6	0	5,652	8,355	+2,702
Endoscopy	22	26	4	528	1,843	+1,315
GEHU Outpatient	9	14	5	338	466	+128
Pharmacy	1	4	3	880	870	-10
ED Admin	0	0	0	391	526	+135
Infection Control Admin	0	0	0	122	212	+90
MHSSU	6	12	6	434	633	+199
Surgical Bookings / Preadmission	8	8	0	429	494	+65
ICU Admin	0	0	0	891	1,047	+156
PCSS Admin (Division of Surgery)	0	0	0	1,466	1,612	+146
Bone Lab	0	0	0	104	104	+0
Research	0	0	0	2,170	2,170	+0
Clinical Trials	0	0	0	0	840	+840
Animal House	0	0	0	184	163	-21
Learning and Teaching	0	0	0	0	1,250	+1,250
Command/Control Centre	0	0	0	133	133	+0
ANU Medical School	0	0	0	2,188	2,188	+0
GDA/POC	52	70	18	15,912	23,169	+7,257
Travel and Plant 40%	0	0	0	6,365	9,268	+2,903
GBA	52	70	18	22,277	32,437	+10,160

Notes:

- All Option 2 POC/Areas (m²) have been benchmarked against AHFG
- Incremental = the change (increase or decrease) in POC/Area relative to the Current State
- GDA = Gross Departmental Area
- GBA = Gross Building Area (GBA) = GDA + 40% for travel, plant and central energy plant (CEP)

Figure 23: proposed PCSS Building stacking diagram



Note:

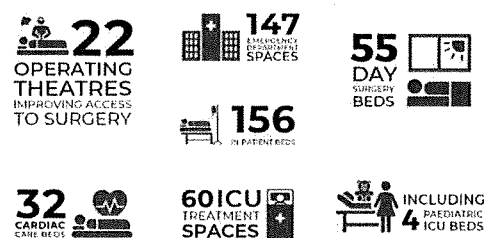
- The FATO (final approach and take off) area - which enables emergency helicopters to safely approach and depart from the CSB helipad - is in close proximity to the proposed PCSS Building will require further review in the next stage of planning and development to validate buildability.

6.4.1.2. Pathology Unit

CH is expected to become the primary pathology provider for the Territory (to a capability Level 6), supporting other major health facilities such as the NH, and UCH. This development aims to create a unit capable of accommodating other major providers across the territory, thus centralising and enhancing pathology services. Given the substantial transition to becoming the primary pathology provider, the existing Pathology Unit necessitates a more comprehensive pathology service framework across the Territory for the following reasons:

- **Increased demand within the Canberra Hospital:** Following the delivery of the CSB, Canberra Hospital will increase its capacity across adult intensive care, paediatric intensive care, surgical, coronary care and emergency services as depicted in Figure 24. As a result, pathology services will have increased demand for anatomical pathology, routine tests and other diagnostic pathology services.
- **Growing demand for healthcare across the Territory:** The demand for healthcare services, including pathology services has increased across the territory as a result of population growth, ageing and increasing incidence of chronic conditions as well as elective and emergency surgeries following the COVID-19 pandemic.

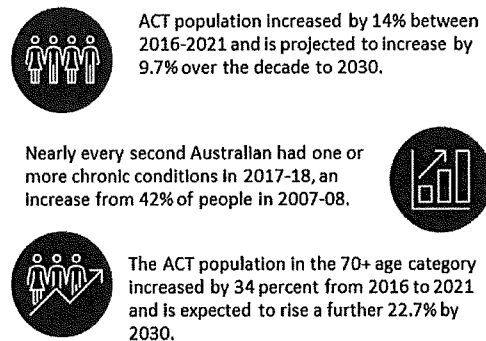
Figure 24: Services at the Critical Services Building⁹⁵



⁹⁵ ACT Government (Aug 2020). Canberra Hospital Expansion Project Update.

- Need for modernisation and operational efficiency:** As identified in the Needs Analysis in Chapter 3 – Needs Analysis, the current floor plate of Building 10 is inadequate for the integration of new technologies due to limited space and infrastructure available to accommodate them. The integration of advanced machinery represents a significant improvement in capability while incurring a substantial increase in the physical space required. The expansion will enhance operational efficiencies by integrating robotics and automation into pathology processes, aiming to streamline operations and improve service delivery. However, it's important to recognise that these machines may not completely replace the need for skilled human labour in laboratories. This dynamic interplay between automated processes and human expertise is not just a matter of current logistics, but also a driving factor for the expansion of pathology services, ensuring increased efficiencies enabled by the co-location of services.

Figure 25: Growing health care demand⁹⁶



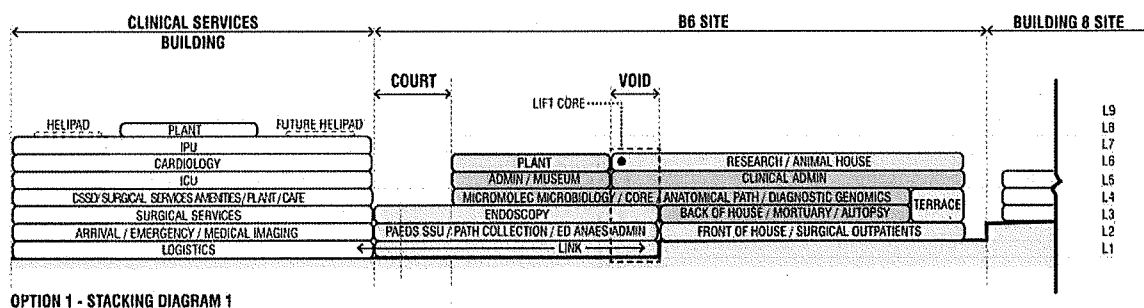
Option 2 will deliver 100% of the pathology shell space and 55% of the fit-out of this space, in line with estimates that 55% of the proposed pathology unit is required to provide a 'like for like' replacement and 45% is extra-over to future proof the unit for growth to 2040-41.

The new Pathology Unit will accommodate a consolidated laboratory, area allowances for robotic automation and other equipment and a dedicated space for administrative offices. Two options have been identified to accommodate the spatial requirements as indicated in Figure 26 and Figure 27 and are subject to further feasibility and design refinement:

- Option 1 (Figure 26): A single level for all laboratory spaces and admin on a separate floor; and
- Option 2 (Figure 27): Split-level design floors with separate areas for laboratories and for administration to ensure that spaces are co-located on each floor.

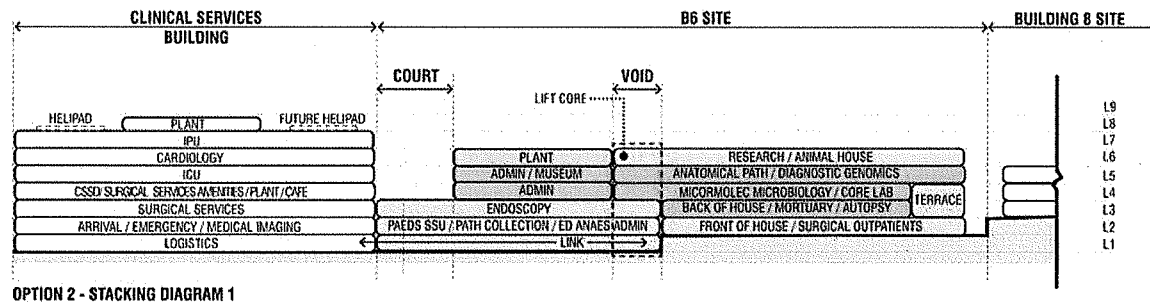
The initial investigations suggest that the spatial requirements are available in the building envelop to accommodate either option, which should be determined through future detail design phase.

Figure 26: PCSS stacking diagram – Option 1



⁹⁶ The infographic is supported by the ACT Health Services Plan 2022-2030 and data released by Australian Institute of Health and Welfare 2021. Chronic condition multimorbidity. <https://www.aihw.gov.au/reports/chronic-disease/chronic-condition-multimorbidity/contents/chronic-conditions-and-multimorbidity>

Figure 27: PCSS stacking diagram – Option 2

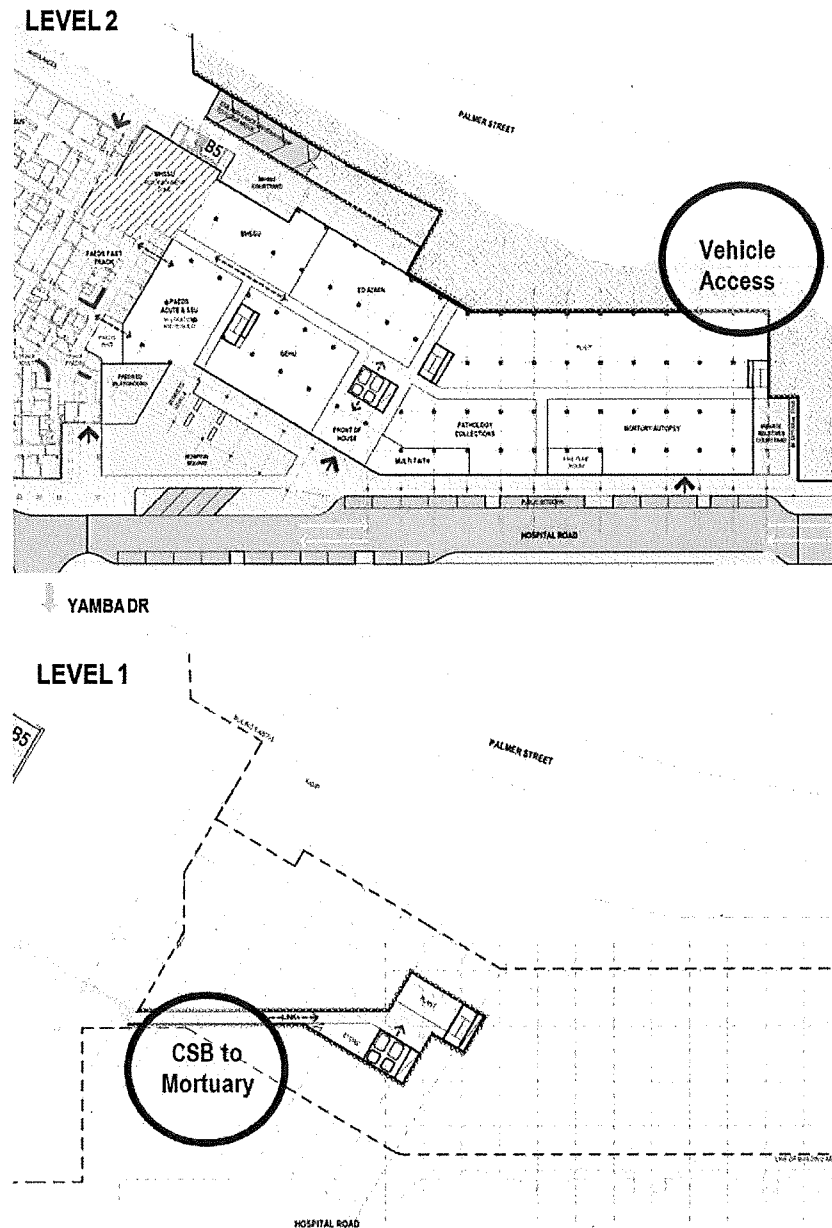


6.4.1.3. Mortuary

The PCSS Building will accommodate the Mortuary which is currently located in Building 10. A discreet linkway through a service tunnel and clinical lifts will provide non-public pathway for the transfer of the deceased from the CSB to the Mortuary in the PCSS, as illustrated in Figure 28. The Mortuary will also include discreet vehicle/hearse access via the logistics hub on Palmer Street. These arrangements are in line with the current proposed site linkages which manage the segregation of internal circulation by building on the following general concepts:

- Level 1 is generally utilised for lateral logistic movements and the management of deceased;
- Level 2 is generally made available for public access and circulation; and
- Level 3 is generally utilised for lateral patient movements across the campus.

Figure 28: Access to Mortuary



6.4.1.4. Pharmacy

The new PCSS Building will include 1,218m² (GBA) to accommodate Pharmacy services. This includes area allowances for the installation of the *PillPick* system – a robotically automated unit dose dispensing system to increase the services operational efficiency allowing it to increase capacity while reducing turnaround times.⁹⁷

The current Pharmacy service model requires inpatient medications to be dispensed from the pharmacy and sent for storage and administration on the ward to treat the patient. Each patient ward stores medication required for approximately 1 day for a patient in the Emergency Department, 3 days for a patient in the Acute Medical Unit and 7 days for all other departments. The amount dispensed for each patient aims to establish a balance between clinical efficacy and

⁹⁷ *PillPick* is a smart unit dose packaging, storage and dispensing system used to optimise the flow of medication from healthcare staff to patients in a healthcare facility.

operational efficiency to maintain quick access to required medication; however such practice has led to increased waste due to delays in dispensing and early patient discharge or transfer, change in treatment, and occasional misplacements requiring re-ordering. The integration of the *PillPick* dispensing system will facilitate efficient dispensing processes, minimising the need for any preventable excess disposal as well as the risk of medication administration errors as described in Chapter 10 – Economic Analysis.

Pneumatic tube system:

The installation of a pneumatic tube system will support the timely delivery of medication to different points of care across the PCSS building as well as to the new Inpatient and Outpatient Services Building. This would enable the rapid distribution of medication to the respective patient area and reduce manual handling and turnaround times to ensure patients have access to the medication they need when they need it. The scope would include:

- Enabling works for the installation of tube reticulation to the base of the CSB. *Note: Additional works (not in scope for CHMPP2) would be required to retrofit existing networked tubes and outlets on a floor level.*

6.4.1.5. Endoscopy and adjacent GEHU

The design includes a 2,580m² (GBA) Endoscopy Unit accommodating 26 POC, including:

- 5x Endoscopy Procedural Rooms;
- 2x Bronchoscopy Procedural Rooms (negative pressure);
- 1x Fluoroscopy Room;
- 8x Stage 1 Recovery; and
- 10x Stage 2 Recovery.

An integrated instrument reprocessing unit will provide dedicated Central Sterile Supply Department (CSSD) capability to store, clean and sterilise endoscopes.

It was determined that the GEHU will provide area allowances for both nurse and doctor administrative areas and would be located on Level 2 with internal stair access up to the Endoscopy Unit located on Level 3 to enabling quick access between gastroenterology, hepatology and endoscopy services. The unit will include 466m² of outpatient areas to accommodate 14 POC. The locating of endoscopy and GEHU moves these services from Building 12, allowing for its decommissioning and demolition in a future phase of the *CHMP*.

6.4.1.6. Clinical adjacencies

The design and scope of the new PCSS Building will maximise the connectivity and clinical adjacencies between key clinical services, clinical support services and functional disciplines, as outlined in Figure 28. This, in part, has been enabled through the inclusion of the existing Building 7 site which has increased the available footprint for the new PCSS Building. A few notable examples are identified below with further detail provided in Appendix D – B6 Functional Design Brief.

Co-location of pathology services: depending on the selection of a preferred massing option, there will be sufficient space to either (1) co-locate all testing-related pathology functions on one floor, enabling important clinical adjacencies relating to the Core Lab and other diagnostic pathology services, or (2) splitting the testing-related pathology functions and pathology administration across two floors to ensure that all laboratory functions are co-located with administrative functions. Clinical Adjacencies between pathology subspecialties and support services are presented in

- Figure 29 and ordered in terms of the criticality of the proposed adjacency.
- **Access for emergency patient transfers:** a dedicated building linkage connecting the rear of the CSB to the new PCSS Building will provide a direct linkage to transfer emergency patients from the Endoscopy suites in the new PCSS to the Operating Theatres located in the CSB.
- **Co-location of Endoscopy and GEHU:** additional space has been provided in the PCSS to co-locate GEHU and Endoscopy to improve access for patients referred for endoscopies.
- **Co-location of Infection Prevention and Control (IPC) and Pathology Micromolecular Laboratory:** to improve the timely coordination and management of patients and their treatments.

Figure 29: Clinical Adjacencies Matrix

Relationship Matrix		Building 5 (CSB)				Clinical Support				Inpatients								Outpatients					TT&R	WYC						
		Emergency Department	B5 Med Imaging	Critical Care (ICU/CCU)	Operating Theatres/Cath Lab	Sterilisation Services	Medical Imaging - New Core MI	Pathology	Pharmacy	Health Information Services	Cardiology Diagnostics	Specialist Medicine	MAPU Legend	Palliative Care 1 Directly adjacent (Horizontal / Vertical)	Day Medical Unit 2 Easily accessible (less than 3 minutes)	Addiction Medicine 3 Accessible 3 to 5 minutes	Specialist Surgery 4 Accessible 6 to 10 minutes	Day Surgery Unit 5 Accessible 10 minutes plus	Endoscopy	Mental Health SSU	HITH	Medical Outpatients	Cardiology/Cardiothoracic Outpatients	Surgical Outpatients	Interventional Radiology	Addiction Medicine Outpatients	Learning and Teaching	Research	WYC Emergency Caesarean Theatre	
Building 5 (CSB)	Emergency Department	X	1	1	1	5	5	5	5	5	5	4	4	5	5	5	4	5	5	5	5	5	5	5	5	5				
	B5 Med Imaging		X	1	1	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5				
	Critical Care (ICU/CCU)			X	1	5	5	5	5	5	4	3	3	3	5	5	3	5	5	5	5	5	5	5	5	5				
	Operating Theatres/Cath Lab				X	1	5	5	5	5	5	3	3	3	5	5	3	4	4	5	5	5	3	5	5	5				
	Sterilisation Services					X	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5				
Clinical Support	Medical Imaging - New Core MI						X	5	5	5	3	3	3	3	3	5	3	5	4	5	5	3	3	3	3	3	5			
	Pathology							X	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5				
	Pharmacy								X	5	5	3	5	3	3	3	5	5	5	5	5	5	5	5	5	3				
	Health Information Services									X	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5				
	Cardiology Diagnostics										X	5	5	5	5	5	5	5	5	5	5	3	1	3	3	5				
Inpatients	Specialist Medicine											X	1	1	2	5	4	4	5	5	2	3	3	4	5	5				
	MAPU Legend												X	4	5	5	5	5	5	5	5	5	5	5	5	5				
	Palliative Care 1 Directly adjacent (Horiz. / Vert.)													X	5	5	5	5	5	5	5	5	5	5	5	5				
	Day Medical Unit 2 Easily accessible (less than 3 mins)														X	5	5	5	5	5	5	5	5	5	5	5				
	Addiction Medicine 3 Accessible 3 to 5 minutes															X	5	5	5	5	5	5	5	5	5	2				
	Specialist Surgery 4 Accessible 6 to 10 minutes																X	4	5	5	5	5	5	3	5	5				
	Day Surgery Unit 5 Accessible 10 minutes plus																	X	3	5	5	5	5	5	5					
	Endoscopy																			X	5	5	5	3	5					
	Mental Health SSU																				X	5	5	5	5					
	HITH																					X	1	5	5	5				
	Outpatients	Medical Outpatients																					X	5	5	5	5			
Cardiology/Cardiothoracic Outpatients																							X	5	5	5				
Surgical Outpatients																								X	5	5				
Interventional Radiology																									X	5				
Addiction Medicine Outpatients																										X				
TT&R	Learning and Teaching																									X				
	Research																											X		
WYC	WYC Emergency Caesarean																												Theatres Adjacency is with WYC Birthing Suite 1	

6.4.1.7. Research, Learning and Teaching Precinct

The PCSS building includes 9,401m² (GBA) to accommodate a consolidated research, learning and teaching precinct enabling an expansion of clinical-academic partnerships to co-create exceptional patient care in line with the Canberra Health Services Research Strategy 2021-2025. This will include:

- Research space (3,038m²);
- Learning and teaching area (1,750m²);
- Animal house (228m²) including vibration mitigation, insulation and appropriate climate control;

- Bone lab (146m²);
- Clinical trials unit (1176m²); and
- ANU Medical School (3,063m²).

There is also an allowance for the relocation of the *Peter Herdson Pathology Museum* (currently located in Building 10) to a gallery style museum, showcasing various pathological specimens.

6.4.1.8. Administration and other functional areas

A total of 5,814m² (GBA) of administrative area will be distributed across various floors. This includes dedicated administrative offices for ED, ICU and other clinical services (including the Surgical Bookings Office on the same level as the Pre-Admission Clinic in the CSB). There is also an allowance for a new Command/Control Centre which would support the provision of more digital care, including virtual patient monitoring, across the Canberra Hospital.

A provision of 367m² is included for Front-of-House functions including 185m² for a Cultural and Multifaith area.

6.4.1.9. Back-of-house (BOH)

The PCSS Building will include a range of logistic solutions across level 3, including:

- A dedicated service yard, accessible via Palmer Street, will enable the following entry:
 - Mortuary Body access;
 - Pathology couriers;
 - Pathology bulk store deliveries; and
 - Animal arrivals/ departures from the Animal House.
- Back of house stores specific to Pathology and Pharmacy
- A new driveway extending from the Level 2 Ambulance Hardstand, connecting to Palmer Street, providing an alternative exit route for ambulances.
- Services Infrastructure, including:
 - New bulk oxygen vessel, connected to the existing hospital mains and Liquid Nitrogen vessel positioned on a dedicated hardstand opposite Building 8;
 - Substations;
 - Generator Hardstand; and
 - Medical and Laboratory Gas Room.
- Reconfigured carpark and Palmer Street crossover behind Building 8.

Note: the CHMP identifies the development of a new Logistics Hub in Phase 3, which will consider the development of a precinct-wide solution for:

- Loading Dock;
- Engineering and Support Services;
- Stores;
- Food Services;
- Office Accommodation; and
- Basement Carpark.

6.4.1.10. Traffic management

The traffic management arrangements for the PCSS Building have been developed to optimise circulation for different users including vehicles and pedestrians. Figure 30 outlines the pedestrian and vehicular access. This includes consideration for ingress and egress to the PCSS Building relative to other adjacent buildings, road and accessways.

- **Vehicular Access:**

- **Carparking:** ACTHD are exploring the development of other parking solutions to accommodate increased demand from both staff and patients. Minimal on-site carparking around the PCSS building would be provided via a small number of external carparking bays on Hospital Rd to enable loading and drop-offs for select hospital fleet vehicles.
- **Public drop-off:** A dedicated drop-off point to enable direct public access to the PCSS building's main entry.
- **Emergency vehicles:** To the East the design has made provision for the Building 5 ambulance hardstand located at Level 2 to connect via a ramp to the PCSS Building service yard on Level 3, which exits back onto Palmer Street behind Building 8. Civil works will be required to modify the B8 vehicular hardstand and will preclude access for a brief timeframe. These civil works are also expected to have minimal impact on Emergency Ambulance operations but will provide a long-term benefit in the form of an additional alternate means of egress for ambulances from the site.
- **Service and logistics vehicles:** Service and logistics vehicles will also gain access to the rear of the PCSS in a similar way to emergency vehicles via the Palmer Street carriageway. This includes provision for discreet access to the Mortuary as described in Section 6.4.1.3.

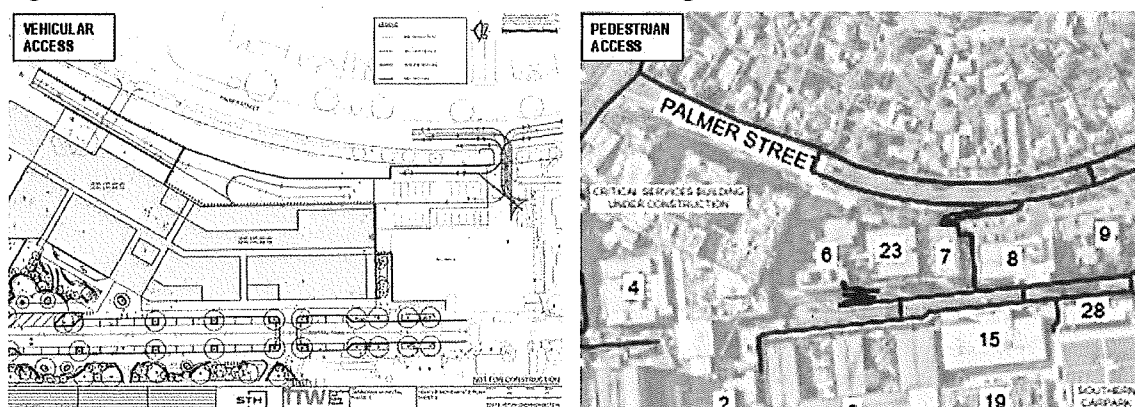
- **Public Transport:**

- **Building 2 Western Entry Bus Stop and other associated works:** provision for public transport access to the campus would be provided via the Building 2 Western Entry Bus Stop and other associated works as described in Section 6.3.3.

- **Pedestrian Access:**

- **Pedestrian Link Bridge to CSB:** The project proposes an open pedestrian link between the CSB Staff Amenities area to the new PCSS asset over a new open landscaped terrace on Level 4.
- **Pedestrian Link Bridge to Palmer Street:** The open terrace on Level 4 has also been configured to accommodate a pedestrian link bridge to Palmer Street.
- **Pedestrian access to Hospital Road:** Due to the change in elevation between the Northern and Southern sides of the PCSS building, there will also be a set of open stairs providing pedestrian access from Level 4 down to Hospital Road. This is part of the strategy to better connect and integrate the campus with the adjoining neighborhood.

Figure 30: Pedestrian and Vehicular Access to PCSS Building



6.4.1.11. Program

Stage 2 will be delivered over an almost 6-year program of work spanning FY26-30. Table 20 outlines the key program milestones for design, procurement, construction and commissioning activities.

Table 20: Stage 2 program

Milestones	Anticipated Deadlines
Pathology and Clinical Support Services Building	
Procure [REDACTED]	August 2025
PCSS design finalisation and construction commencement	March 2027
PCSS practical completion	January 2029
PCSS operational commencement	July 2029
Energy Node	
Precinct wide energy node – Stage 1 works	June 2026

6.4.2. Precinct wide energy node (Stage 1)

The proposed assets to be developed as part of the CHMPP2 scope will generally be self-contained and/or supported from existing campus engineering infrastructure, with the exception of the electrical services. A new precinct-wide energy node is required to meet the long-term energy needs of the campus and enable the progressive transition from natural gas to an all-electric facility. The energy node will upgrade power supplies needed to cater for new heat pumps and electric boilers. Consultant advice is to undertake the upgrades in four stages, with the Preferred Option 2 to include the first two stages to meet the energy needs of the new buildings and wider campus.⁹⁸ The inclusion of the energy node in the scope of this Business Case represents a significant opportunity cost, however it has been deemed necessary in line with the Territory power authority's (*Evoenergy*) transition of the hospital to a HV tariff.

However, it should be noted that the upgrade of the sites' HV infrastructure is not essential to deliver the proposed development of the new PCSS and Inpatient and Outpatient Building's. Therefore,

⁹⁸ The Canberra Hospital HV Network Summary. Appendix O. LCI Consulting (2023). Retrieved on 19 January 2024.

there is an opportunity to defer the establishment of the precinct-wide energy node to post-CHMPP2. If deferred, the PCSS Building and Inpatient and Outpatient Building would need to be constructed with their own new HV feeds and generators, which would be located within the plant rooms of the new buildings. At a later date, these generators would then be removed, facilitating the buildings' connection to the new node.

Stage 1 will deliver all building works, installation of the diesel storage tank (for redundancy requirements), and the required high voltage feeder and genset infrastructure to maintain the estimated 4.5MVA (Mega Volt Amp) of electrical capacity required to power the site from 2026.

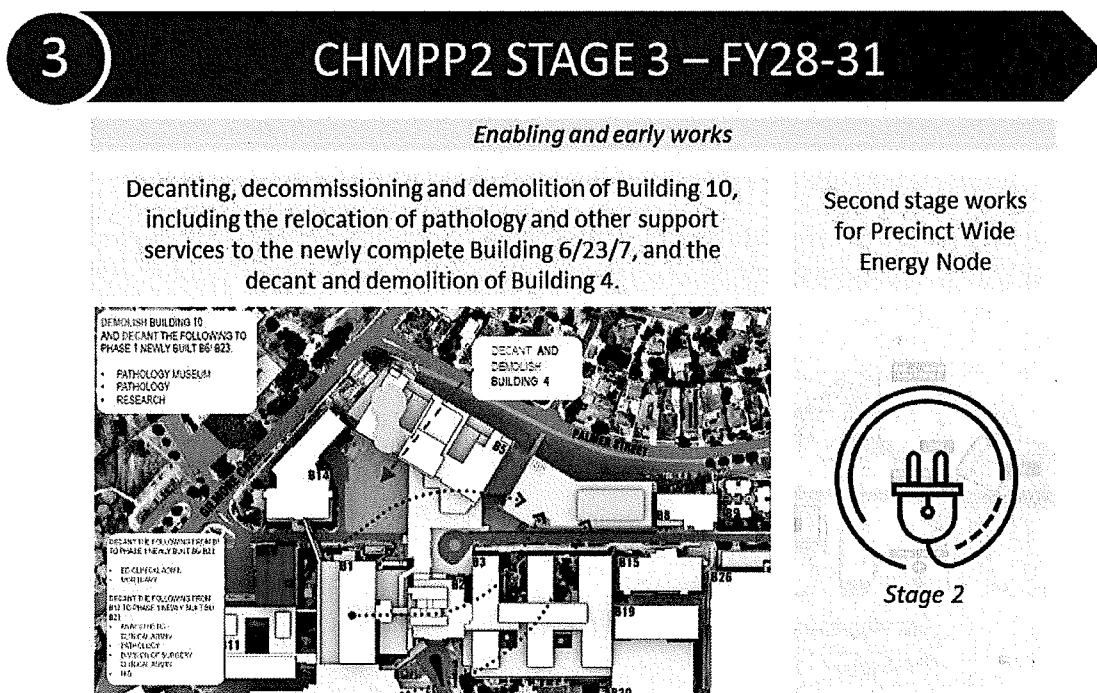
The proposed location for the electrical energy node is in the North-West sector of the site to the South of the current Building 13 helipad and carpark. In order to assure alignment with the CHMP the requirement to implement a central campus electrical energy node has necessitated further consideration of the Phase 3 CHMP scope which was primarily focused upon the delivery of a new logistics centre in the location of the current Building 12 asset.

It is proposed that the new electrical energy node will be 'future-proofed' to allow integration with the podium of a future gateway precinct on the corner of Yamba Drive and the Kitchener Street, as contemplated by the CHMP. It is also anticipated that the energy node will share vehicular access with the Phase 3 logistics centre service yard.

6.5 Stage 3

Stage 3 will be undertaken between FY28-31 and includes a series of initial enabling and early work activities to prepare the site for the development of the new Inpatient and Outpatient Services Building in Stage 4. During this stage all necessary enabling and early works, including decanting, decommissioning and demolition activities, will be performed facross the B10 and B4 sites. An overview of Stage 3 activities is presented in Figure 31.

Figure 31: Overview of Stage 3



6.5.1. Inpatient and Outpatient Services Building: enabling and early works

The proposed scope of works to clear the Building 10 site comprises:

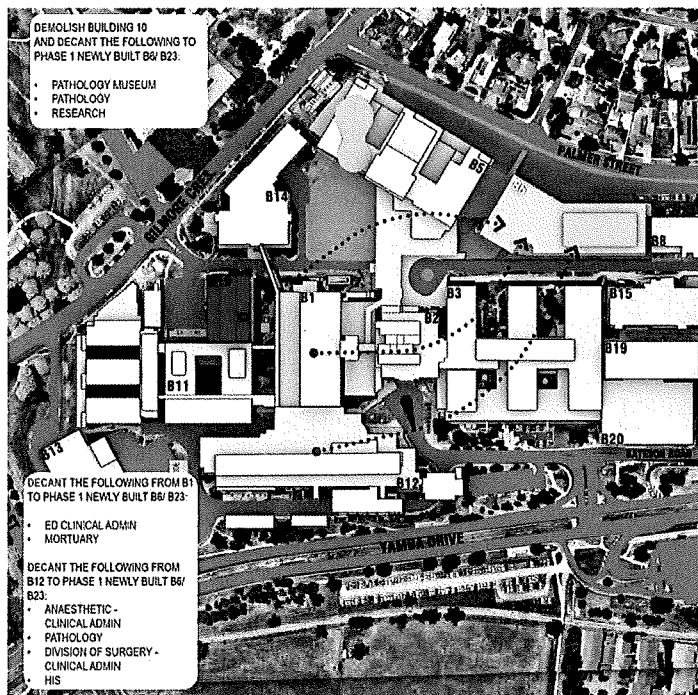
- **Decanting works:** including the preparation of the site (e.g., provision of temporary linkways (e.g., between Buildings 11 and 12, and 1 and the CSB), hoardings, set-down areas and traffic arrangements), the relocation of all existing services in Building 10 to the newly commissioned PCSS Building;
- **Decommissioning works:** including the disconnection and diversion of services (utilities such as power, water and gas) from the building. This will require further detailed consideration by an expert demolition contractor in order to develop and confirm:
 - A protection strategy for adjoining assets which ensures that services being disconnected are done so in isolation from other assets.
 - Demolition methodology with respect to the proximity of adjoining live operational services.
- **Demolition works:** including the removal and site clearing of the existing Building 10 structure.

These works are further detailed in the following sections.

6.5.1.1. Decanting works

Following the completion of Stage 2, in July 2029, services in the existing Building 10 will be decanted to the new PCSS building. These include pathology and its subspecialties, teaching, learning and research facilities currently located in Buildings 10 and 12, emergency clinical administration and mortuary from Building 1, and other clinical administration units from Building 12 as presented in Figure 32.

Figure 32: The overview of Building 10 decanting works prior to demolition



6.5.1.2. Decommissioning works

Building 10 utilises HV electrical systems that serve the Canberra Hospital Campus. Further work has been undertaken to confirm the requirement to decommission the existing utility services, including the development of interim services solutions for power, water and gas to ensure the continuity of critical site services for the campus. It is critical that a protection strategy for adjoining assets is developed during the design and procurement phase to ensure that services being disconnected are done so in isolation from other assets.

Isolation of service infrastructure: all the existing Building 10 site services infrastructure will require safe isolation and termination outside the Building 10 site to enable their removal and for demolition and bulk earthworks to proceed. The following additional enabling works will be required: i) Power: The existing Building 10 Main Switchboard is located in Building 11, outside the site, and has a large, dedicated supply. It can likely be reused to provide temporary power to site for these works and to complete the construction works in Stage 4.

Investigation of hazardous materials: due to the age of the existing Building 10 (built in 1984), it is possible that it may contain hazardous materials and be located on contaminated ground soil. Further analysis would need to be undertaken to determine the extent (including the types and volumes) of any present hazardous materials or ground contamination. This would include consideration to undertake a Division 6 Building Audit or similar (to identify all hazardous materials) and/or a Preliminary Site Investigation (PSI) or similar to provide an indication of the potential for ground contamination at the site as a result of current and historical activities onsite and adjacent sites, and the likely impacts on cost and program for their removal.

6.5.1.3. Demolition works

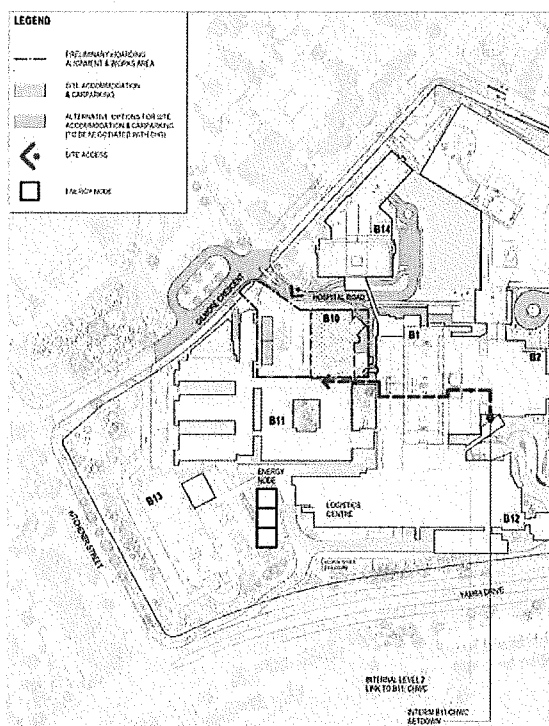
Due to its proximity to adjoining assets, the demolition of Building 10 will require the preparation of a detailed program of works, as depicted in Figure 33:

- The existing 8-level including basement Building 10 structure is a substantial asset and will require careful consideration to demolish and remove from site. Similarly, the interface with Building 11/Centenary Hospital for Women and Children (CHWC) and the proximity to the current CHWC vehicular set-down to the immediate North of the current Building 10 asset will require careful consideration. Given that the demolition works are an immediate precursor to the construction of the new Building 10 asset which will occupy the combined site of the current Building 10 and the CHWC setdown, it is the project view that the entire works site should be secured.
- **Demolition and existing asset protection strategy for adjoining assets:** Noting the proximity of adjoining live operational services, it is recommended that a demolition and existing asset protection methodology is developed and adopted as part of a construction management plan prior to the commencement of any demolition works. This is required to avoid any impact on operational services in Buildings 1, 11 and 12 and may include but not limited to the planning of staging areas, contractor parking provision and the installation of necessary safety hoardings;
- **Alternate vehicular set-down and access pathway:** This strategy will require an alternate vehicular set-down and access pathway for occupants wishing to access Building 11 / CHWC, noting that the new Western Entry is for bus and emergency vehicle access only. The decommissioning of substantial Building 12 services in mid-2024, in particular the Emergency Department will add additional set-down capacity to the western Building 2 entry at Level 2. From this point a relatively direct existing north-south pathway through Building 1 can be utilised to access Building 11 / CHWC. This pathway connects directly with the eastern circulation spine of Building 11 / CHWC, which in turn connects to the existing vertical transport core.

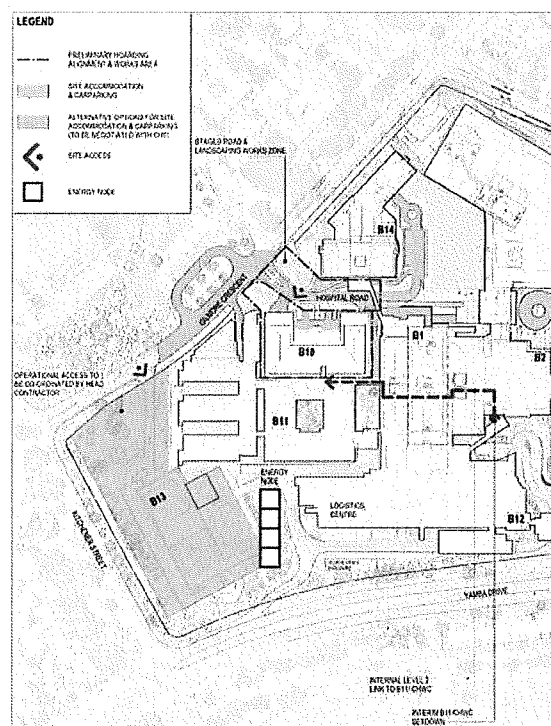
- Hoardings and other site protection considerations:** The Building 10 site can be secured through the installation of hoardings along the western edge of Hospital Road and North of Building 1. Building 11/CHWC provides a natural hoarding. Vehicular access will need to occur off Hospital Road and onto Gilmore Crescent. During the demolition phase of the works and indeed the subsequent Building 10 installation phase, operational vehicular access will be limited to NCHP access, Building 1 Food services and emergency fire appliance access to the Building 1 fire booster pumps. With the decommissioning of the majority of the Building 12 clinical services post commissioning of the CSB, CHS may wish to consider a western access for food services via the current Loading Dock as an interim measure to further reduce operational vehicular access along Hospital Road North.

Figure 33: Enabling works and site preparation arrangements

Site preparation arrangements: site services infrastructure



Site preparation arrangements: construction



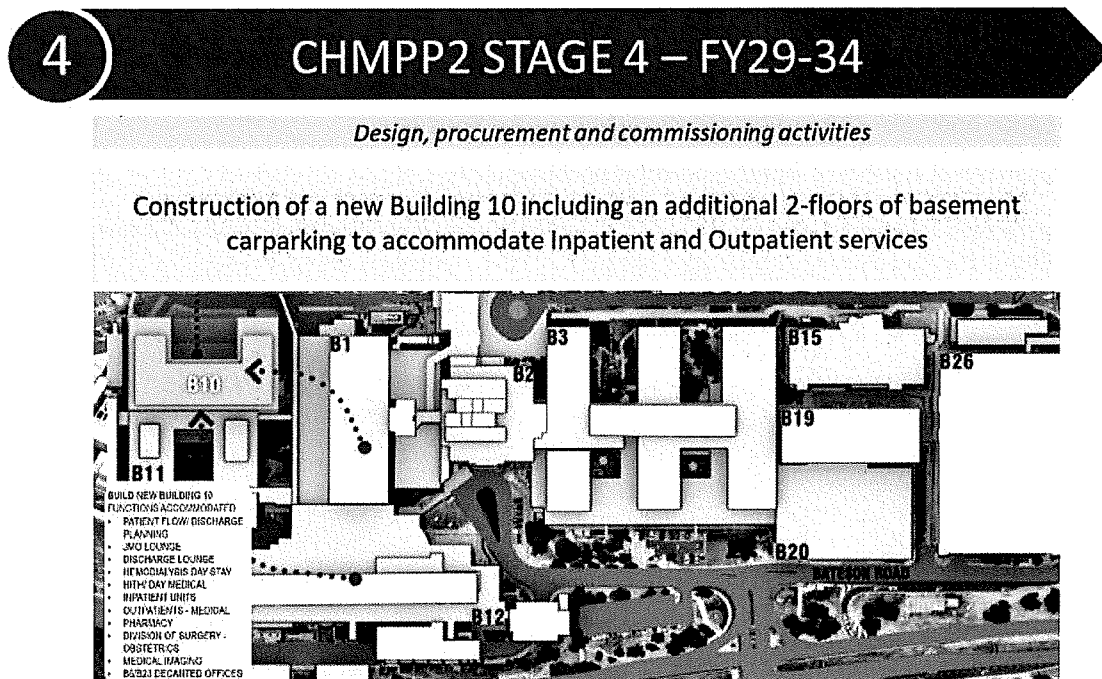
6.5.2. Precinct wide energy node (Stage 2)

Stage 3 will deliver the second stage of the precinct wide energy node further detailed in Section 6.4.2, including the installation of additional feeders and gensets to increase the sites electrical capacity to an estimated 9.0MVA by June 2030.

6.6 Stage 4

Stage 4 will be undertaken between FY29-34 including the delivery of the new Inpatient and Outpatient Services Building, as illustrated in Figure 34.

Figure 34: Overview of Stage 4



6.6.1. Inpatient and Outpatient Services Building: construction works

The new Inpatient and Outpatient Building – illustrated in Figure 35 – comprises 11-floors with an additional 2-floors of basement carparking to accommodate staff, patients and visitors.

Figure 35: New Inpatient and Outpatient Building



The additional 2-floors of basement carparking will provide direct and discreet access to clinical services in the Inpatient and Outpatient Services Building as well as broader access to occupants in surrounding buildings. This has been a consistent point of feedback from key stakeholders consulted through the development of the new building and the broader Canberra Hospital Master Plan.

6.6.1.1. Clinical scope

The scope of services to be accommodated in the new Inpatient and Outpatient Services Building has been informed via a service planning activity undertaken in 2023. The activity identified the clinical and functional requirements for the proposed facility to meet the parameters of the Preferred Option 2 – including a replacement and upgrade of existing services in line with current clinical and regulatory guidelines. Table 21.outlines the service scope for the new Inpatient and Outpatient Services Building.

Table 21: Inpatient and Outpatient Services Building summary Schedule of Accommodation

Department	Points of Care (POC)			Area (m ²)		
	Current State POC	Preferred Option 2 POC	Incremental POC	Current State Area (m ²)	Preferred Option 2 Area (m ²)	Incremental Area (m ²)
Front-of-House (Inc. Multifaith)	0	0	+0	0	473	+473
Inpatients	236	257	+21	8,232	13,117	+4,885
Palliative Care						
Outpatients	96	119	+23	4,104	4,513	+409
Sleep Lab	2	8	+6	85	384	+300
Discharge/Transit Lounge	18	19	+1	112	394	+282
Clinical Handover	0	0	+0	0	75	+75
Day Med Services (HITH)	12	31	+19	387	814	+427
Dialysis	12	13	+1	391	508	+117
Perioperative Services (WYC Obstetric Theatres)	0	12	+12	0	1,224	+1,224
CSSD	0	Sterilisation inc. in Periop		0	0	+0
Medical Imaging	20	19	-1	2,776	2,164	-612
JMO Lounge	0	0	+0	161	147	-14
B1 Admin	0	0	+0	974	1,025	+52
PCSS Admin (non-Div Surg)	0	0	+0	640	956	+316
MOSCETU	0	0	+0	186	193	+8
PTO	0	0	+0	34	34	+0
Central Equipment Store	0	0	+0	228	228	+0
Transport Pool	0	0	+0	20	20	+0
VAD	0	0	+0	0	57	+57
HIS	0	0	+0	0	0	+0
GDA	396	478	+82	18,328	26,327	+7,999
Travel and Plant 40%	0	0	+0	7,331	10,531	+3,200
GBA	396	478	+82	25,659	36,858	+11,199

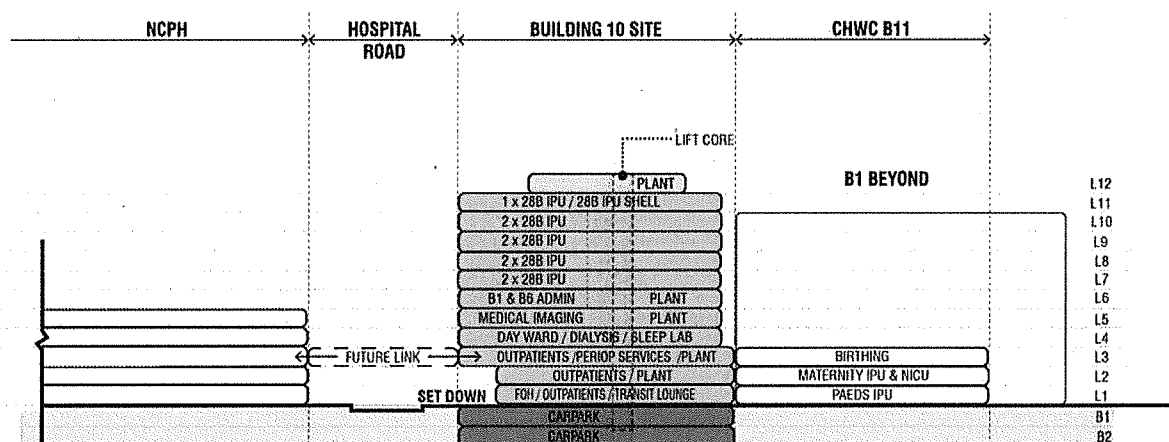
Notes:

All Option 2 POC/Areas (m²) have been benchmarked against AHFG

Incremental = the change (increase or decrease) in POC/Area relative to the Current State

GDA = Gross Departmental Area

GBA = Gross Building Area (GBA) = GDA + 40% for travel, plant and central energy plant (CEP)



6.6.1.2. Inpatient services

The new Inpatient and Outpatient Services Building will include a total of 18,315m² (GBA) for inpatient services distributed across five (5) dedicated floors spanning levels 7-11. This would include 9 fully fitted IPU's and shell space for the future development of a 10th IPU. Each floor comprises a dual IPU layout accommodating a total of 257 beds. The 28-bed IPU configuration is the maximum bed-yield that can be accommodated within the available building footprint. Additional rationale and justification for a 28-bed IPU is provided further below. This allows for the decommissioning of Building 1.

Overarching inpatient design:

- Allowance for clear wayfinding for patients and carers/visitors from entry to exit, including clearly signed directions.
- Support to maximise clinical and workforce productivity and efficiency through design that supports workflows with short travel distances (horizontal and vertical), clear patient flows, separation of clean and dirty material workflows to and from the unit/s.
- Safety in design measures to prevent occupational violence, including access control for staff only areas as part of preventing unauthorised access.
- Maximising comfort for inpatient, visitors, and staff through visual observation, acoustic, climate control, natural light, and Artwork elements.
- Adequate infection control measures, facility maintenance and environmental sustainability in finishes and surfaces, air handling systems, water management and environmental sustainability.
- Provision of appropriate digital infrastructure that accommodates existing and future systems which promote flexible telehealth, POC mobile device utilisation, unit specific communications and advances in technology.

The areas considered in each IPU include *(note: while the long-term vision of the CHMP is to develop a standardised IPU for seamless and consistent provision of inpatient services across the Territory's hospital network, there will be some unavoidable variance across the IPU's where bespoke design elements have been included or excluded according to the varying clinical specialties across the inpatient service):*

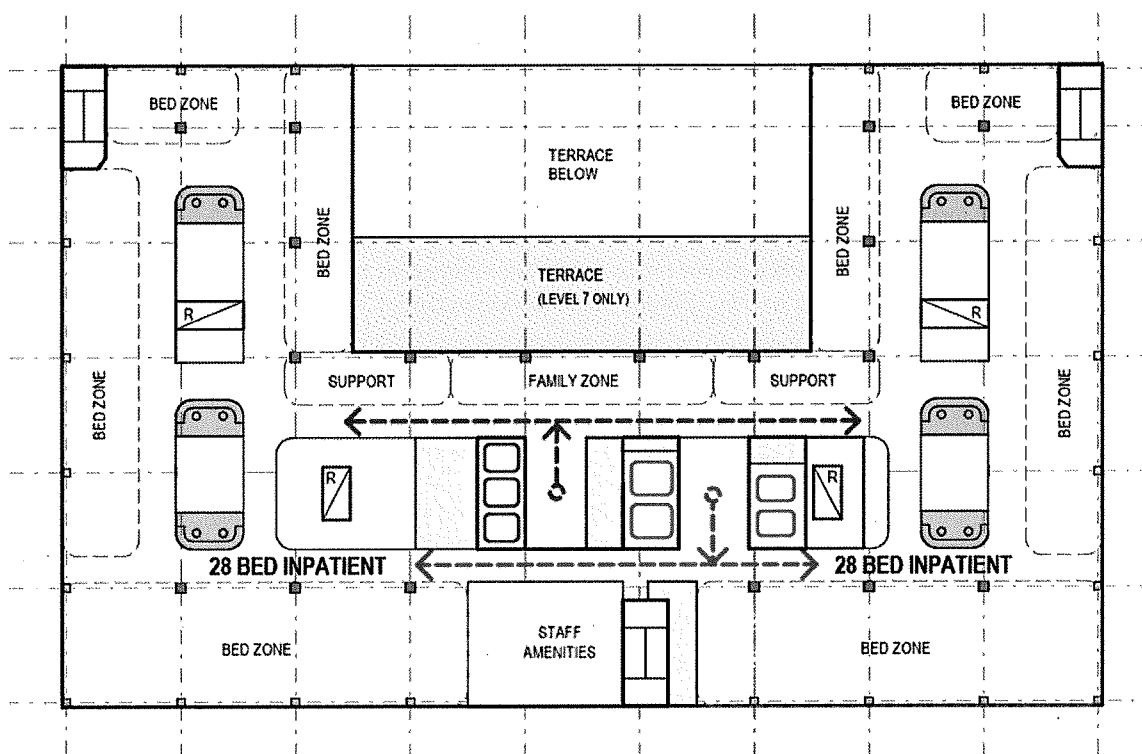
- Rehabilitation and allied health therapy spaces;
- Treatment rooms (one per floor, to be shared between two adjacent units);
- Interview rooms;
- Learning, research, and education spaces;
- High and close observation units should support high levels of monitoring;
- Each inpatient unit will have a minimum of one of the 28 beds as a negatively pressured bedroom with ensuite for isolation. Negative pressured isolation rooms provide respiratory isolation and prevent the transmission of infection. The anteroom provides an area for staff to don and doff personal protective equipment. Respiratory and Infectious Diseases inpatient units will have higher ratios of negatively pressured bedrooms with ensuites;
- Each inpatient unit will also include one bariatric bedroom and one super bariatric bedroom, with ensuite and a lifter through the bedroom into the ensuite;
- Bariatric equipment weighted to 250kg and super bariatric equipment to 450kg;
- Ceiling mounted hoist or mobile hoists;

- Sufficient readily accessible storage and charging spaces for frequently utilised ICT and medical equipment; and
- Radiation room (x2 included in one of the nine IPU's only).
 - *Note: Radioactive iodine therapy is effective and is therefore in high demand. However, radiation rooms have very specific technical requirements to ensure safe administration for patients, staff and the public. This includes (but is not limited to) lead-lining and radiation resistant plumbing to prevent the release of radiation. Existing access to radiation iodine therapy (I-131) is extremely limited to one room across the Territory. The service is currently located at Canberra Hospital (in 14A, Haematology). The next closest facility is located approximately ~250km north of Canberra in Liverpool, NSW. Alternatively, services can be accessed in central Sydney.*

Level 5 will include some additional area for handover rooms comprising 105m² (GBA) for three (3) bookable meeting rooms to provide a dedicated and quiet space for medical staff to handover between shifts.

The layout of each IPU is outlined below in Figure 36 and has been designed in line with existing AusFHG standards and guidelines.

Figure 36: Inpatient and Outpatient Services Building – example layout of the 28-bed IPU configuration



The decision to change from a 24-bed configuration to a 28-bed configuration is based on a high-level analysis that considers the required capital funding to deliver the extra bed yield and additional operational funding as a result of increased capacity in each unit.

Table 22 presents the difference in total capital funding required for a 24-bed and 28-bed configuration in line with the current building scope and design. Assuming the current proposed total floor area allowance of 18,315m² (GBA) across 5 levels, a total of 9 IPU units would yield 252 beds and 216 beds in either a 28-bed or 24-bed configuration (presenting a difference of 36 beds).

To ensure that a 24-bed configuration delivers at least 252 beds, an additional floor is required to accommodate two (2) additional IPU units, delivering a total of 264 beds. The extra floor would increase the total area for inpatient services by 3,674m² (GBA) [REDACTED]

Table 22: Financial Analysis – 28-bed vs. 24-bed IPU Configuration – CAPEX Estimates

Financial Analysis – 28-bed vs. 24-bed IPU Configuration – CAPEX Estimates	Inpatient and Outpatient Services Building: 24-bed vs 28-bed Configuration (current building scope & designs)			Inpatient and Outpatient Services Building: 24-bed Configuration (new building scope)	Difference between 28-bed (current scope) and 24-bed (new scope) configuration
	24-bed IPU	28-bed IPU	Difference		
Building Scope					
No. of floors	5	5	0	6	-1
No. of IPU's	9	9	0	11	-2
Bed yield	216	252	-36	264	12
Total GBA (m²)	13,117	13,117	0	15,741	-2,624

The additional capital cost of a 24-bed IPU configuration has been compared to the additional resourcing costs of a 28-bed IPU to confirm a preferred option. The existing staff to patient ratios for inpatient units in Canberra Hospital require:

- Day shift: 1:4
- Night shift: 1:6

This indicates that a 28-bed IPU would require an additional staff member in each of the 9 IPU's for both day and night shifts (totalling an additional 18 nursing FTE per year as outlined in Table 23). [REDACTED]

Table 23: Financial Analysis – 28-bed vs. 24-bed IPU Configuration – OPEX Estimates

Financial Analysis – 28-bed vs. 24-bed IPU Configuration – OPEX Estimates	Inpatient and Outpatient Services Building: 24-Bed vs 28-Bed Configuration		
	24-bed IPU	28-bed IPU	Difference
Operational IPU costs (Labour component)			
Number of patients for each staff			
Day shift	4	4	0
Night shift	6	6	0
Total Staff requirement			
Total day time	54	63	-9
Night shift	36	42	-6
Adjusted night shift in line with the required staff patient ratio	0	3	
Total night shift	36	45	-9
Total FTE required			-18
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

This shows that while a 28-bed IPU configuration would result in additional recurrent costs over the 20-year life of the project, [REDACTED]

99

6.6.1.3. Outpatient services

The new Inpatient and Outpatient Building will include a centralised consolidated outpatient service across three floors in a flexible and generic configuration. The following clinics will be accommodated across 6,364m² (GBA) delivering a total of 119 POC's, including 85 medical and 34 surgical POC's. The design includes:

- Patient areas in pods of 15-23 POC, each with its own waiting area, examination plinths (for orthopaedics, general surgery and other outpatient clinics), patient toilets, clinical offices/workstations/workrooms, a cleaning utility room, and a height/weight bay. The POCs are generally made up of consult rooms (of various sizes), interview rooms, and (general) treatment rooms, with the addition of some allied health treatment rooms (including a hand therapy/splitting room, a plaster room, a podiatry room, an orthotics/prosthetics workshop, and an audiology testing room) as well as other specialised rooms (including a negative pressure room for respiratory outpatients, a lung function lab, and two stress testing rooms). The patient pods comprise:
 - 4 pods for medical clinics, comprising 15-17 POC's each;
 - 1 pod of 23 POC for cardiology/cardiothoracic and diagnostic cardiology clinics; and
 - 2 pods standardised/flexible pods of 15 and 19 POC each for surgery clinics (which would also include the orthopaedic and plastics registrar clinics).
- Clinical support services to be shared amongst two (2) adjacent pods (if there is an adjacent pod), including resuscitation bays, linen bays, equipment stores, general stores, cleaner's rooms, disposal rooms, dirty utility rooms, and specimen collection bays;
- Staff areas also to be shared amongst 2 adjacent pods (if there is an adjacent pod), including offices, workstations, file stores, photocopy stores, beverage bays, staff rooms, property bays, and staff toilets; and
- Sleep lab including 538m² (GBA) to accommodate 8 POC. This comprises inpatient rooms located adjacent to the Respiratory Outpatient area.

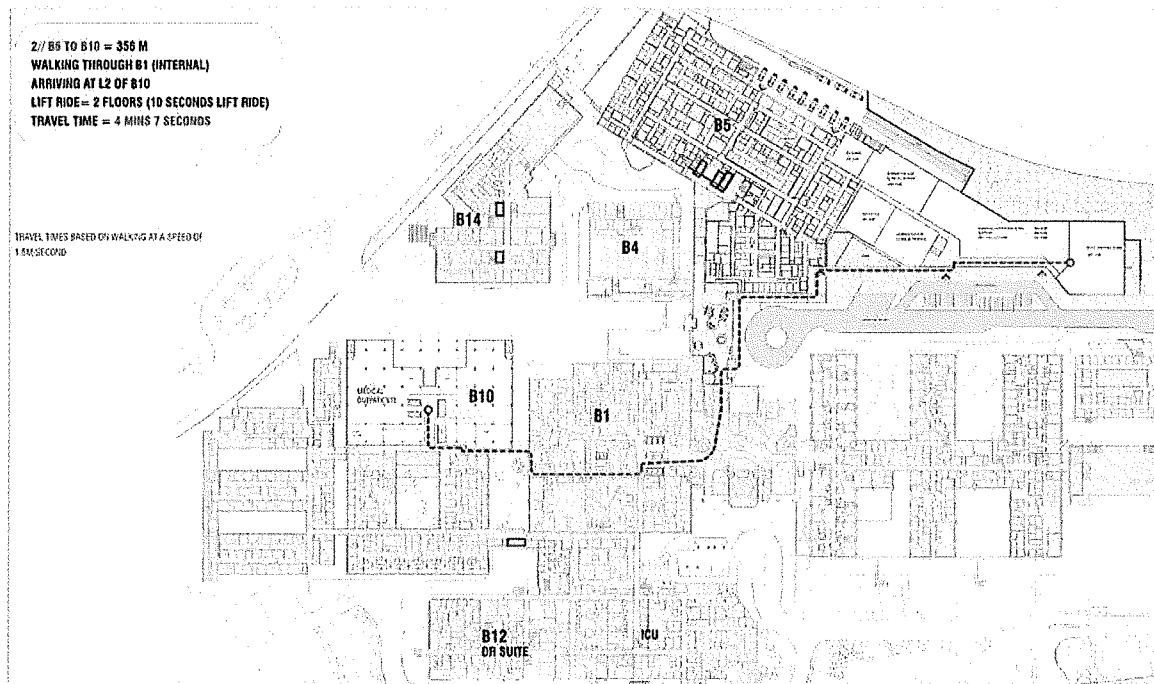
The consolidation of surgical and non-surgical outpatient services including the close proximity to peri-operative services and clinical support services such as medical imaging.

- An assessment was undertaken to determine the feasibility of splitting Outpatient Services across the two sites – including Surgical Outpatients in the new PCSS building and Medical Outpatients in the new Inpatient and Outpatient Services Building. However, it was determined that a consolidated model in the new Inpatient and Outpatient Services Building was preferred due to:
 - **Reduced travel times to Medical Imaging:** the location of Medical Imaging in new Inpatient and Outpatient Services Building would increase travel times between buildings and reduce the overall patient experience. The estimated internal and external distance and travel times between the PCSS Building and Inpatient and Outpatient Services building are:

- Internal: 356 metres / 4 minutes 7 seconds (Figure 40)

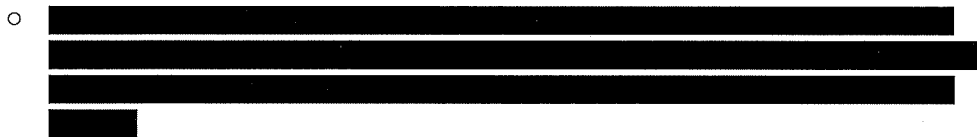
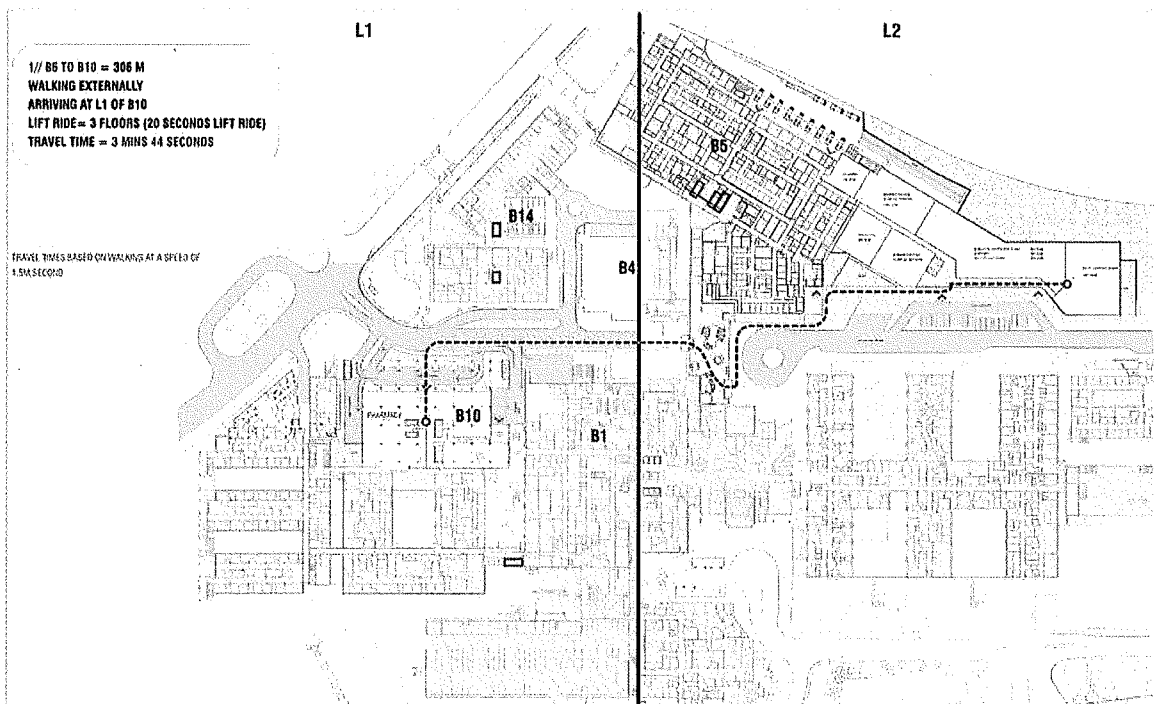
99 Note: this analysis is high level only and intended to provide an order of magnitude to inform decision-making. The capital costs are based on the existing cost rates developed for the CHMPP2 project. The operating costs are based on the average nursing salary in ACT, which has been escalated against Wage-Price Index (WPI) of 3.25% per annum and is intended to provide an order of magnitude for comparison and to inform decision-making.

Figure 37: Internal travel time to Medical Imaging



- External: 306 metres / 3 minutes 44 seconds (Figure 38)

Figure 38: External travel time to Medical Imaging



- **Operational implications:** the increased travel time for medical staff working across both Medical and Surgical Outpatients would reduce productivity and overall operational efficiency.

Standardised rooms would include consult rooms and supported by interview rooms and/or treatment rooms. The treatment and interview rooms may be shared across pods if the final configuration allows and will allow for the provision and ventilation of medical gases. There will also be provision for a Negative Pressure Room on Level 2 for Pentamidine Aerosolised Therapy delivered through the Respiratory Outpatient service.

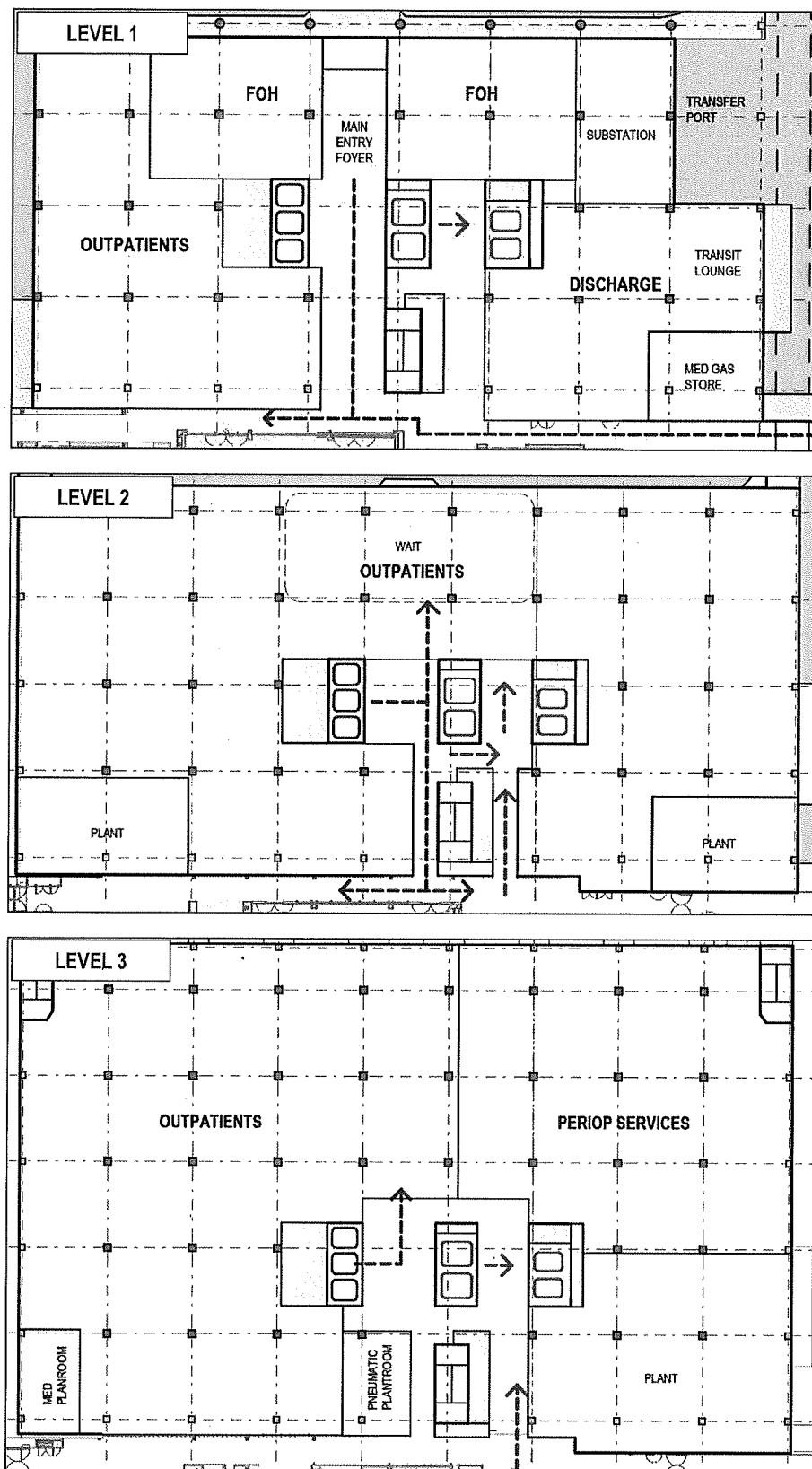
A mix of larger consultation rooms will facilitate multidisciplinary care, as well as cater for patients who bring children or larger family groups.

The support areas for outpatient clinics include:

- Resuscitation equipment for medical emergencies;
- Point of care testing for pathology and specimen collection;
- A system for reprocessing reusable medical devices;
- Storage for equipment and consumables; and
- Back of house functions such as waste disposal rooms.

The layout of each floor accommodating outpatient services is presented in Figure 39.

Figure 39: Floor plan layout of outpatient services



6.6.1.4. Medical imaging

The new Inpatient and Outpatient Services Building will enable the consolidation of public access Medical Imaging (MI) services in one central location (noting the provision of dedicated inpatient and emergency patient imaging services in the new CSB building). The current service is distributed across multiple locations and its consolidation would improve access and overall operational efficiency. It also allows for the decommissioning of Building 12. A total area allowance of 3,030m² (GBA) will accommodate 19 POC and provide the space needed for the following diagnostic equipment:

- 4 general X-ray machines;
- 4 Ultrasound machines (one procedural);
- 2 procedural Computed Tomography (CT) machines;
- 2 Magnetic Resonance Imaging (MRI) machines;
- 1 Fluoroscopy machine;
- 1 Positron Emission Tomography (PET) / CT;
- 2 Single Photon Emission Computed Tomography (SPECT) / CT;
- 1 Gamma Camera;
- 1 Mammography machine; and
- 1 Bone Mineral Density (BMD) scanner.

The design and layout of the MI service will include provisions for:

- Bariatric patients, including MI equipment with adjusted size and weight capacities of up to 250kg with appropriate lifting equipment.
- Radiation shielding for all walls, ceilings, floors doors, internal viewing windows, door viewing panels and external windows to protect patients and staff from ionising radiation.
- Faraday cages to shield the electromagnetic fields produced by the MRI machines.

The MI service would include a provision of front-of-house area including a public access reception and waiting area for patients. The new Core MI Service will operate as a 'booked or planned' MI service with only limited appointment capacity for any unscheduled community appointments, enabling operational efficiencies and reduction of interrupted service provision due to emergency examinations which would be managed through the CSB.

6.6.1.5. Perioperative services

Perioperative services for emergency caesareans will be accommodated on Level 3. A total area allowance of 1,714m² (GBA) will accommodate 12 POC, including:

- Two fully fitted operating rooms (60m² each) as well as a third shell space for the development of a third operating theatre in the future to support increased birthing activity (*note: the shell space utilises the area that could have been used to accommodate the relocation of HIS from Building 12*);
 - *Note: an extra doorway will be added along the existing East-West corridor to block public access and provide a discreet linkage for emergency Maternity patients transiting between Buildings 11 and 10 theatres.*
- Two dedicated patient holding bays; and