Dubbo Health Service State Significant Development Environmental Impact Statement

Dubbo Health Service

Dubbo Health Service Redevelopment Stage 4 (SSD 7720)

Submitted to Department of Planning and Environment
On Behalf of NSW Health Infrastructure

March 2017 ▪ 16095

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JBA operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by:

Alicia Baker 21/03/2017

This report has been reviewed by:

Kate Tudehope 21/03/2017

Contents

Contents

Figures

Tables

Appendices

Contents

Contents

Under Separate Cover

Statement of Validity

Environmental Impact Statement prepared by	
Name	Kate Tudehope
Qualifications	BPlan (Hons) MPIA
Address	173 Sussex Street, Sydney
In respect of	State Significant Development (SSD 7720) - Development Application for Dubbo Health Service Redevelopment Stage 4

Applicant Details	
Applicant name	Health Infrastructure – Health NSW
Applicant address	Level 8, 77 Pacific Highway, North Sydney
Land to be developed	Lot 12 DP 1159243 Myall Street, Dubbo NSW
Proposed development	Dubbo Health Service Redevelopment Stage 4

Environmental Impact Statement	An Environmental Impact Statement (EIS) is attached.
Certificate	I certify that I have prepared the content of this EIS and to the best of my knowledge: ▪ It is in accordance with Part 4 of the *Environmental Planning and Assessment Act 1979* and Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*. ▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.
Signature	
Name	Kate Tudehope
Date	21 March 2017

Executive Summary

Purpose of this Report

This submission to the Department of Planning and Environment (the Department) comprises an Environmental Impact Statement (EIS) for a Development Application under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP& A Act). This EIS relates to Dubbo Health Service Redevelopment Stage 4 at Dubbo Hospital. The stage 4 works comprise: demolition of multiple buildings, construction of a new three (3) storey clinical building and construction of new car parking, ambulance driveway and hospital entry. It is noted that Stage 3 works in general formed part of a Review of Environmental Factors (REF), under Part 5 of the EP&A Act.

The proposed development works have a Capital Investment Value (CIV) of approximately $78,806,000 (excl. GST) and is therefore classified as State Significant Development (SSD) pursuant to Schedule 1 of the *State Environmental Planning Policy State and Regional Development* (SEPP SRD).

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was made on 17 June 2016. Accordingly, the SEARs were issued to NSW Health Infrastructure (HI) on 15 July 2016.

This submission is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the EP&A Act, and addresses the issues raised in the SEARs.

Overview of the Project

The Development Application (DA) seeks approval for Stage 4 of the Dubbo Hospital's redevelopment. The upgrades are identified under the Dubbo Health Service 2016 Master Plan, prepared by HDR Rice Daubney Architects for HI to facilitate the provision of essential clinical services to meet the needs of the Western NSW Local Health District. This Master Plan supercedes the 2010 Master Plan prepared by Cox Richardson Architects.

The Dubbo Health Service Redevelopment Stage 4 project scope, for which approval is sought, is described as follows:

- Site preparation works:
  - Demolition of the George Hatch Building and existing nurse's administration.
  - Demolition of 'S' Block.
  - Construction of a new temporary corridor bypass link.
  - Construction of a new permanent corridor bypass link south.
- Construction of a new, approximately 11,100m^2, 3-storey clinical building comprising:
  - Ground Level:
    - Medical imaging;
    - Emergency department, including short stay unit; and
    - Refurbished and expanded front of house, entry and drop-off zone.
  - Level 1:
    - Renal dialysis unit; and
    - Ambulatory care services.
  - Level 2:
    - Coronary care unit (CCU) / cardiovascular/ stroke unit;
    - Intensive care unit (ICU); and
    - Cardiovascular suite.

  - Level 3:
    - Plant area.

- Other associated works, including but not limited to:
  - Expansion of on grade car parking facilities with additional parking spaces, improved access and way finding.
  - Provision of a dedicated ambulance access off Myall Street.
  - Amendments to the Cobbora Road roundabout to facilitate entry to the hospital.
  - Demolition of the existing Playmates childcare centre and doctor's accommodation.
  - Demolition of an external component of existing ambulatory care unit.
  - Landscaping including tree removal and other public domain works.
  - Upgrades of related engineering services and infrastructure to support Stage 4.
  - Refurbishment of two ICU ensuites within the medical inpatient ward (G-ward).

It is noted Stage 3 works in general formed part of a Review of Environmental Factors (REF), under Part 5 of the EP&A Act.

The Site

Dubbo Hospital is located on the northern fringe of the Dubbo town centre, approximately 1.5km north-east of Dubbo CBD. It is bounded by Myall Street and Cobbora Road to the south, River Street and the Charles Sturt University Campus to the north, Leonard Street to the east and the Coonamble rail line to the west.

Dubbo Hospital is legally described as Lot 12 in DP 1159243 and is owned by the former Macquarie Area Heath Service, now known as the Western NSW – Local Health District. The site has an area of 13.48ha and is irregular in shape.

Planning Context

Section 5.0 of the EIS considers all applicable legislation in detail. The proposal complies with all relevant planning controls.

The site is zoned SP2 - Infrastructure 'hospital' under *Dubbo Local Environmental Plan 2011* (DLEP 2011). Permissible uses in the SP2 zone include *"the purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose"*. The proposal is permissible with consent and meets the objectives of the subject zone. Further, the site does not have specific controls for FSR or height; however, it is considered the building form is consistent with the scale of the existing hospital buildings and surrounding uses.

Environmental Impacts and Mitigation Measures

This EIS provides an assessment of the environmental impacts of the project in accordance with the SEARs and sets out the undertakings made by HI to manage and minimise potential impacts arising from the development.

Conclusion and Justification

The EIS addresses the SEARs, and the proposal provides for the significant extension and upgrade of key hospital services at Dubbo Hospital, a major component of the Western NSW Local Health District. The works form part of the DHS Redevelopment Stages 3 and 4 program. The potential impacts arising as a result of the development are minor in nature and are able to be managed. Given the planning merits of the proposal, the proposed development warrants approval by the Minister for Planning and Environment or his delegate.

1.0 Introduction

This Environmental Impact Statement (EIS) is submitted to Department of Planning and Environment (the Department) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of an application for State Significant Development (SSD 7720), which seeks approval for Stage 4 of the Dubbo Hospital Redevelopment Stages 3 and 4. It is noted that Stage 3 works in general formed part of a Review of Environmental Factors (REF), carried out under Part 5 of the EP&A Act.

Development for a hospital with a Capital Investment Value (CIV) of more than $30 million is identified in Schedule 1 of *State Environmental Planning Policy State and Regional Development) 2011* (SEPP SRD) and is therefore declared to be SSD for the purposes of the EP&A Act.

This EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), and the Secretary's Environmental Assessment Requirements (SEARs) for the preparation of the EIS, which are included at **Appendix A**. This EIS should be read in conjunction with the supporting information and plans appended to and accompanying this report.

This EIS has been prepared by JBA on behalf of NSW Health Infrastructure (HI) and is based on the Architectural Drawings provided by HDR Rice Daubney (see **Appendix B**) and other supporting technical information appended to the report (see Table of Contents).

1.1 Overview of Proposed Development

As shown on the Architectural Drawings prepared by HDR Rice Daubney at **Appendix B**, the development application (DA) seeks approval for a new three (3) storey clinical building, construction of new car parking, ambulance driveway and hospital entry and demolition and site preparation works. The works are located in the southern and south-eastern portions of the Dubbo Hospital campus.

This application seeks approval for the following:

- Site preparation works:
  - Demolition of the George Hatch Building and existing nurse's administration.
  - Demolition of 'S' Block.
  - Construction of a new temporary corridor bypass link.
  - Construction of a new permanent corridor bypass link south.
- Construction of a new, approximately 11,100m^2, 3-storey clinical building comprising:
  - Ground Level:
    - Medical imaging;
    - Emergency department, including short stay unit; and
    - Refurbished and expanded front of house, entry and drop-off zone.
  - Level 1:
    - Renal dialysis unit; and
    - Ambulatory care services.
  - Level 2:
    - Coronary care unit (CCU) / cardiovascular/ stroke unit;
    - Intensive care unit (ICU); and
    - Cardiovascular suite.
  - Level 3:
    - Plant area.

- Other associated works, including but not limited to:
  - Expansion of on grade car parking facilities with additional parking spaces, improved access and way finding.
  - Provision of a dedicated ambulance access off Myall Street.
  - Amendments to the Cobbora Road roundabout to facilitate entry to the hospital.
  - Demolition of the existing Playmates childcare centre and doctor's accommodation.
  - Demolition of an external component of existing ambulatory care unit.
  - Landscaping including tree removal and other public domain works.
  - Upgrades of related engineering services and infrastructure to support Stage 4.
  - Refurbishment of two ICU ensuites within the medical inpatient ward (G-ward).

1.2 Background to the Development

The Dubbo Health Service forms a major component of the Western NSW Local Health District (WNSWLHD), replacing the former Greater Western Area Health Service, which covers 41 districts and hospitals generally across the Western NSW and Orana regions.

The Dubbo Health Service 2010 Master Plan (the Master Plan) was prepared by Cox Richardson Architects (Cox) for HI to facilitate the provision of essential clinical services to meet the needs of the WNSWLHD. This Master Plan guided the implementation of redevelopment Stages 1 and 2. The Master Plan reflects the requirements of the Dubbo Health Services Plan 2010-2022 (DHSP). The 2016 Master Plan, prepared by HDR Rice Daubney builds upon this document to provide the framework for DHS Redevelopment Stages 3 and 4.

In February 2013, the then Department of Planning and Infrastructure granted consent for Stages 1 and 2 of the hospital's redevelopment. The Stages 1 and 2 approval comprised a new building with approximately 9,574m^2 of additional floor space area, containing the following services, as well as a range of new internal linkages, plant and equipment:

- A new maternity unit;
- Operating theatre suite;
- Central sterilising department; and
- A day surgery unit.

In addition to the construction of the main building, consent was granted for:

- Refurbishment of existing admissions / outpatients and medical records building to accommodate a new front of house area;
- Demolition of the existing maternity building and construction of new car parking spaces on the footprint of the existing maternity building; and
- The provision of new landscaping.

These works are now complete. HI is currently progressing Stages 3 and 4 of the proposed hospital upgrades identified under the DHSP. This includes Stage 4 works for which consent is sought under this application.

1.2.1 Objectives of the Development

Dubbo Hospital has identified the need to provide new medical and health services and accommodation to cater for a growing region. The works deliver on Stage 4 of the Master Plan and the DHSP, with the development being underpinned by the desire to:

- Improve overall healthcare quality and reduced cost;

- Improve patient safety and quality of care;
- Create a substantial entry experience with both internal and external spaces which are welcoming and appropriate in scale to the new clinical building; and
- Provide required infrastructure to support the new development.

1.2.2 Works Currently on Site

HI has recently authorised a Review of Environmental Factors (REF) for Stage 3 for a range of works under Part 5 of the EP&A Act to enable hospital-wide upgrades to various infrastructure and facilities. These works have been authorised under *State Environmental Planning Policy Infrastructure 2007* (SEPP Infrastructure) as 'Development Without Consent'.

The authorised works include:

- Construction of a second storey addition over the existing New Maternity Unit to house the new surgical Inpatient Unit (IPU) including construction of a link way at Level 2 from the existing public lifts to the IPU;
- Refurbishment of the Old Maternity Building for decanted office and medical records space;
- Construction of a new fire control centre;
- Construction of a new kiosk sub-station and main switchroom;
- Relocation of the gas bottle enclosure; and
- Diversion of Electrical and Communications (ICT) cabling infrastructure.

1.3 Analysis of Alternatives

The proposal seeks consent for Stage 4 of Dubbo Heath Service Redevelopment Stages 3 and 4, identified within the 2010 Master Plan which in conjunction with the requirements of the DHSP seeks to update and modernise existing facilities and deliver new facilities.

Despite the Stages 1 and 2 works, parts of Dubbo Hospital are still lacking in services to enable the provision of high quality health care to the region. This is exacerbated by the great variation in the quality of building stock, poor building services and a lack of building efficiency. Many existing facilities do not encourage the efficient delivery of health services, being out-dated and of poor quality, which evidently affects the hospital's ability to service its catchment population.

Various issues have been identified through previous studies carried out by various consultants, user group consultation and the DHSP. These include:

- Age and dilapidation status of many building;
- Contamination, known to exist in many buildings;
- Building services in poor condition or nearing end of life in many instances;
- Supporting technologies for power and communications / data frequently being obsolete;
- Lack of energy efficiency;
- Campus security is severely compromised due to the extensive number of entry points, lack of surveillance throughout internal spaces and conflicting circulation paths; and
- The inability to adopt contemporary models of care.

The proposed development, as outlined in this SSD DA (as described in **Section 3.0**) responds to the 2016 Master Plan, prepared by HDR Rice Daubney Architects. This Plan builds on the existing 2010 Master Plan prepared by COX.

During the design process HDR Rice Daubney explored a range of design options for the massing, location and design of the new building and services. Options for the development of Stage 4 were driven by the following:

- Functional requirements and operational impacts;
- Buildability;
- Appropriately locate the development to utilise existing built areas within the hospital campus in order to prevent the need to develop vacant land, and to consolidate the hospital's functions;
- Facilitate appropriate connections with existing services and clinical buildings.
- Provide adequate setback from Myall Street and neighbouring properties; and
- Minimise impacts on adjacent areas and uses.

The proposed Stage 4 works will ensure that a high quality clinical facility is provided on a site that responds to the key issues outlined above. The location connects with existing services and clinical buildings. In doing so the proposal is setback further from Myall Street and consolidates all building form centrally to the site. The location of additional parking along the eastern side of the Dubbo Hospital campus, removes built form from the site boundary, creating greater separation between neighbouring properties. Additionally, the site is easily accessible from Myall Street, with a dedicated ambulance entry. The proposal will not result in adverse visual impacts, improving the Myall Street setback and creating greater sight lines to all public entries.

The major impacts of not proceeding with the redevelopment would be:

- Limiting the ability of Dubbo Hospital to meet the healthcare demands of the catchment population, as outlined in the DHSP;
- Limiting the attraction and retention of health services staff;
- The ongoing hindering of the provision of models of care in accordance with current Ministry of Health policies and worldwide trends; and
- Limiting the potential for health services to be delivered to levels of quality required by the Ministry of Health's and WNSWLHD's policies.

1.4 Secretary's Requirements

On 15 July 2016, the Secretary of the Department of Planning and Environment issued the requirements for the preparation of an EIS. A copy of the SEARs is included at **Appendix A**.

Table 1 provides a detailed summary of the individual matters listed in the SEARs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 1 – Secretary's Requirements

Requirement	Location in Report	
General Requirements	**Report**	**Appendix**
The Environmental Impact Statement (EIS) must be prepared in accordance with, and meet the minimum requirements of clauses 6 and 7 of Schedule 2 the *Environmental Planning and Assessment Regulation 2000* (the Regulation). Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development. Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include: ▪ adequate baseline data; ▪ consideration of potential cumulative impacts due to other development in the vicinity (completed, underway or proposed); and ▪ measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.	This report	-
The EIS must be accompanied by a report from a qualified quantity surveyor providing: ▪ a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Environmental Planning and Assessment Regulation 2000) of the proposal, including details of all assumptions and components from which the CIV calculation is derived; ▪ an estimate of the jobs that will be created by the future development during the construction and operational phases of the development; and ▪ certification that the information provided is accurate at the date of preparation.	Section 5.0 Section 3.3.2	**Under Separate Cover**
Key Issues	**Report**	**Appendix**
Statutory and Strategic Context		
State Environmental Planning Policy (State & Regional Development) 2011;	Section 5.1	-
State Environmental Planning Policy (Infrastructure) 2007;	Section 5.1	-
State Environmental Planning Policy No.55 – Remediation of Land;	Section 5.1 and Section 5.6	**Appendix D**
State Environmental Planning Policy No.33 – Hazardous and Offensive Development;	Section 5.1 and Section 5.6	**Appendix P**
Orana Regional Environmental Plan No.1 – Siding Spring (if applicable); and	Section 5.3.3	**Appendix Q**
Dubbo Local Environmental Plan 2011.	Section 5.1	-
Permissibility ▪ Detail the nature and extent of any prohibitions that apply to the development.	Section 5.1 and Section 5.2	-
Development Standards ▪ Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.	Section 5.1	-

Requirement	Location in Report	
Policies and Guidelines		
NSW State Priorities;	Section 5.1	-
NSW Long Term Transport Master Plan 2012;	Section 5.1	**Appendix H**
Draft Central West and Orana Regional Plan;	Section 5.1	-
Dark Sky Planning Guideline 2016;	Section 5.3.3	**Appendix Q**
Dubbo Urban Areas Development Strategy, Institutional Precinct Strategy (Health Precinct), Western Plains Regional Council;	Section 5.1	-
Central West Regional Transport Plan 2013; and	Section 5.8	**Appendix H**
Healthy Urban Development Checklist, NSW Health.	Section 5.1	-
Built Form and Urban Design		
Address the height, density, bulk and scale, setbacks of the proposal in relation to existing hospital buildings, the surrounding locality, topography and streetscape.	Section 5.3	**Appendix B**
Address design quality, with specific consideration of the overall site layout, connectivity, interface with the public domain, streetscape, open spaces, landscaping, internal streets, pathways, façade, rooftop, massing, setbacks, building articulation, materials, colours and Crime Prevention Through Environmental Design Principles.	Section 5.3 and Section 5.12	**Appendix B**
Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Section 3.8	**Appendix B**
Environmental Amenity		
Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing and wind impacts. A high level of environmental amenity must be demonstrated.	Section 5.3	**Appendix B**
Transport and Accessibility		
Include a transport and accessibility assessment which details, but is not limited to, the following: ▪ the current daily and peak hour vehicle, public transport, pedestrian and bicycle movements and existing traffic and transport facilities provided on the road network located adjacent to the proposed development;	Section 5.8 and Section 5.12	**Appendix B, Appendix H and under separate cover**
▪ the existing and proposed pedestrian and bicycle routes and facilities within the vicinity of and surrounding the site and to public transport facilities as well as measures to maintain road and personal safety in line with CPTED principles;		
▪ an estimate of the total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips;		
▪ the impact of daily and peak (AM and PM) vehicle movements on nearby intersections, in particular on the Golden Highway and its intersections with Myall, Leonard and Caroline Streets and Mary McKillop Avenue, and consideration of the cumulative impacts from any other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works (if required), including traffic modelling and analysis;		
▪ the assessment of the adequacy of existing public transport, pedestrian and cycle networks and infrastructure to meet the likely future demand of the proposed development;		
▪ measures to promote travel choices that support sustainable travel, such as a location-specific sustainable travel plan, provision of end-of-trip facilities, green travel plans and wayfinding strategies;		
▪ existing and proposed vehicular access arrangements, including pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and cycle networks;		
▪ proposed car and bicycle parking provisions for staff and visitors, including consideration of medium to long term access and parking issues and mitigation measures, availability of public transport and the requirements of the relevant parking codes and Australian Standards;		

Requirement	Location in Report	
▪ provision of end of trip facilities (i.e. showers, lockers, change rooms etc.) for the use of employees who choose to walk or cycle to/from work as well as undertake activities during work hours;		
▪ ambulance, emergency vehicles (e.g. police and fire), service vehicle access, delivery and loading arrangements and estimated vehicle movements (including vehicle type and the likely arrival and departure times);		
▪ traffic and transport impacts during construction, in particular on Myall Street, Mary McKillop Avenue and Cobbora Road, and how these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport and the cumulative impact of any nearby construction\ projects, including the preparation of a draft Construction Traffic Management Plan to demonstrate the proposed management of the impact; and		
▪ details of any works that may impact on the existing rail corridor, such as ground penetration works (e.g. excavation, piers/piles etc) in consultation with the rail authority.		
Relevant Policies and Guidelines: ▪ *Guide to Traffic Generating Developments (RMS)* ▪ *EIS Guidelines – Road and Related Facilities (DoPI)* ▪ *Cycling Aspects of Austroads Guides* ▪ *NSW Planning Guidelines for Walking and Cycling* ▪ *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development* ▪ *Development Near Rail Corridors and Busy Roads – Interim Guidelines (DoP)*		
Ecologically Sustainable Development (ESD)		
Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design and ongoing operation phases of the development.	Section 5.14	**Appendix B, Appendix J, Appendix L and Appendix T**
Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice.		
Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.		
Biodiversity		
Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment (FBA)(OEH 2014), unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the Threatened Species Conservation Act 1995.	Section 5.4 Section 5.14	**Appendix X and Request for Biodiversity Exemption Letter provided under separate cover**
Noise and Vibration		
Identify and provide a quantitative assessment of the main noise and vibration generating sources during construction and operation. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land.	Section 5.8, Section 5.9 and Section 5.15	**Appendix H, Appendix O and Appendix S**
Assessment of noise impacts in accordance with '*Development Near Rail Corridors and Busy Roads – Interim Guidelines*', including details of noise mitigation measures.		
Relevant Policies and Guidelines: ▪ *NSW Industrial Noise Policy (EPA)* ▪ *Interim Construction Noise Guideline (DECC)* ▪ *Assessing Vibration: A Technical Guideline 2006* ▪ *Development Near Rail Corridors and Busy Roads – Interim Guidelines (DoP)*		
Heritage		
Assess the impact of the proposal on the heritage significance of the place and its individual components in accordance with NSW Heritage guidelines	Section 5.7	**Appendix R**

Requirement	Location in Report	
and *Dubbo Local Environmental Plan 2011*.		
Consideration of the archaeological potential of the area and the potential impact of the proposal on the archaeological significance of the site in accordance with the guidelines of the Heritage Council of NSW.		
Aboriginal Heritage		
Where relevant, the EIS shall address Aboriginal Heritage in accordance with the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005 and Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.	Section 5.7	-
Relevant Policies and Guidelines: ▪ *Guide to investigating requirements for proponents 2010 (DECCW)*		
Contamination		
Demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.		**Appendix D**
Relevant Policies and Guidelines: ▪ *Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP)* ▪ *Dubbo City Council's Contaminated Land Register* ▪ *Dubbo Local Environmental Plan 2011 Clause 7.5 Groundwater vulnerability*		
Utilities		
Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure.	Section 3.8	**Appendix I, Appendix K, Appendix L and Appendix M**
Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	Section 5.13	**Appendix L**
Contributions		
Address Council's relevant Section 94 Contribution Plans, Section 64 Water and Sewage Contribution Plan and/or details of any Voluntary Planning Agreement.	Section 5.1.2	-
Drainage		
Prepare a stormwater management plan that details drainage associated with the proposal, existing development and any proposed future expansion, including stormwater and drainage infrastructure.	Section 5.13	**Appendix I**
Flooding		
Assess any flood risk on site and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity.	Section 5.13	**Appendix I**
Water and Soils		
Address measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles, especially during demolition and excavation stages.	Section 5.13 and Section 5.17	**Appendix I and Appendix O**
Address the impacts of the proposed development on water quality, including the nature and degree of impact on receiving waters for both surface and groundwater and hydrology.		
Relevant Policies and Guidelines: ▪ *Approved Methos for the Modelling and Assessment of Air Pollutants in NSW (EPA)* ▪ *Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom)*		
Waste		
Identify, quantify and classify the likely waste streams to be generated during demolition (e.g. asbestos), construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	Section 5.15	**Appendix N**

Requirement	Location in Report	
Plans and Documents		
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents.		
▪ Architectural drawings (dimensioned and including RLs);	-	**Appendix B**
▪ Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries;	Section 2.2	**Appendix**
▪ Site Analysis Plan;	Section 2.2	**Appendix B**
▪ Stormwater Concept Plan;	Section 5.13	**Appendix I**
▪ Sediment and Erosion Control Plan;	Section 5.13	**Appendix I**
▪ Shadow Diagrams;	Section 5.3	**Appendix B**
▪ View Analysis / Photomontages;	Section 5.3	**Appendix B**
▪ Landscape Plan (identifying any trees to be removed and trees to be retained or transplanted);	Section 3.6	**Appendix J**
▪ Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures;	Section 5.17	**Appendix O**
▪ Geotechnical and Structural Report;	Section 5.5 and Section 5.16	**Appendix E and Appendix W**
▪ Accessibility Report;	Section 5.11	**Appendix V**
▪ Arborist Report;	Section 3.2 and Section 5.4	**Appendix G**
▪ Acid Sulphate Soils Management Plan (if required); and	-	**-**
▪ Schedule of materials and finishes.	Section 5.3	**Appendix B**
Consultation		
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: ▪ Western Plains Regional Council; ▪ Roads and Maritime Services; ▪ Australian Rail Track Corporation; and ▪ Transport for NSW. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	Section 5.0	**-**

2.0 Site Analysis

2.1 Site Location and Context

Dubbo Hospital is located on the northern fringe of the Dubbo town centre, approximately 1.5km north-east of Dubbo CBD. It is bounded by Myall Street and Cobbora Road to the south, River Street and the Charles Sturt University Campus to the north, Leonard Street to the east and the Coonamble rail line to the west (refer to **Figure 1**).

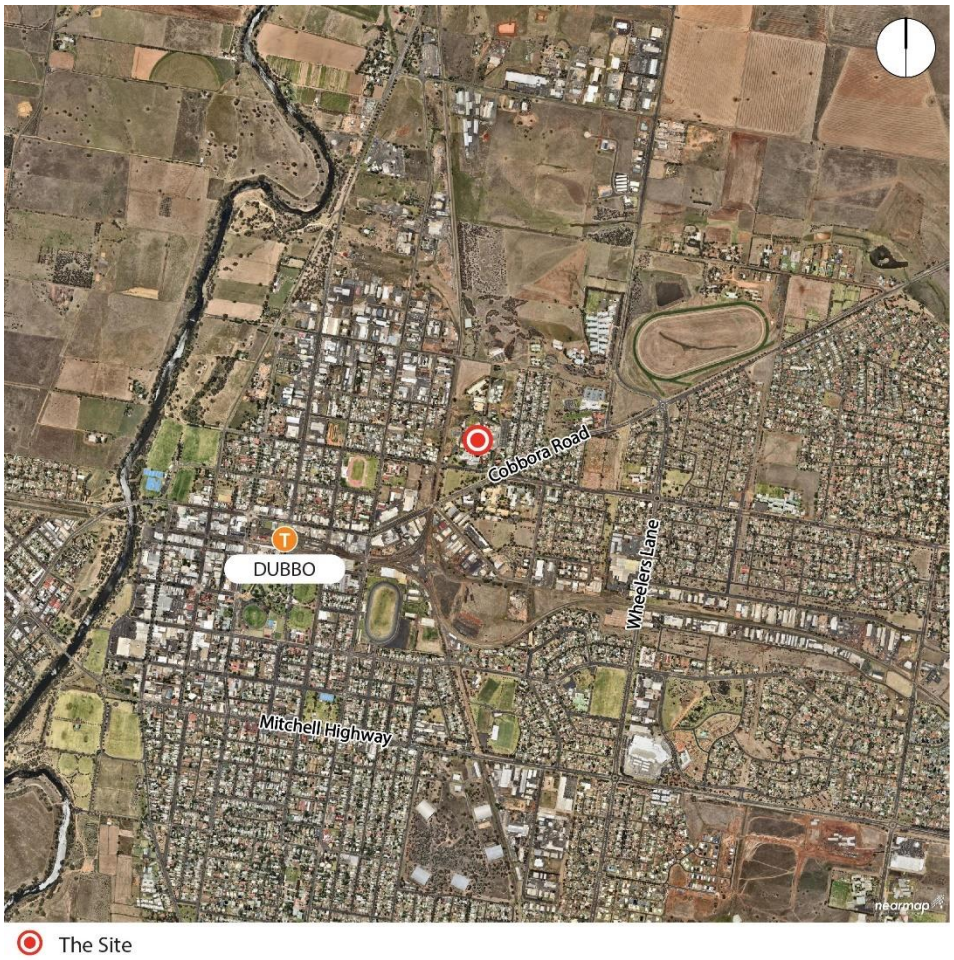

Figure 1 – Context Map
Source: NearMap/ JBA

2.2 Site Description

2.2.1 Land Ownership and Description

Dubbo Hospital is legally described as Lot 12 in DP 1159243 and is owned by the former Macquarie Area Heath Service, now known as the Western NSW – Local Health District. The site has an area of 13.48ha and is irregular in shape. The site is zoned SP2 Infrastructure 'hospital' in *Dubbo Local Environmental Plan 2011* (DLEP 2011).

An aerial photo outlining the development site and the existing distribution of buildings and car parking across the hospital site is shown at **Figure 2**.

Figure 2 – Aerial Photograph
Source: NearMap/ JBA

2.2.2 Existing Development

Dubbo Hospital is an existing clinical facility, comprising several buildings, including the recently completed Stages 1 and 2 works, the main single storey hospital building fronting Myall Street, the two storey building on the corner of Myall Street and Cobbora Road and the Nursing Home fronting Muller Street. The site operates 24 hours a day with visiting hours from 9am-5pm.

The existing buildings accommodate approximately 314 beds and 715 full-time equivalent staff across various hospital departments including:

- Mental health;
- Aboriginal health;
- Breast screening;
- Child care;
- Child health care;
- Community health;
- Coronary care;
- Accident/emergency;
- Day surgery;
- Intensive care;

- Alcohol/drug;
- Maternity;
- Mental health;
- Anaesthetics;
- Oncology;
- Ophthalmology;
- Orthopaedic;
- Paediatric;
- Pathology;
- Psychiatric;
- Psychology;
- Radiology;
- Audiometry;
- Renal unit;
- Sonography;
- Speech pathology; and
- Surgical and women's health.

Dubbo Hospital also includes a main at-grade car park on the site's eastern boundary, as well as some parking on Myall Street and near the Dialysis unit. In total Dubbo Hospital provides approximately 393 existing formal car parking spaces for staff, patients and visitors. Additional informal car parking is available (including on street parking) which increases the total supply to approximately 480 spaces.

The Dubbo Hospital site also contains a helipad. The helipad is located approximately 160 metres to the north-west of the development site.

2.2.3 Development Site

The development site is located within the southern and south-eastern parts of the Dubbo Hospital campus. The new building proposed as part of these works is located within close proximity to existing hospital buildings, central to the campus.

The development site currently contains multiple buildings which house various hospital related programs such as administration, an outpatient's area, paediatrics unit and nurse's administration, as well as ancillary programs such as the Playmates childcare centre. The proposal includes demolition and reconfiguration of these existing buildings.

Figures 3 – 5 show the area of the proposed works and the existing buildings on site.

Figure 3 – George Hatch Building and ambulance entry looking west
Source: Google

Figure 4 – Existing Myall Street entry and Playmate childcare centre looking north
Source: Google

Figure 5 – Existing public entry and outpatient's area looking south-west
Source: JBA

2.2.4 Topography

Dubbo hospital site generally falls from the north-east to the west (adjacent to the rail corridor) and the south (adjacent to Myall Street).

There is a gradual fall of between 1% and 5% across the development site. The area along the western and southern boundaries of the development site is much steeper, with a fall of 5% to 60% (1 in 1.6) near the existing stormwater detention basin. The levels across the development site vary between RL281.50 at the highest point (east) and approximately RL277.15 at the lowest point (west). The existing main hospital entry building is located at RL277.15. A Site Survey prepared by Imrle, Astley & Associates is included at **Appendix C**.

2.2.5 Vehicle and Pedestrian Access

Vehicle access to the hospital is currently provided at several locations along Myall Street on the site's southern boundary. These access routes provide convenient connections with the wider arterial road network. Primary access to the hospital's internal road network, main entry and car parks is provided via the Cobbora Road roundabout and McGuinn Drive. Other car parking areas are also accessed via dedicated driveways along Myall Street. Additional informal access and parking is provided to the north of the site. These access points are primarily used by staff, site maintenance vehicles and taxis.

Pedestrian access follows the primary road network throughout the hospital. Footpaths and pedestrian crossings are located between the car park areas and the main hospital entry.

2.2.6 European Heritage and Archaeology

Dubbo Hospital is identified as a heritage item of local significance in DLEP 2011. A Heritage Impact Assessment has been prepared by Adaptive Architects to address the impact of the proposed development on the heritage significance of the site. The impact of the works on the heritage significance of Dubbo Hospital has been further considered and addressed in **Section 5.7** and the Mitigation Measures at **Section 7.0**.

As part of redevelopment Stages 1 and 2, Biosis Research assessed the European Archaeological potential of the site. The assessment identified the Stage 4 development site as being located partially within an area of archaeological sensitivity. However, the Stage 4 works are deemed not to have any archaeological impact. This is further considered and addressed in **Section 5.7** and the Mitigation Measures at **Section 7.0**.

2.2.7 Aboriginal Archaeology

Biosis Research has also assessed the Aboriginal Archaeological potential of the hospital site which concluded that the development site does not have the potential to contain items of Aboriginal heritage.

2.2.8 Soils and Contamination

A Phase 1 Contamination Assessment has been prepared by Douglas Partners (refer to **Appendix D**). The report concludes that the subject site is suitable for continued use in the hospital environment.

A Geotechnical Investigation has been undertaken by Douglas Partners and is included at **Appendix E**. The *Dubbo 1:250 000 Geological Series Sheet* shows that the site is close to a boundary between gravel and ferruginous sandstone, and olivine basalt and dolerite. Both of these geological units are of Cainozoic age. Site investigations indicated a layer of filing consisting of clayey, silty and sandy soils with gravel, roots, building fragments etc. of depths between 0.1 metres and 2 metres. Natural soils consisted of typically clayey and sandy soils, with basalt and quartz gravel and silt, varying between 0.6 metres and 5 metres in depth. Extremely weathered bedrock was located below depths of 1.2 metres and 4.5 metres.

The southern portion of the hospital campus appears to be underlain by typically very stiff to hard residual clayey soils overlying extremely weathered basalt. The soils and weathered rock contain gravels in varying proportions. Basalt often weathers inconsistently such that the depth of stronger rock may vary significantly over short distances.

2.2.9 Hazardous Materials

Hazardous materials are known to exist in various buildings, and have been remediated in others. Douglas Partners has undertaken a review of hazardous materials within the buildings to be reconfigured or demolished as part of the proposed SSD development (refer to **Appendix F**).

The assessment concludes that asbestos, synthetic mineral fibre (SMF) and lead-containing paint have been identified in one or more of the buildings surveyed given their age and period of construction. As such, the report provides recommendations which have been incorporated into the Mitigation Measures at **Section 7.0**.

2.2.10 Utilities and Infrastructure

All services (i.e. water, sewer, gas, electricity and telecommunications) are available to the site, and can be connected / augmented to service the proposed development. Further details are provided in **Section 3.8.**

2.3 Surrounding Development

The Dubbo Hospital campus is bordered by low density residential development to the east, low density residential and further beyond, light industrial development to the west, Dubbo Private Hospital and Charles Sturt University Campus to the north, and Theresa Maliphant Park and the Golden Highway (Cobbora Road) to the south.

3.0 Description of the Development

As shown on the Architectural Drawings prepared by HDR Rice Daubney (**Appendix B**), the DA seeks approval for components of Stage 4 of the hospital's redevelopment. The works comprise a new three (3) storey medical building, construction of a new car park, ambulance driveway and hospital entry and demolition and site preparation works.

This application seeks approval for the following:

- Site preparation works:
  - Demolition of the George Hatch Building and existing nurse's administration.
  - Demolition of 'S' Block.
  - Construction of a new temporary corridor bypass link.
  - Construction of a new permanent corridor bypass link south.
- Construction of a new, approximately 11,100m^2, 3-storey clinical building comprising:
  - Ground Level:
    - Medical imaging;
    - Emergency department, including short stay unit; and
    - Refurbished and expanded front of house, entry and drop-off zone.
  - Level 1:
    - Renal dialysis unit; and
    - Ambulatory care services.
  - Level 2:
    - Coronary care unit (CCU) / cardiovascular/ stroke unit;
    - Intensive care unit (ICU); and
    - Cardiovascular suite.
  - Level 3:
    - Plant area.
- Other associated works, including but not limited to:
  - Expansion of on grade car parking facilities with additional parking spaces, improved access and way finding.
  - Provision of a dedicated ambulance access off Myall Street.
  - Amendments to the Cobbora Road roundabout to facilitate entry to the hospital.
  - Demolition of the existing Playmates childcare centre and doctor's accommodation.
  - Demolition of an external component of existing ambulatory care unit.
  - Landscaping including tree removal and other public domain works.
  - Upgrades of related engineering services and infrastructure to support Stage 4.
  - Refurbishment of two ICU ensuites within the medical inpatient ward (G-ward).

A photomontage of the proposed development is shown at **Figure 6.**

Figure 6 – Aerial view of the proposed hospital entry, clinical building and car parking
Source: HDR Rice Daubney Architects

3.1 Urban Design Principles

The proposed development has been designed in response to the following aims and objectives. The proposal seeks to:

- Make best use of the site and existing infrastructure;
- Optimise the site's potential for redevelopment in an orderly manner;
- Maintain adherence to the principles of the Master Plan and DHSP;
- Introduce improved infrastructure and servicing to the whole of the hospital, including retained areas;
- Organise the multitude of client and staff journeys and enhance the daily experience of its occupants;
- Recognise that patient health outcomes are improved by an enriched environment and that all occupants should enjoy a high quality environment;
- Promote a dignified, reassuring experience for all clients and staff, recognising the frequent traumatic events which are experienced in the hospital;
- Recognise the extensive range of services which originate in the hospital but are often provided as outreach services; and
- Understand regional and site-specific qualities.

3.2 Demolition, Tree Removal, and Earthworks

3.2.1 Demolition of Existing Buildings

The proposed works require the demolition of the following buildings:

- George Hatch Building and existing nurse's administration including entry way;
- 'S Block;
- Playmates childcare centre; and
- Doctor's accommodation building.

Figure 7 outlines the location of these buildings.

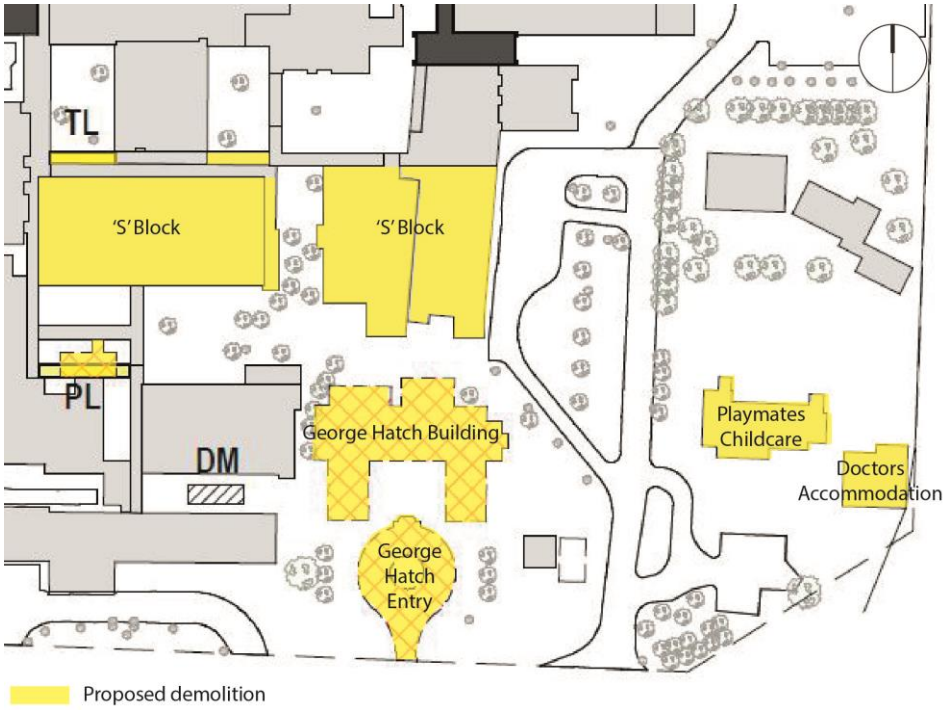

Figure 7 – Buildings proposed to be demolished
Source: JBA / HDR Rice Daubney

'S' Block will be vacated and demolished following the relocation of the Surgical IPU, above the Maternity Unit, as approved under the Stage 3 REF. Additionally, it is noted that ongoing discussions have taken place between HI and Dubbo Hospital to facilitate the relocation of the Playmates childcare and doctor's suites to alternative premises within Dubbo. The relocation of the childcare centre will not result in a decrease in the places available or the service offerings of the childcare.

In addition, the proposal includes minor refurbishment works. The proposed reconfiguration and refurbishments are shown with the Architectural Drawings (refer to **Appendix B**). Minor external modifications to the existing ambulatory care unit will be undertaken, to make allowances for the Stage 4 building footprint. As a result of this some internal works within the localised zone will also occur. The existing hospital entry and front of house is of relatively new construction. As such, only minor internal refurbishments will occur to replace the existing medical records with a new discharge lounge. Existing administration, retail, Aboriginal lounge will remain. Finally, the proposal includes the addition of two new ensuites in G Ward to the north of the proposed clinical building.

3.2.2 Tree Removal

The proposal includes the removal of fifty-two (52) trees. The proposed tree removal is discussed further in Section 0 and in the Arborist's Report prepared by Outback Tree Services Dubbo included at **Appendix G**.

3.2.3 Earthworks

The Stage 4 redevelopment works, including the construction of new roads and car parking, will require approximately 1,800m^3 of cut (including topsoil stripping), 1,600 m^3 of fill and 2,300 m^3 of pavement material (for 4,800 m^2 of car parks and 3,300 m^{2}of roads). It is proposed that the deficit fill where possible will be retained on site, with some of top soil being suitable for reuse in new landscape areas and some excavated material being suitable for reuse in general fill areas.

3.3 Construction of New Clinical Building

The proposed new clinical building is located over three (3) storeys and comprises of approximately 11,100m^2 of health-related uses, including:

- Medical Imaging;
- Emergency Department, including Short Stay Unit;
- A refurbished and expanded Main Entry;
- Renal Dialysis Unit;
- Ambulatory Care Services;
- CCU/ Cardiovascular/ Stroke Unit;
- ICU; and
- Cardiovascular Suite.

The building's form has been influenced by two equally important drivers, being:

- Site constraints; and
- Clinical and functional requirements.

The proposed site is constrained on all four sides; with the existing ambulatory care block to the south, the G ward (existing medical IPU) and ICU to the north, the existing emergency department and medical imaging to the east and the main linkway to the west. HDR Rice Daubney has engaged in discussions with key user groups, which has guided the functional planning of the hospital environment, and consequently, the overall building envelope and floor plate division.

The building's overall height and floor to floor heights are established through a direct response to the levels of adjacent buildings, with an emphasis on reducing ramps and gradients on connections to the recently completed Stages 1 and 2 building, located to the north. On the building's first and second floors, a main corridor is flanked on either side by a quadrant style planning arrangement. The building's elevation treatment responds to a regular planning and structural grid of 8.4 metres, established by HI's preferred planning strategy.

The proposed uses for each level within the new building are outlined in **Table 2** below.

Table 2 – Floor by floor summary of use

Level	Proposed Use
Ground Level	▪ Medical imaging. ▪ Emergency department, including short stay units. ▪ Refurbished and expanded main entry including administration. ▪ Retail uses, Aboriginal lounge and security services
Level 1	▪ Ambulatory care services. ▪ Renal dialysis unit.
Level 2	▪ Coronary care unit (CCU) / cardiovascular/ stroke unit. ▪ Intensive care unit (ICU). ▪ Cardiovascular suite.
Level 3 – Roof	▪ Plant area.

The internal layout flows through the new hospital entry and forecourt out into the broader hospital campus. Proposed upgrades and modifications to the streetscape, including additional soft landscaping, will further enhance the arrival experience, as well as accessibility and connectivity for users. Internal patient amenity has also been a key focus, with a skylight located above the corridor leading into the ICU department allowing 'borrowed light' to permeate into the ICU bays.
The roof of the building largely comprises a dedicated plant space to support the new clinical building. Like the building itself, the plant is also staged to support the interim

functions of the various departments. Where possible, the plant has been set back from the building's parapet to minimise its visibility from ground level. On the eastern side, a blade wall is proposed to screen the plant from the main public entry.

3.3.1 External Materials and Finishes

The building envelope is proposed to be constructed of lightweight panelling which is modularised by an 8.4 metre building structural grid. Panels are substituted for glazing where suitable, with a variety of heights proposed to respond to the variety of internal conditions, as well as to break up the linear nature of a panelised façade. A second skin is proposed over the panelised façade in the form of batten screens. These screens will provide shading, soften the panelised façade and will be coloured to reference the existing heritage precinct to the south-west. This façade provides a consistent backdrop for the heritage precinct. A photomontage of the façade is shown at **Figure 8**.

Figure 8 – Façade detail
Source: HDR Rice Daubney

The materials selected for the new clinical building have been chosen to create a building that is new, modern and innovative whilst remaining sensitive to the environment, particularly through the use of the screens. The building's façade is proposed to be a light colour, complimented by stained battens. These battens will feature against the panelled façade. Additionally, the use of light facade tones allows feature zones to be established for such purposes as emergency way finding, which are proposed to be coloured red.

3.3.2 Building Population and Job Generation

The proposed clinical building will provide an additional 50 beds, increasing the hospital's total number of beds to 221. The proposal will also provide an additional 154 FTE operational jobs, raising the hospitals total FTE employment to 869 persons.

The Stage 4 works will generate approximately 150 FTE construction jobs (at peak time) being generated during the construction phase. This figure is to include employment for indigenous workers or apprentices/ trainees.

3.4 Car Park, Vehicle Access and Hospital Entry

3.4.1 New Eastern Car Park

The Stage 4 works include at-grade car parking, located to the east of the main hospital entry, in the current location of the Playmates childcare centre (to be decanted) and doctor's accommodation (to be demolished). The car park comprises 105 spaces, with an additional 12 spaces provided perpendicular to McGuinn Drive (to expand the existing 10 spaces). In total, the proposal includes 107 new car parking spaces catering for visitors, staff and the Dubbo Health Service fleet. The parking has been

located to provide short stay and set-down / pick-up parking adjacent to the main hospital entrance.

3.4.2 Vehicle Access and Hospital Forecourt

The Stage 4 redevelopment includes significant reconfiguration of the exiting hospital entry and public entry, to provide for new emergency vehicle access, a set-down and pick-up area and access to the proposed car park (refer to **Figure 9**). The internal road network has been designed to ensure convenient access and circulation. The internal, fully mountable roundabout will allow visitors to enter the main forecourt area and then circulate to the car park, or 'loop' back around to the entry.

The hospital forecourt has been designed to be a feature of the new clinical building, allowing for convenient access and set-down / pick-up area, whilst also being landscaped to provide a passive recreation space for staff and visitors.

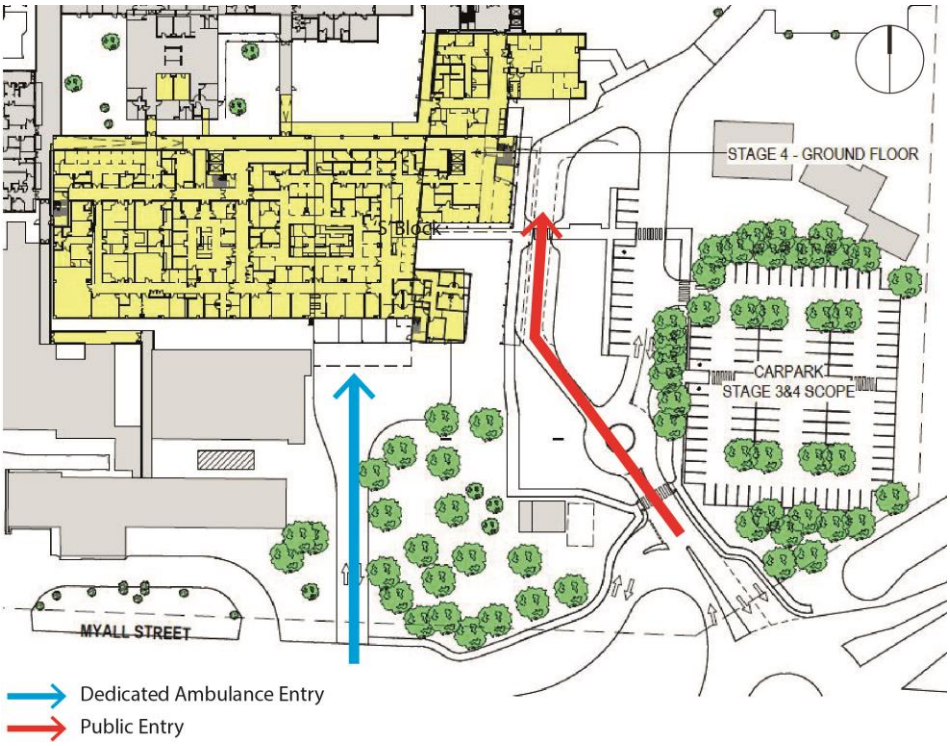

Figure 9 – Proposed hospital entry, forecourt, car parking and ambulance driveway
Source: HDR Rice Daubney

3.4.3 Ambulance Entry

As noted above, significant reconfiguration of the hospital entry from Myall Street is proposed within the Stage 4 scope of works. This includes a dedicated ambulance entry from Myall Street, in the location of the George Hatch Building. The new ambulance entry will be constructed in accordance with Ambulance Service of NSW (ASNSW) standards. This separation of the ambulance entry from the public entry and hospital forecourt will create a safer environment for all users and will ensure medical services are efficient and effective.

As outlined in the Transport Assessment prepared by GTA Consultants (refer to **Appendix H**) the entry and ambulance parking bay has been designed to accommodate an Ambulance NSW bariatric vehicle, with sufficient area provided to allow the vehicle to enter from Myall Street and reverse into the dedicated ambulance bay, which will be covered with an awning. All vehicles will enter and exit the site in a forward direction. Additionally, the driveway makes provision for other emergency vehicles such as police. The area will be clearly defined and signed to ensure ongoing separation from general public areas.

3.4.4 Pedestrian Access

Pedestrian access will primarily remain consistent with the existing pedestrian network throughout the hospital. Pedestrian traffic typically enters the site from the south-east from Myall Street and the existing eastern car park. The proposed works include the provision of new pedestrian footpaths adjacent to the road network and crossings have been provided through the new eastern car park to the hospital entry.

3.5 Cobbora Road and Myall Street Roundabout

As part of the Stage 4 redevelopment it is proposed to realign and reconfigure the north-west leg of the Cobbora Road and Myall Street roundabout. Cobbora Road is a State managed road, and so approval is required from RMS under Section 138 of the *Road Act 1993*.

In its current form the roundabout presents some operational issues, with a history of minor incidents. Whilst it is not considered a major safety concern and does not impact traffic movements to and from the hospital, the configuration is inefficient and does not meet current performance or safety standards. The reconfiguration focuses on the connection of McGuinn Drive to Cobbora Road, with Myall Street connecting to McGuinn Drive and then onto Cobbora Road. The realignment will better facilitate the separation of ambulances from the general public, leading to improved emergency services provision. Additionally, further separation between the roundabout and the Myall Street intersection improves vehicle and pedestrian safety and performance, as vehicles turning right out of Myall Street will be less affected by any queuing from the roundabout. Plans of the reconfigured roundabout have been prepared by Enstruct Group and are provided at **Appendix I**.

Whilst the proposed development is not expected to require the relocation of any existing service bays within the hospital, which are currently located to the north and west of the redevelopment area, it is noted the proposed swept paths can accommodate vehicles up to and including 12.5 metre Heavy Rigid Vehicles. Additionally, access to the on-site kiosk substation and other services will continue to be via the western loop road, wherever feasible.

3.6 Landscaping and Public Domain

A Landscape Schematic Design Report and Drawings have been prepared by 360 Degrees and are included at **Appendix J**. The Report outlines the preliminary landscape design principles and design language employed in the design of key landscape and public domain areas. The key landscape areas comprise the main entry, internal courtyard and eastern car park. A landscape concept plan is provided at **Figure 10**.
Key strategies and principles of the proposed landscaping include:

- Responsive design to the previously completed redevelopment stages to create a unified campus;
- Retention of existing rural landscape character and historical significance;
- Recognition and re-introduction of indigenous planting, including regionally significant bush tucker and medicinal species; and
- Create unified social and passive places that harness the power of healing and enrich the lift of those who encounter it.

Each of the landscaped areas has been designed with these principles in mind and responds to the existing site and context as well as objectives of the Master Plan.

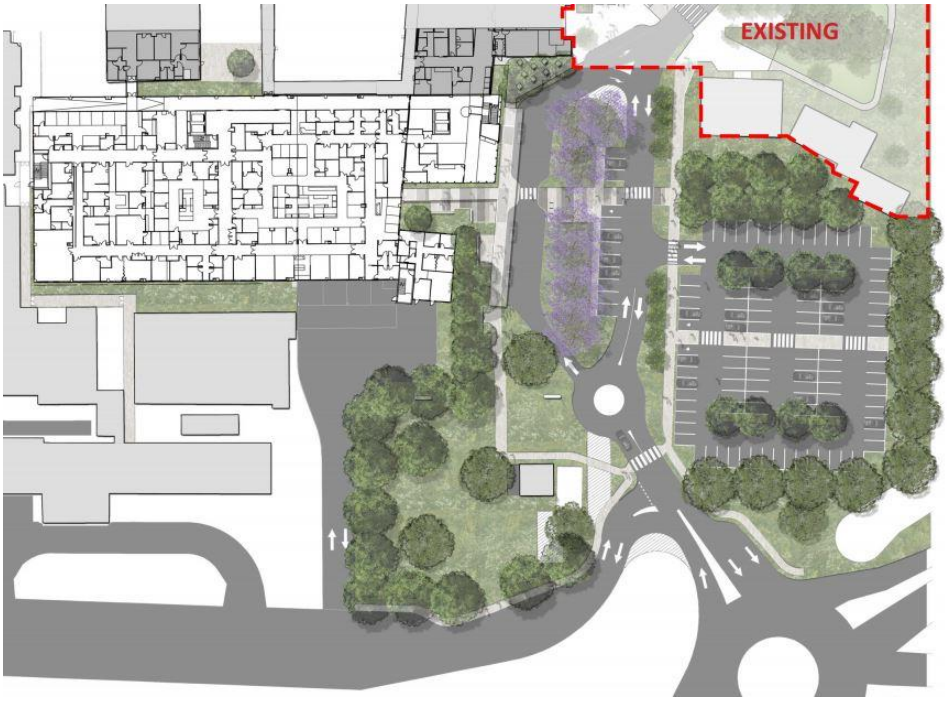

Figure 10 – Landscape Concept Plan
Source: 360 Degrees

3.6.1 Entry Forecourt

The Entry Forecourt has been designed as the central drop-off point to the main hospital entry, providing a sense of arrival, continuity through to the lobby and complementing the new building form. The design aims to enhance and integrate the vehicular and pedestrian entries whilst providing a distinct separation between the building and car park. Soft planting zones provide structure as well as places for passive respite. The way finding strategy is incorporated into the landscape, providing direction to various locations across the hospital campus. A distinct material palette complements the building's architecture and local vernacular, whilst clearly distinguishing the building entry and safe pedestrian path of travel.

3.6.2 Internal Courtyard

Located within the building envelope, on level two, the internal courtyard and garden has been designed to provide hospital patients and staff physical connection to external spaces whilst maintaining privacy and security from within Dubbo Hospital. The courtyard will complement the existing Indigenous Courtyard located to the north of the proposed building.

3.6.3 Eastern Car Park

The new public car park is located to the east of the Entry Forecourt. The car park design has been developed to ensure the function of the hospital and amenities are maintained. The car park will incorporate WSUD initiatives such as permeable paving and bioswales. Bioswales provide a valuable vegetation buffer between car parking bays, control stormwater collection and also form minor pedestrian access links to the central spine. Way-finding signage will be incorporated into the landscape. Proposed planting includes drought and frost tolerant local native plants in order to minimise maintenance. Planting also incorporates tall, clear trunk trees to provide passive shade for vehicles and pedestrians. Additionally, the proposed planting has been chosen with consideration to improving sight lines to and from the hospital entry, aiding in passive surveillance.

Additionally, the peripheral landscape treatment will provide an aesthetically pleasing outlook from within the hospital, whilst providing privacy to ground floor rooms. The

function of this landscape is to provide a continuous belt which connects the existing and proposed hospital wings and facilitates pathway connections.

3.7 Ecologically Sustainable Development

The proposed Stage 4 redevelopment works incorporate Ecologically Sustainable Development (ESD) strategies and principles as defined in clause 7(4) of Schedule 2 of the EP&A Regulations, where appropriate to the scope of the development.

The environmental performance of the proposed building has been assessed using the NSW Health's Engineering Services Guidelines and Section J - Energy Efficiency of the Building Code of Australia 2010.

In particular, the proposal will achieve ESD principles on an integrated design process with the intention of delivering:

- Lower operating costs for energy, water, waste and maintenance;
- Improved indoor environment quality;
- Extended lift through inherent flexibility and 'future-proofing'; and
- Electrical services with efficient lighting, lighting control and energy metering.

The environmental performance of the new building and associated works is provided in **Section 5.14**.

3.8 Services and Infrastructure

Comprehensive services and infrastructure upgrades were undertaken across the campus as part of the Stage 3 REF works. These works took the proposed development into consideration, and are capable of servicing the new building. It is noted the existing and proposed electrical and ICT infrastructure works have common routing / connection points. Additional services required as part of the Stage 4 redevelopment are outlined below.

3.8.1 Electrical Works

An Electrical, ICT and Security Report has been prepared by Jacobs and is included at **Appendix K**. Given the location of the work, central to the existing hospital site, a number of electrical diversions are required to ensure that existing services are maintained and do not adversely impact the operation of a fully functioning hospital.

Key electrical works included within the proposed scope of works include:

- New electrical works throughout the new clinical building;
- Connection of the Essential Energy substation to the existing high voltage 11kV network;
- Addition of new circuit breakers to the existing site main switchboard (MCB-C);
- Installation of new sub main cable to run from the existing site main switchboard (MCB-C) to the Level 1 building main distribution board; and
- New sub main cables to run from the new Stage 4 building main distribution board to all lighting and power distribution boards, lifts, mechanical services and hydraulic services.

3.8.2 Information and Communication Technology (ICT)

The Electrical, ICT and Security Report prepared by Jacobs (refer to **Appendix K**) details the required ICT works that will be carried out throughout the site as part of the proposal. These include installation of:

- New fibre optic and copper backbone cables which run from the existing hospital file server room (FSR) to the new Stage 4 clinical building distributor located on Level 1 of the new building; and
- New fibre optic and copper backbone cables which run from the new Stage 4 clinical building distributor to the Stage 4 floor distributors located on the Ground Floor, Level 1, Level 3 and the roof plant room.

3.8.3 Security

A number of new security services will be provided as part of the proposed works to support the hospital's operational security requirements. These works will include:

- Closed Circuit Television System (CCTV);
- Electronic Access Control Systems (EACS);
- Intrusion Detection System (IDS);
- Duress System (FDS); and
- Intercom system.

The proposed security systems will be designed and installed in accordance with the relevant Australian Standards, and will be fully integrated with the existing Stages 1 and 2 clinical building.

3.8.4 Hydraulic Services

An Integrated Water Management Plan has been prepared by ACOR Consultants and is included at **Appendix L**. The report outlines the hydraulic services provided by the development. The following hydraulic services are proposed:

- Alterations and additions to existing hydraulic and Fire Pump Room;
- Capping of existing service connections to buildings to be demolished including capping of existing sewer lines;
- Roof water drainage including eaves gutters, podium areas and box gutters;
- Sanitary plumbing and drainage;
- Treatment of hydraulic trade waste;
- Potable hot and cold water services; and
- Natural gas services.

New in-ground potable water, hydraulic and fire services will be connected to existing supplies. Additionally, the report outsides Ecologically Sustainable Development (ESD) initiatives, which are further discussed in **Sections 3.7** and **5.14**.

3.8.5 Mechanical Engineering

A Mechanical, Medical Gases and Vertical Transport Report has been prepared by Wood & Grieve and is included at **Appendix M**. The report outlines the medical engineering works, including:

- Provision of HVAC services including new Water Cooled Chillers and associated Cooling Towers, Dedicated Air Handling Units (AHUs) and exhaust systems;
- Relocation of existing Medical Gas systems (Medical Liquid Oxygen, Nitrous Oxide, Medical Dry Air and Compressed Air); and
- Two public passenger lifts and two clinical patient care lifts.

The proposed mechanical and medical gas services will be designed to comply with the relevant Australian Standards and other relevant government standards and guidelines.

3.8.6 Stormwater

New and upgraded stormwater infrastructure has been provided across the hospital site as part of the Stages 1 and 2 redevelopment. The proposed Stage 4 works will result in an increase of impervious catchment areas. As a result, new stormwater drainage and detention services are required, as well as upgrades to existing facilities. Stormwater collected from the roof, car park and other impervious areas will be captured through gutters and drainage grates, transported by pipe through pollutant trap and oil / silt capture device before discharging into storage tanks.

As outlined in the Stormwater Management Plan prepared by Enstruct Group (refer to **Appendix I**) the stormwater works include:

- Removal of existing stormwater drainage;
- Retention of the existing 675mm pipe connection from the existing detention basin as an overflow pipe rather than a primary drainage line;
- Retention of existing on-site detention tank (OSD) adjacent to the Myall Street entry;
- Configuration of the car park drainage to connect with the existing OSD tank and Myall Street drainage;
- Construction of a new 300m^3 detention tank adjacent to Myall Street and stormwater treatment device with restricted pipe flows directed in a westerly direction to a new stormwater main extension along Myall Street; and
- Reconfiguration of existing stormwater drainage in the west of the development site and redirection of discharge towards the new detention tank.

3.9 Waste Management

A Waste Management Plan (WMP) has been prepared by TSA Management and is included at **Appendix N**.

3.9.1 Operational Waste

Table 3 shows the quantities of waste that will be generated, based on the 39 new beds and treatment spaces proposed.

Table 3 - Waste quantities

	Total waste per week (kg)		
Waste Type	**Current**	**Estimated Additional**	**Estimated Total**
General Waste	6,328	1708	8,036
Recyclable Waste	835	225	1,060
Clinical / Cytotoxic Waste	775	209	984
Total	7,938	2,143	10,081

The new building will operate under the hospital's existing waste management procedures and systems for general waste (including confidential papers), recyclable waste, builder's waste and green waste. The location of the existing and future waste storage facilities is included in the WMP.

The additional volume of waste for each waste stream will be accommodated by increasing the number and capacity of waste bins, the use of a compactor on-site and / or increased frequency of waste collection.

Clinical Waste

The additional clinical waste generated by the proposed development is anticipated to be 209kg / week. The waste is to be disposed of within the existing clinical bins. Clinical waste will continue to be stored in a secure area, compliant with the Australian Standards.

Hazardous Waste

A Preliminary Hazards Analysis has been prepared by Douglas Partners to address hazardous waste (refer to **Appendix P** and **Section 5.15**).

All dangerous goods on site will continue to be stored and used as per the material safety data sheets (MSDS) provided with the substance. The report notes there is a low risk associated with the hazards anticipated as a result of the redevelopment works. As such, the proposed development will not result in a change to the type of dangerous goods on site and therefore the hospital's current management practices concerning waste collection, storage, transport and dispatch will continue to apply.

3.9.2 Construction Waste

The management of the site during the construction period will be undertaken by the Head Contractor once details of the quantities generated and handling methods are known. A Preliminary Construction Management Plan has been prepared by TSA Management and is included at **Appendix O.** The general management principles from the preliminary Construction Management Plan are outlined at **Section 5.17**.

3.10 Development Staging

The development will be constructed within the environment of an operating hospital. As such, existing accesses, services and facilities are required to be maintained during the construction process.

Following demolition and site preparation works, the proposed construction will be carried out in stages currently referred to as Stages A, B and C, however subject to ongoing investigations. Additionally, Stage C may be carried out in two (2) phases being a new building component and a refurbishment component. Staging Plans are included in the Architectural Drawings provided at **Appendix B**. **Table 4** outlines the primary works associated with each phase.

Table 4 – Development Staging Components

Development Stage	Key Components
Stage A	▪ Demolition works including 'S' Block ▪ New construction – Ground Floor shell ▪ New construction – Level 1 shell ▪ New construction – Level 2 shell ▪ New construction – Level 3 plant room (partial) ▪ Fit-out and commissioning ground floor medical imaging and renal department ▪ Fire pump room extension
Stage B	▪ New construction – Ground floor emergency ▪ New construction – Level 1 ambulatory care ▪ New construction – Level 2 ▪ New construction – Level 3 plant room (remaining) ▪ Demolition - temporary corridor bypass link ▪ Fit-out and commissioning including Stage A shell ▪ Public domain works - roads, ambulance bay & parking
Stage C (New Build Component)	▪ New construction - front of house, lobby and cafe ▪ New construction – Intensive care unit connection ▪ Demolition - existing Hospital Street ▪ Public domain works - landscaping
Stage C (Refurbishment Component)	▪ Refurbishment - new admin, retail, Aboriginal and discharge lounges ▪ New construction - bridge links ▪ Refurbishment - Two new ensuites to existing G Ward

Appropriate construction management measures will be implemented throughout the development stages to ensure minimal impact on ongoing hospital operations.

3.11 Construction Management

A Preliminary Construction Management Plan has been prepared by TSA Management and is included at **Appendix O**. This provides an indicative construction methodology, construction traffic arrangements and mitigation measures to be undertaken to support the delivery of the proposed works. Additional project management protocols for construction traffic have been identified as part of the Transport Assessment prepared by GTA Consultants and included at **Appendix H**.

3.12 Hours of Construction

The following hours of construction are proposed:

- Monday to Friday: 7:00am to 6:00pm
- Saturday: 8:00am to 5:00pm
- Sundays and Public Holidays: No work

4.0 Consultation

In accordance with the SEARs issued for this project (as detailed in **Section 1.4**), ongoing consultation has been undertaken with relevant local, State and Commonwealth government authorities, hospital staff, the community and Western Plains Regional Council. Specifically, the SEARs required consultation with:

- Dubbo Regional Council;
- Roads and Maritime Services;
- Australian Rail Track Corporation; and
- Transport for NSW.

In addition, consultation was undertaken with the following parties:

- Ambulance NSW;
- Playmates childcare;
- Dubbo Health Service Breast Screen Service;
- Dubbo Health Service Renal Patients;
- WNSWLHD Board;
- Health Council;
- Hospital staff and visitors; and
- Community members.

Consultation was undertaken by Dubbo Hospital Redevelopment Team, HI and various consultants in the preparation of their reports. Details of the consultation undertaken are outlined in **Table 5** below. It is noted that no significant issues were raised during the course of this consultation.

Table 5 – Summary of stakeholder consultation undertaken

Relevant Party	Consultation
Agency Consultation	
Roads and Maritime Services (RMS)	GTA Consultants has undertaken consultation with RMS throughout all stages of the project to ensure understanding of the key traffic and transport and design matters. The extent of the consultation has included email correspondence and phone discussions. Correspondence with Timothy Wilson, Senior Project Development Manager, RMS (Wagga Wagga) included authorisation for use of traffic data collected as part of the New Dubbo Bridge project. RMS had no initial concerns from a major projects perspective as the works relate to only minor works on a State road..
Australian Rail Track Corporation (ARTC)	Consultation with the ARTC related to issues concerning key design matters, traffic impacts and impacts on Coonable Railway Line located to the west of the hospital. Telephone conversations with relevant ARTC personnel confirmed the proposal would have a negligible impact on ARTC rail assets.
NSW Ambulance	HI has undertaken ongoing consultation in the form of one-on-one meetings with NSW Ambulance. Discussions have focused around the design provisions for a new Ambulatory Care Unit, Emergency Department and dedicated ambulance access of Myall Street. NSW Ambulance has provided feedback on the proposed design however has not raised any issues associated with the development.
Western NSW Local Health District (WNSWLHD)	HI has undertaken ongoing consultation with WNSWLHD via email and telephone correspondence and one-on-one meetings. An update on the redevelopment design, programming and key milestones has been provided to the WNSWLHD Board each month. The LHD has not raised specific concerns regarding the proposed scope of works.
Office of Environment and Heritage (OEH)	The Office of Environment and Heritage (OEH) is not required to be consulted during the preparation of an Non-Indigenous or Indigenous Archaeological Assessment. Notwithstanding this, OEH will be consulted if archaeological relics are discovered during the construction process, as outlined in the Mitigation Measures at **Section 7.0**.

Relevant Party	Consultation
Council Consultation	
Dubbo Regional Council (formerly Dubbo City Council)	Individual consultants have undertaken consultation with Council to address specific issues with the project. As documented in the Transport Assessment prepared by GTA Consultants (refer to **Appendix H**), consultation has been undertaken with Council regarding key components of the proposal and traffic related implications. Myall Street purpose and designation has been raised by Council but has not been included in this scope of works. Additionally, the operation of the roundabout controlled intersection of Cobbora Road and Myall Street has continued to be a topic of discussion. Email correspondence between GTA and Dennis Valantine, Traffic Engineer, covered several items including dedication of Myall Street, the Cobbora Road roundabout and broader traffic planning. No major concerns have been raised regarding the proposal. As documented in the Stormwater Management Plan prepared by Enstruct Group (refer to **Appendix I**) consultation with Council has occurred regarding the proposed stormwater management and water quality systems. Consultation indicated Council engineers approved of the proposed development and associated works in principle. Correspondence issued by Council dated 16 July 2016 indicates that the stormwater management proposal should address water quality issues related to car park discharge and gross pollutants conveyed by stormwater runoff. The proposal has addressed these requirements through the inclusion of temporary sediment control and permanent stormwater treatment measures including pollutant capture. Additionally, Council expressed concerns regarding the available limited capacity of the Cobbora Road drainage system. To address these concerns a new stormwater main extension along Myall Street is proposed, below Council's footpath. This will connect to the new detention storage.
Dubbo Health Service	
Hospital Staff	HI has undertaken multiple forms of consultation with hospital staff and administration concerning issues such as the schematic design, removal of the George Hatch Building and other potential operational impacts. Consultation has included the following: ▪ All of staff briefing presentations held in: – October 2014 – November 2015 – January 2015 – November 2016 ▪ All of staff email – June 2016 Additionally, the redevelopment team has prepared a Project Wall consisting of boards with images as per the Schematic Design launch. This is a central point in the hospital for staff, visitors and patients to access redevelopment information.
Dubbo Health Service Breast Screen Service	Consultation with the Dubbo Health Service Breast Screen Service has occurred throughout the project and has comprised of the following: ▪ Presentation of DHSMP– February 2016 ▪ Ongoing email and telephone correspondence with management No specific issues were raised as a result of these consultation sessions. Staff and management will continue to liaise with all hospital patients throughout the development process.
Renal Patients	Dubbo Health Service Renal Patients were notified by letter in June 2016 of the proposed works, intermediate operational arrangements and ongoing arrangements. Staff and management will continue to liaise with all hospital patients throughout the development process.
Community Consultation	
Local Community	HI has undertaken ongoing consultation and engagement with the local community regarding redevelopment Stage 4. The community consultation has comprised: ▪ Project user group meetings (outlined above). ▪ A project website which is regularly updated. ▪ Social media updates. ▪ Media releases including: – Lead design team announcement – September 2015;

Relevant Party	Consultation
	– Stages 3 and 4 Tender Release – August 2016; and – Dubbo Schematic Design Launch – November 2016. ▪ Project fact sheets for public displays and exhibitions. ▪ Presentation of the Master Plan to the Dubbo Aboriginal Community Working Party – December 2014.
Other	
Playmates Childcare	Playmates childcare centre is currently located in the south-eastern corner of the hospital campus. The Childcare Centre currently occupies a building proposed to be demolished as part of the Stage 4 redevelopment works. Concluded discussions have occurred between HI and Dubbo Hospital regarding the removal and relocation of the Playmates Childcare Centre. In September 2014, the Playmates Working Group (PWG) was established to investigate and provide support to Playmates transitioning to another location outside Dubbo Hospital. The PWG comprised representatives from the office of the Honourable Troy Grant MP, Member for Dubbo, Dubbo Hospital, HI, WLHD and Playmates. The preferred site for the relocation of Playmates is owned by Council and it was agreed by all parties that Council had the required expertise and experience to lead the transition. Playmates, with the PWG's support, have also produced a Functional Design Brief, Concept Design and a Strategic Business Plan to facilitate Playmates transitioning and operating at this preferred site. It should be noted that the relocation of Playmates will not result in the loss of places available or a decrease in the services offered at the Centre. Additionally, it has been agreed that Playmates will offer priority places to children of Dubbo Hospital staff, children placed by the Department of Family and Community Services, and children from the local Aboriginal communities.

Further, the proposed development will be placed on public exhibition for a minimum of 30 days in accordance with Cause 83 of the EP&A Regulation. During the public exhibition period Council, State agencies and the public will have an opportunity to make submissions on the project.

5.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the proposed DA. It addresses the matters for consideration set out in the SEARs (see Section 1.4).

The Mitigation Measures at **Section 7.0** complement the findings of this section.

5.1 Consistency with Relevant Strategic and Statutory Plans and Policies

The following legislation, planning instruments and strategies are relevant to the proposed development and have been addressed:

- *Environmental Planning and Assessment Act 1979* (EP&A Act);
- *State Environmental Planning Policy (State & Regional Development) 2011* (SRD SEPP);
- *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* (SEPP 33);
- *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55)
- *State Environmental Planning Policy Infrastructure 2007* (SEPP Infrastructure) ;
- *Dubbo Local Environmental Plan 2011* (DLEP 2011);
- *Orana Regional Environmental Plan No. 1– Siding Spring* (deemed SEPP) (repealed);
- Dubbo Regional Council Section 94 Contributions Plans;
- NSW State Priorities;
- NSW Long Term Transport Master Plan 2012;
- Draft Central West and Orana Regional Plan;
- Dark Sky Planning Guideline 2016;
- Dubbo Urban Areas Development Strategy, Institutional Precinct Strategy (Health Precinct), Western Plains Regional Council.
- Central West Regional Transport Plan 2013;
- Development Near Rail Corridors and Busy Roads – Interim Guideline; and
- Healthy Urban Development Checklist, NSW Health.

The DA's consistency and compliance with the relevant strategic and statutory plans and policies is outlined in **Table 6** below.

Table 6 – Summary of consistency with relevant Strategies, EPIs, Policies and Guidelines

Instrument/Strategy	Comments
Strategic Plans and Policies	
NSW State Priorities	The NSW State Priorities are a series of reforms designed to grow the economy, deliver infrastructure, and improve health, education and other services across NSW. The proposed upgrades to Dubbo Hospital align with these priorities.
NSW Long Term Transport Masterplan 2012	The NSW Long Term Transport Masterplan provides a framework for delivery of and integrated and modern transport systems. The master plan identifies the challenges and needs and the actions proposed to address these challenges. As far as practicable given the nature of the use and the location of the site, the proposal will support the proposed actions contained within the Masterplan, as well as encouraging a modal shift away from private vehicle use through the provision of bicycle parking facilities.

Instrument/Strategy	Comments
Central West Regional Transport Plan 2013	The Central West Regional Transport Plan 2013 builds on the NSW Long Term Transport Masterplan 2012. The proposal supports the actions of the Plan by providing opportunities for walking and cycling within the proposed Stage 4 redevelopment.
Draft Central West Orana Regional Plan	The Draft Central West Orana Regional Plan outlines a vision to grow and diversify the economy over the next 20 years by supporting jobs growth and strengthening the region's cities, towns and villages. The Plan seeks to support employment and investment growth in the healthcare and social assistance sector. The proposed Stage 4 redevelopment of Dubbo Hospital will directly support this aim, and in doing so, will provide improved healthcare and employment opportunities for the region.
Dark Sky Planning Guideline 2016	The Dark Sky Planning Guideline 2016 informs development controls that apply to land within the local government areas of Coonamble, Dubbo, Gilgandra and Warrumbungle and the assessment of significant development within 200 km of the Siding Springs Observatory, in order to manage light spill and limit the impact on the Dark Sky Region. Dubbo Hospital is located 117 km from the Observatory and as such the impact of the development on the Dark Sky Region has been considered. An External Lighting Assessment has been prepared by Jacobs and is included at **Appendix Q** and is discussed further in **Section 5.3.3**. It concluded that the impact of the proposed development on the Observatory is considered to be negligible.
Dubbo City Council Urban Area Development Strategy – Institutional Areas Development Strategy	Dubbo Health Service is identified as one of the key institutions in the Dubbo LGA, providing medical / hospital services that are of City, Regional and State significance. The Strategy seeks to create areas with a clearly identifiable institutional function, which are dedicated to the provision of higher order medical, hospital, educational, cultural and research facilities in the most favourable environment possible. The proposed supports the functions of the hospital as one of Dubbo's major institutions, and will assist in further reinforcing the institutional identity of the precinct. In accordance with the Strategy, the works will encourage the development of Dubbo based medical services, so that Dubbo is developed as a centre of excellence for medical services in inland Eastern Australia. The development will also enhance the amenity of the hospital, which is one of the key objectives of the Strategy.
Development Near Rail Corridors and Busy Roads – Interim Guidelines	The Guideline aims to assist in reducing the health impacts of rail and road noise and adverse air quality on sensitive adjacent development. The Guidelines do not apply to the proposed development. The proposed development is over 150 metres from the railway line to the west of the site, and so no assessment is required with respect to rail noise and vibration. Similarly, the Golden Highway carries 19,156 vehicles per day, and so is below the 40,000 vehicles that would trigger an assessment for road noise and vibration (refer to **Appendix H** and **Section 5.8**).
Healthy Urban Development Checklist, NSW Health	The proposal will enable the construction of a new hospital building, and the refurbishment of the existing main hospital building. The proposed development will provide improved functionality and capability whilst improving efficiency. The proposal is considered to be consistent with the intent of the Healthy Urban Development Checklist by providing a new development that contributes to social infrastructure in the locality and region, and facilitates cycling and pedestrian accessibility.
State Legislation	
EP&A Act	The proposed development is consistent with the objects of the EP&A Act for the following reasons: ▪ It promotes the social welfare of the community; ▪ It allows for the orderly and economic development of land; and ▪ It is development for public purposes and will facilitate the delivery of community services. The proposed development is consistent with Division 4.1 of the EP&A Act, particularly for the following reasons: ▪ The development promotes medical services and stimulates social welfare of the community; ▪ The development has been declared to have state significance; ▪ The development is not prohibited by an environmental planning instrument;

Instrument/Strategy	Comments
	and ▪ The development has been evaluated and assessed against the relevant heads of consideration under section 79C.
EP&A Regulations	The EIS has addressed the criteria within clause 6 and of Schedule 1. Similarly, the EIS has addressed the principles of ecologically sustainable development (refer to **Section 5.14**). Clause 7(1)(d)(v) of Schedule 2 is addressed below.

Act	Approval Required
Legislation that does not apply to State Significant Development	
Coastal Protection Act 1979	N/A
Fisheries Management Act 1994	N/A
Heritage Act 1977	N/A
National Parks and Wildlife Act 1974	N/A
Native Vegetation Act 2003	N/A
Rural Fires Act 1997	N/A
Water Management Act 2000	N/A
Legislation that must be applied consistently	
Fisheries Management Act 1994	No
Mine Subsidence Compensation Act 1961	No
Mining Act 1992	No
Petroleum (Onshore) Act 1991	No
Protection of the Environment Operations Act 1997	No
Roads Act 1993	Yes (refer to **Section 5.1.1**)
Pipelines Act 1967	No

SEPP (State and Regional Development)	The aim of this policy is to identify development that is State Significant Development. Pursuant to the SEPP SRD a project will be a SSD if it falls into one of the classes of development listed in Schedule 1 of the SEPP. 'Hospitals, medical centres and health research facilities' with a capital investment value (CIV) of $30 million or more are identified as SSD and are considered to be development of State significance. The proposed Stage 4 development has a CIV of approximately $78,806,000 million and so qualifies as a State Significant Development. A CIV Report prepared by MBM Quantity Surveyors confirming the total CIV of the proposal. The report has been provided under a separate cover.
SEPP 55	SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. The SEPP specifies when consent is required for remediation of contaminated land. The Phase I Environmental Site Assessment prepared for the site (see **Appendix D**) demonstrates that the site is suitable for the proposed development.
SEPP 33	A Preliminary Hazard Analysis has been prepared by Douglas Partners, and is included at **Appendix P.** The report outlines the potentially hazardous materials in relation to the development and the management of the materials in accordance with SEPP 33. The report outlines the potential for a number of buildings to contain hazardous material and provides recommendations. This is discussed further in **Section 5.6.3**.
SEPP (Infrastructure)	The aim of this SEPP is to facilitate the effective delivery of infrastructure across the State, including providing for consultation with relevant public authorities about certain development during the assessment process. The proposed development will result in a total of 87 beds on the site (a percentage increase of 26.9%) and so does not trigger consultation with the Roads and Maritime Services (RMS) under the provisions of Schedule 3 of the SEPP.

Instrument/Strategy	Comments	
Orana Regional Environmental Plan No 1 – Siding Spring (Repealed)	The Orana Regional Environmental Plan No 1 was repealed in August 2016. Despite this, the proposed development takes into consideration Clause 6 of the SEPP which requires the assessment of the amount and type of light likely to be emitted by, and from, the development and the probably effect of that emission on the level of artificial sky global at the Siding Spring Observatory. The Observatory is over 100 kilometres from the subject site, as such the impact of the Observatory is considered to be negligible. Accordingly, no consultation or concurrence is required. A External Lighting Assessment has been undertaken by Jacobs and is included at **Appendix Q**.	
Local Planning Instruments and Controls		
Dubbo Local Environmental Plan 2011	Clause 2.2 – SP2 Infrastructure 'Hospital'	Dubbo Hospital is zoned SP2 Infrastructure 'hospital' in Dubbo Local Environmental Plan 2011 (DLEP 2011). Permissible uses in the SP2 zone include *"the purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose".* The works are part of the main function of the hospital and are therefore permissible.
	Clause 4.3 – Height of buildings	The LEP does not have specific controls for FSR or height within the SP2 zoning however, it is considered that the building form is appropriate, and is consistent with existing development on the site.
	Clause 4.4 – Floor space ratio	
	Clause 5.10 –Heritage Conservation	The site is identified as containing a heritage item under DLEP 2011. A Heritage Impact Statement has been prepared by Adaptive Architects (refer to **Appendix R**). The proposed works will directly affect the 1936 George Hatch Building (Nurse's Building) which is proposed to be removed as part of the works. This results from contamination issues, the need to provide a separate ambulance entry, preserve the main heritage group fronting Myall Street and to assist with ongoing funding and usage of these buildings. Additionally, Biosis Research undertook a European Archaeological Assessment for redevelopment Stages 1 and 2. The report identified the Stage 4 redevelopment site as an area of archaeological sensitivity. This is further considered and addressed in **Section 5.6.3** and the Mitigation Measures at **Section 7.0**.
	Clause 7.1 – Flood Planning	No areas within the development site are identified as being flood prone on the Flood Planning Maps included in DLEP 2011. The area proposed to be developed is not identified as flood prone, and therefore no flood impacts are anticipated to the proposed development.
	Clause 7.5 - Groundwater Vulnerability	The site is identified as having moderate to high groundwater vulnerability (the lowest level of vulnerability). A Geotechnical Assessment was undertaken by Douglas Partners (refer to **Appendix E**) which determines that groundwater has not been encountered within 5 metres of the ground surface. As the groundwater surface is well below the ground surface levels on the site, the proposed development will not involve groundwater extraction, and so will not reduce groundwater yields in the area. On this basis, the assessment confirms that any groundwater impacts associated with the proposed development would be very low.

Instrument/Strategy	Comments
Dubbo Regional Council Section 94 Contribution Plans	Refer to **Section 5.1.2**.

5.1.1 Integrated Development

In accordance with Section 89K of the EP&A Act 1979, the provisions of Section 138 of the *Roads Act 1993* continue to apply to State Significant Development. The development involves works to the Cobbora Road roundabout, which is a State managed road, and so requires approval under Section 138(1)(a) of the *Roads Act 1993*.

This application will require referral to RMS for approval.

5.1.2 Development Contributions

The relevant contributions plans which apply to the site are:

- Western Plains Regional Council Section 94 Development Contributions Plan for Dubbo Open Space and Recreation Facilities – 2016-2026;
- Dubbo City Council Amended Section 94 Contributions Plan 2016 – Roads, Traffic Management and Car Parking;
- Dubbo City Council Section 94 Contributions Plan 1995 – Urban Stormwater and Drainage Headworks Contributions; and
- Dubbo City Council Section 64 Water and Sewerage Contribution Policy 2002.

The purpose of the Open Space and Recreation Facilities Section 94 Plan is to provide for open space and recreational facilities resulting from development which will contribute to an increase in population. Development to which this Plan applies includes:

- *Subdivision undertaken for the purposes of residential or rural residential development;*
- *Residential accommodation (as defined in the Dubbo Local Environmental Plan 2011) resulting in the undertaking of residential development*
- *Tourist and visitor accommodation; and*
- *Seniors Housing.*

Whilst not specifically exempt from the Plan, the proposed hospital development will not result in an increase in population. As such, the Open Space and Recreation Facilities Section 94 Plan does not apply to the development.

The Roads, Traffic Management and Car Parking Section 94 Plan applies to all development *'that requires the provision of or, which increases the demand for road upgrading, traffic management and car parking facilities in the City of Dubbo'*. Specifically, the Plan applies to:

i) *development which result in a net increase in dwellings; or*

ii) *development where subdivision is involved which results in a net increase in the number of lots where the additional lot or lots are capable of being used for the purpose of residential, commercial, retail or industrial development; or*

iii) *residential development carried out on land that is vacant, or is made vacant for the development to occur; or*

iv) *development that involves commercial, retail or industrial floorspace that yields additional floor area; or*

v) development that intensifies a current approved commercial, retail or industrial use.

Whilst not automatically exempt from the payment of development contributions, hospitals are routinely expected to be exempted from the payment of contributions as a result of their significant contribution to social and essential infrastructure within the region.

Section 3.6 of the Plan provides for flexibility in the imposition of contributions. Council may consider adjustment or waiver of Section 94 Contributions (either in full or part) as they apply to individual applications. Circumstances where this may occur include:

a) Where previous contributions have been paid on a particular property towards the planning need for which the contribution is to be levied and where it can be demonstrated that this can be attributed to the current development (ie that the demand for which the previous contribution was levied has not been realised and will be superseded by the current development application); or

b) Where a material public benefit has been obtained by council in lieu of a monetary contribution for the purposes outlined in (a) above; or

c) Where the applicant can demonstrate that the development does not generate demand for public amenities or services, or generates demand at a lower quantum than the rates set out in part 4 of this plan.

The development delivers significant public benefit through the provision of substantial upgrades to an existing health facility, which will facilitate improved hospital services to supporting the local community and wider region. The development is a Crown development providing an essential community service and consequently should not be levied developer contributions.

Additionally, the development will have no significant impact on local infrastructure and facilities, providing upgrades to existing services, on-site parking and improved road access and intersections are part of the works. The Transport Assessment has been prepared by GTA Consultants (refer to **Appendix H**) confirms that the additional traffic generated by the development is not expected to compromise the functioning of the surrounding road network and as such no upgrading or intersection works (outside that of the works proposed to be undertaken as part of this development) are warranted as a result of the development.

The Dubbo City Council Section 94 Contributions Plan 1995 – Urban Stormwater and Drainage Headworks and the Section 64 Water and Sewerage Contributions apply to developments which discharge into the urban stormwater drainage system and utilise or proposed to utilise water supply and sewerage infrastructure. In accordance with the reasoning provided above, the development will provide essential infrastructure within the region and will not have adverse impact on existing infrastructure connections. The proposed works involve augmentation of existing services in order to accommodate the intended change and ensure continuity of stormwater drainage to affected upstream areas, as discussed in **Section 5.13** below.

In view of the above it is considered that no contribution levy should be applied to this SSD DA and that the Minister imposes no conditions in relation to contributions.

5.2 Site Suitability and Implications of Proposed Land Uses

The hospital campus is suitable for the building and has been considered from a medical operations perspective as well as from a site capacity and environmental perspective.

The site is considered suitable for the proposed development for the following reasons:

- It is within the existing Dubbo Hospital campus and is co-located with other key and supporting health services;
- The location of the building will enable future development on the campus to address the increasing population and growing demand for health services within the region;
- The proposal provides additional car parking and includes modifications to the entry and internal road network to improve accessibility and circulation;
- The provision of a new clinical building including Medical Imaging, Emergency Department, Ambulatory Care Unit, Renal Dialysis, Coronary Care/ Stroke Unit, Cardiovascular Suite and Intensive Care Unit, will further support and strengthen the medical facilities available on the hospital site and within the surrounding area, both now and in the future; and
- The area, shape and topography of the site allows for the provision of a new hospital building that meets the design requirements of each unit, whilst not resulting in any significant adverse impacts on the use of surrounding buildings or the amenity of adjoining residences.

Further to the site suitability, the project demonstrates State significance by providing a number of social benefits, including:

- Improving the treatment of patients through allied health services within the State;
- Facilitating training and teaching opportunities with new and improved technology; and
- Creating a number of construction and operational jobs.

5.3 Built Form and Urban Design

As articulated in the Architectural Design Report prepared by HDR Rice Daubney (refer to **Appendix B**), the proposed building has been designed to respond to the functional needs of the hospital and to its surrounding context. The new clinical building is located within the footprint of the existing 'S' Block, central to the hospital campus. As a result of its location, the building does not encroach upon any existing property boundaries, and as such will not result in adverse view or visual impacts to or from neighbouring properties, as discussed below. Where the new building is adjacent to existing hospital buildings care has been taken to provide adequate fire protection.

The proposed clinical building presents itself at a much larger scale than the majority of the hospital campus, however is in keeping with the height of the recently completed Stages 1 and 2 development. As a result of its height and mass, the building establishes itself visually as the focal point of the site. Through the use of façade panelling, natural materials and colour the building defines the primary hospital entry. Additionally, the proposed materiality complements the existing hospital character particularly the heritage precinct to the south-west. The façade treatment, consisting of louvers/blades, references the heritage precinct and provides a backdrop for the remaining heritage buildings. The ambulance bay canopy along the southern façade pays homage to the existing verandahs along the heritage buildings. The building entry continues through to the forecourt, access driveways and car park, providing adequate accessibility and connectivity.

Soft landscaping and public domain elements will complement the building, providing a passive recreation space and assist with way finding. Perimeter planting will also be used in conjunction with external panelling to screen internal uses whilst providing a natural outlook for the building's occupants. The addition of the second floor courtyard will provide a more private space for staff and patients.

A photomontage of the proposed building entry and forecourt is included at **Figure 11** below.

Figure 11 – Proposed Clinical Building Entry and Forecourt
Source: HDR Rice Daubney Architects

5.3.1 Overshadowing and Solar Access

Overshadowing

Shadow diagrams that illustrate the extent of overshadowing caused by the proposal have been provided by HDR Rice Daubney and are included at **Appendix B**. The shadow diagrams reflect the overshadowing impact at 9am, 12pm and 3pm during the winter solstice (21st June) and the summer solstice (21st December).

Due to the size of the site and the location of the building, separated from the hospital boundary and neighbouring residences by the proposed car park and landscaping, the new clinical building will not result in any adverse impacts on neighbouring land uses at any time of the year. However, overshadowing will occur on the existing Administration Buildings fronting Myall Street, the hospital entries and landscaped areas during the morning on the winter solstice. It is noted that the shadow will not extend further than Myall Street.

Given the location and orientation of the building (restricted by the existing footprint of the 'S' Block), overshadowing of the existing hospital buildings to the south and internal Level 2 courtyard is unavoidable, and is considered acceptable in relation to other considerations for the building. As such, it is concluded that overshadowing will not impact on the environmental amenity of surrounding uses.

Solar Access

The building has been sited and designed to maximise the amount of natural daylight within the building. Passive design measures have also been used to promote an environment that provides well-being for the patients and a place for staff that ensures a comfortable and safe working environment. Façade materiality and shading devices have been incorporated into the design to further improve and manage solar access, thereby having a positive impact on future occupants and users of the building.

As noted above, the building will not result in the restriction of solar access on neighbouring land uses; however will have a minor impact on hospital buildings located to the south during mid-winter.

5.3.2 Visual Impacts

As the main building within the hospital campus, the clinical building will establish itself as the focal point for the site. However despite the building's scale, due to the location

of the building within the site and the setbacks from site boundaries and other uses, the building will have an insignificant visual impact on neighbouring properties and will not result in a loss of visual privacy.

Further, the orientation and design of the proposed building, running along an east-west axis, results in the majority of the windows being located along the north and south facades (with exception of the entry forecourt and lobby). As a result, windows overlook existing hospital buildings, hospital grounds or internal courtyards. These spaces will include substantial planting to act as a privacy barrier, as well as providing a favourable outlook. As such, no internal view loss or privacy issues will result from the new clinical building.

5.3.3 Light Spill

In accordance with the SEARs, consideration has been given to the impact of the proposed development on the conditions at the Observatory for astronomical observations, as outlined in the Dark Sky Planning Guideline 2016 and the *Orana Regional Environmental Plan No 1– Siding Spring* (deemed SEPP) (repealed as of August 2016). An External Lighting Assessment has been prepared by Jacobs and is included at **Appendix Q**.

The Dark Sky Planning Guideline 2016 informs development controls for land within Dubbo Regional Council LGA and within the Dark Sky Region (land located within 200 km of the Siding Spring Observatory) and as such applies to Dubbo Hospital. The Guide supports good lighting design within the Dark Sky Region so that lighting used in development does not impact on the effectiveness and successful functioning of the Observatory.

The Guideline outlines several good lighting design principles, which have been considered in the proposed development, as follows:

- Locating and directing external light sources below the horizontal plane to eliminate upward spill light;
- Use of architectural screening to limit the escape of internal light;
- Selection of shielded fittings;
- Inclusion of light sources to satisfactorily illuminate the development and surrounding areas for operation, safety and aesthetics however avoiding over lighting;
- Use of asymmetric beams; and
- Selection of non-reflective materials.

Final lighting structures and type will be confirmed during detailed design.

The Lighting Assessment outlines the development will result in a total light emission rate for Dubbo Hospital of 734,000 lumens. Clause 5.14(7) of Dubbo LEP 2011 states that the “consent authority must not (except with the concurrence of the Secretary) grant development consent to development on land is 18 kilometres or more from the Siding Spring Observatory if the consent authority considers that the development is likely to result in the emission of light of 1,000,000 lumens or more”. The total light emission does not exceed this figure. As such, using this as a guide it can be concluded that the probably effect of the development emission on the level of artificial sky glow at the Observatory is expected to be extremely minimal.

Given the nature of the development, lighting design, distance from the Observatory and overall emissions it can be concluded that the proposal will not have an adverse impact on sky glow.

5.4 Tree Removal

A total of 52 trees and shrubs are required to be removed from the development site. The Arborist Report prepared by Outback Tree Service Dubbo (**Appendix G**) assesses the condition and significance of these trees. Of the 52 trees:

- Two (Trees 25 and 26) are identified as having high significance; and
- Fifty (50) are identified as having low significance.

The two trees identified as having high significance are a Jacaranda and a Callistemon (Bottle Brush). The Jacaranda tree is a healthy, mature tree. The tree sits within the area required for a new foot path connecting the new car park to the hospital entrance. The tree is significant to the surrounding landscaping, however the proposed footpath would result in the root system becoming compacted, leading to a decline in the tree's health. The Bottle Brush is also a mature specimen and is in a row of trees of the same species. This tree also sits within the area required for a new footpath connecting the new car park to the hospital entrance. The tree is significant to the surrounding landscaping, however the footpath cannot wrap around the base as it is too small.

The proposed tree removal will be offset by a greater number of replacement tree plantings, as detailed in the Landscape Plan at **Appendix J**.

All trees identified for retention around the development site will be kept in good condition for the duration of the works in accordance with *AS4970 2009 Protection of Trees on Development Sites* and the recommendations outlined in the Arborist Report. The Transplant Method Statement will be followed for those trees which are proposed to be relocated within the site.

These recommendations have been included in the Mitigation Measures at **Section 7.0**.

5.5 Geotechnical Impacts

A Geotechnical Investigation has been undertaken by Douglas Partners and is included at **Appendix E**. As outlined in **Section 2.2.7**, the site is close to a boundary between gravel and ferruginous sandstone, and olivine basalt and dolerite and underlain by layers of fill, natural soil and bedrock.

Based on the results of the site investigations, the report provides advice on the geotechnical aspects of the proposed civil and structural design. These recommendations relate to foundations, pavements, stormwater infiltration, aggressivity and seismicity, and have been considered during the design of the building.

5.6 Contamination

5.6.1 Site Contamination

A Phase 1 Contamination Assessment has been prepared by Douglas Partners and is included at **Appendix D**. The Assessment considers the potential contamination of the site of the proposed works. The report was based on a desktop assessment of existing and historical information, photographs, licensed groundwater bore records and previous Phase 1 Contamination Assessments undertaken for the Stages 1 and 2 redevelopment in 2012.

Of the twenty-five (25) soil samples obtained and tested from the site (nineteen (19) from filing profile and six (6) from natural soils), all samples had concentrations of analysed contaminants below the health-based investigation levels and ecological-based investigation levels adopted for this project. The suite of soil contaminants was devised to test the presence of heavy metals, hydrocarbons, polychlorinated biphenyls and phenol which could be present due to the former and current activities on the site.

The Assessment notes asbestos was not observed in the boreholes and was not detected in the samples analysed in the laboratory. It should be noted, however, that the filling present on the site did contain building rubble and the buildings on the site (both current and former) are known to contain asbestos. The possibility of the presence of asbestos on the site should therefore not be discounted, particularly in the near-surface soils.

The Assessment concludes that the subject site is suitable for continued use in the hospital environment. Nonetheless, Douglas Partners recommend the incorporation of an Unexpected Finds Protocol in construction management documents. This is included as a Mitigation Measure at **Section 7.0**.

5.6.2 Groundwater

The site is identified as having moderate to high groundwater vulnerability (the lowest level of vulnerability) under DLEP 2011. The LEP requires the consent authority to consider:

- Whether or not the development (including any on-site storage or disposal of solid or liquid waste chemicals) will cause any groundwater contamination or any adverse effect on groundwater dependent ecosystems; and
- The cumulative impact (including the impact on nearby groundwater extraction for potable water supply or stock water supply) of the development and any other existing development on groundwater.

Groundwater conditions have been addressed within the Phase 1 Contamination Assessment (refer to **Appendix D**). Previous assessments and groundwater bore logs note the groundwater at Dubbo is relatively deep (i.e. >5m depth). Additionally, the Geotechnical Assessment (refer to **Appendix E**) confirms free groundwater was not observed in any of the previous or current boreholes at the time field work was undertaken. As such, the quality of groundwater should not hinder development on the surface of the site. On this basis, the Assessment confirms that any groundwater impacts associated with the proposed development would be very low and appropriate mitigation measures will be established to manage groundwater seepage throughout the construction process.

5.6.3 Hazardous Materials

Douglas Partners has prepared a Hazardous Building Materials Assessment (refer to **Appendix P**) which describes the findings of asbestos-containing materials (ACM) and other hazardous building materials (HBM) assessments carried out for nine (9) buildings, including S Block, the George Hatch Building, Myall Street Doctors Residence and Playmates childcare centre. The demolition and refurbishment of these buildings form part of the Stage 4 of works.

The assessment identified the presence of asbestos and synthetic mineral fibre (SMF) in the buildings. Friable asbestos was also identified, which will be removed during demolition and refurbishment in accordance with the requirements of WorkCover NSW and the National Occupational Health and Safety Commission's *Code of Practice for the Safe Removal of Asbestos 2nd Edition*. The SMF observed was in relatively good condition.

Due to the age of the buildings, the report recommends that all paint be assumed to be lead-based, however it is noted that lead paint was specifically found on the window frames of the George Hatch Building, and appropriate precautions will be adopted where there is proposed removal. Additionally, no Polychlorinated Biphenyls (PCBs) are understood to exist in any light fittings within the buildings, or at the hospital in general.

The report provides the following recommendations:

- All occurrences of asbestos are recommended to be labelled in accordance with statutory requirements, except where labelling would cause undue concern to visiting members of the public;
- The effective isolation of all occurrences of friable asbestos be checked and upgraded where necessary;
- The previous Asbestos Management Plan (2003) be updated, as it is now out of date;
- Any occurrences of external paintwork of a similar age to sampled from the George Hatch Building should be tested for the presence of lead; and
- External timber work on the George Hatch Building covered with lead-containing paint should be carefully removed, or otherwise managed to reduce any risk from dust-borne lead.

These recommendations have been incorporated into the Mitigation Measures in **Section 7.0**.

5.7 European Heritage and Archaeology

5.7.1 Heritage Impact

The whole of the Dubbo Hospital site is listed as a local heritage item under Dubbo LEP 2011, by virtue of the 'two storey brick hospital building' on the site's Myall Street frontage. However, the site and the immediate area do not include any places currently listed on the National Heritage List (NHL), the Commonwealth Heritage List (CHL) or the Register of the National Estate (RNE). The site is not located within or adjoining a heritage conservation area.

A Heritage Impact Statement (HIS) has been prepared by Adaptive Architects and is included at **Appendix R**. The Statement assesses the potential heritage impacts as a result of the proposed works, specifically the demolition of the George Hatch Building, which is considered to be of moderate significance. The George Hatch Building (also known as the 1936 Nurses Building) forms part of the Myall Street Group, the hospital's heritage precinct. The Building is located within the designated curtilage zone which extends across the forecourt to Myall Street, and provides 6 metres clear at the rear of the buildings. **Figure 12** shows the heritage curtilage zone and significant fabric.

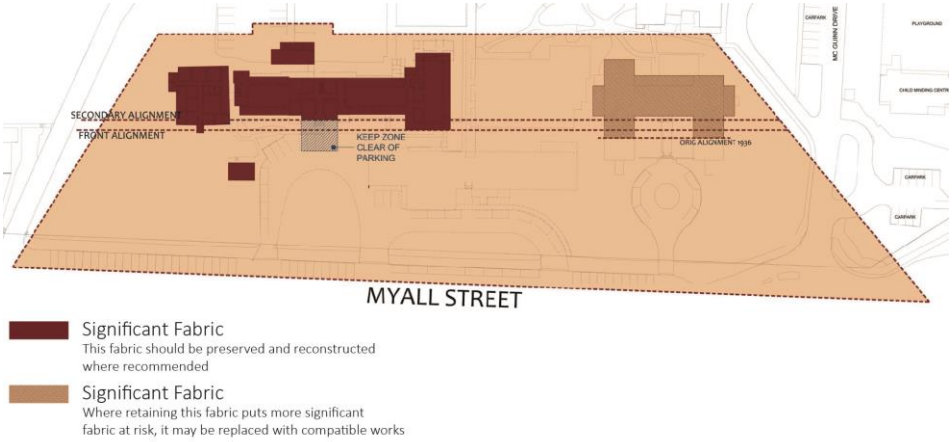

Figure 12 – Dubbo Health Service heritage curtilage zone and significant fabric
Source: Adaptive Architects

The proposed demolition of the George Hatch Building will remove the largest remaining building from the Cobden Parkes era, and as such will have a significant impact on the heritage fabric and aesthetic setting of the heritage precinct. Despite this, the HIS concludes that the demolition of the George Hatch Building is reasonable and unavoidable for the following reasons:

- The design of the Emergency Department requires the provision of separate entries to cater for ambulance access. The George Hatch Building in its current position inhibits the dedicated ambulance traffic flow to the Emergency Department. To ensure feasibility of the new building the removal of George Hatch Building is required;
- The proposed building elevation and ambulance entry has been designed with respect to the heritage zone through the use of timber shading structures which acknowledge the colour palette of the original buildings;
- The new clinical building will result in only a minor encroachment on the heritage curtilage zone;
- The proposed soft landscaping area which replaces the George Hatch Building is not considered to detract from the core heritage block;
- The core views of the heritage precinct from Myall Street will not be affected by the proposal; and
- The remainder of the works are remote from the heritage zone and do not impact on heritage fabric.
- Demolition will allow development to occur centrally within the site in close proximity to the Myall Street heritage block and will aid in ongoing preservation of the highly significant heritage core;
- Ensuring the hospital develops in proximity to the heritage block ensures that the buildings continue to be suitably occupied and operational, resulting in ongoing management and maintenance;

Figure 13 shows the ground plane of the proposed new building in relation to the curtilage zone and heritage fabric.

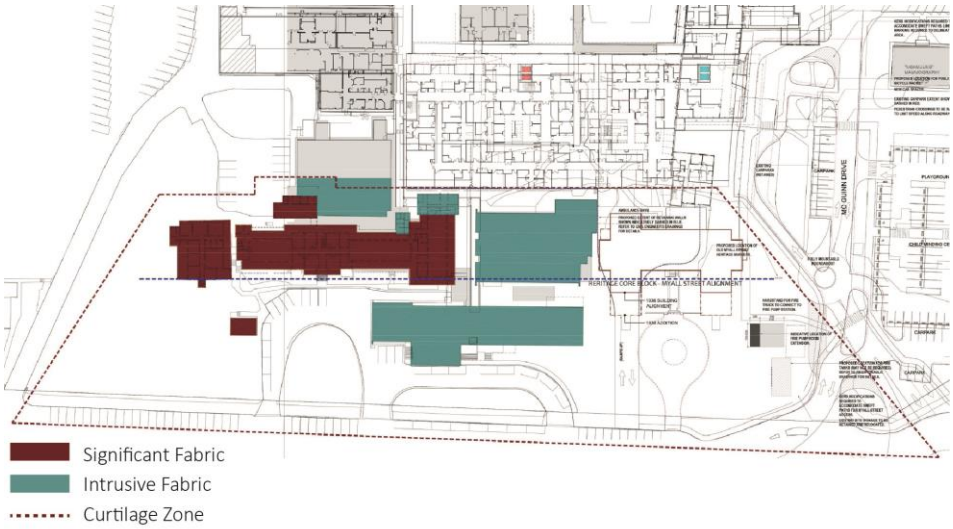

Figure 13 – Proposed ground plane overlaid with curtilage zone
Source: Adaptive Architects

The HIS provides recommendations to mitigate the heritage impacts resulting from the demolition of the George Hatch Building and to ensure ongoing preservation and management of remaining heritage items. These include:

- A photographic and measured drawing archive record will be undertaken;
- An Interpretation Plan will be prepared in accordance with NSW Heritage Office guidelines;

- Construction of the banded brick and rendered markers included in the proposed landscaping works to mark the alignment of the former George Hatch Building; and
- Undertaking ongoing refurbishment works of the existing heritage group and promote new works within the southern portion of the hospital campus to ensure ongoing compatible uses for the core heritage block.

These measures have been incorporated into the Mitigation Measures at **Section 7.0**.

5.7.2 Archaeology

European Archaeology

A Non-Aboriginal Archaeological Assessment was prepared by Biosis Research for redevelopment Stages 1 and 2 (2012). It notes that Dubbo Hospital has undergone continuous changes and additions since the mid-1800s, and as a result there are areas of potential archaeological resources located within the hospital site. The report identifies the Stage 4 development site as being located partially within an area of archaeological sensitivity. This is a result of the site's proximity to the original hospital footprint and heritage buildings. As such, it is recommended that construction management documents include measures to manage any unexpected finds. This is included as a Mitigation Measure at **Section 7.0**.

Aboriginal Archaeology

An Aboriginal Archaeological Heritage Assessment was prepared by Biosis Research for redevelopment Stages 1 and 2 (2012). The assessment was carried out in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*.
No Aboriginal sites or objects have been recorded within the site of the proposed works or within the Dubbo Hospital site. Notwithstanding this, a search of the Aboriginal Heritage Information Management System (AHIMS) has identified eight (8) sites within a 2 kilometre radius of the subject site, of which the predominant type is 'Open Camp Sites'.

The report notes that the hospital site has been disturbed over time and is subsequently of low archaeological potential. The northern section of the site, which is well outside of the proposed works area, is considered to have high archaeological potential, and should be avoided during the period of construction. However, the location of the development site is defined as having low archaeological potential and being outside the area of impact. Therefore, no further investigation is required prior to development provided that the works are limited to the areas described in the description of the development.

Should works or construction activities extend to the northern-most portion of the site, further detailed archaeological investigation will be required. Should an item of archaeological significance be found during excavation or construction, work would cease immediately, the site would be closed and the Office of Environment and Heritage would be informed. The Mitigation Measures includes this action.

5.8 Traffic, Access and Parking Impacts

A Transport Assessment has been prepared by GTA Consultants and is included at **Appendix H**. The Assessment outlines the existing road network and arrangements, the proposed works and provides an assessment of the traffic and parking implications associated with the Stage 4 works.

5.8.1 Traffic Generation

Traffic surveys from the site have been used to calculate trip generation rates for the hospital. In total, it is estimated that the hospital currently generates up to 350 two-way vehicles trips during the weekday afternoon peak hour ending at 5:00pm. Traffic movements are primarily concentrated to and from the main hospital access and public interface, via the roundabout controlled intersection of Cobbora Road and Myall Street.

Intersection surveying and modelling indicates the intersection currently operates well, with minimal queues and delays on all approaches.

Operational Traffic

In order to estimate the future site traffic generation upon completion of the Stage 4 redevelopment, consideration has been given to design rates sourced from the RMS Guide to Traffic Generating Development, existing traffic generation, estimated staff and visitor numbers and the proposed increase in GFA and car parking. A summary of the traffic generation estimates from the above sources is outlined in **Table 7**.

Table 7 – Summary of traffic generation estimates

Methodology	AM Peak	PM Peak	PM Peak
	Anticipated Increase in Traffic		Anticipated Future Generation
RMS Private Hospital Rates	+27	+68	418
Increase in GFA	+65	+65	415
Increase in staff	+75	+75	438
Increase in Parking Provision (107 spaces)	+60	+60	410

The data indicates that the proposal could be expected to generate between 65 and 77 additional vehicle movements in any peak hour. Based on the hospital currently generating 350 vehicle movements in the PM peak hour, the redevelopment would likely result in a total of approximately 425 vehicle movements. A conservative approach has been adopted by assuming an additional traffic generation of 90 vehicle movements. It is assumed that all future generated traffic would continue to enter and exit the site via the primary access at Myall Street.

Based on the above, the traffic generated by the Stage 4 development is not expected to compromise the safety or function of the surrounding road network, including the Cobbora Road / Myall Street roundabout.

Construction Traffic

In accordance with the recommendations of the Transport Assessment and Preliminary Construction Management Plan prepared by TSA Management (refer to **Appendix O**) construction traffic will be restricted to the State and Regional Road network, where possible.

Traffic generated by the construction workers will include construction worker light vehicles, as well as heavy vehicles for periodic delivery and removal of materials. Likely construction vehicle routes have been developed with the aim of providing the shortest distances to / from the State and Regional Road network, whilst minimising the impact of construction traffic on the local streets in the immediate vicinity of the site. Access to this site is anticipated to be primarily via Cobbora Road (Golden Highway) to / from the southern construction sites, and Bourke Street (Newell Highway) to make use of River Street and Moran Drive north of the hospital. This is primarily to ensure that the impacts on the existing hospital uses are kept to a minimum, including avoiding use of Myall Street directly to / from the roundabout whenever possible.

All works within the site and associated vehicle movements will be restricted to the permitted working hours of the site. Detailed site access will be set out in the detailed Construction Traffic Management Plan following approval. Additionally, any works on the weekend would not present significant traffic related impacts, with no know specific restrictions limiting access during the hours specified.

Overall the construction works are not expected to significantly impact the surrounding road network, intersection operation external to the site or access to and from the site.

5.8.2 Parking and Loading Facilities

Operational Car Parking

Car parking requirements have been calculated based on Dubbo Development Control Plan 2013 requirements, the increased GFA and increased staffing and visitor levels. A recommended 105 car parking spaces are required to be provided as part of the Stage 4 redevelopment works. This requirement has been met, with the provision of 107 spaces within the proposed eastern at-grade car park and additional angled spaces along McGuinn Drive. As such, the car parking required as a result of increased development can be catered for on-site and will therefore not adversely impact on surrounding areas.

Disabled car parking has been provided in accordance with provisions of the BCA rate, which requires the provision of one space for every 100 non-outpatient car parking spaces, and one space for every outpatient car parking spaces (up to 1,000 total spaces). It is noted that the overall provision of disabled parking within Dubbo Hospital generally exceeds this, however to ensure a high level of accessibility is maintained, the report recommends that a minimum of four (4) additional disabled car spaces are provided.

Additionally, the car park layout has be reviewed against the requirements of the relevant Australian/ New Zealand standards. All circulation aisle widths are a minimum 5.8m wide with car space dimensions 2.5 metres wide and 5.4 metres long. Disabled spaces are a minimum 2.4 metres wide and 5.4 metres long. The main entrance set-down / pick-up area has been designed to maximise capacity while maintaining a safe environment for all users. This includes localised narrowing at the pedestrian crossing and bollards to delineate the vehicle and pedestrian areas. The main entry has been designed to provide access to coaches and the internal roundabout is fully mountable.

Construction Car Parking

Construction workers will be instructed not to park within hospital grounds or on adjoining streets. This includes Myall Street. Designated parking will be provided immediately north of the hospital and to the rear of the School of Rural Health. Access to the construction parking will be via Moran Drive and River Street only. The location of construction car parking is shown in the Architectural Drawings included at **Appendix B**.

Bicycle Parking

The existing bicycle parking facility provided on-site, adjacent to the Oncology Building, provides an adequate quantum of bicycle parking for the current hospital use. The Dubbo Development Control Plan 2013 does not specify bicycle parking requirements for hospitals. The NSW Government Planning *Guidelines for Walking and Cycling* indicate a requirement of total bicycle parking provision to be 5%-10% of staff. Based on a daytime peak of 400 staff that would be able to potentially ride to work (based on the staff travel model and travel distances surveys), 20 to 40 space would be required. However, staff surveys have shown that less than 1% of staff chose to cycle as a travel mode to and from the hospital. A total of 32 spaces are currently provided on-site. These spaces are located in a secure area which is monitored by CCTV.

In addition to maintaining the existing staff bicycle parking on-site, an additional provision is made for visitors (in the order of eight (8) bicycle spaces). These will be located in close proximity to the main pedestrian entrance.

It is therefore concluded that together with existing demand for such facilities and the known staff travel mode choice, the current bicycle storage provided is adequate and allows for future growth in demand should travel modes change over time.

End-of-Trip Facilities

The existing and proposed end-of-trip facilities provided within Dubbo Hospital include a total of six showers and associated lockers for use by staff. Whilst this falls marginally below the required eight showers, they are considered an appropriate quantum having

regard to the level of use by staff. They also allow for some expansion of use by both bicycle users and those exercising at lunchtime.

Overall, having regard to the location of Dubbo Hospital, staff travel distances and existing travel mode share, it is concluded that the provision of end-of-trip facilities will adequately accommodate the new development.

5.8.3 Access

Emergency Services

Access to the Emergency Department will be clearly defined and well separated from the general public entry. The design of the entry is appropriate for secure and dedicated emergency vehicle access. Ambulances are able to enter via Myall Street and reverse into the dedicated ambulance bays that have been designed for bariatric ambulance and in strict accordance with Ambulance NSW specifications. Swept paths are outlined the Transport Assessment (refer to **Appendix H**). Additional capacity for other emergency services (Police etc.) is also accounted for. As such, access provisions for emergency services have been adequately catered for.

Additionally, during construction the appointed Head Contractor will be required to ensure that there is no disruption to emergency vehicles on public and internal roads. Any potential minor impacts on emergency access associated with truck movements will be effectively managed throughout the works. Use of Myall Street and the roundabout at Cobborra Road will be minimised wherever possible to limit interaction with emergency services.

Private Vehicle Access

The Stage 4 redevelopment includes the reconfiguration of the Myall Street entry to significantly improve user experience and the way the hospital interfaces with the surrounding network. The layout will better delineate McGuinn Drive as the primary entrance to the hospital and provide for a direct vehicle link to the Emergency Department, as well as the main existing car park to the north. The design will provide a larger and more accessible arrivals set-down and pick-up area, which will accommodate coaches and cars. The proposed development will result in enhanced private vehicle access.

Pedestrian and Cyclist Access

The Stage 4 redevelopment will concentrate pedestrian activity to the eastern portion of the hospital and in the location of the current Emergency Department and along McGuinn Drive to and from the existing and proposed at-grade car parking areas. As such, provisions for pedestrian and cycle connectivity are largely focussed on this area, seamlessly integrating these with the redevelopment and car parking provided as part of existing facilities. Connections are provided to the Bora Road shared path that runs along the frontage of Teresa Maliphant Park, linking the hospital to the west towards Dubbo CBD.

The report includes further recommendations to improve pedestrian connectivity and safety during operation including lighting and way-finding signage. Additionally, during construction, pedestrian movements throughout the site will be maintained as much as possible. In the case one is required an alternative pedestrian route will be provided.

5.9 Noise and Vibration

An Acoustic Report has been prepared by Wood and Grieve Engineers (refer to **Appendix S**). The Report considers the impact of noise emissions from mechanical services and road traffic during the operation of the proposal, as well as the construction noise and vibration impacts associated with the proposed development.

The existing acoustic environment has been determined using a combination of attended and unattended noise measurements. Based on the background and ambient noise monitoring carried out at the nearest affected residential locations, Wood and

Grieve Engineers have developed a set of project specific noise criteria (refer to Section 5 and 6 of the Acoustic Report) which form the basis of the assessment.

5.9.1 Construction Noise and Vibration Impacts

The construction program has yet to be fully established as the proposal is still at the planning phase of the development, and so the indicative assessment of noise emissions is based on typical construction activities.

Based on noise emissions from standard construction equipment, jackhammers and piling rigs would be the loudest activities during the construction phase. The EPA Interim Construction Noise Guideline recommends a noise level of 10dB(A) above the background for residential receivers.

With respect to vibration, Wood and Grieve Engineers note that vibration associated with construction is dependent on a number of variables including the types of machinery used, the proximity to the nearby receivers as well as the ground type. Due to the lack of information regarding these factors at this stage of the development, an accurate calculation of the vibration impacts cannot be predicted. Notwithstanding this, the Report outlines safe working distances for vibration impacts associated with various types of machinery that may be used during the construction process.

A detailed Construction Noise and Vibration Management Plan (CNVMP) will be prepared prior to construction in order to manage construction noise and vibration, as well as to perform high level predictions to avoid non-compliances with the vibration criteria. In addition, the use of noise and vibration monitoring during construction will be essential in order to ascertain the extent of vibration and noise generated in and around the site. The CNVMP will incorporate amelioration measures to minimise the transmission of vibration around the site, including:

- Monitoring vibration levels using attended / un-attended methods during construction in order to manage potential excessive vibration;
- Managing the construction program so as to minimise heavy machinery operating concurrently;
- Preparing dilapidation reports on adjacent structures and monitoring the effects; and
- As far as practical, locating heavy machinery away from nearby sensitive receivers.

5.9.2 Operational Noise Impacts

Mechanical Plant and Equipment

A preliminary assessment of external noise emissions has been conducted for mechanical services to address compliance with the necessary criteria. In order to comply with the recommended limiting aggregate sound power levels, Wood and Grieve Engineers have put forward a number of recommendations which will be considered during detailed design. The recommendations include:

- Plant room walls should achieve a minimum sound insulation performance of 45dB - 50dB Rw;
- If airflow paths are required to or from the outside (such as outside air, exhaust air, relief air, etc), these paths should be fully ducted and include a minimum 50mm thick internal insulation and / or include acoustic louvres;
- All plant room walls and roofs should be internally lined with insulation, which in conjunction with insulation facing, should achieve a minimum noise reduction coefficient (NRC) rating of 0.8;
- All outside, relief or exhaust air ductwork connecting to external discharges or intakes should be internally lined with minimum 50 mm thick insulation;
- Variable speed drives should be implemented whenever possible; and

- The number of operational plant items should be reduced between 6pm and 7am.

Noise Impact from Local Roads

Traffic noise was assessed in accordance with the *NSW Road Noise Policy*. Based on the traffic generation estimates put forward in GTA Consultants' Transport Assessment, Wood and Grieve Engineers confirm that the traffic noise will not result in an adverse impact to the surrounding residential receivers, and is expected to comply with the criteria established in the *NSW Road Noise Policy*.

The recommendations from the Acoustic Report have been included in the Mitigation Measures at **Section 7.0**.

5.10 Aviation Impacts

A Helicopter Landing Site Survey was prepared by AviPro to address the aviation impacts of Stage 1 and 2 redevelopment works. This survey has formed the basis for assessment of the proposed Stage 4 redevelopment works. It is noted that the Stage 4 development site is located over 100 metres from the hospital's helipad, and as such will have no substantial impact on the use of the helicopter landing site.

An Obstacle Limitation Surface (OLS) is identified for Dubbo Airport to ensure flight path and navigation clearance for air traffic. The maximum height of development at Dubbo Hospital under the OLS is between 325 AHD and 340 AHD. Based on the approximate typical surface level at the hospital of 276.5 metres AHD, the height limit of buildings before penetration of the OLS would be in the order of 63 metres. Given the low-rise character of the hospital campus and the proposed development, it is concluded that the OLS does not result in foreseeable restriction upon development and does not require CASA approval.

5.11 BCA and Accessibility

5.11.1 Building Code of Australia

A Building Code of Australia (BCA) Capability Statement has been prepared by Blackett Maguire + Goldsmith (BM+G) and is included at **Appendix T**. The statement concludes that the proposed development is capable of satisfying the requirements of the relevant Deemed-to-Satisfy (DtS) provisions of the BCA, subject to the inclusion of the report's recommendations as part of detailed design development and prior to issue of the Section 109R Crown Certificate. It is considered that minor non-compliances can be addressed without giving rise to any inconsistencies with SSD Application.

5.11.2 Fire Engineering

A Fire Engineering Capability Statement prepared by Innova Services is included at **Appendix U.** This statement verifies compliance with the DtS provisions and performance requirements of the BCA will result in the development and justification of Performance Based Alternative Solutions prepared by suitably accredited consultants. The report outlines several fire safety measures to be incorporated into the design to satisfy the requirements of the BCA.

5.11.3 Access

An Access Statement has been prepared by iAccess Consultants and is included at **Appendix V**. The Statement considers the proposed works and their compliance with the relevant access provisions of the Disability (Access to Premises) Standard 2010 and the Accessibility Standards identified in the Australian Standards. It is concluded that based on the initial architectural drawings, the proposal complies or is capable of compliance with the relevant requirements subject to implementation of the recommendations and notations contained in the report prior to be addressed prior to the issue of a Section 109R Crown Certificate.

The recommendations from the BCA and Access Statements have been included in the Mitigation Measures at **Section 7.0**.

5.12 Crime Prevention Through Environmental Design

The Crime Prevention Through Environmental Design Principles (CPTED) guidelines under Section 79C of the EP&A Act 1979 are based on key principles for designing buildings and places that are safe and secure and which deter criminal behaviour.

A CPTED Assessment has been undertaken by HDR Rice Daubney and is included at **Appendix B**. The Assessment outlines the key CPTED principles which have been embodied in the design of the proposed clinical building to provide a safe and secure environment for staff, patients, contractors and visitors. The key CPTED principles are addressed below.

Principle 1 – Natural Surveillance

As noted in *Crime Prevention and the Assessment of Development Applications*, good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would-be offenders are often deterred from committing crime in areas with high levels of surveillance. In accordance with this principle, the development provides surveillance.

The development has been designed to facilitate and promote passive surveillance over adjacent buildings, roads and spaces. By designing and encouraging a mixture of uses and users at different times of the day and night the surrounding area is activated. Unimpeded site lines between key spaces and destinations avoid blind spots where possible and places to hide. Additionally, the Landscape Plans include tree species with a high canopy within the car park to provide good shade for the pedestrian whilst ensuring good visibility and low shrub planting around the building entry.

In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

- Provide adequate lighting to ensure safe use and appropriate surveillance of the space at night;
- Appropriate signage should reinforce the building's main entrance;
- Use clear signage in relation to pedestrian access and way-finding through the pedestrian areas and car park; and
- Utilise strategically placed capable guardians, such as reception staff, to provide natural surveillance to the building entries.

Principle 2 – Access Control

Access controls use physical and symbolic barriers to attract, channel or restrict the movement of pedestrians. As noted in *Crime Prevention and the Assessment of Development Applications*, effective access controls make it clear where people are permitted to go or not go, and make it difficult for potential offenders to reach and victimise people and damage property.

The proposed development incorporates natural barriers such as roadways and landscaping as well as physical barriers such as entryways. The building has a reduced and controlled number of public entries and exits into and out of the main building. A security desk is provided with a 24-hour security presence to be located within the Emergency Department. Whilst the hospital is publically accessible after-hours electronic access control and intercom stations will be provided at main entry points to allow access to authorised personnel only.

In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

- Use symbolic barriers, such as coloured or different paving materials to clearly define the public areas and routes around the building;
- Ensure all windows are lockable from the inside; and
- Ensure an adequate level of security is provided to staff and patients within the hospital.

Principle 3 – Territorial Reinforcement

Territorial reinforcement refers to the clear identification of public spaces, and the creation of a sense of community ownership over such spaces. As noted in the *Crime Prevention and the Assessment of Development Applications* people feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

The development incorporates distinguishable zones which provide ownerships between spaces through the use of formal devices such as fences, screens or signage. Additionally, landscape elements such as planting, changes or materials and levels are also proposed to define public and private areas. The building design attempts to avoid ambiguity by not creating too many choices in circulation and connections between different spaces.

In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

- Continue after hours management measures such as regular security patrols; and
- Ensure building entrances are either locked or well monitored after hours to increase the territorial reinforcement of the building.

Principle 4 – Activity and Space Management

Space management refers to providing attractive, well maintained and well used spaces. As noted in *Crime Prevention and the Assessment of Development Applications*, space management strategies include site cleanliness, rapid repair of vandalism and graffiti and the removal of damaged physical elements.
The building is designed to have an engaged perimeter with no hidden areas on the ground plane or concealed service docks or similar for intruders to hide. A mix of retail and café outlets are proposed near the main entrance and front of house.

Durable and high-quality materials are proposed which will ensure that minimal maintenance is required for the proposed development. The use of durable façade treatments will also discourage graffiti or vandalism of the building facades. The continued maintenance of the building will ensure that it does not become degraded and will ensure that vandalism of the property is strongly discouraged.

In addition, further strategies can be adopted to further improve the safety and security of the development. Including:

- Ensure graffiti is rapidly removed and all public spaces are kept clean and tidy.

Principle 5 – Environmental Maintenance

Environmental maintenance refers to providing an attractive, well maintained and well used environment. As noted in *Crime Prevention and the Assessment of Development Applications*, an area's image can impact on feelings of safety and danger.

Maintenance of the building and surrounding environment will be overseen by Dubbo Hospital staff and building management and maintenance. Development of the site allows for further environmental improvements to be made to the hospital site particularly regarding to primary entry road off Myall Street.

Principle 6 – Lighting and Technical Supervision

As noted in *Crime Prevention and the Assessment of Development Applications*, effective lighting can reduce fear, increase community activity, improve visibility and increase the likelihood that offenders will be detected and apprehended.

The proposed development will include the installation of new lighting and the upgrade of existing lighting to Australian Standards, specifically the objectives for crime and fear reduction as outlined in Australian Lighting Standard AS/NZ 1158 for public streets, car parks and pedestrian areas. High quality lighting throughout all publicly accessible areas should be adequate to permit facial recognition, informal surveillance and reduce the threat of predatory crime. As discussed in **Section 3.8.3** the development will result in the provision of new CCTV, IDS and FDS systems for the new building and surrounding area.

5.13 Water Cycle Management

5.13.1 Stormwater

A Stormwater Management Report has been prepared by Enstruct Group and is included at **Appendix I**. The Report assesses the impact of the proposed works on the existing stormwater system and as outlined in **Section 3.8.6**, provides detail on the required augmentation of existing services in order to accommodate the intended change and ensure continuity of stormwater drainage to affected upstream areas.

As part of the Stages 1 and 2 redevelopment, upgrades occurred to the existing drainage and detention basin in the north western part of the hospital to accommodate the increased discharge attenuation from an increase in impervious surfaces in the northern catchment. At present there are five drainage catchments directed to separate pipe outlet locations, including two detention storage tanks. The proposed Stage 4 redevelopment works will result in an increased impervious surface area. To accommodate this it is proposed to redefine the catchment areas as shown in Appendix B of the Stormwater Management Report. The eastern catchment has been increased from 21,966m^2 to 36,143m^2.

To manage an increased catchment footprint, increase in impervious surface area and to assist with the existing capacity concerns of the Myall Street stormwater network, the proposed works include the provision of a new detention tank with restricted pipe flows being redirected in a westerly direction towards a new stormwater main along Myall Street. The proposed stormwater system and detention tank volume of 300m^3 is calculated to be adequate to reduce the proposed 20 year storm runoff down to existing 5 year storm runoff values in accordance with Dubbo City Council Development Control Plan 2013.

As such, it is considered that the proposed works are capable of accommodating the increased runoff as a result of the development and will not result in adverse effects on existing stormwater systems upstream or downstream.

5.13.2 Water and Wastewater Management

In order to reduce the demand on local water and wastewater infrastructure, and to reduce the environmental impact of increased water use and water flows generated from the development, the proposed works have been designed to consider multiple potable water demand reduction strategies. These are outlined in the Stormwater Management Report prepared by Enstruct Group (refer to **Appendix I**) and the Integrated Water Management Plan prepared by ACOR Consultants (refer to **Appendix L**). The proposed strategies include:

- A stormwater treatment device to capture pollutants such as oil and grease from the car parks;
- Conserving water usage within buildings by installing water efficient fixtures and fittings in accordance with Water Efficiency Labelling and Standards (WELS);

- Installation of pulse water meters for all major uses of water and data collection and water leak detection; and
- Selection of drought tolerant landscape elements for low irrigation.

It is noted that rain water from the roof area will not be collected, stored and re-used. Roof water will drain through a series of rainwater outlets and eaves gutter systems into the proposed stormwater drainage system.

Additionally, in consultation with Dubbo Regional Council the stormwater management proposal is required to address water quality issues related to car park discharge and gross pollutants conveyed by stormwater runoff. The proposal has addressed these requirements through the inclusion of temporary sediment control and permanent stormwater treatment measures including pollutant capture. Both the temporary sediment control and permanent stormwater treatment measures will serve to improve the quality of untreated runoff currently discharging from the site and are considered to be consistent with the objectives of minimising impact to the surrounding area.

5.13.3 Water Sensitive Urban Design

Water Sensitive Urban Design (WSUD) measures shall be incorporated into the design of the proposed development, implemented to enrich the quality of intermediate landscape spaces and to provide control to stormwater run-off. The proposed WSUD measures aim to achieve the following objectives:

- Improve stormwater quality prior to discharge; and
- Highlight WSUD design elements within the planting and circulation strategy for the site.

The Landscape Report and Drawings prepared by 360 Degrees (refer to **Appendix J**) document potential water treatment measures including bio-retention swales located within the proposed car park, rain gardens, bio-retention ponds and rip rap swales.

5.13.4 Flooding

A small portion of the western edge of the Dubbo Health Service is identified to be within the mapped Probable Maximum Flood (PMF) area. No areas within the development site are identified as being flood prone under Dubbo LEP 2011.

As part of the Stages 1 and 2 redevelopment works, Enstruct Group assessed the impact of flooding on the site (refer to **Appendix I**). Reference was made to the Dubbo City Council Flood Prone Areas Report G2.2, which noted the 1 in 100 year flood level of 262.30 metres and a Probable Maximum Flood (PMF) level of 266 metres at Erskine Street, Dubbo. The levels of the development site are in the vicinity of RL275.00 metres, which is well above the PMF. The area is not identified as flood prone and is above the identified levels, therefore no flood impacts are anticipated on the proposed development.

Additionally, provided the discharge flows from the development are not increased, it is concluded no adverse effects will be caused by the development on the existing flood levels upstream or downstream of the site.

5.14 Ecologically Sustainable Development

The environmental performance of the development has been assessed by using the Health Infrastructure Engineering Service Guidelines, Clause 7(4) of Schedule 2 of the EP&A Regulations, Environmental Performance Guide for buildings and Section J of the Building Code of Australia. The initiatives and targets relate to the following aspects of the proposed development:

- Energy efficient electrical services;
- Mechanical services;

- Hydraulic services;
- Improved indoor environmental quality;
- Extended life through inherent flexibility and 'future-proofing';
- Electrical services with efficient lighting, lighting control and energy metering;
- Structural design; and
- Initiatives during construction and operation.

The key ESD features implemented in the proposed development include:

- Indoor Environmental Quality – maximising natural daylight, achieving a high level of thermal comfort, utilising materials with low volatile organic compounds;
- Energy Efficiency – Conservation, use of energy efficient HVAC systems and lighting fixtures and appliances;
- Building Materials – Reuse, recycle and possess low embodied energy and use of materials that are manufactured using sustainable methods;
- Water Resources – water flow monitoring and use of WELs rated fixtures and fittings;
- Stormwater – incorporation of WSUD strategies to improve stormwater quality, detention systems and gross pollutant traps and infiltration basins; and
- Waste minimisation – during construction and operation, waste management strategies will be implemented to reduce the amount of waste going to landfill.

Furthermore, the proposed development is consistent with the five accepted principles of ESD as described below.

Precautionary Principle

If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

The proposal is supported by environmental studies and technical reports which conclude that there are no environmental constraints that preclude the development of the site in accordance with the proposal, subject to appropriate management in future planning, design, construction and operational stages.

It is considered that through adherence to the Mitigation Measures outlined in **Section 7.0** the proposal will not result in serious impact to the environment.

Integration Principle

The integration principle holds that decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations. The design of the building has been developed to integrate the short and long term effects of economic, environmental and social considerations for the hospital.

Intergenerational Equity

The principle of inter-generational equity holds that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The proposal has been developed to directly benefit current and future generations in that it contributes to the acute health services of the community without causing significant impact to the environment.

Biological Diversity

Under the biodiversity principle, the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making. As outlined in the SEARs 'biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment (FBA) (OEH 2014), unless otherwise agreed by the OEH'.

OzArk Environmental and Heritage Management Pty Ltd have conducted a preliminary biodiversity assessment of the proposal (refer to **Appendix X**). The assessment concluded that the development site does not contain any native vegetation communities, threatened or vulnerable species and as such does warrant comprehensive assessment under the FBA. No further ecological assessment is required.

In light of the above and in consultation with the DPE, HI has requested an exemption to the ecological assessment from the Office Environment Heritage (OEH). The request for exemption letter has been provided under separate cover.

It is noted however that construction and ongoing operations of the facility will be managed in accordance with the Mitigation Measures, ensuring no significant indirect impacts on the surrounding environment.

Valuation and Pricing of Environmental Resources

Under this principle, improved valuation, pricing and incentive mechanisms as well as environmental factors should be included in the valuation of assets and services. The cost of infrastructure and other design measures to ensure an appropriate level of environmental performance has been incorporated into the cost of development. In addition, the level of waste will be appropriately managed during the construction and the operation of the development. These measures have also been incorporated into the cost of development.

5.15 Waste Management

5.15.1 Construction and Operational Waste Management

Waste Management Plan (WMP) has been prepared by TSA Management and is included at **Appendix N**. As detailed at **Section 3.9**, the Plan provides an assessment of potential waste impacts of the construction and operation of the proposed Stage 4 redevelopment works. The WMP identifies the potential types and volumes of waste that are expected to be generated in the construction and operation of, and suggests systems to be implemented to appropriately manage this waste generation.

The recommendations from the WMP have been included in the Mitigation Measures at **Section 7.0**.

5.15.2 Hazardous Waste

Douglas Partners has prepared a Preliminary Hazards Analysis (PHA) in accordance with the requirements of *State Environmental Planning Policy 22 – Hazardous and Offensive Development* (SEPP 33) and is included at **Appendix P**. In accordance with SEPP 33 the assessment evaluates the hazardous materials during the operation of the new clinical building. Hazardous waste generated by a hospital may include clinical, cyotoxic, pharmaceutical, radioactive, chemical, organic, liquid and general waste streams.

The assessment involved the identification of hazardous activities associated with the use of the development. These include:

- Exposure to infectious diseases/cytotoxic waste where appropriate controls are not in place;
- Exposure to infectious diseases/cytotoxic waste if the storage area was to catch fire;

- Exposure to infectious diseases/cytotoxic waste in the case of unauthorised entry into storage area;
- Exposure to infectious diseases/cytotoxic waste during transportation to disposal facility; and
- Exposure to the unauthorised use of pharmaceutical materials.

The likely wastes generated by services performed by the new clinical building are primarily related to clinical and pharmaceutical waste. The assessment notes that the proposal will not result in any new hazardous activities being undertaken on the site.

The PHA provides a hazard risk analysis, including measures to mitigate potential risks from the handling and exposure to hazards. The PHA concludes that there is a low risk associated with the proposal. Management measures include:

- The use of secure and lockable bins;
- Frequent fire inspections on storage areas;
- Contractors are to be appropriately trained;
- Undertake an external audit process annually;
- The hospital must account for all pharmaceuticals used.

It is noted the existing hospital operates under strict compliance with NSW Health Guidelines that are audited annually. The Analysis also notes that NSW Health is responsible for coordinating with other government departments to ensure that the collection, storage, transport and disposal of clinical waste is undertaken in accordance with current industry standards.

The report concludes that, as the proposed works will not result in any additional hazardous activities on the site, the risk to the hospital community is expected to generally remain unchanged.

The recommendations made in the report have been included in the Mitigation Measures at **Section 7.0**.

5.16 Structural Certification

Structural Certification has been prepared by Enstruct Group and is included at **Appendix W**. The statement confirms the structural engineering design for the proposed works will meet the requirements of the National Construction Code (NCC) and the relevant Australian Standards including:

- AS/NZS 1170.0 Structural Design Actions Part 0: General Principles 2002;
- AS/NZS 1170.1 Structural Design Actions Part 1: Permanent, Imposed and Other Actions 2002;
- AS/NZS 1170.2 Structural Design Actions Part 2: Wind Actions 2002;
- AS 1170.4 Structural Design Actions Part 3: Earthquake Loads 2007;
- AS 3600 Concrete Structures 2009;
- AS 3700 Masonry Structures 2001; and
- AS 4100 Steel Structures 1998.

5.17 Construction Management

A Preliminary Construction Management Plan (PCMP) has been prepared by TSA Management and is included at **Appendix O**. The PCMP outlines site management principles and measures to mitigate impacts during the construction period. These measures are outlined below in relation to potential construction impacts. A final CMP will be prepared once a Head Contractor is appointed.

5.17.1 Site Operations and Preparation

Throughout the duration of construction the Head Contractor will ensure:

- All works will be undertaken in accordance with relevant legislative requirements;
- All construction will adhere with the approved construction hours;
- Appropriate hoarding / fencing will be installed to prevent public access and to maintain security for the various areas of work;
- Vehicle access / egress gates will be erected internally as required. These gates will be managed by qualified traffic supervisors;
- Disconnection of services will be undertaken with full cooperation, development with approval and input with relevant hospital and authority stakeholders; and
- Construction phasing will be developed to ensure continued hospital operations and safe public and staff access particularly in regards to the public car park areas.

5.17.2 Environment and Amenity

Once appointed the Head Contractor will prepare a comprehensive Environmental Management Plan (EMP), which will address the following matters.

Construction Noise and Vibration

The Acoustic Assessment prepared by Wood & Grieve Engineers (refer to **Appendix S**) has assessed construction noise and vibration. The report outlines the noise criteria for construction sites as established in the EPA's NSW *Interim Construction Noise Guideline* (ICNG). In order to meet these established criteria and to minimise the impacts of construction related noise and vibration on nearby sensitive receivers the following measures are proposed:

- Use Noise Management Levels (NML's) to identify demolition, excavation and construction noise sources or scenarios that require engineering controls or administrative management;
- Promote clear understanding of ways to identify and minimise noise from construction works;
- Focus on applying all feasible and reasonable work practices to minimise construction noise impacts;
- Provide flexibility in the selection of site-specific and reasonable work practices to minimise noise impacts;
- Encourage construction / demolition work to be undertaken within approved standard hours where reasonably practicable with noise that is audible to other premises. Approval is required for works undertaken outside standard hours; and
- The use of noise reduction techniques including, but not limited to, barriers, enclosures and silencers shall be employed to ensure compliance with construction and demolition noise criteria.

These measures have been included in the Mitigation Measures at **Section 7.0** of this report.

Air

The proposed demolition and earthworks are likely to result in some dust generation. Where this occurs, dust measures including spraying of water at the source of origin, will be put in place to prevent airborne dust particles.

Whilst odour problems are expected to be minimal for demolition and construction activity on the site the PCMP notes that all plant and machinery involved in the works will be regularly serviced and checked for exhaust emissions and catalytic converters.

Stormwater, Erosion and Sediment Control

The PCMP and Stormwater Management Plan (refer to **Appendix I**) outline a number of measures that will be employed to ensure stormwater quality is maintained. These include:

- Continual clearing of rubble from the site to minimise possible sediment flow during rainfall periods;
- Use of sediment controls in the form of hay bales or sedimentation socks on stormwater kerbs and drainage lines;
- Use of geotextile fabric over existing stormwater inlet drains to allow water to enter into drains whilst retaining sediments; and
- Regular checking of all drainage control devices, particularly during periods of heavy rainfall.

An Erosion and Sediment Control Plan has also been prepared by Enstruct Group (refer to **Appendix I**) which outlines additional erosion and sediment control measures that will be employed. This plan details the proposed sediment basins, silt traps, sediment fencing and vehicle wash-down facilities which will be installed on the site during the construction period.

5.17.3 Traffic Management

The PCMP and Transport Assessment (refer to **Appendix O**) outline appropriate construction traffic management measures. These include:

- Monitor transport vehicles and surrounding roadways for loose debris;
- Instruct construction works not to park either within hospital grounds or on the street within the typical daily hospital parking catchment, rather in contractor car-parking in the north of the hospital site;
- Construction traffic and activities will be separated from the public;
- Ensure construction vehicles follow designated site access routes; and
- Pedestrian and vehicular passage to and around the site will be maintained, or alternate routes determined where necessary, and be defined by clear signage;.

The Transport Assessment finds that on-site parking will be sufficient to accommodate demand generated by the anticipated construction traffic, and contractor requirements.

5.17.4 Waste Management

The PCMP identifies practices and procedures for the identification, management and reuse (where practical) of waste streams and materials resulting from the demolition of existing structures and general construction. The PCMP also identifies strategies to deal with potentially hazardous and contaminated waste materials as recommended by Douglas Partners (refer to **Appendix F** and **Appendix P**).

6.0 Environmental Risk Assessment

The Environmental Risk Assessment (ERA) establishes a residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the development has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools.

In accordance with the SEARs, the ERA addresses the following significant risk issues:

- The adequacy of baseline data;
- The potential cumulative impacts arising from other developments in the vicinity of the site; and
- Measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Figure 13 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

- The receiving environment;
- The level of understanding of the type and extent of impacts; and
- The likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- The complexity of mitigation measures;
- The known level of performance of the safeguards proposed; and
- The opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Figure 14 – Risk Assessment Matrix

				Risk Assessment		
Item	**Phase**	**Potential Environmental Impact**	**Proposed Mitigation Measures and / or Comment**	**Significance of Impact**	**Manageability of Impact**	**Residual Impact**
Key: C - Construction O - Operation						
Noise and Vibration	C + O	▪ Increase in noise and vibration levels during construction activities ▪ Increase in noise levels during the operation of the school facility	▪ Implementation of Construction Noise and Vibration Measures which considers the construction methodology and details specific mitigation measures in accordance with the DECCW Interim Construction Noise Guideline. ▪ Appropriate mitigation measures to be implemented to ensure vibration levels will not compromise human comfort or result in building damage. ▪ Appropriate sound minimisation measures to be incorporated within the plant and mechanical areas.	C = 3 O = 1	C = 2 O = 2	C = 5 (low/medium) O = 3 (low)
Traffic and Parking	C + O	▪ Increase in construction traffic on local roads ▪ Increase in traffic and parking on local roads during operation	▪ A Construction Traffic Management Plan has been prepared detailing measures to minimise any adverse impacts arising from construction traffic. ▪ Additional parking demand generated by the proposed development will be accommodated within the existing and proposed on-site parking areas. The existing road network has capacity to support any increase in traffic associated with the proposed development.	C = 3 O = 2	C = 2 O = 1	C = 5 (low/medium) O = 3 (low)
Visual and Built Form	O	▪ Visual impact of the development when viewed from the public domain.	▪ Measures have been incorporated to reduce the visual impact of the development when viewed from Myall Street.	O = 2	O = 2	O = 4 (low/medium)
Air and Water Quality	C	▪ Potential for reduced air and water quality during construction	▪ A detailed Construction Environmental Management Plan will be developed once a contractor has been appointed to implement measures to ensure that air and water quality are maintained.	C = 2	C = 2	C = 4 (low/medium)
Heritage	O	▪ Impact on heritage listed buildings in the vicinity of the proposed Stage 4 redevelopment. ▪ Impacts associated with the demolition of the George Hatch Building.	▪ A Statement of Heritage Impact has been prepared by Adaptive Architects which concludes that the proposed development is acceptable.	O = 3	O = 3	O = 6 (medium)

7.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 8** below. These measures have been derived from the previous assessment in Section 5.0 and those detailed in appended consultants' reports.

Table 8 – Mitigation Measures

Mitigation Measures
Contamination ▪ Detailed design is to incorporate the recommendations of the Phase 1 Contamination Assessment (prepared by Douglas Partners dated December 2016).
Hazardous Materials and Waste Management ▪ Hazardous waste shall be stored appropriately, and disposed of in accordance with the recommendations of the Hazardous Building Materials Assessment (prepared by Douglas Partners dated June 2016). ▪ Hazardous waste will be managed in accordance with the recommendations of the Preliminary Hazard Analysis prepared by Douglas Partners and dated December 2016. ▪ Waste will be in accordance with the recommendations of the Waste Management Plan prepared by TSA Management dated December 2016.
Heritage and Archaeology ▪ Work will be carried out in accordance with the recommendations of the Heritage Impact Statement prepared by Adaptive Architects and dated December 2016. ▪ If Aboriginal objects were to be identified during development of the subject land, works must stop and a suitably qualified archaeologist notified immediately to assess the finds. The finds must be reported to OEH and further approvals may be necessary prior to the recommendation of works. ▪ If items of archaeological potential are identified during development of the subject land, works must stop and a suitably qualified archaeologist notified immediately to assess the finds. The maternity building will not be demolished until further investigation is undertaken.
Building Code of Australia (BCA) ▪ The recommendations of the BCA compliance statement are to be employed before detailed design and the release of a Section 109R Certificate.
Accessibility ▪ The recommendations of the Access Statement are to be employed before detailed design and the release of a Construction Certificate.
Noise and Vibration ▪ Construction noise and vibration measures will be implemented in accordance with the recommendations of Wood and Grieve Engineers Acoustic Report dated November 2016. ▪ The recommendations of the Acoustic Report prepared by Wood and Grieve Engineers (dated December 2016) relating to mechanical services noise will be adopted to ensure compliance with the relevant noise criteria.
Construction Impacts ▪ A Construction Environmental Management Plan (CEMP) will be prepared by the appointed contractor prior to the commencement of works. The CEMP will establish site management principles generally in accordance with the Preliminary Construction Management Plan prepared by TSA Management dated December 2016.
Traffic and Access During Construction and Operation ▪ Construction and operational traffic will be in accordance with the recommendations of the Transport Assessment prepared by GTA Consultants and dated December 2016.

8.0 Conclusion and Justification of the Proposal

The Environmental Impact Statement has been prepared to consider the environmental, social and economic impacts of the proposed Dubbo Health Service Redevelopment Stage 4. The EIS addressed the issues outlined in the SEARs (**Appendix A**) and accords with Schedule 2 of the EP&A Regulation with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, construction impacts and stormwater.

It is considered that the project warrants approval for the following reasons:

- The proposal will facilitate the development of a new and modern health facility which will further support and strengthen the services and facilities provided at the hospital for the benefit of the Western NSW community.
- The proposal will assist in achieving the intended objectives for the site under the Dubbo Health Service 2016 Master Plan for redevelopment Stage 4.
- The area and shape of the site allows for the provision of new health facilities that meet the special design requirements for the future proposed uses, whilst not resulting in any significant adverse impacts on surrounding uses.
- The assessment of the proposal has demonstrated that the development will not result in any environmental impacts that cannot be appropriately managed, and is consistent with the relevant planning controls for the site.
- The proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the EP&A Regulation as well as Section J of the Building Code of Australia.
- The proposal will not result in any adverse traffic or parking impacts, with new parking allocations being provided as part of the scope of works.

Given the planning merits described above, and significant public benefits proposed, it is requested that the Minister or his delegate approve the application.