



Douglas Partners

Geotechnics | Environment | Groundwater

Report on
Preliminary Hazard Analysis

Dubbo Base Hospital Redevelopment
Myall Street, Dubbo

Prepared for
Health Infrastructure

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Integrated Practical Solutions



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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.



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Report on Preliminary Hazard Analysis

Dubbo Base Hospital Redevelopment

Myall Street, Dubbo

1. Introduction

This report presents the results of a Preliminary Hazard Analysis associated with the proposed redevelopment works at Dubbo Base Hospital, Myall Street, Dubbo. The work was commissioned by Health Infrastructure, in consultation with TSA Management Pty Ltd.

The project scope includes the following items:

- Bulk excavation;
- A new one and two-storey building with future flexibility to expand to a three-storey building to accommodate a new Maternity Unit, Operating Theatre suite, Central Sterilising Department and Day Surgery Unit;
- Minor reconfiguration and refurbishment of Front of House (main entry and associated services);
- Demolition of existing Maternity Building and construction of new car parking spaces in the footprint of the existing building; and
- Stormwater infrastructure works.

It is important to note that the activities proposed in the new and refurbished buildings are activities that are currently being undertaken elsewhere on the site. No new hazardous activities are currently proposed.

This Preliminary Hazard Assessment has been undertaken to address the requirements of *State Environmental Planning Policy No.33 – Hazardous and Offensive Development* (SEPP 33), as outlined in the Director General's Requirements (DGRs) for the project submission. The assessment has been undertaken with reference to the *Hazardous Industry Planning Advisory Paper No.6 – Hazard Analysis* (NSW Department of Planning, 2011).

Douglas Partners Pty Ltd has recently been involved in a geotechnical investigation, contamination assessment, groundwater impact assessment and hazardous building materials assessments for the project. Each of these elements are reported separately.

2. Scope of Preliminary Hazard Analysis

The analysis aimed to identify risks associated with the handling, storage and disposal of dangerous goods in relation to the new/refurbished hospital buildings. The analysis did not identify risks associated with other existing hospital practices on the site. Existing practices presumably have approval to be undertaken on the site.

The analysis was undertaken following a site meeting, inspection and discussion with representatives of the Western NSW Local Health District (Mr Brian Cusack and Mr Rob Shaw) on 6 June 2012.

3. Site Description

3.1 General Site

Dubbo Base Hospital is located to the north-east of the city centre and is bounded by Myall Street to the south, the Coonamble-Dubbo Railway line to the west, residential dwellings to the east, and vacant land to the north. The natural ground surface levels at the site appear to fall gently to the south and west.

At the time of the current investigation, the main hospital buildings were located in the southern and central portions of the site. A car park was located in the eastern portion, and the western and northern sections of the site were generally vacant.

3.2 Buildings Proposed for Construction/Refurbishment

The locations of the buildings proposed for construction and refurbishment are shown on the architectural drawing A11-12 prepared by Cox Richardson and included in Appendix A. A site plan showing the locations of the works in relation to the remainder of the hospital campus is also included (Drawing PHA1).

4. Potentially Hazardous Activities

Potentially hazardous activities identified during the site visit included:

- Exposure to infectious diseases where appropriate controls are not in place;
- Exposure to infectious diseases if the storage area was to catch fire;
- Exposure to infectious diseases in the case of unauthorised entry into storage area;
- Exposure to infectious diseases during transportation to disposal facility; and
- Exposure to the unauthorised use of pharmaceutical materials.

Activities using radioactive substances (including x-ray type equipment) are not proposed for the new and refurbished buildings and will be undertaken elsewhere.

5. Current Hazardous Materials Procedures

5.1 Clinical Waste Collection

Clinical waste (including sharps) from operating theatres, treatment rooms and wards is collected in yellow hazardous material receptacles for collection by appropriately trained staff. The bins are then taken to a locked temperature-controlled storage container and are stored for collection by a specialist contractor (SteriHealth). Collection currently occurs six days per week.

Cytotoxic waste is collected, stored and disposed of in a similar manner to clinical waste except the receptacles are purple instead of yellow. It is noted, however, that cytotoxic waste is not expected to be generated from the new facilities.

Waste from the new building will be removed via an external door on the western side of the facility rather than through the new clinical corridor. This is a preferable change in collection methodology.

5.2 Clinical Waste Storage

The clinical waste receptacles are stored in a locked, temperature-controlled container until such time as the clinical waste disposal contractor collects the containers and transports them by road to Orange. Empty receptacles are stored adjacent to the container and are used to replace the bins placed in the container. This storage process occurs for all hospital units and will not be limited to the new and refurbished buildings. As the new buildings will house facilities that are currently housed elsewhere on the campus, the proposed development is not likely to result in a significant increase in waste generation. Photographs in Appendix B show the current storage facility.

The hospital master-plan makes an allowance to replace the current waste compound with an enclosed facility in the future Western Service Block.

5.3 Clinical Waste Transport

The clinical waste disposal contractor (SteriHealth) collects the bins from the storage container and transports them to a secure facility in Orange. The waste is currently collected from the hospital six days per week. This process is undertaken in accordance with approved procedures. SteriHealth has the contract for all facilities in the Western NSW Local Health District. The method of collection and transport is not likely to change as a result of the proposed redevelopment works.

5.4 Pharmaceutical Storage and Dispatch

The hospital pharmacy is located within the main hospital building and stores all pharmaceuticals used on the site. The pharmaceuticals are distributed by the pharmacy when requested by authorised medical practitioners. Selected pharmaceuticals are also stored within individual wards and theatres, and these are dispatched by authorised staff using a two-key system which requires two separate staff members to account for the pharmaceuticals taken. This approved method of pharmaceutical dispatch is not likely to change as a result of the proposed redevelopment works.

6. Risk Analysis Methodology

The risk analysis methodology used in this assessment is based on AS/NZS ISO 31000:2009 *Risk management – Principles and guidelines*. This standard outlines the following process:

1. Establish the Context
2. Identify the Risks
3. Analyse the Risks
4. Evaluate the Risks
5. Treat the Risks

Steps 1 and 2 of this process have been undertaken in previous sections of this report. Steps 3 to 5 are undertaken in Section 7. The process for analysis and evaluation uses a Risk Assessment Matrix to quantitatively assess each risk. This process is outlined in Tables 1 to 3.

Table 1: Qualitative Measures of Likelihood

Likelihood Designation	Description
Almost Certain	Is expected to occur in most circumstances
Probable	Will probably occur
Possible	Might occur at some time
Unlikely	Could occur at some time
Rare	May occur but only in exceptional circumstances

Table 2: Adopted Qualitative Measures of Consequence

Severity	Description
Insignificant	Local treatment required – minor short term health effects
Minor	Medical treatment required – short term health effects
Moderate	Lost time injury – short to medium term health effects
Major	Extensive injuries – chronic health issues
Catastrophic	Fatality or permanent disability

Table 3: Qualitative Risk Analysis Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	M	M	H	H	H
Probable	L	M	M	H	H
Possible	VL	L	M	H	H
Unlikely	VL	VL	L	M	H
Rare	VL	VL	L	M	M

H = High risk: Cannot be tolerated. Implement control measures to reduce risk

M = Medium risk: Undesirable. Implement control measures to reduce risk

L = Low risk: Tolerable only if the implementation of further controls is impractical or impossible

VL = Very low risk: Acceptable

7. Preliminary Hazard Analysis

The Preliminary Hazard Analysis is outlined in Table 4.

Table 4: Preliminary Hazard Analysis

Hazard	Likelihood ¹	Consequence ¹	IRR	Controls	MRR	Comments
Exposure to infectious diseases due to lack of controls	Probable (Rare)	Moderate (Moderate)	H	Different wastes segregated into streams. Held in secure bins. Handled by specialist contractors.	L	Collection & storage process presumably approved by NSW Health as industry best-practice.
Exposure to infectious diseases due to fire in storage area	Unlikely (Rare)	Moderate (Moderate)	L	Storage area located away from hospital buildings. Fire inspections have deemed storage adequate.	L	HI to confirm existing fire controls adequate or whether a dedicated fire system is required.
Exposure to infectious diseases due to entry to storage area	Unlikely (Rare)	Moderate (Moderate)	L	Storage container is locked. Only those with authorisation to access have keys.	L	HI to confirm existing security is adequate or whether additional fencing etc. required around compound.
Exposure to infectious diseases during waste transport	Possible (Unlikely)	Moderate (Moderate)	M	Waste held in secure bins. Contractors are appropriately trained. External audit of process undertaken annually.	L	Contractor presumably has controls in place in the event of major transport accident which could expose public to infectious diseases.
Unauthorised use of pharmaceutical materials and substances	Possible (Rare)	Moderate (Moderate)	M	Appropriate requisition & dispatch process is followed. Hospital must account for all pharmaceuticals used.	L	Requisition process presumably approved by NSW Health as industry best-practice.

Notes: IRR = Initial risk rating; MRR = Managed risk rating; HI = Health Infrastructure; ¹ Initial ranking without control measures, ranking in brackets with control measures

8. Discussion

The Preliminary Hazard Assessment outlined above indicates that there is a low risk associated with the hazards anticipated as a result of the redevelopment works. A low risk is one that is tolerable only if further controls are impractical or impossible. NSW Health should undertake regular audits of hospital processes and procedures to ensure the best possible controls are in place. NSW Health is also 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.

It is noted that the proposed redevelopment works will not result in additional hazardous activities being undertaken on the site. The new floor space will be occupied by facilities that already exist on the hospital campus and therefore the risk to the hospital community is expected to generally remain unchanged.

9. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for a project at Dubbo Base Hospital in accordance with DP's proposal dated 2 May 2012 and acceptance received from Health Infrastructure. The report is provided for the use of Health Infrastructure for this project only and for the purpose(s) described in the report. It should not be used for other projects or by a third party.

DP has necessarily relied upon information, both verbal and written, provided by the client and/or their agents. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by a statement, interpretation, outcome or conclusion given in this report.

This report, or sections from this report, should not be used as a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Douglas Partners Pty Ltd

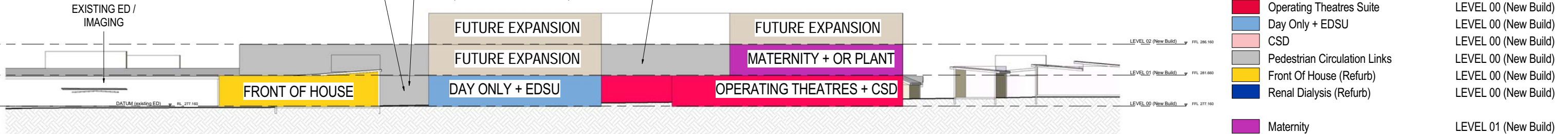
Appendix A

Drawings

GROUND FLOOR CLINICAL LINK FROM EXISTING ED / IMAGING TO NEW THEATRES VIA CLINICAL CORRIDOR

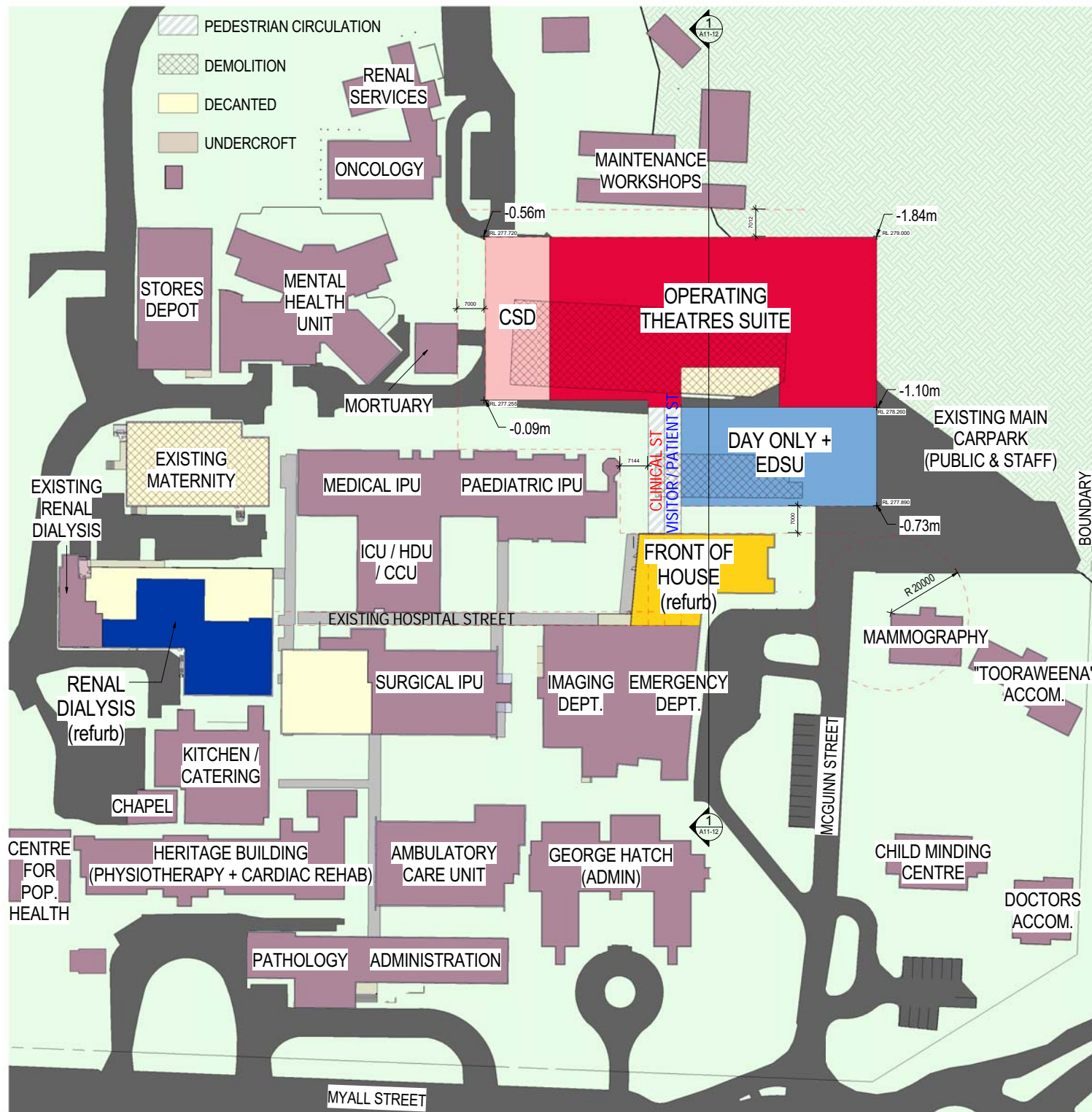
GROUND FLOOR PUBLIC + PATIENT LINKS THROUGH TO DAY SURGERY (FROM FRONT OF HOUSE)

FIRST FLOOR PUBLIC / VISITOR / PATIENT STREET TO MATERNITY

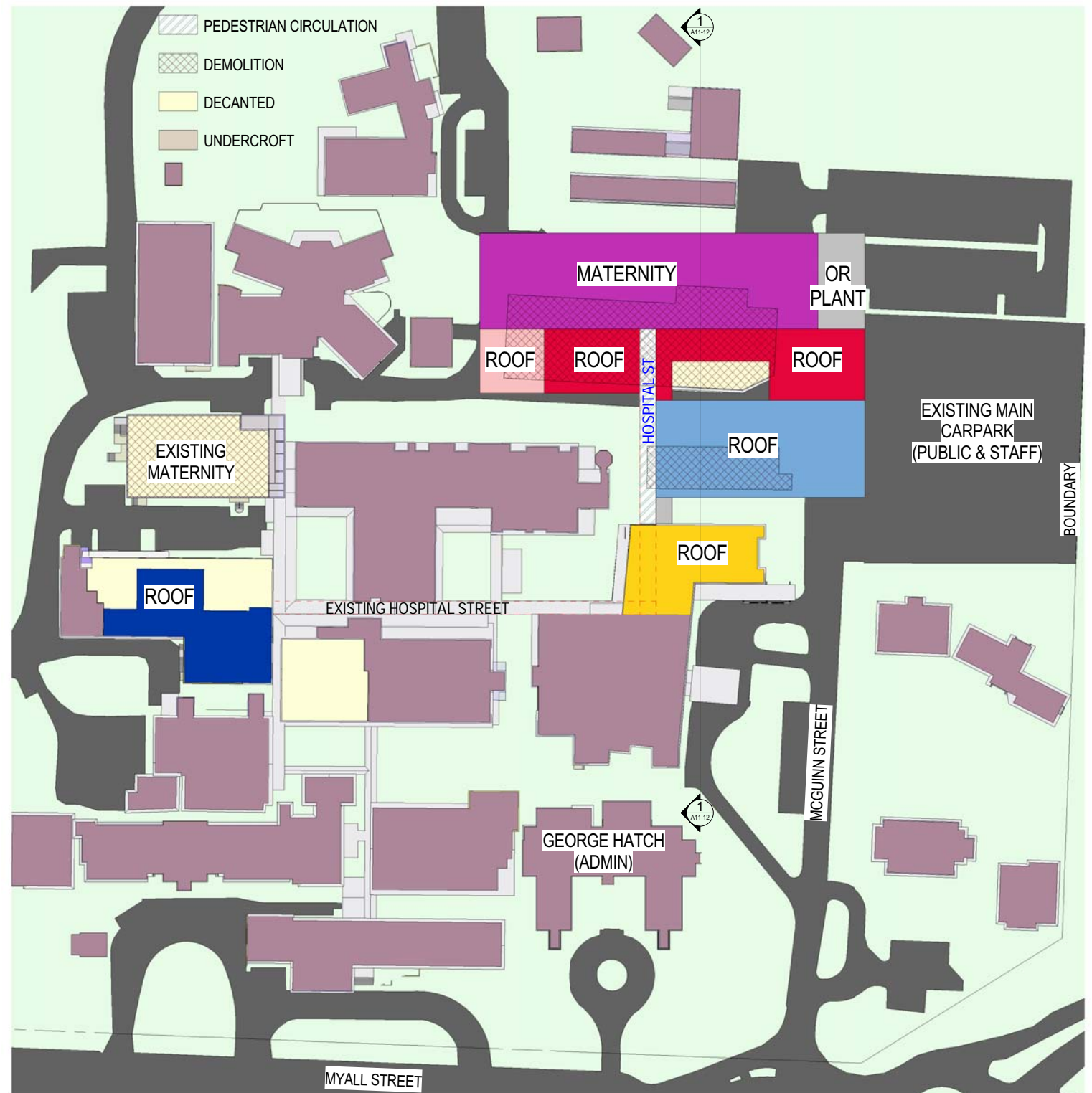


SECTION 1 (OPTION 2)

MASS FLOOR AREA SCHEDULE		
KEY	NAME	LEVEL
■	Operating Theatres Suite	LEVEL 00 (New Build)
■	Day Only + EDSU	LEVEL 00 (New Build)
■	CSD	LEVEL 00 (New Build)
■	Pedestrian Circulation Links	LEVEL 00 (New Build)
■	Front Of House (Refurb)	LEVEL 00 (New Build)
■	Renal Dialysis (Refurb)	LEVEL 00 (New Build)
■	Maternity	LEVEL 01 (New Build)



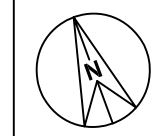
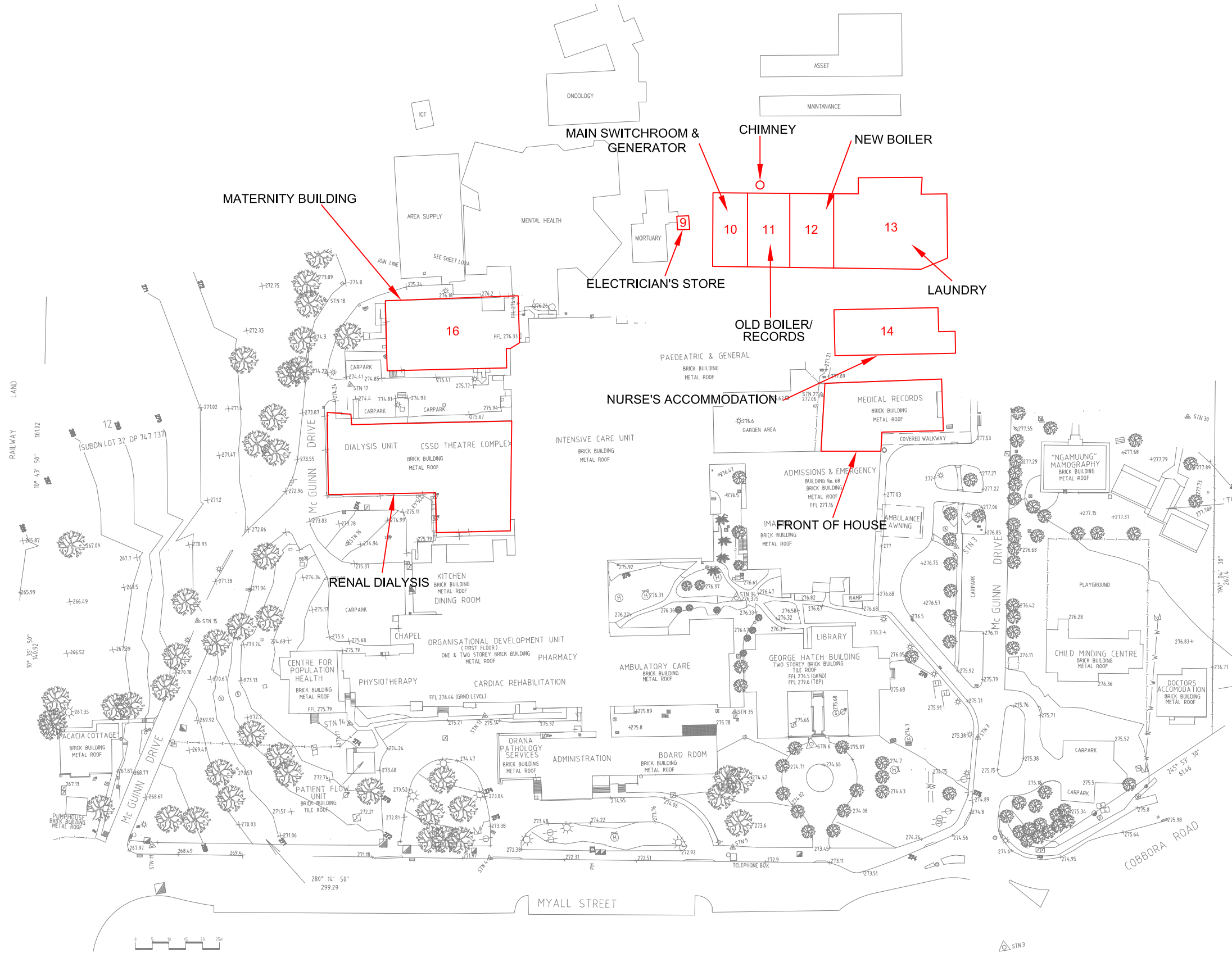
GROUND FLOOR PLAN (OPTION 2)



FIRST FLOOR PLAN (OPTION 2)



Locality Plan



Appendix B

Site Photographs



Photo 1 - Waste storage compound with temperature-controlled container behind shed



Photo 2 - Empty collection bins



Site Photographs
Waste Storage Compound
Dubbo Base Hospital

CLIENT: Health Infrastructure

PROJECT: 72811.01

PLATE No: 1

REV: 0

DATE: 6-Jun-12