Crime Prevention Through Environmental Design Report

Dubbo Base Hospital Redevelopment Stages 1 and 2

Myall Street, Dubbo

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

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JBA Urban Planning Consultants Pty Ltd 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.

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Signature 

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Date: 20 August 2012

This report has been reviewed by: Bernard Gallagher

Signature 

Date: 20 August 2012

Figures

1.0 Introduction

This Crime Prevention Through Environmental Design (CPTED) Assessment Report is submitted to Department of Planning and Infrastructure in support of a State Significant Development Application (SSD DA) for the Dubbo Base Hospital at Myall Street, Dubbo.

A CPTED assessment was required as one of the Director General's Requirements (DGRs) for the proposed development and supports the State Significant Development DA for Dubbo Base Hospital Redevelopment Stages 1 and 2.

The CPTED report has been prepared by JBA on behalf of Health Infrastructure NSW, and is based on the Architectural Drawings provided by Cox Richardson (Cox) and Landscape Drawings provided by Oculus and other supporting technical information appended to the report.

CPTED is a situational crime prevention strategy that focuses on the design, planning and structure of the environment. It aims to reduce opportunities for crime by employing design and place management principles that minimise the likelihood of essential crime ingredients. This CPTED assessment has been prepared by Grahame Edwards and Claire Burdett (Safer by Design Certified Risk Assessors).

CPTED is a socio-scientific approach to designing and managing the built environment to ensure it can passively assist public safety, crime prevention and detection of crime and support the feeling of safety within a community.

CPTED can provide positive community safety benefits by improving planning and design decisions in ways that provide organisations, communities and businesses with practical crime prevention tools. The fundamentals of CPTED are generally practical applications of security theory, which are enabled though the intelligent built environment design, architecture and planning.

The following tasks were undertaken in the preparation of this CPTED report:

- review of key relevant CPTED literature;
- review of Dubbo LGA and NSW State crime statistics from the Bureau of Crime Statistics and Research (BOCSAR);
- review of Schematic Building Design Site Plan prepared by Cox and Preliminary Landscape Plan prepared by Oculus;
- review of overall long term design concept for the redevelopment of Dubbo Base Hospital prepared by Cox;
- meetings with project architect on site; and
- meeting at Dubbo Base Hospital with Site Services Manager.
- conduct of a site visit and CPTED safety assessment in the current NSW policy and practice of the following regulation and assessment principles:
  1. Surveillance
  2. Lighting/technical supervision
  3. Territorial reinforcement
  4. Environmental maintenance
  5. Activity and Space Management
  6. Access Control
  7. Design, definition and designation.

Disclaimer:

CPTED strategies must work in conjunction with other crime prevention strategies and police operations. By using recommendations contained within this document, any person who does so must acknowledge that:

- *it is not possible to make areas assessed completely safe for the community and their property;*
- *recommendations are based upon information provided to, and observations made at the time the document was prepared; and*
- *this document does not guarantee that all risks have been identified, or that the area evaluated will be free from criminal activity if its recommendations are followed.*

2.0 Dubbo – Statistics and Nature of Recorded Crime

2.1 Dubbo LGA

According to the NSW Bureau of Crime Statistics and Research (BOCSAR), the crime statistics for non-domestic violence related offences in Dubbo LGA, 24 month and 60 month trends to December 2010 were both stable and consistent with NSW State statistics (refer to **Figure 1**).

In 2010, Dubbo LGA ranked 10th, up from 15th in 2008.

Dubbo Local Government Area

Crime summary table for Assault - non-domestic violence related offences in Dubbo LGA

Year	Rate	Count	Rank
2006	1087.9	431	6
2007	1024.9	410	11
2008	1005.4	407	15
2009	929.4	383	14
2010	946.3	390	10

	24-month trend ending Dec 2010 average annual % change	60-month trend ending Dec 2010 average annual % change
Dubbo	Stable	Stable
NSW	Stable	Stable

Figure 1 – BOCSAR crime statistics for Dubbo LGA

A review of the local statistics found that the site and it's immediate surrounds are found to be crime hotspots for:

- malicious damage to property;
- dwelling break and enter;
- theft from a dwelling;
- theft from a motor vehicle; and
- domestic violence related assault.

Hotspots indicate areas of high crime density relative to crime concentrations across NSW. However hotspots are not adjusted for the number of residents and visitors in the area and thus may not reflect the risk of victimisation. In addition, we note that the site is not a hotspot for non-dwelling break and enter and many of the most common crimes relate to dwellings.

Notwithstanding the hotspot data, the BOSCAR statistics indicate that the site has low levels of crime activity and this is supported by the Hospital's site services manager.

3.0 Site Analysis

3.1 Hospital Location and History

The Dubbo Base Hospital campus is located 1.5km northeast of Dubbo Town Centre along the Golden Highway (Cobbora Road) (refer to **Figure 2**). The context is of a mixed character and low-scale urban setting, predominantly low-density residential, light industrial and health uses. The campus site is part of a broader Health Precinct and has direct frontage to the Golden Highway.

Dubbo Base Hospital is located on land 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. The Dubbo Base Hospital site is L-shaped and covers an area of approximately 13.48ha.

The site is owned by the Former Macquarie Area Health Service, now Western NSW Local Heath District and is legally described as Lot 12 in DP 1159243.

The Hospital is an existing 160-bed facility providing 24-hour emergency services and mental health; indigenous health, coronary care; maternity; oncology; orthopaedic; paediatric; renal and other health services.

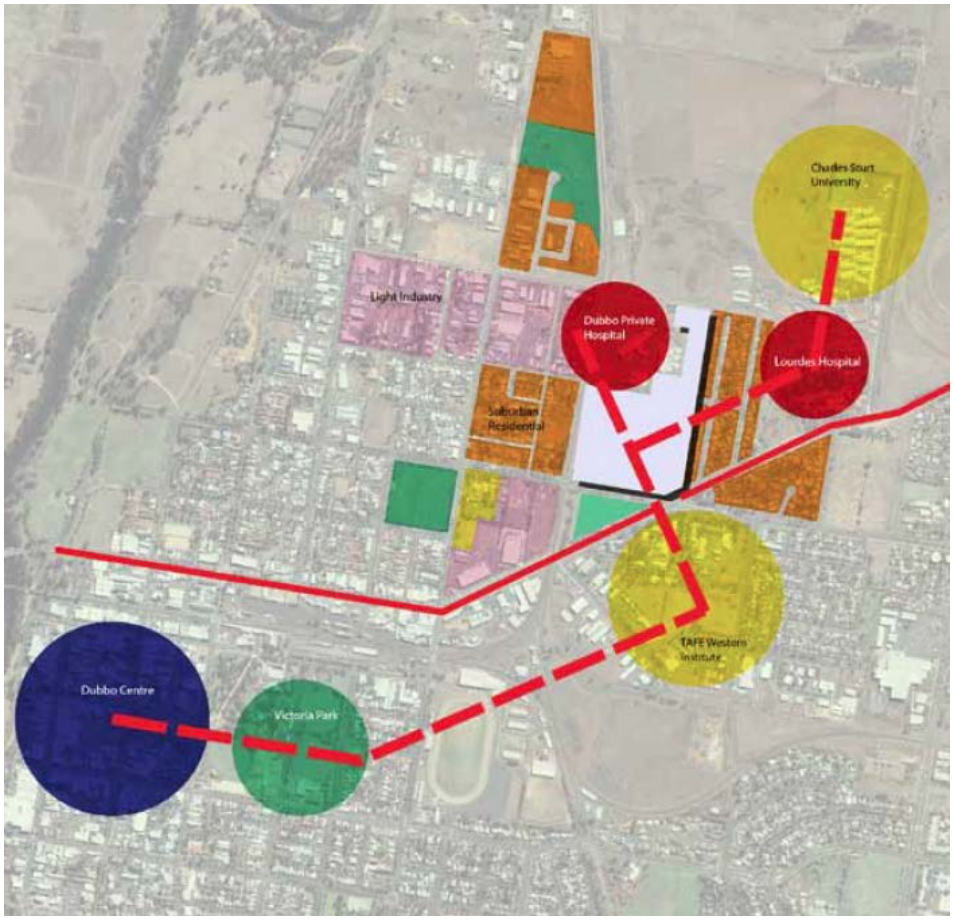

Figure 2 –Dubbo Base Hospital in its context (Cox)

The first Dubbo Base Hospital on this site dates back to 1865. This building was demolished and replaced by other hospital buildings during the 20th Century.

The oldest building on site dates from 1868 which has partially remained intact and is adjacent to another building, built in 1907 (refer to **Figures 3** and **4**). The 1907 building is listed as a heritage item and is located on the southern part of the campus overlooking Myall Street.

The Hospital facilities have evolved and grown over the last 100+ years in what appears to be a largely unplanned but pragmatic manner that has responded incrementally to the demands of the time.

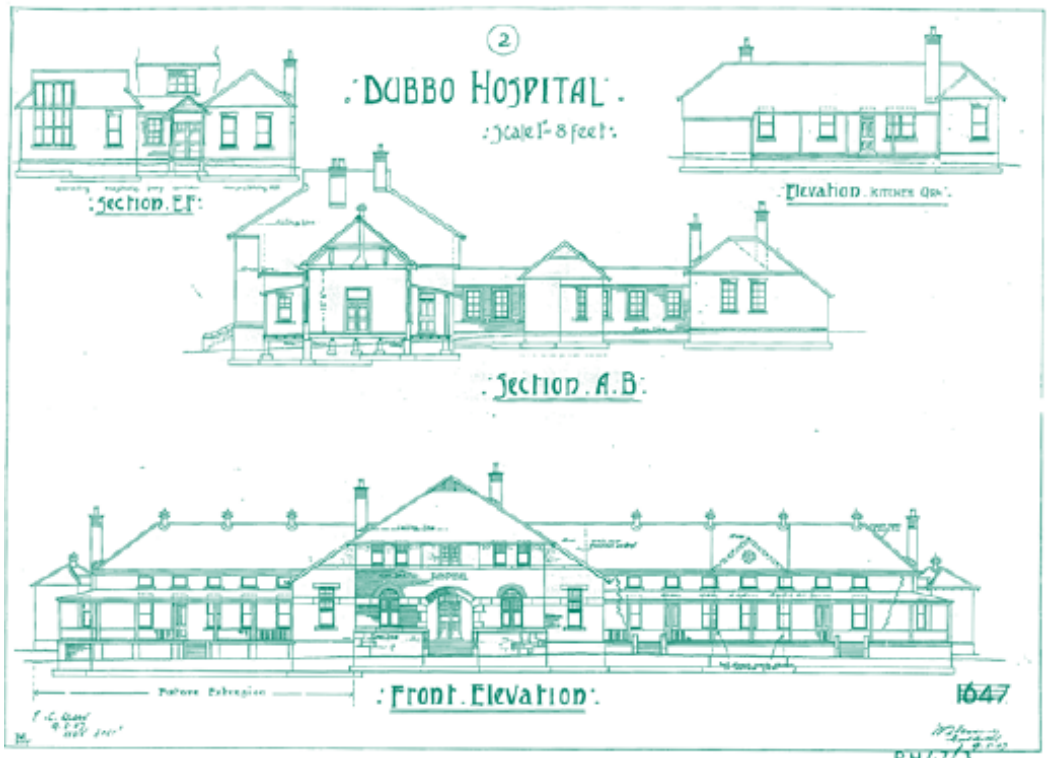

Figure 3 –Dubbo Base Hospital - 1907 building

Figure 4 –The 1907 building today – often referred to as 'the old, old entrance' to the hospital

3.2 Existing Hospital

The Dubbo Base Hospital facilities have evolved and grown over the last 100+ years in what appears to be a largely unplanned but pragmatic manner that has responded incrementally to the demands of the time. The complexity of the current building / facility layout is clearly illustrated in **Figure 5.**

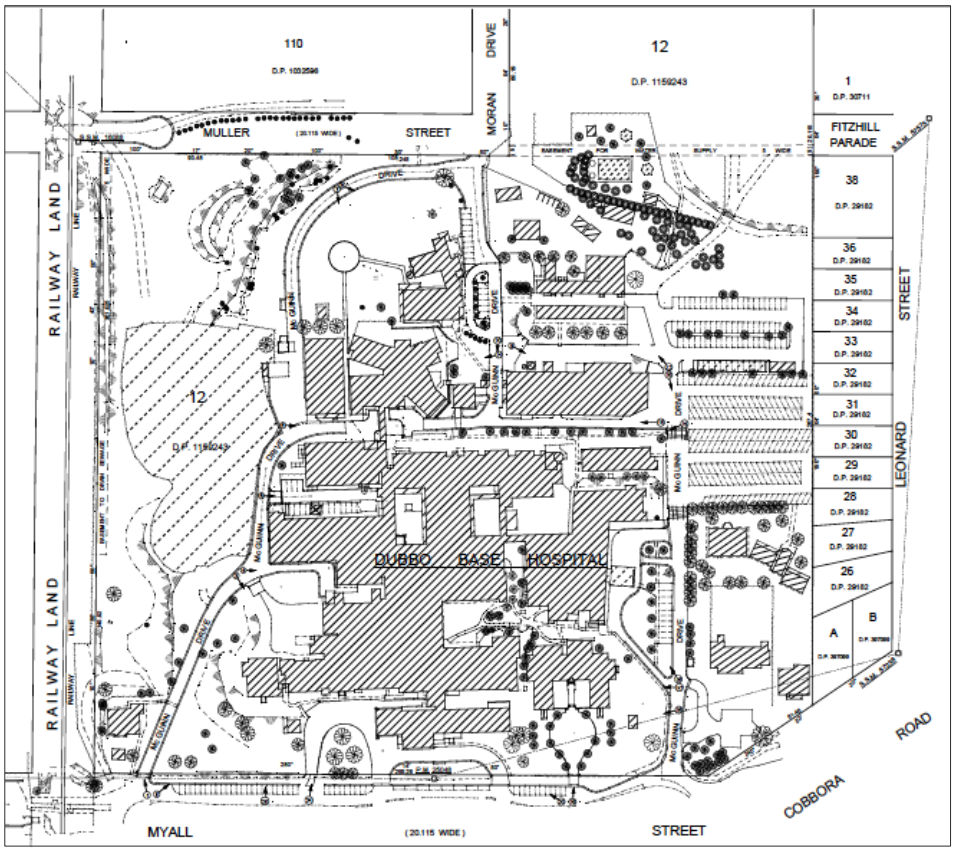

Figure 5 – Site survey of existing hospital layout (Imrie Ashley & Associates)

Whilst clearly important to hospital administrators, security and safety of hospital premises appears to be less of a priority than would be the case in more urban and metropolitan locations.

Incremental growth of the hospital facilities over time has led to a situation where there are three (3) recognised and formal entrances to the hospital – 'old old', the 'old' and the 'new', as well as Accident & Emergency.

According to security staff at the hospital, there are in fact up to twelve (12) separate entrances on the campus through which the public can (and do) enter the hospital facilities, usually without any level of security and access check. Hospital security staff also indicated that there were over 100 doors on the campus that potentially required locking and unlocking during the working day / night.

Clearly, this level of unfettered public access and permeability of the hospital campus could have significant potential safety and security implications for hospital patients, hospital staff and hospital property / facilities.

3.3 Operational Security

In the Concept Master Plan, Cox has noted that from the hospital's operational perspective:

- 24-hour and inpatient facilities are not co-located in a manner which provides for safe or effective staffing;
- long hours duration facilities such as Renal Services are also remote from other services and are exposed to security risks as a result;
- there is an excessive number of entry points into the hospital, which must be manually inspected and locked each night and reopened the following morning;
- there is little CCTV provision within the buildings;
- 24-hour operational zones are not consolidated in one area of the site;
- the Day Surgery and the Surgical Inpatient Unit are separated by a secondary corridor which facilitates unsupervised public access; and
- a number of departments including Renal, Maternity and Ambulatory Care receive patients directly who do not use the main entry.

3.4 Development Site

The development site (**Figure 6**) is located within the north-eastern corner of the Hospital site. The site is now clear of vegetation and structures.

The location has been chosen for this particular development site as it is within proximity to existing hospital buildings, providing better connectivity and accessibility, is relatively level land and is within close proximity of the newly upgraded car park. The existing topography and proximity to existing hospital buildings will facilitate Stages 1 and 2 of the redevelopment, without causing interruption to the current operation of the Hospital.

3.5 Surrounding Development

The Hospital site 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 (refer to **Figure 7**)

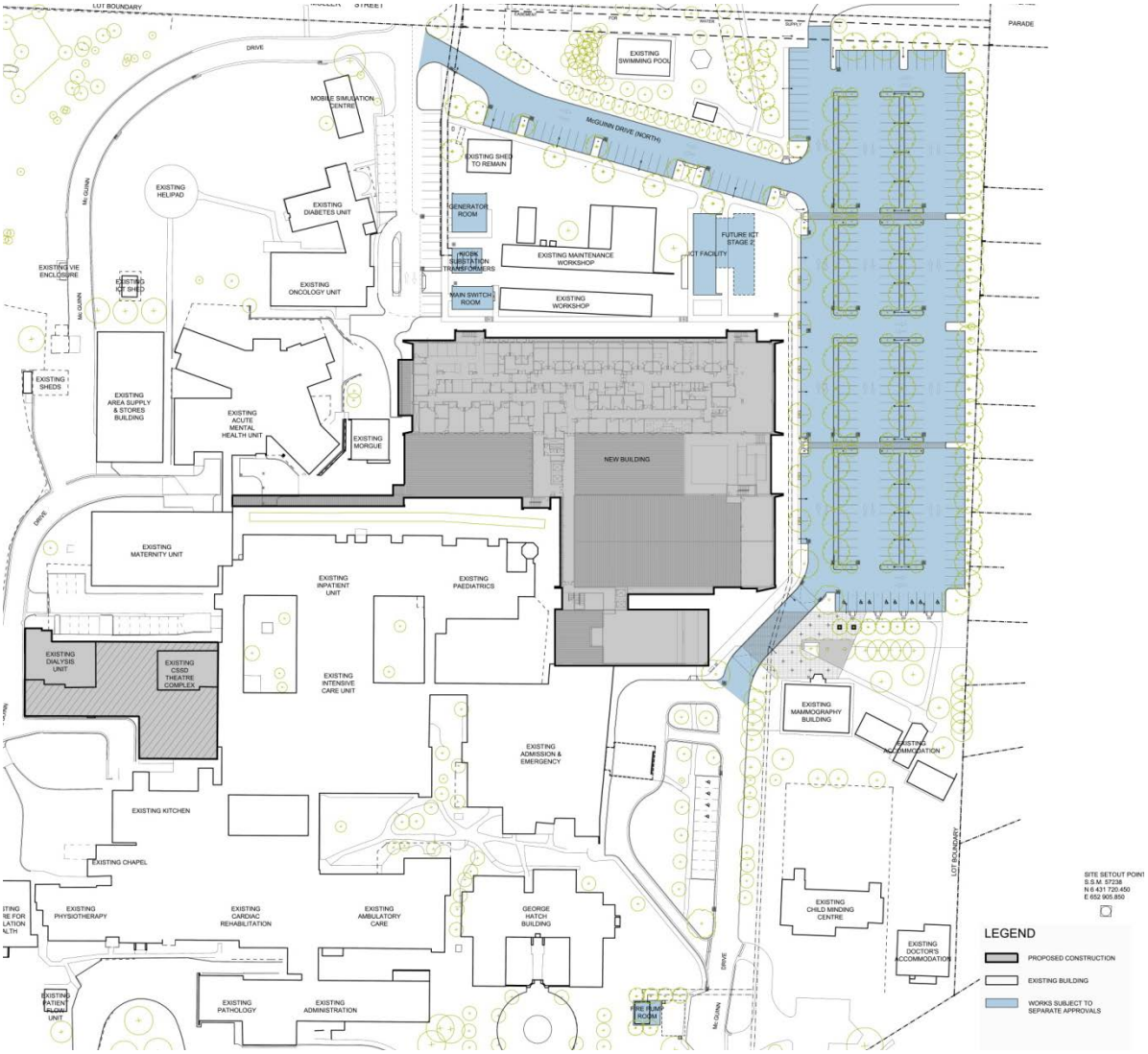

Figure 6 – Site Plan

Figure 7 –Aerial photograph of Dubbo Hospital and surrounding development

4.0 Dubbo Base Hospital Stage 1 & 2 Redevelopment

4.1 Description of Proposed Redevelopment

NSW Health Infrastructure is proposing to undertake Stages 1 & 2 of the Hospital's redevelopment in phases. The proposed State Significant Development Application comprises:

- bulk excavation;
- construction of a new 1 and 2 storey building to accommodate a new maternity unit, operating theatre suite, central sterilising department and day surgery unit with future flexibility to expand to a 3 storey building;
- refurbishment of existing admissions/ outpatients and medical records building to accommodate a new front of house area;
- refurbishment of existing theatres building to accommodate an expanded renal dialysis unit;
- demolition of the existing maternity building and construction of new car parking spaces on the footprint of the existing maternity building; and
- provision of new landscaping to renal outlook.

Figure 8 illustrates the proposed development and a copy of the preliminary landscape plan is provided at **Figure 9**.

Figure 8 – Site Plan (Cox)

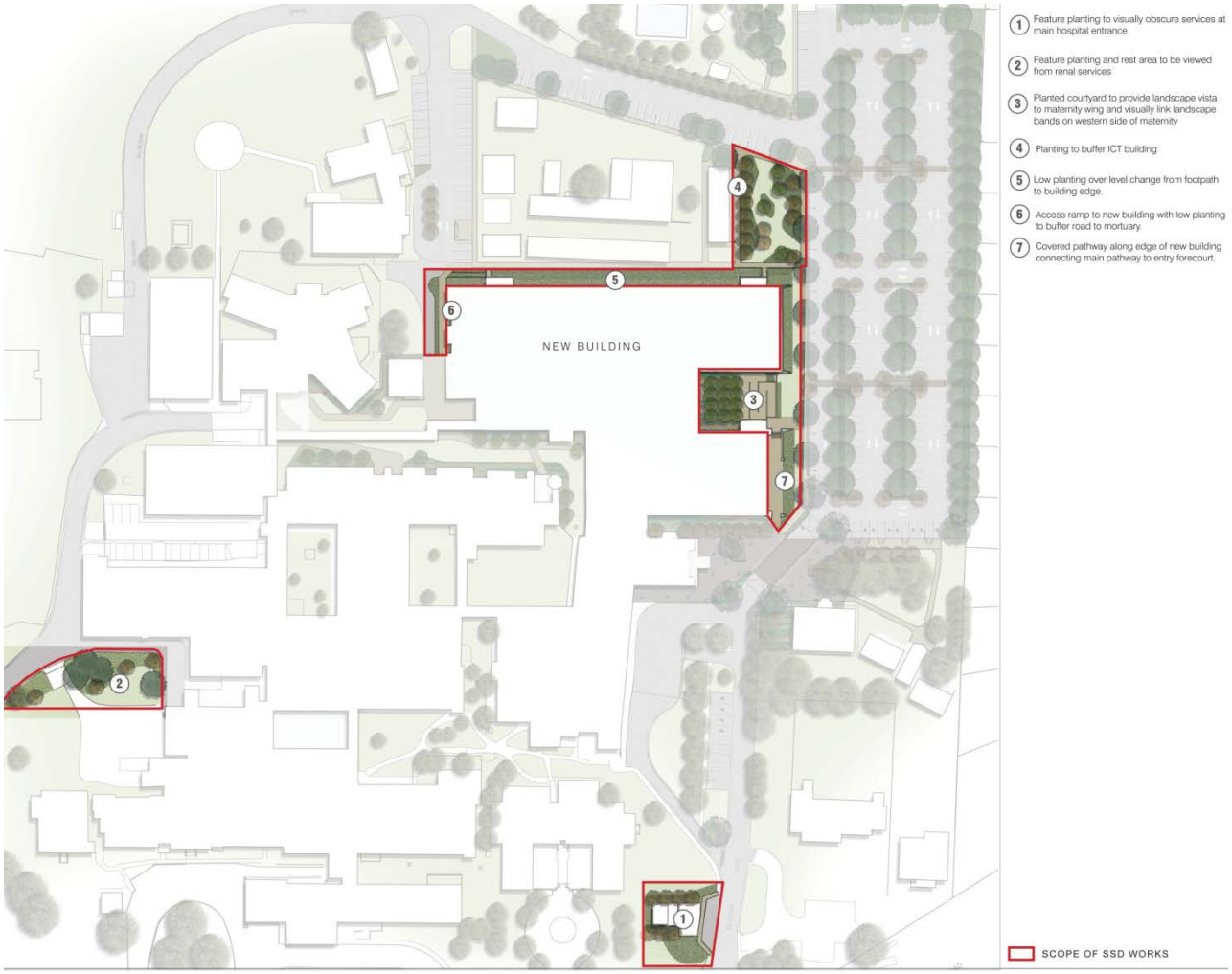

Figure 9 –Dubbo Base Hospital - Preliminary Landscape Plan (Oculus)

5.0 Matters for Consideration

5.1 Surveillance

5.1.1 Building Layout

Buildings that incorporate opportunities for surveillance increase the threat of apprehension of criminals by increasing the perception that people can be seen. Placement of physical features, activities and people in ways that maximise the ability for visibility, discourages crime and fosters positive social interaction among legitimate users of private and public space.

Windows and doors facing semi-public and public areas maximise 'natural'. surveillance and in so-doing, increases the risk to potential offenders. The proposed development's design and location provides the opportunity for natural surveillance from the surrounding buildings, landscaped areas, car parks and footpaths, and in return offers the opportunity for natural surveillance over the courtyard and main building entrance as well as the surrounding public areas and buildings.

5.1.2 The Building Entrance

Way finding is important in large premises and the main entrance should be clearly defined. The entry forecourt with the pedestrian priority raised threshold defines the entry, however signage should reinforce this with clear naming and directions.

The 'front of house' offers passive surveillance of the main entry at ground level, and the space itself can be supervised naturally by the strategic placement of capable guardians, such a reception staff along with incoming-outgoing visitors/patients. However care should be taken when glazing is used in entry foyers to ensure that departing visitors/staff can be seen as reflections on the interior of the glass can cause a mirror effect at night. The use of appropriate external lighting can be used to mitigate this effect.

Landscaping in the entry forecourt should also ensure that surveillance opportunities and not impaired and sightlines are not affected.

5.2 Lighting/Technical Supervision

Effective lighting can reduce fear, increase community activity, improve visibility and increase the likelihood that offenders will be detected. All lighting should meet minimum Australia New Zealand Standards and objectives for crime and fear reduction are outlined in Australian Lighting Standard AS/NZ 1158 for public streets, car parks and pedestrian areas. Lighting to the open spaces and surrounding landscaped area should be adequate to permit facial recognition and informal surveillance and high quality vandal resistant lamps are less likely to require replacement or maintenance.

Security lighting should be in place at the building's main entrance and all other ingress and egress points. All lighting should be managed with the location, size, shape and density of trees and plants to maximise effectiveness. Where recesses and blind corners cannot be avoided, the use of extra lighting and/or mirrors should be considered.

Effective CCTV systems are expensive, but should be put in place to cover the main entrance and the courtyard. If crime incidents occur in the future, the expansion of the coverage should be explored if lighting does not prove to be a sufficient mechanism.

5.3 Territorial Reinforcement

The location of the 'front of house' will increase offender risk and crime effort. Care must also be taken to ensure other entrances are either locked or well monitored. The visible presence of formal guardians in and around the premises will help to deter offenders as this increases the risk of being detected and challenged.

People generally recognise areas that are well cared for, and areas that display strong ownership cues are less likely to be improperly used than those that don't. Building and landscape maintenance will facilitate this.

5.4 Environmental Maintenance

The image of the Hospital can impact upon feelings of safety and danger, influence local confidence and individual decisions to either withdraw or engage in community life. Vandalism, graffiti and other crimes can induce fear and avoidance of public spaces, particularly amongst the elderly. A rapid removal policy should be in place for vandalism repair and the removal of graffiti and all public spaces should be kept clean and tidy.

The maintenance of the proposed landscaping is important to balance safety, aesthetics and plant health, as well as ensuring it is a nice outlook for patients. Well maintained spaces encourage regular use, which in turn creates natural supervision of public areas. High quality building materials and furniture must be used to lessen the likelihood of damage and to help reduce maintenance costs.

5.5 Activity and Space Management

The development of a new 1 and 2 storey building to accommodate a new maternity unit, operating theatre suite, central sterilising department and day surgery unit provide the opportunity to increase the activity of the area during both the day and night which in turn can increase surveillance and natural community policing.

Malicious damage to property is a common occurrence in the local area therefore the increase in activity in and around the entire hospital precinct provides the opportunity to increase the threat to offenders.

5.6 Access Control

Access control strategies restrict, channel and encourage the movement of people into and around designated areas. Whilst physical barriers increase the effort required to commit crime, they are not considered appropriate in this instance, given the campus layout of the site. Symbolic barriers are cues that help define borders and transitions between public and private space, therefore the use of coloured or different paving materials should be considered in order to clearly define the publicly accessible areas and routes in and around the building.

Most break-ins occur at the side or rear of buildings, therefore care must be given to ensuring all access points to the building are appropriately controlled by key/code locks in conjunction with the level of security to be provided to staff and patients. Windows should be lockable from the inside to provide security at the ground floor level in particular.

5.7 Design, Definition and Designation

The design of the building reflects the purpose of the facility, however care should be taken to ensure potential offenders cannot make excuses about their presence and actions. Clear signage to indicate appropriate entry points will help make clear how the building should be used.

6.0 Conclusions and Recommendations

The proposed Stages 1 & 2 of the Dubbo Base Hospital redevelopment represent an overall positive improvement to the safety and security of the overall Hospital campus. Combining the area context and the site opportunity rating of the issues discussed in the previous sections, the Crime Risk Assessment Rating of the proposed development is considered to be 'Low'.

The design concepts proposed in the schematic design plan by Cox and accompanying preliminary landscape schematic design concept plan by Oculus are well designed and will improve safety and security in the area of the Hospital being redeveloped.

Notwithstanding the support for the proposed development, there are a number of principles and areas of the proposed design where safety and security matters can be improved, as outlined below.

Surveillance

- 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.
- Utilise strategically placed capable guardians, such as reception staff to provide natural surveillance to the building entry.
- Maintain clear and prominent signage, changed at regular intervals, warning people not to leave their valuables in their cars.
- Use street trees with a high canopy that provide good shade for the pedestrian, complemented with low groundcover landscaping that ensures good visibility for the pedestrian,.
- Placement, size, shape, density and design of landscape planting to ensure that lighting to public spaces is effective over time, maintaining coverage and lighting levels as the landscape matures.

Lighting/ Technical Supervision

- All lighting should meet minimum Australia and New Zealand Lighting Standards. Lighting objectives relevant to crime and fear reduction are outlined in Australian lighting standard AS/NZS 1158 for pedestrian areas.
- Lighting shall provide a wide and even spread of illumination, which provides visibility from as far away as possible. Good sightlines become ineffective if illumination levels are poor. Good lighting is an essential element of surveillance as it allows people to see and be seen, and gives individuals the opportunity to take evasive action if required.
- Light fittings shall be positioned to eliminate shadows cast by surrounding elements.
- Lighting levels shall be adequate to meet operational requirements.
- High quality, vandal resistant lamps are less likely to require replacement or maintenance.
- Use adequate lighting to a standard that enables face recognition and ensure street lighting is maintained to this standard in external areas.
- Install CCTV over the main entrance to the building and consider the expansion of coverage if crime incidents occur.

Territorial Reinforcement

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

Environmental Maintenance

- Ensure graffiti is rapidly removed and all public spaces are kept clean and tidy.
- Use robust materials and graffiti resistant surfaces where possible to mitigate against potential malicious damage.

Access Control

- Use symbolic barriers, such as coloured or different paving materials to clearly define the publicly accessible areas and routes in and around the building.
- Ensure all access points to the building are appropriately controlled by key/code locks in conjunction with the level of security to be provided to staff and patients.
- Ensure all windows are lockable from the inside.