5 KEY ASESSMENT REQUIREMENTS

5.1 URBAN DESIGN, HEIGHT, DENSITY, BULK AND SCALE

5.1.1 Acute Hospital Building

Urban Design Response

The following extracts, provided by Infrashore and BVN, relate to the key architectural and urban design drivers for the development of the new hospital:

THE RIGHT DESIGN RESPONSE	*"The people of New South Wales and the citizens of Sydney take great pride in the Royal North Shore as an institution that has attained a world class reputation for research, clinical excellence and committed education. They also cherish it for being a hospital which goes that extra mile in compassionate patient care.* *The Royal North Shore Hospital should be represented by an architecture which quietly confirms its status and represents the ethos of the hospital as an institution with a culture of caring.* *The new hospital will make a significant contribution through both its siting and its architectural form and appearance to the urban environment and the surrounding community:* *RESERVE ROAD – URBAN SPINE* *The building is sited to provide an engaging and urban link through the site through maintaining and accentuating the Reserve Road axis – The creation of this strong pedestrian spine that links St Leonard's station, the heritage precinct, the hospital entrance, the new forecourt to the Research Building, the chapel, the private hospital and the TAFE will allow a vital permeability through the site for pedestrians, residents, visitors and workers and enable the creation of a dynamic urban precinct* *CREATION OF A CAMPUS* *The building's main circulation spine and entrance is structured to enable the creation of a clinical campus from east to west that engages the Douglas building at its western extremity and the new Research and Education building and Ramseys private hospital to the north.* *ENTRANCE AT THE HEART OF THE CAMPUS* *The hospital entrance is located at the centre of the pedestrian spine – a clear and visible entrance that takes visitors and staff to the 'heart' of the hospital, and to the centre of the campus. This significant location provides integration of the site from north and south, captures the variety of directions of visitor and staff approach and defines an exciting and dynamic centre for the site which will be enlivened by additional commercial and retail opportunities.* *The entrance to the hospital will be an engaging and welcoming urban space that is embedded in the communal environment of the precinct.* *INTEGRATING THE LANDSCAPE* *The building is sited to engage with the landscape of Gore Hill Oval and the Heritage precinct, and draw the landscape up and into the building's entry. Landscaping blends the park into the hospital campus and its immediate surrounds. The landscape is transformed as it passes up Reserve Road and through the building's entry, moving from the grassland of Gore Hill Oval, through the campus entry and flowing into the building, before continuing through and up Reserve Road and creating a rich urban precinct to the north.* *Orientation* *The positive impact of access to daylight for both staff and patients is clearly acknowledged as influencing healing, reducing stress and anxiety, promoting a sense of well-being and increasing effectiveness.* *Access to daylight has provided a key design driver, structuring the major planning of the building footprint. The building's form is bisected by the Atrium – the main circulation spine which drives daylight deep into the building, flooding the entrance and circulation spaces with natural light. Courtyards are cut into the building from the north and south and all patient rooms, major departmental waiting areas and staff workplaces have access to an external outlook.*

THE RIGHT DESIGN RESPONSE	*APPEARANCE AND MASSING* *Massing of the building has been carefully considered to consciously break down the scale of the building's presence to the south, with the predominant height to the north, as it responds to its southern parkland setting.* *The location of the wards to the south of the building allow both a dynamic articulation of the building and views to the south across the harbour enabling the building elements to be treated as series of elegant extrusions reaching out to the park and the heritage precinct.* *The building is designed as two distinct forms that rest either side of a main daylit circulation spine and courtyard gardens are sliced into both these forms to provide green spaces and natural light deep inside the building.* *LEGIBILITY AND CONNECTION* *The building's form and internal arrangement will not only be legible to public view but the building will relate outwards to the life of St Leonard's itself – and contribute a sense of expansiveness and connection, rather than enclosure and containment.* *PROUD AND DEFINABLE* *The building stands proud and definable to the south – creating a strong civic presence from its most prominent view across the oval from Pacific Hwy. Its presence is legible, its approach is clear and its entrance is welcoming.* *CONTEXTUAL RESPONSE* *The height and form of the building responds to the environment that it is located alongside – with its southern form lower in scale and playful in articulation, the northern side higher and nestled into the more urban context that the research building presents and the western side civic and inviting with its vertical glass sunblades that draw the visitor along Reserve Road and into the hospital entrance. These translucent glass blades set up a vertical rhythm across the façade, they will catch the light in different ways throughout the day and provide a beguiling entrance this significant building.* *Our design makes use of the unique opportunity to site a building in what is both a parkland setting and, what will be, a vital urban campus and it will engage the public spaces it creates.* *This fine new building will represent RNSH as a proud and successful institution of international standing with a history and future of excellence which is grounded in the community which its serves.*
A COMMUNITY BUILDING	*This significant facility creates both internal and external community 'places'. It is sited to enable a vital urban environment to develop around its entrance precinct, and creates a sun filled northern plaza that links the chapel, the new R&E building, Ramsey's private hospital and the TAFE and the single entrance into the hospital's Atrium connects everyone who works in the hospital everyday.* *The atrium connects the building and the people and provides options for staff and patients to use space for their different needs, whether it be work, social, respite or play. The atrium provides 'bump' spaces – part social, part circulation – which are always present in successful buildings. It provides multiple opportunities for chance encounter and is conducive in creating a "one team" culture within the diverse functions of the hospital.*
SEPARATION OF ENTRIES	*The various significant entrances to the hospital are clearly separated and identified. The Emergency entrance is located on the hospital's southern boundary, clearly visible on the major approach to the hospital and is distinct and easily identifiable and the Mental Health Unit is given its own discrete and dignified entrance and identity to the north, off Westbourne Street. The service and loading docks use the natural cross fall of the site to advantage, and are accessed off Red Rd from the east, and the car park entry is clear and visible from the main entry approach with a separate exit off Cemetery Rd.*
FUTURE EXPANSION AND FLEXIBILITY	*Both the masterplan and the building design itself allow for adaptability, flexibility and expansion. From flexible and adaptable large span floor plates clear of services, to 'soft' expansion spaces allocated alongside major departments, to a structural system enabling ease of vertical expansion through to short and long term major horizontal expansion.* *The design's inherent flexibility anticipates the certainty that models of care will change and new technologies and treatment methods will impact on its use of space.*

CLARITY OF WAYFINDING	*The site planning, the form of the building and the clarity of the public spaces and internal planning will enable patients and their families to navigate confidently through the new hospital. All the patient journeys through the main public and clinical spaces of the hospital pass through the main central space which is lit by sunlight, enables a clear and constant reference point for cognitive wayfinding, reduces anxiety and confusion, and creates an enjoyable journey for patients, visitors and staff alike.* *The new hospital is designed to be functionally compact and efficient with a focus on an ease and clarity of wayfinding for public, patients and staff and for minimising travel distances horizontally and vertically for both staff and patients to allow effective delivery of services.* *A clear circulation spine runs through the east-west axis of the building. The journeys to and between all major departments are made along this spine, around which is created a single public space – the Atrium – which is naturally lit and from which you can see the sky and the sun.* *CLARITY OF WAYFINDING – PUBLIC / OUTPATIENTS* *The site planning, the form of the building and the clarity of the public spaces and internal planning will enable patients and their families to navigate confidently through the new hospital.* *All the patient journeys through the main public and clinical spaces of the hospital pass through the main central space which is lit by sunlight, enables a clear and constant reference point for cognitive wayfinding, reduces anxiety and confusion, and creates an enjoyable journey for patients, visitors and staff alike.* *THE 'HIGH STREET'* *The creation of three distinct public lift pods distributed along the east-west circulation spine enable all the 'horizontal' travel by the public to occur on Level 3, the main entry, in a public, sun filled space, animated with activity and movement. It becomes the hospital's high street.* *The public are clearly directed at the entry to lift pod A B or C.* *Once this journey to a lift pod is made, and the visitor reaches their floor destination, the departmental entries are located to coincide with these lift pods.* *The departmental entries are located to coincide with their lift pods so that the public or outpatients have immediate view of an entrance/waiting area.* *No major departmental waiting area/reception is further than 8.5m from a lift lobby.* *COLOUR* *The clarity and directness of the wayfinding system is enhanced and enlivened by the use of colour. Having a coherent visual strategy is essential to avoid confusing vulnerable and easily disoriented patients. In addition a well balanced and attractive environment is of major importance to patients' health and well being and to staff and user enjoyment.* *We have developed a clear and tangible approach that takes more than just signage into account, and exploits the building design and internal finishes to both help users find their way, and to create a warm environment of joy and delight.* *The lift pods have each been allocated a colour to assist in immediate cognitive recognition of the circulation system. The colour is in the form of dramatic coloured signage that runs vertically up the full height of the lift shaft, and is also used in a 'portal', or gateway that emanates from the lift lobbies and slices into the atrium space. The use of colour will not only assist users in finding their way, but will help them to remember their route next time.* *The colour also extends to the exterior of the building in a series of coloured panels. This will enable an immediate legibility of the wayfinding structure from outside to in, and presents the Royal North Shore as a building that is contributing in a positive and joyful way to the urban environment and surrounding community".*

Height

An indicative Height Control Plan has been by prepared by Cox Richardson, to illustrate the height limits imposed by the adoption of the Illustrative Master Plan, as included in the Preferred Project Report for the Concept Plan. The plan below provides an extract of the Plan as relevant to the hospital site. A full size copy of the Plan is provided at **Appendix G.**

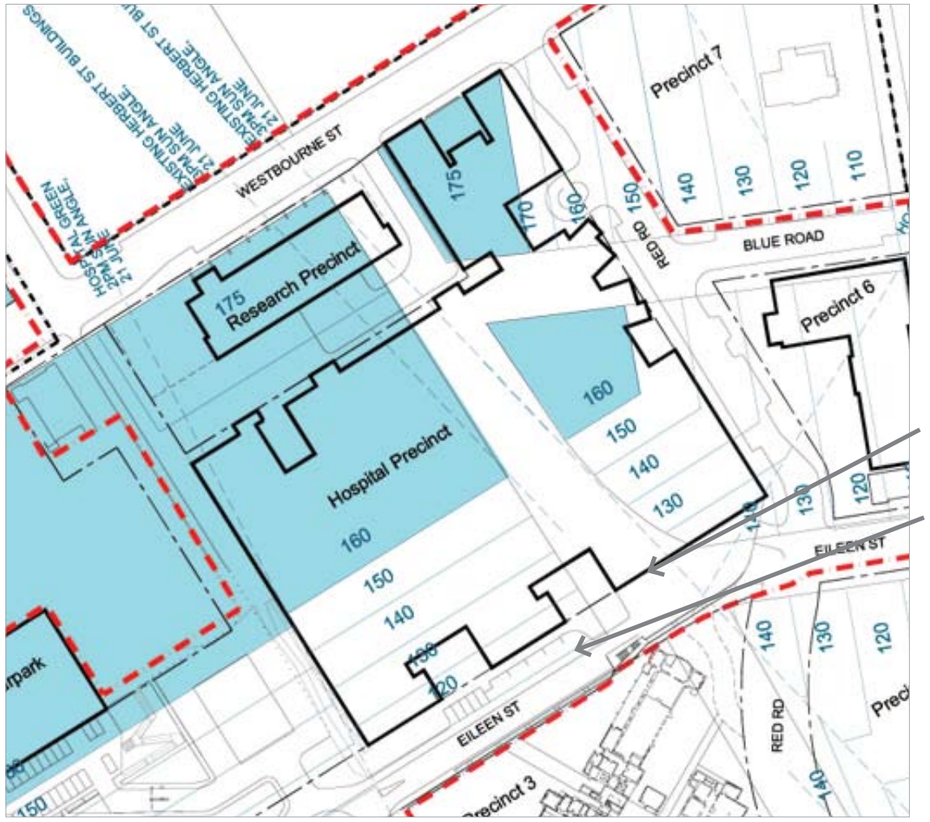


Figure 26: Extract of Height Control Plan, prepared by Cox Richardson

As shown above, the maximum height limits for development within the Hospital Precinct range between RL.120 and RL.175.

The proposed development, having an uppermost height of RL 126.35 complies in this respect, as the RL.120 height control contour follows the southern side of Eileen Street. The height of the building at its southern elevation is RL119.9.

Density and Scale

The density and scale of the building is consistent with that envisaged under MP 06_0051. The height of the building sits comfortably within the prescribed envelope, and as will be further discussed below, will not introduce any significant adverse impacts such as overshadowing, loss of views or privacy impacts.

5.1.2 Community Health Facility

Urban Design Response

The designers of the building, Cox Richardson, have provided the following description with respect to how the building responds to its urban context:

"This building provides for a large diverse mix of community health services and client groups. When complete, it will offer one of the largest Community Health facilities in the state and in fact the nation.

It will be a prominent facility with multiple direct street address points and achieve a major part of relating the Main Hospital building to a reconnected neighborhood fabric. The new and reinstated streets encircling the building will support pedestrian and private vehicle access adjacent to the building. Its major address point on Herbert Street will be prominent and signify a re-engagement of the Hospital with the broader community. It will also contribute to a new urban form for the Hospital, becoming a more urban form surrounded by major new and revitalised open spaces and new publicly accessible streets. The previous institutional campus will evolve into a new street form in which public visitation and thoroughfare is encouraged.

The Community Health Services building will:

- *Provide clear entry points for all users (staff and visitors alike)*
- *Allow effective clinical and management efficiencies with discreet and secure separation of entries and internal functions where required;*
- *Provide the initial impression of the hospital campus to clients and visitors arriving from Herbert Street.*

The building engages the precinct in which it is located in a number of ways:

- *It encloses a publicly-accessible open space which opens to Red Road and the Heritage precinct;*
- *It provides a frontage to Herbert Street for the majority of the precinct's length with visible activities including the main entry, meeting and conference rooms, and indoor / outdoor café space.*
- *It provides entry points on three road frontages;*
- *It allows for an integrated extension to the south of the precinct in future.*
- *The building also engages a conserved portion of Building 19 on the southern boundary of* the precinct, fronting Eileen Street.

The building will achieve a strong presence along each frontage:

- *Herbert Street, as the initial presence of the hospital community encountered on arrival from St Leonard's Station;*
- *Facing Blue Road to the north, with optimum daylight gain to occupied patient and visitor treatment areas;*
- *Red Road entry to Community Mental Health with a clear and welcoming street presence in its own right.*

Key urban design outcomes are identified and addressed as follows:

URBAN DESIGN OUTCOME	RESPONSE
Effective transition between public and private space	*This is achieved by creating a clear façade alignment compliant with the required 4m setback from the current boundary*
Activation of the ground level streetscape	*The main entry to this building is provided on Herbert Street, as the busiest and most visible approach to the precinct I which the building is sited. This provides a direct pedestrian route from St Leonard's station to the facility.* *In addition, vehicle entry to the building is located along the same frontage at the far end of the building, to minimise traffic introduced in to the hospital campus*
Articulation and modulation of building façades	*Each major façade is expressed with metal framing elements wrapping the fenestration to achieve a consistent expression, also compatible with the facade detailing of the main acute hospital.*
Increasing building separation in proportion to building height	*The building extends to a maximum of seven stories and is articulated at the upper levels with faced setbacks to reduce the perceived aggregate volume*
Creation of secondary upper level setbacks	*The building form has been developed as two rectilinear masses joined via a more transparent glazed link at the entry zone.* *The upper floors also reduce in total floor area.*
Provision of street landscape character	*The new 4m Herbert Street setback is augmented with extensive landscape planting between each of the major entries.* *Additional landscaping to the perimeter of the cafe external seating area complements this landscape.* *To the northern façade a more robust paving zone is provided to manage the security and safety requirements of the Opioid Treatment facility which has its entry and exit on this frontage. A low wall aligned with the boundary mediates between level entry doors and the steeply rising street grade.* *The southern side of the precinct includes the most substantial planting and landscape, complementing the retained Ficus Hilli specimen, the largest on the site.* *In the northwest corner a hard paved zone provides occasional emergency vehicle access to the Mental Health unit at Level 2*
Clarity of planning for visitors and enable staff to operate with security and efficiency in the building	*Provision of the enlarged multiple-height entry lobby achieves a welcoming, open invitation to the building;* *Extensive glazing on two opposite sides provides ample daylight and signifies the core circulation sequence to the building*

URBAN DESIGN OUTCOME	RESPONSE
	Each floor typically contains patient and visitor spaces to the northeastern wing, so that on arrival from the public lists at each level the reception for each department is visible directly in front of visitors. Generous daylight in to this space from side windows illuminates the reception and waiting spaces on each floor. *Where a few levels contain functions visited by the public in the southern wing, these each have reception or access from the public lift lobby in the centre of the building.* *Security between portions of the building is generally achieved at each level so that fire and life safety is achieved simultaneously with staff security, at the northern face of the link section, behind the typical reception location. This minimises the intrusion of additional compartments within the planning. It will also support flexibility of future re-planning when this is needed in future.* *Ease of orientation has been emphasised through the provision of a generous entry lobby which offers visibility to multiple floors, interprets the arrival sequence and offers wayfinding, security through:* *A prominent main reception which offers visibility, support and potentially intercepts problematic cases should these arise.* *The entry achieves security through control of access to other floors and departments; passive surveillance of all arriving visitors; co-location of compatible uses including* *Separates basement vehicular access from lift access to the upper floors, so that all visitors may be met and directed to appropriate facilities within the building. This planning also minimises the risk of unintended interaction between differing visitor groups* *The main entry to this building is provided on Herbert Street, as the busiest and most visible approach to the precinct in which the building is sited. This provides a direct pedestrian route from St Leonard's station to the facility.*
Glazing (Amenity)	*Clarity of glass selection has been a prime objective of the facade, along with achieving the technical requirements of the brief. The glazing types have been selected to balance both solar and acoustic performance and light transmission. The building enjoys good views in most directions, particularly to the northeast and the west, and a maximum of rooms which can enjoy this sunlight have been located along the perimeter.* *Extensive glazing is provided to the link section on the northeastern and northwestern façades; this will create more open, day lit spaces to the entry and waiting areas on each floor. Horizontal aluminum louvre shading to these and other windows on the same facades mitigates glare and direct sunlight*
Glazing (Adaptability)	*The future open planned office environments which will be subject to change and re-planning over the life of the building. For this reason, the typical glazing configuration is proposed as modular strip glazing, able to accommodate changes in room layouts in future.*
Sustainable Design	*The building exemplifies the values of "long life, loose fit and low energy" in so far as it:* ▪ *Minimises vertical travel to the widest group of occupants by pacing least visited units at the upper levels;* ▪ *Optimises ground level access to maximum number of functions;* ▪ *Encourages pedestrian activity and supports public transport access from rail or bus;* ▪ *The plan form is not tailored to a highly specific singular use but rather creates flexible spaces which can accommodate a broad range of uses;* ▪ *Utilizes simple façade material selected for durability and continued appearance quality throughout their lifetime; and* ▪ *Internal lining materials which have been selected for durability and ease of maintenance, ensuring a high maintained standard of finish*

Height

The uppermost height of the building is RL113.0. The building is finished at two different levels, with the Herbert Street wing being approximately 7.4m lower than the highest point of the Blue Road wing.

The maximum height for development within Precinct 6, as prescribed under the Concept Approval, and as demonstrated in the extract from the Height Control Plan below, ranges between RL140 at the north west side of the Precinct down to RL110. The highest point of the building, being the uppermost point of the roof-top plant, is located at the north-west portion of the site and therefore complies fully in this respect.

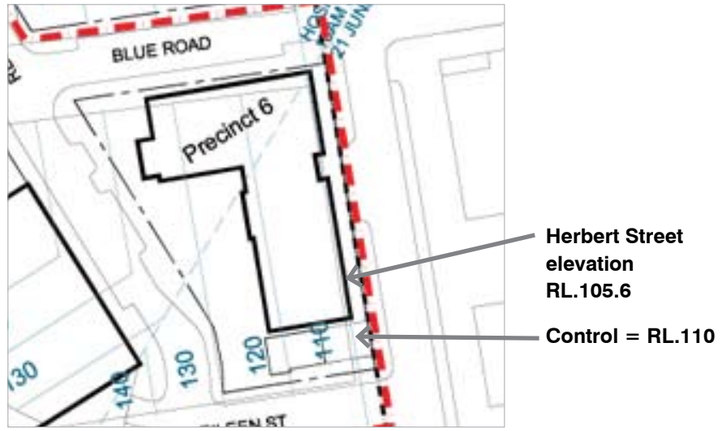


Figure 27: Extract of Height Control Plan, prepared by Cox Richardson

Density and Scale

The density and scale of the building is consistent to that envisaged under MP06_0051 except importantly, with respect to location. However, the height of the building sits comfortably within the prescribed envelope, and as will be further discussed below, will not introduce any significant adverse or unacceptable impacts such as overshadowing, loss of views or privacy impacts.

5.1.3 Multi-level car park

The higher level is expressed as a glazed, visually lightweight bridge for public and clinical access between the buildings and will be fully integrated with the design of each of the buildings it connects.

The car park uses the site topography and the basement void left as a legacy of Building 1 when removed, to achieve the required number of spaces within a low-rise form which favours the amenity and outlook of adjacent buildings. In this manner it will rise only three storeys above ground, sufficient to support the clinical link at level 5 whilst remaining a low-rise structure.

A limited number of spaces will be provided on grade in front of the rectangular floor plates of the building. This area will be interspersed with trees and landscape planting, to maintain a continuity of landscaped open space facing the Oval and the principal south-facing address of the campus.

Vehicle circulation within the car park is configured as a simple, unidirectional loop system, with alternating split-level floor plates, so that traffic conflict is minimised and wayfinding direction is not demanded to support smooth traffic flow. A pay-on-foot ticketing system is envisaged to further reduce queuing times in peak periods.

Visual Impacts

In order to mitigate any potential visual impacts, the designers of the building have responded by the architectural treatment of the facades and by partially locating the building in the foot print of the existing hospital building.

The proposed facade treatments and the design of the multi-level carpark are considered to result in a satisfactory urban design outcome in terms of bulk and scale, and the mitigation of any potential visual impacts. The provision of landscaping on the structure is not considered necessary.

Façade expression

An architectural façade has been applied to parts of the south and east elevations to address the visually prominent elements. Further expression comes in the form of an over-head, pedestrian bridge, of light-weight glazed construction, and linkages to the hospital and Douglas Building.

Externally, the southern and western facades are clad with alternating coloured panels of perforated metal which reflect the fenestration patterns of the new Acute Hospital and Community Health building façades. A distinct colour scheme will complement the colour palette of the neighbouring health buildings.

The car park is essentially split into the northern rectangular section which is seven levels in height and provides the bulk of the car parking space. The southern wedge-shaped section is only two levels in height and has been designed to take up most of the excavation left by the demolition of Building 1. This two-level area has been designed to meld into the Reserve Rd landscape and limit the visual bulk of the car park.

Height

As shown below on the extract from the Height Control Map, the maximum height for development on land where the building is proposed is RL.160.

The proposed development having an uppermost height of RL.106.35 complies in this respect

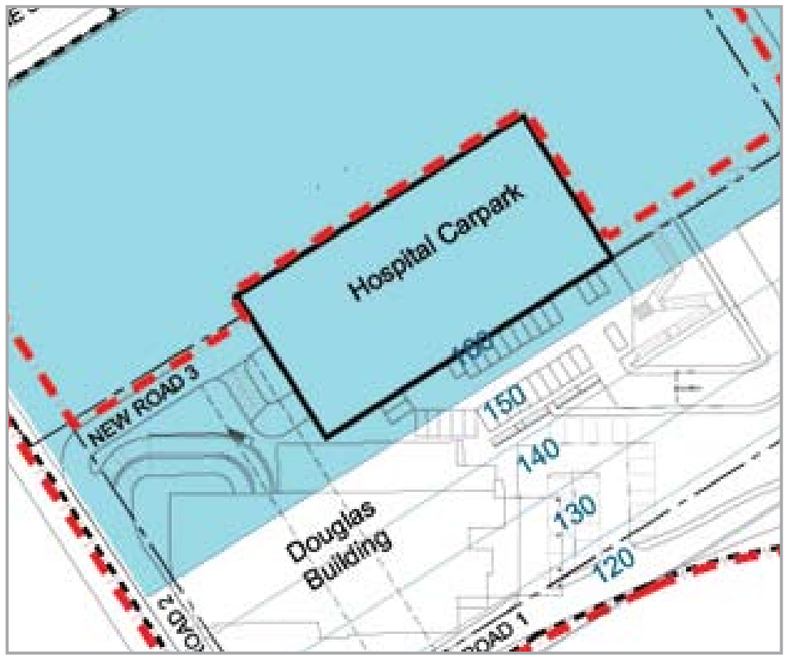


Figure 28 : Extract of Height Control Plan, prepared by Cox Richardson

Density and Scale

The density and scale of the building is consistent to that envisaged under MP06_0051. The height of the building sits comfortably within the prescribed envelope, and as will be further discussed below, will not introduce any significant adverse impacts such as overshadowing, loss of views or privacy impacts.

5.2 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

A CPTED Assessment has been prepared by Urbis. Refer to **Appendix H.**

The following provides a summary of the findings of this assessment:

Crime Data & Research

There are no current concerns in relation to levels of crime and safety that would impact significantly on the proposed redevelopment.

Consideration has been given to trends in crime rates of selected offences from 2003 to 2007 for the Lane Cove, North Sydney and Willoughby Local Government Areas (LGAs).

With the exception of malicious damage in the Willoughby LGA, crime trends across the Lane Cove, North Sydney and Willoughby LGAs have been either stable or reduced over the 2003-2007 period.

While there is no publicly available information regarding crime on the RNSH grounds, a July 2008 Bureau of Crime, Statistics and Research (BOCSAR) bulletin reported that between 1996 to 2006 police-recorded a 50% increase of assaults on NSW hospital premises from 214 in 1996 to 322 in 2006. A significant majority of victims were hospital health-care workers.

Design Issues

Overall, the proposed building and landscape design is considered to be robust and congruent with CPTED principles.

The design assessment has considered:

- External design
- Internal design
- Landscape design.

The assessment identified a number of CPTED issues under the following broad characteristics of the proposed design:

- Courtyards and children play areas
- Loading bays and emergency vehicle areas
- Car park amenities
- Building access points.

Broadly, proposed mitigation measures include:

- After hours management measures such as consideration of adequate levels of lighting, CCTV and security patrols at key locations such as building access points, courtyards, loading bays, basements and car park amenities.
- Use of robust materials in finishes to minimise the impact of malicious damage
- Use of clear signage in relation to pedestrian access clearly marking staff only areas
- Installation of clear and prominent signage reminding users not to leave valuables in their cars

- Restricting access to car park amenities after hours.

Consideration has also been given to the management of additional issues during the construction works. This includes consideration of:

- Management of vacant premises
- Pedestrian and user safety
- Signage and emergency vehicles (NSW Police & NSW Fire Brigades).

It is proposed that these recommendations be translated into Project Commitments.

5.3 AMENITY IMPACTS

5.3.1 View analysis

The plans below indicate important views from, and within, the site. On comparison with the proposed building footprints it is evident that no significant views or outlooks are compromised as a result of this Project.

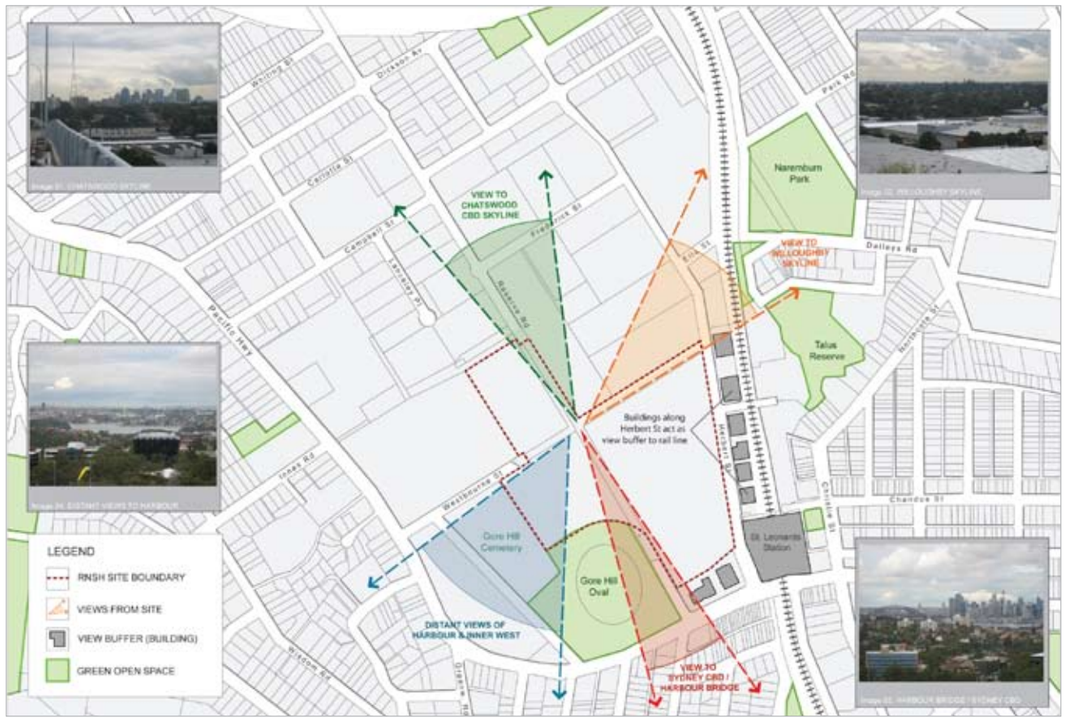


Figure 29: Local Context - Views and Vistas from Site, prepared by Cox Richardson

Figure 30: Local Context - Views in and around Site, prepared by Cox Richardson

5.3.2 Privacy

The greatest potential for such impacts exists between the eastern elevation of the Community Health Building and the residential flat building on the opposite side of Herbert Street. The distance between the main eastern building line of the proposed building and the nearest apartment is approximately 30m.

Given the physical separation of the two structures and the incorporation of horizontal aluminum louvers to the eastern facade, no significant adverse impacts related to overlooking or the loss of privacy are envisaged as a result of the proposed development.

The proposed louvre system will improve levels of internal amenity for the occupants of the new building by providing shading and mitigating glare and direct sunlight

5.3.3 Overshadowing

To assess the impact of the proposed development, shadow modelling has been carried out by C3D Interactive Pty Ltd. A full set of shadow diagrams are provided at **Appendix I.**

Key considerations with respect to overshading and solar access with respect to this project include:

1. Solar access to open space; and,
2. Potential overshadowing to residential uses on the eastern side of Herbert Street.

These matters are addressed as follows:

Solar Access to Open Space

The shadow diagram below indicates the expected shadows, existing and proposed, during the winter solstice at 3pm. In the context of this site this is the period where shadows are longest across the site.

Figure 31 : Shadow Diagram June 22, 3pm

It is noted that Gore Hill Park is already partially overshadowed by the existing Douglas Building at this time. No further such impacts will be introduced as a result of the proposed development. Other areas of open space include gardens and open areas within the heritage precinct. As shown above, the proposed hospital and the existing heritage buildings render most of this area in shadow at this time. However, as can be seen from the further plans below, these areas are free of shadow in the morning and at Noon.

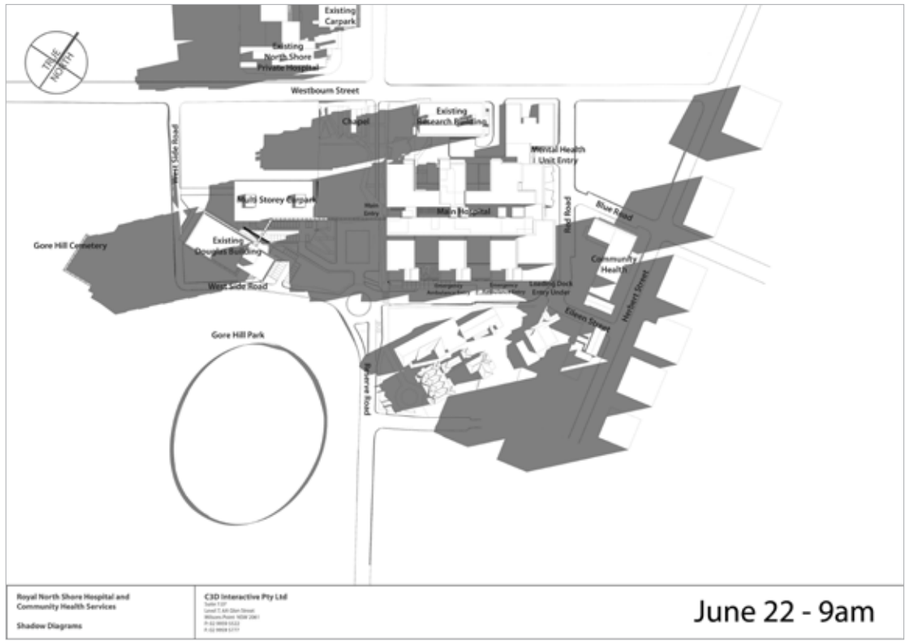
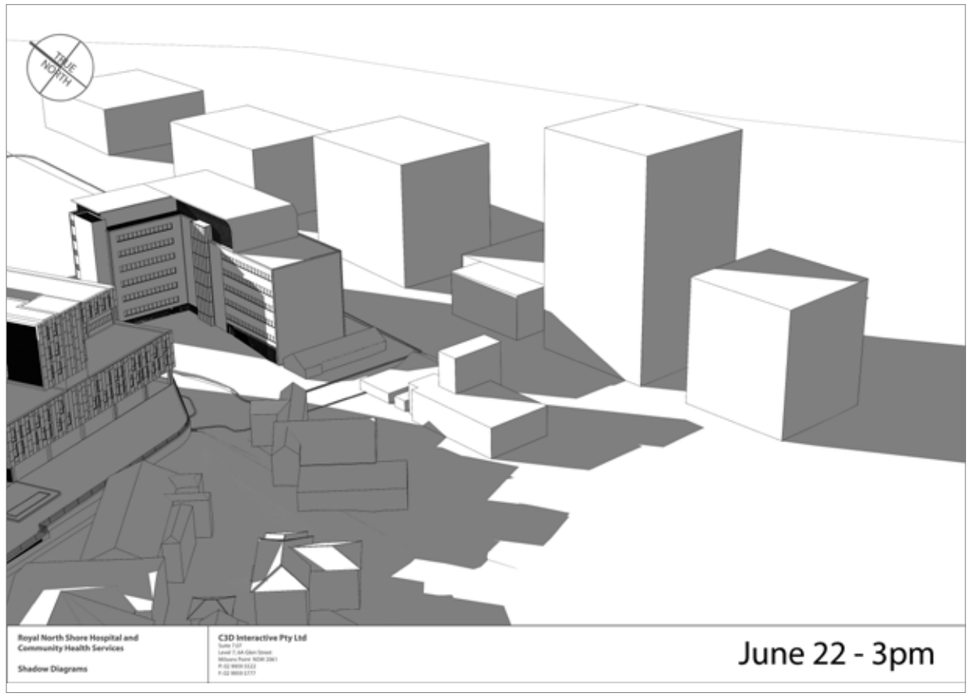


Figure 32 : Shadow Diagram June 22, 9am

Figure 33: Shadow Diagram June 22, 12pm



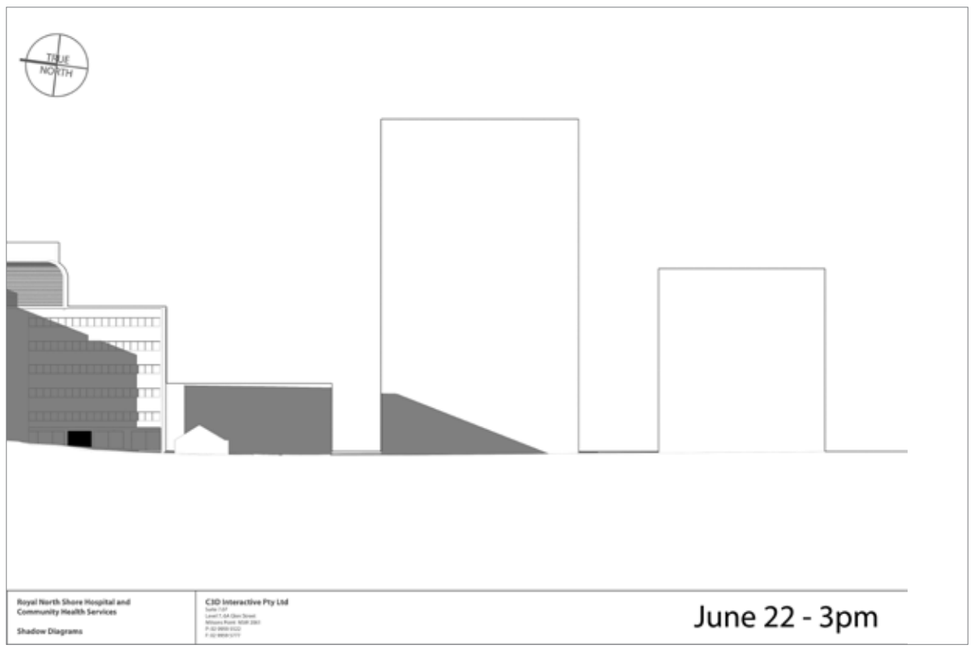


Figure 34: Shadow Diagram June 22, 3pm 3D Model and Elevation

Overshadowing on surrounding uses

As is evident at Figure 31, the potential exists for overshadowing to the residential units on the opposite side of Herbert Street from the proposed Community Health Facility later in the afternoon at mid-winter.

To demonstrate the actual impact on these residential buildings, further modelling was carried out to ascertain how far the shadows extend up the buildings. These further drawings are provided at Figure 34.

Whilst it is accepted that some overshadowing will be introduced to the western elevation of these building, it is clear that the extent of the shadowing is not significant and it should be made clear that this is worst case scenario.

During the equinoxes, such shadows will be non-existent on the residential properties.

Overshadowing has been minimised by:

- Finishing the street wall height of the proposed Community Health Facility at approximately 5m below the permitted height limit for the site;
- Increasing building separation in proportion to height;
- The provision of a 4m setback along Herbert Street; and,
- Allowing the building to follow the natural topography of the site.

Overall, the proposal is considered to be satisfactory in terms of shadow impacts.

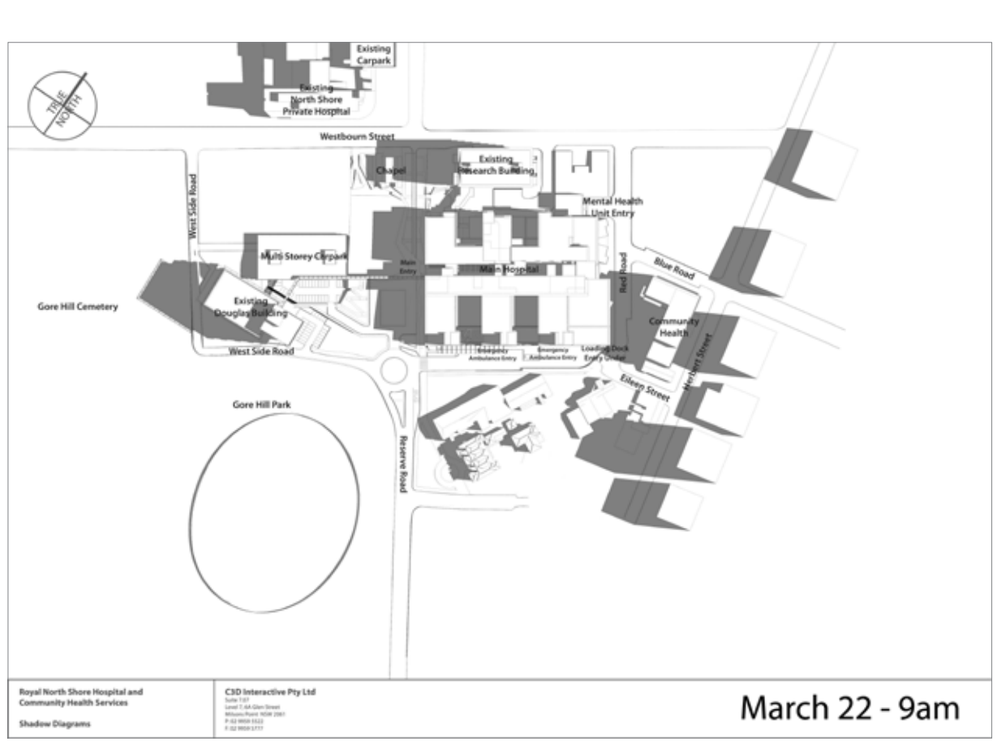


Figure 35: Shadow Diagram March 22, 9am

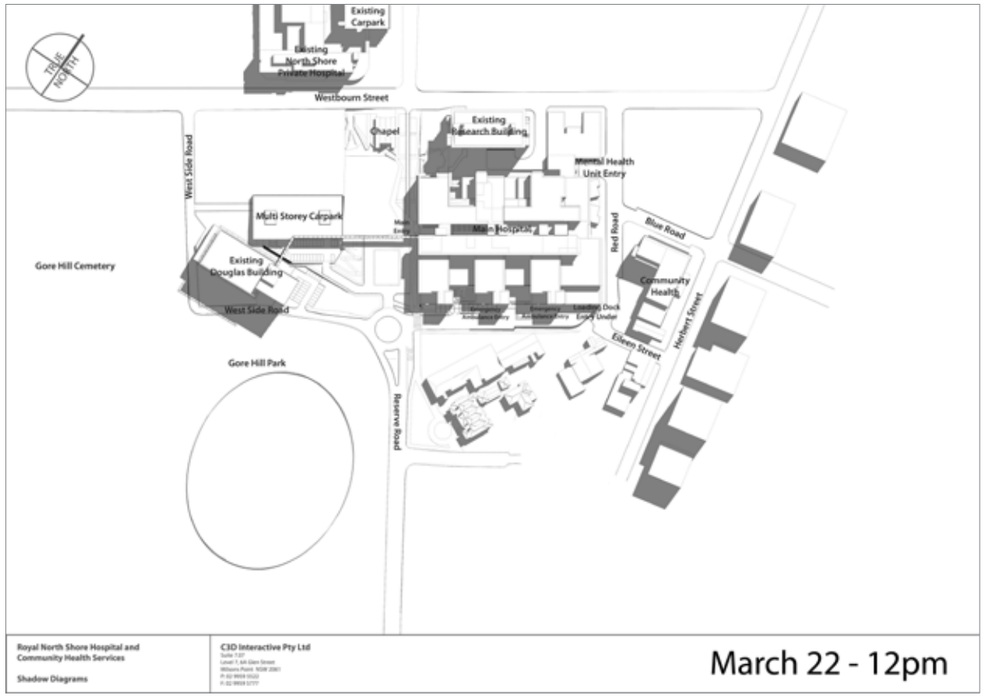


Figure 36: Shadow Diagram March 22, 12pm

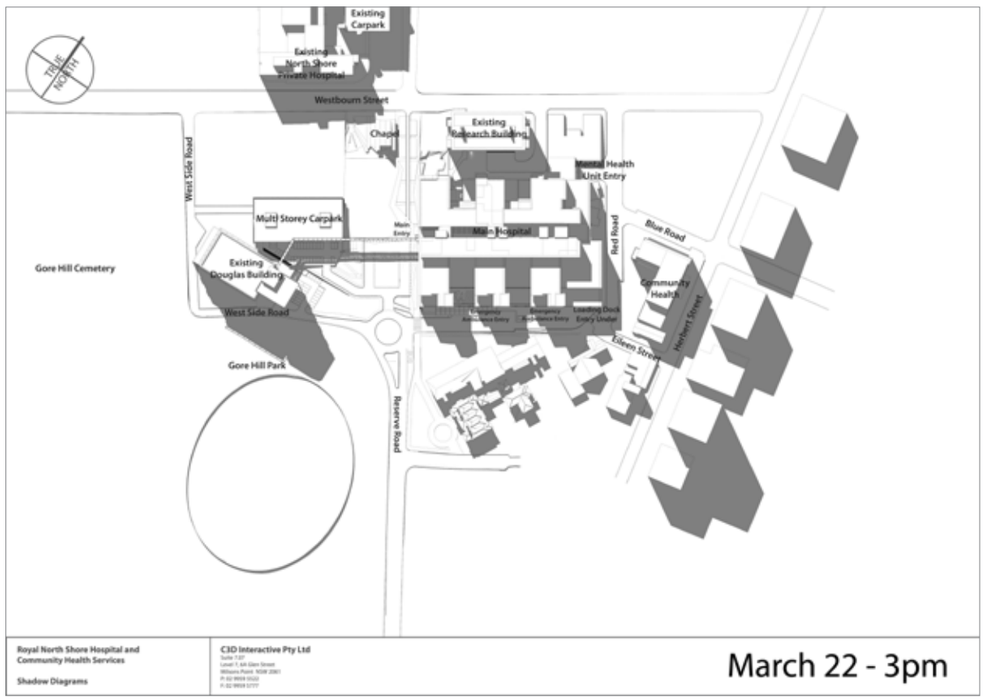


Figure 37: Shadow Diagram March 22, 3pm

5.3.4 Visual Impacts

The existing hospital building, private hospital, Douglas Building and the Kolling Building are all prominent features of the existing urban streetscape, particularly given their location along a natural ridge running east-west across the site, across the northern portion of the development site.

The new hospital will continue to be an iconic element in the urban environment but will be a significant improvement in terms of the potential impacts it may introduce. The quality design and considered selection of façade treatments will be a positive outcome for the site, particularly when compared to the lifeless, imposing nature of the current hospital building.

Any potential visual impacts related to the new multi-level car park are discussed in detail above, however in summary, any such impacts are considered to have been satisfactorily addressed by the proposed well articulated façade expression and the siting of the excavated part of the building in the footprint of the existing hospital basement.

The Community Health Facility is located with its principal frontage facing Herbert Street with residential apartment buildings located on the opposite side of the Street. Whilst there are considered to be no unreasonable environmental impacts, such as overshadowing and the loss of privacy, expected with regard to the residential uses opposite, it is also important to considered any potential visual impacts and the quality of the outlook of these residents.

The visual impact of the proposed Community Health building has been minimised by setting back upper levels, the selection of high quality materials and a well modulated, articulated facades. The overall visual environment along Herbert Street is considered to improve as a result of the proposed development given the removal of dilapidated buildings and their replacement with a contemporary structure, which better relates to the street through activation along the ground floor. Refer to the photomontage below illustrating the Herbert Street presentation of the building.

Figure 38: Photo Montage Herbert Street Elevation, prepared by Cox Richardson

Overall, no adverse visual impacts are envisaged as a result of the proposed development, on the contrary, the new master planned precinct, including the removal of defunct structures and the construction of new facilities will result in an improved visual environment.

5.3.5 Acoustic Impacts

Road traffic using the Pacific Highway generates high levels of noise. Noise associated with the Hospital operations includes vehicles entering and existing site, plant, ambulances travelling along the Pacific Highway and helicopter movements. The nature of noise impact is not anticipated to change markedly in the context of the proposal.

An Acoustic Statement of Commitments has been prepared by ARUP Acoustics and is attached at **Appendix J** . The report suggests that the main source of noise impact will be related to construction impacts and recommends relevant criteria to which such potential impacts may be managed and mitigated.

5.3.6 Noise from plant and equipment

No such impacts are expected on surrounding uses. Any required plant will be subject to the DECC Industrial Noise Policy.

5.4 HERITAGE

The hospital use commenced on this site in 1903, replacing an earlier cottage hospital located on a site in Crows Nest. Over the subsequent decades the hospital site grew through acquisition of adjacent lands with buildings and landscaping added in virtually every decade.

No structures/elements on the site have been formally listed as having state or local heritage significance, although the site retains the group of four (4) original hospital buildings erected on the site in 1903, including the RMOs Building and adjacent wards. These, and the two former cottages in the northeast corner of the site, are of greatest significance with later buildings mostly of moderate to low heritage significance.

Some of the landscape areas and trees have heritage value, in particular, those around the early buildings and lining Reserve Road. The latter is an historic alignment that pre-dated the hospital. The part of Eileen Street adjacent to Reserve Road is also an historic alignment. There are also several areas of mature trees on the eastern side of Reserve Road and avenue planting to the southern part of the site. Refer to **Appendix P** for Tree Heritage Study.

Graham Brooks and Associates have prepared a Heritage Report to accompany this Project Application. Refer to **Appendix F.**

Since no development is proposed within the Heritage Precinct under this Project, the Heritage Report, as supplemented by the TB Report, is limited to the following relevant criteria:

- Identification of heritage structures, landscape items, curtilages and kerb and gutter
- Heritage Impact Statements for Buildings 10 and 19 as approval was not granted for their demolition under MP06_00051.
- Recommendations as to how best to mitigate potential impacts and promote the conservation and re-use of those buildings to be retained.

A series of recommendations have been made in the Heritage Report related to archival recordings and conservation and the like. It is proposed that these form part of the Draft Statement of Commitments.

In summary, the Report concludes that Building 10 is of low significance and may be demolished, particularly given the public interest benefits of the proposed works and that there are better quality and more significant buildings on-site that may be retained and adaptively re-used. Whilst Building 19, (the Mortuary), has been identified as having heritage significance, the proposal to demolish the intrusive eastern addition to the building is acceptable.

The retention and adaptive re-use of a number of significant buildings is considered to be a positive heritage outcome for the site.

5.5 TRAFFIC AND TRANSPORT

5.5.1 Traffic Generation

With respect to Traffic Generation, the Traffic and Transport Report, provided at **Appendix E,** is prepared with respect to the RTA Guidelines for Traffic Generating Development and on the basis of determining future traffic rates by considering the difference between existing and proposed levels on on-site parking.

Given that the resultant development will only include a marginal increase in on-site parking, (proposed 2550 /existing 2197), there will be no significant changes to traffic generation.

5.5.2 Car Parking

The completed development will result in 2550 on-site parking spaces. This represents an increase of 353 on-site parking spaces. Whilst the proposed parking level is below that envisaged under the guidance contained in Willoughby Council DCP, the level of parking proposed is considered to be satisfactory given the availability of alternative methods of transport and the underlying objective to increase the modal split to public transport. Seventy-one (71) disabled parking are to be incorporated into the campus on completion, (including 23 spaces in the existing multi-level car park).

The Traffic and Transport concludes that the arrangement of car parking across the development site will have no adverse impacts on vehicular circulation and junction performance.

During construction, it is proposed to provide temporary parking areas and facilities to coincide with the proposed staging of the works. Throughout this phase it is proposed that 69 disabled spaces, 38 short terms spaces and 16 emergency reserved spaces will be provided. The proposed arrangements for car parking during construction, described in detail at Section 3.3.7, are considered to adequately cater for demand during this period.

5.5.3 Measures to encourage public transport use

The Traffic and Traffic Report, explores a number of initiatives to encourage a mode shift to public transport. Such initiatives include the retention/ improvement of existing measures including clear and safe pedestrian links, cycling routes and amenities and free public transport arrangements.

Ultimately however, to comprehensively address this issue and to successfully encourage a shift to public transport use, it is recommended that a Workplace Travel Plan be prepared and submitted for approval prior to the occupation of the hospital, which will allow for the consideration of detailed information such as staff numbers, shift changeover times, and the like. It is recommended that the Plan be reviewed 1 year post-occupancy.

The Workplace Travel Plan will be informed by a Travel Demand Management Assessment.

5.5.4 Access and Service Vehicles

New roads associated with the proposed development are detailed at Section 3.3.6 above.

The plan below illustrates expected circulation routes. Service vehicles will access the Acute Hospital and Community Health Facility at lower ground floor levels and will be dislocated from primary pedestrian routes and main entrances. The proposed access and servicing arrangements are considered to be satisfactory.

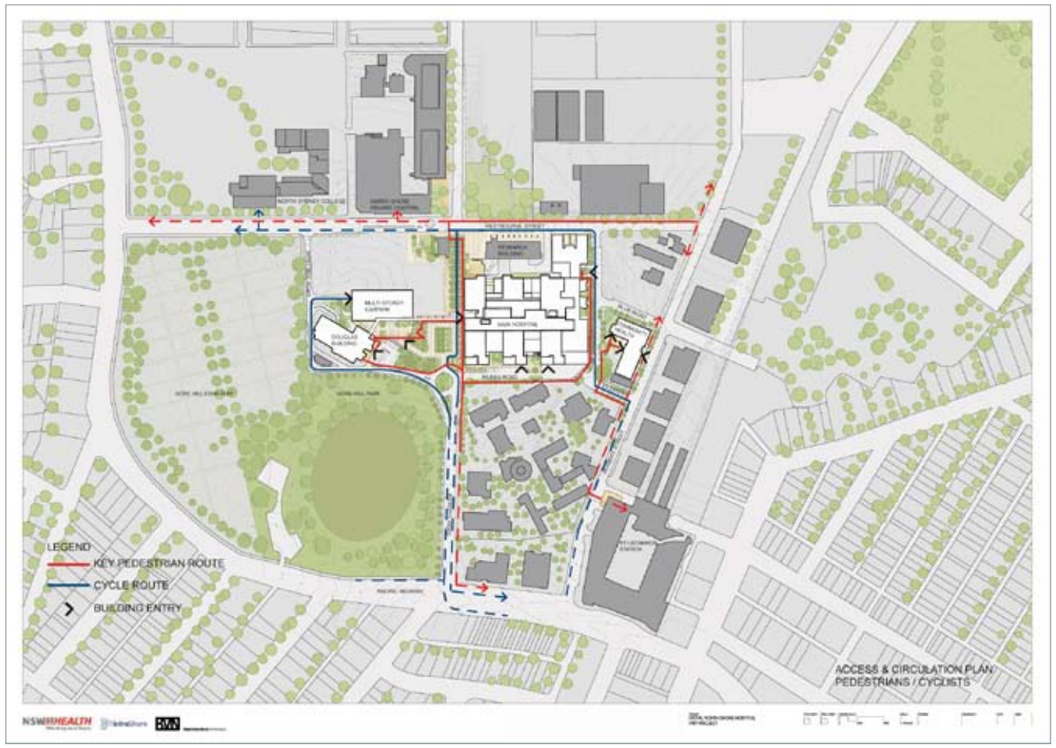


Figure 39 - Pedestrian & Circulation Plan - pedestrian and cyclists

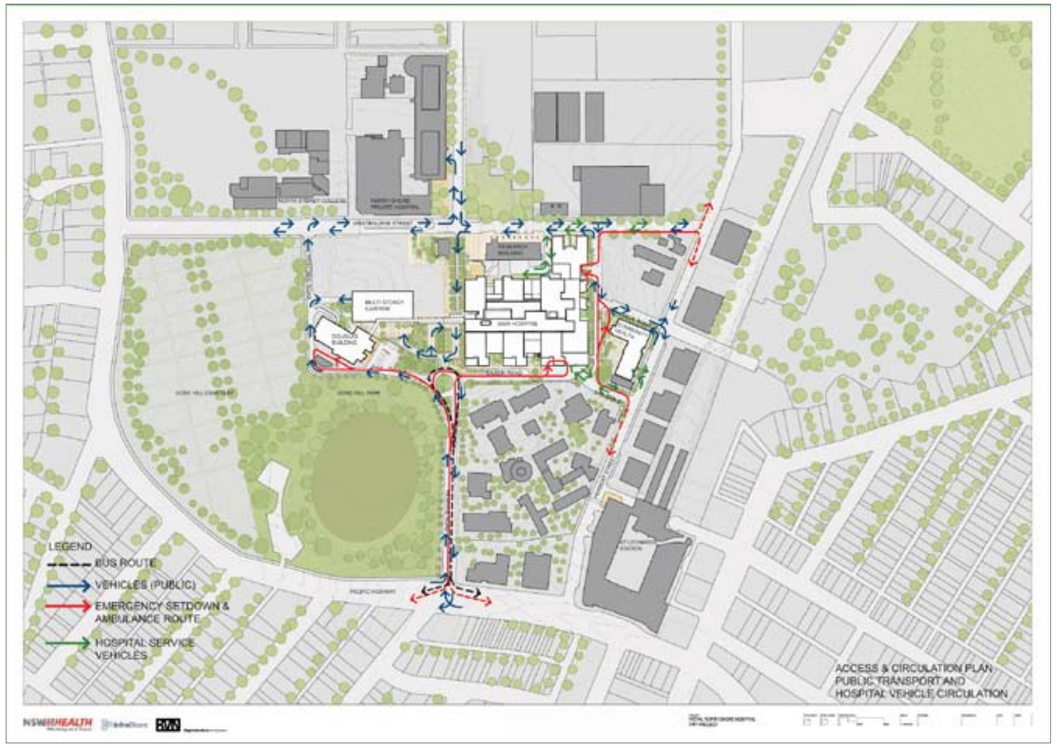


Figure 40 - Access & Circulation Plan - public transport and hospital vehicle circulation

Future cycle routes and linkages to pedestrian routes proposed outside the site will be developed in consultation with Willoughby City Council, once more is know in this respect.

Access and drop off points are all clearly indicated on the architectural drawings provide at **Appendix A**, (Ref DWG-MH-AR-101 and DWG-MH-AR-102). Future signage and road marking will further delineate these elements.

All entries and drop-off areas are capable of meeting all relevant standards with respect to pedestrian access.

5.5.5 Emergency Evacuation

Issues related to emergency evacuation are discussed below at Sections 5.10.4.

The proposed development is considered to be satisfactory in terms of traffic and transport, particularly given that the assessment has been conducted on the basis of the whole campus and the heads of consideration of a future TMAP for the whole site. No significant increase in traffic generation is expected and adequate on-site parking is provided.

5.6 ACCESSIBILITY

A preliminary assessment of the proposal has been undertaken by Morris Goding Accessibility Consulting, a copy of which is provided at **Appendix K**.

With respect to the current development drawings, the following observations are noted in the report:

> *"Appropriate accessible continuous paths of travel throughout main hospital levels 1-9 can be achieved. The public, visitor, staff and patient circulation areas, passenger lifts and lift lobbies areas are appropriate for wheelchair users. The entries to particular departments within the building appear to be suitable at this stage.*
>
> *Appropriate accessible continuous paths of travel throughout 2 levels of the mental health unit and basement car park level can be achieved. The public, visitor, staff and patient circulation areas, passenger lifts and lift lobbies area are appropriate for wheelchair users.*
>
> *Appropriate accessible continuous paths of travel throughout community health building levels 1-7 and basement car park level can be achieved. The public, visitor, staff and patient circulation areas, passenger lifts and lift lobbies are appropriate for wheelchair users. The entries to particular departments within the building appear to be suitable at this stage.*
>
> *The developed design of these building will provide a consistent accessible environment through detailed design and planning of integrated accessible network of paths of travel. This will include the provision of appropriate continuous accessible paths of travel, circulation areas, signage, lighting, seating, handrails, stairs, ramps, lifts, accessible toilet facilities, accessible services and amenities, accessible car parking, accessible pedestrian and transport linkages."*

The Report concludes that the proposed development is capable of satisfying all relevant legislation and policy in this respect. It is proposed that a commitment is made to comply with the DDA, the BCA, Draft DDA premises Standards, NSW Health Facility Guidelines and the relevant Australian Standards.

5.7 DRAINAGE AND STORMWATER MANAGEMENT

The concept for the proposed stormwater drainage system has been prepared on the basis that flows leaving the site at critical points at present, will be no greater as a result of the proposed development.

The design complies with the following guidelines:

- Australian Rainfall and Runoff 2000 (ARR);
- NSW Floodplan Management Manual 2001;
- Willoughby City Council Development Control Plan 2006;
- Willoughby City Council Engineering Guidelines D5 Stormwater Drainage Design 1999;
- Willoughby City Council Technical Standards:
  - No. 1 On-site Detention 2005;
  - No. 2 Rainwater Tanks 2005;
  - No. 4 Sediment and Erosion Control 2004;
  - No.5 Water Quality 2004

5.7.1 Stormwater Modelling and On-site Detention

For the purposes of stormwater modelling and the assessment of detention requirements, the development site has been divided into four catchment areas.

The proposed drainage system has been designed to accommodate a 1 in 20 year flood event, with any occurrences up to the 1 in 100 year event managed by overland flows in accordance with Council Policy.

Whilst three of the four catchments do not increase discharge rates and do not necessitate detention, catchment area C, as identified in the attached Stormwater Report (Refer to **Appendix L**), may be subject to potential increased discharges and hence the proposal includes the provision of On-site Detention.

Subject to the provision of appropriate detention systems, the proposed development will not increase the potential for flooding on neighbouring properties.

5.7.2 Stormwater Quality

The treatment of stormwater discharge is a key component of the overall drainage concept. WSUD measures will be further developed during further detailed design processes.

5.7.3 Other Civil Works

As well as incorporating stormwater drainage design details, the comprehensive Stormwater and Drainage Assessment, prepared by Hyder, also includes details of proposed works with respect to:

- New road design;
- Proposed pavement treatments;
- Bulk excavations; and,
- Erosion and sediment control.

The details provided in these drawings are considered to be adequate for current assessment purposes, the merits of which appear satisfactory, but which will be the subject of further detailed design, assessment and certification prior to the commencement of works.

5.8 CONTAMINATION ASSESSMENT

A draft Stage 2 Environmental Site Assessment has been carried out by Coffey Environments. A copy of the Report, (excluding testing data given the volume of material), has been provided at **Appendix M**. All relevant former studies and testing data may be made available on request.

The report identifies traces of asbestos in the sub soil around parts of the site as well as localised areas of contamination, which may remediated. The Report also makes recommendations to inform the Remediation Action Plan (RAP), including how to address potential contaminants not yet detected, such as localised waste material mixed within imported fill and asbestos pipes which may have been used during the early construction of the site. As a contingency to address undetected contaminants and to properly manage asbestos, a specific asbestos management plan will be included in any RAP.

Any soil requiring off-site disposal will be classified in accordance with NSW DEC (2004) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes.

It is proposed that a hazardous materials assessment be prepared for the development site prior to the commencement of demolition. The assessment should take place prior to demolition to ensure any hazardous material are appropriately identified and managed. Demolition should be carried out in a controlled manner to mitigate the spread of potential contaminants and remediation should then follow. Further contamination assessments will be carried out on the footprint of buildings to be demolished and where pathways and roads are to be removed. No significant issues have been identified with respect to groundwater contamination.

There is no evidence to suggest that subject to appropriate remediation and waste soil management that the current soil conditions should have any adverse implications with respect to the current Project

The draft Stage 2 Environmental Site Assessment concludes that, based on investigations undertaken to date, the site is suited to its intended purpose in terms of soil and groundwater contamination, subject to the aforementioned matters being further investigated and managed.

5.9 CONSTRUCTION IMPACTS

Potential construction impacts such as noise and vibration, waste management, cut/fill retaining structures, access during construction, construction vehicle management and parking for construction workers will all be comprehensively addressed in a Construction Management Plan to be prepared prior to the commencement of works. Subject to any peculiarities of each stage, a Construction Management Plan may be prepared for each development stage/site.

The preparation of such a plan(s) later in the planning process, as opposed to forming part of the Project Application, is considered to be of significant public benefit as all matters related to potential construction impacts raised during the exhibition of the Project may be accordingly addressed. More detailed management provisions may also be incorporated once the design has further progressed.

All potential construction related matters may be appropriately managed and mitigated to minimise any potential environmental impacts through adherence to statutory and industry standards as described below.

5.9.1 Noise and Vibration

Environmental control procedures will be developed, implemented and monitored to mitigate all potential noise and vibration generated from construction activities in accordance with DECC Draft Construction Noise Guidelines (2008) and the DECC Assessing Vibration Guide.

All demolition work shall comply with AS2601: 2001 – The Demolition of Structures.

5.9.2 Soil and Erosion Control

The proposed location and means of erosion and sediment control systems shall be in accordance with the Erosion and Sediment Control Plan prepared by Hyder, as provided at **Appendix L.** The Plan has been prepared in accordance with Managing Urban Stormwater, Soil and Construction 4th Edition March 2004.

The control of sediment and mitigation of erosion impacts will be detailed in the Construction Management Plan.

5.9.3 Stormwater Management

Environmental control procedures will be developed, implemented and monitored to ensure water runoff from the construction site does not contaminate stormwater discharge as per the requirements of the Protection of the Environment Act 1997.

5.9.4 Waste Management

Environmental control procedures will be developed, implemented and monitored to control the generation of, removal from site and reporting of waste. Management and operational criteria for waste management shall be prepared in accordance with Waste Avoidance and Resource Recovery Act 2001. Recycling and waste recovery will be monitored by waste management contractors who will report on what is being recycled and what is sent to land fill.

It is anticipated that approximately 80% of materials will be recycled.

5.9.5 Excavation

All work, including demolition, excavation and building shall comply with AS2436: 1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.

A proposed Bulk Excavation Plan has been prepared by Hyder and is provided within the Stormwater and Civil Drawings at **Appendix L.**

The Geotechnical Report, as provided at **Appendix D**, includes observations with respect to subterranean rock, soil and groundwater conditions and provides recommendations with respect to loading ratios for unsupported cuts, vertical excavations in rock, retaining walls and foundations which will inform excavation practises.

As discussed earlier the site conditions, from top down generally include soil, shale, then sandstone. Of significance, in terms of potential impacts introduced during excavation activities, no penetration is expected in the denser sandstone bedrock, making the achievement of relevant noise and vibration criteria more straight forward.

Again, all construction activities shall comply with DECC Draft Construction Noise Guidelines (2008) and the DECC Assessing Vibration Guide.

5.9.6 Vehicular and pedestrian access during construction

All Construction traffic will have a single point of entry to the development site. The entry off Eileen Street is accessed off Herbert Street and will have a traffic controller checking the booking in of delivery vehicles and assisting with the smooth running and orderly flow of traffic into the site.

The impact of construction traffic will be mitigated by staggering deliveries to the site.

This strategy takes the bulk of vehicles along Herbert Street and away from roads associated with the existing hospital, (Reserve Road from Eileen Street), the exit is well away from the current hospital and has vehicles leaving the operational hospital precinct via a direct and manageable route. A traffic controller will assist in the safe exiting of vehicles from the site at the Red Road and Eileen Street exits.

The construction traffic entering in from Herbert St will be co-ordinated in a manner that will not congest the traffic on Herbert St. The volume of construction traffic will be controlled to enter the site on pre-planned arrangements with the principle contractor. Construction traffic will be staggered throughout the day to ensure that congestion is not encountered within the site and outside the site on surrounding streets. Construction traffic entering and exiting the site will be controlled by traffic controllers on either side of the Herbert St.

It is proposed that a comprehensive Construction Traffic Management Plan be prepared for approval prior to the commencement of works.

Subject to all construction vehicles meeting relevant noise criteria, the proposed means of construction traffic access and egress appears to be satisfactory.

5.9.7 Public transport access during construction

There have been no significant changes or proposed changes to the existing bus routes for the Lower North Shore area. Changes in timetables for the buses that serve the Hospital have been negligible to those previously outlined.

Discussions held with the STA suggest that there are no significant improvements planned at present.

At present, buses enter the hospital from the Pacific Highway via Reserve Road (S). They travel north then run along Reserve Road until they reach a mini roundabout at which point they undertake a U-turn and travel south for around 40m where passengers join or leave the service.

For the majority of the construction period, the current access arrangements for public buses will continue. Only in the period, May 2011 to December 2011 will buses need to follow another route as the turning area on Reserve Road will be absorbed into the construction site. During this period, buses could drive along Westbourne Street (W) where it is expected they will set down and pick up passengers adjacent to the private hospital. They will then turn left and travel up Reserve Road (N) turn right at Frederick Street and then travel along Herbert Street to rejoin the Pacific Highway.

Upon completion of the scheme, buses will take a similar route as present. They will leave the Pacific Highway, travel north along Reserve Road (S) and travel to the new larger roundabout where they will undertake a u-turn and travel for around 40m before stopping at the new bus stop to set down / pick up passengers. Passengers leaving the bus will then have a direct walking route to the new hospital entrance by means of a footpath and zebra crossing.

Summary

The proposed practises and standards referred to above will be formalised in a Construction Management Plan and once approved, will be included in the Development and Construction Contractors Construction Management Plan.

5.10 OPERATIONAL IMPACTS

5.10.1 Waste management

During construction of the new hospital there will be no changes to the way waste is currently treated at the existing hospital. The construction of the new hospital does not interfere with the existing waste handling procedures. All waste streams will be dealt with in the current manner where waste is transported through the existing built environment by hospital employed waste staff. The waste is taken to the existing loading dock areas where it is placed in its storage area or specialist storage receptacles and transported off site by the current waste contractors who have a contract with NSW Health.

Waste Attendants will move medical and contaminated waste in yellow bins to the designated pick up area within the existing loading dock. This service will be delivered according to the existing operations schedule. After hours requests for this task will be allocated to trained Support Service Attendants staff.

At point of pickup each yellow medical bin will be fitted with a black plastic snap tie. The snap ties will be supplied by the waste supervisor to the waste attendants who will carry out these duties. The supervisor will ensure staff have adequate stocks of snap ties to secure this waste.

All medical waste will be handled with due care and will be transported to the existing secure medical waste storage room by the dock.

Sharps containers will be collected as per the agreed schedule. The tops of the sharps containers will be checked by waste attendants to ensure they are closed firmly. The collection of sharps containers will be manually recorded. Sharps containers will be taken to the medical waste room. Sharps containers will be placed in the nearest yellow waste bin for disposal.

EPA documentation for the external waste collection service is in place currently with the contracted waste provider and these procedures will stay in place for the construction period without change.

The following commitment is made with respect to operational waste management for the proposed buildigs.

Waste Management Plan

A fully detailed Waste Management Plan will be submitted prior to occupation of the hospital and community healthy facility. These plans will document waste management practices that comply with all relevant legislation relating to waste and resource recovery, environmental protection, and occupational health and safety, including:

- NSW Government Waste Reduction and Purchasing Policy,
- NSW DOH Infection Control Policy (02/45)
- NSW DOH Waste Management Guidelines for Health Care Facilities, Aug. 1998.
- ISO 14001:1996,
- ISO 9001:2000 and
- Relevant Council and EPA requirements.

5.10.2 Storage of potentially hazardous materials

No chemicals or detergents will be brought onto site without the prior approval of NSW Health. ISS, the facility manager with respect to operational apsects, (Thiess Services, being responsible for asset management), will supply detailed information on all chemical cleaning products that are to be considered for use in the form of a Material Safety Data Sheet (MSDS). The facility manager, ISS, will also ensure that all rules, regulations and codes of practice in relation to the use and handling of hazardous substances are strictly adhered to. ISS will not have a bulk store of chemicals on site. If any hazardous materials are on site they will be stored in accordance with the relevant Australian standard for storage of Hazardous materials.

5.10.3 Site Security

A security manager will be present during the normal operating hours of the Hospital. The security manager will be responsible for all security services provided to the health facilities and promoting security awareness across the Hospital. The Thiess security contractor will liaise with the hospital security manager or representative on a daily basis and during night patrols.

ISS holds a Master Security License for NSW and has mobile patrols constantly on the road within the general North Shore area. If an incident occurs on site where extra security personnel are required on short notice these mobile patrols will be called on as well as the local police.

5.10.4 Emergency and evacuation procedures

Matters related to emergency and evacuation procedures will form part of the overall Disaster, Fire and Emergency Management Plan which will be developed, to account for the new development, in accordance with the following Australian standards;

- Australian Standard AS 4083 – 1997 “Emergency Response for Healthcare Facilities”
- Australian Standard AS 4485.1 – 1997 “ Security for Health Care Facilities”
- Australian Standard AS 3745 – 2002 “Emergency control organisation and procedures for buildings, structures and workplaces”
- Australian Standard AS 4083 – 1997 “Planning for Emergencies – Health Care Facilities”
- Australian Standard AS 2293 – 2005 “Emergency escape lighting and exit signs for buildings System design, installation and operation”

The following existing hospital policies and procedures are also relevant:

1. Hospital Policy Manual, “Occupational Health, Safety and Welfare Policy, Responsibilities and Consultative process”
2. Hospital Policy Manual, “ Non-Medical Emergency and Evacuation”
3. Hospital Policy Manual, “ Blood and Body Fluid Exposure”.
4. Hospital Policy Manual, Incident Notification ”
5. Hospital Policy Manual, “Protective Clothing and Equipment”
6. Hospital Policy Manual, “Safe Work Practices”
7. Hospital Policy Manual, “Critical Incident Stress Management”
8. Policy manual “ Disturbed Patients – Chemical Restraint”
9. Patient Aggression Procedure
10. Restraint Standards Procedure
11. Booklet; Background information on aggression in hospitals
12. Protocol; Chemical Restraint Medication Management Protocol

The Plan will describe the procedures to take place in response to a disaster or major emergency that cannot be dealt with by normal operational processes and procedures. The aim to maintain acceptable levels of business functions and services across the hospital at all times. Role descriptions and responsibilities for key personal are defined and communicated as part of the induction procedures.

An emergency control centre, which is included in the proposed Acute Hospital, will be staffed by the emergency coordinator, manager of corporate services, director of nursing and other staff as necessary.

Evacuation procedures are incorporated into the induction procedures. Evacuation plans will be displayed, updated as required and maintained at key locations in all areas of the building.

It is proposed that the Disaster, Fire and Emergency Management Plan be finalised and submitted for approval prior to the commencement of works as emergency evacuation procedures will need to be addressed during the construction process.

5.10.5 Lighting

The integrity of the lighting systems as installed will be inspected and maintained to its original design parameters. All lighting will comply with AS1518 with respect to lighting design for roads and public spaces and AS4282 on “The Control of the Obtrusive Effects of Outdoor Lighting”

5.10.6 Signage

It is proposed that a comprehensive signage strategy be prepared for the site. A key component of any future strategy will be the promotion of clear wayfinding, ease of access to services and building identification. Signage will augment design mechanisms, such as colour referencing façade treatments, to achieve these ends.

5.11 ECOLOGICAL SUSTAINABLE DEVELOPMENT

An assessment has been prepared Arup and Partners, to consider the Ecological Sustainability of the proposed development. Refer to **Appendix N.**

In terms of the overall design and the on-going operations of the buildings, the following is provided by the authors of the Report:

> *"The design of the new Royal North Shore Acute Hospital block and the Community Health Building will respond to the latest ESD standards and guidelines and address the following design principles:*
>
> - *To achieve leadership in sustainable hospital design and set international benchmarks for indoor environmental quality, greenhouse gas reduction and water conservation;*
> - *To achieve an innovative and ecologically sustainable development, which will provide healthy clinical care areas, workplace and laboratory environments and reduce the ecological impact and operating costs of the development;*
> - *To maximise the advantages of the urban site and aspect ensuring access to natural daylight, external views and garden access for all occupants; and,*
> - *To embed sustainability objectives (environmental, social and economic) into the design at the outset of the project and then measured, tracked and improved throughout the project life to meet NSW Health's stated requirements.*
>
> *The implementation of these principles are done through the use of the Green Building Council of Australia's Green Star (GBCA) Health Care Tool. The aspiration is to achieve a 4 star Green Star facility."*

Other design responses and initiatives to promote ecological sustainability include:

- Optimal orientation of Community Health Building to receive favourable solar access;
- Horizontal shading devices on both the Acute Hospital and the Community Health Building;
- Compliance with Part J of BCA, in particular the use of selected façade treatments to maximise thermal performance;
- The limited width of the Community Health Building maximises the penetration of natural daylight into the building. The Acute Hospital has been designed to locate enclosed rooms to the centre of the building footprint, allowing consulting rooms and open treatment areas to receive natural light;
- A water strategy will be devised to revolve around the capture and re-use of rainwater. Two-hundred, 200cb.m of additional water storage has been set aside in the OSD system for re-use purposes;
- All fittings and fixtures in the buildings will have a minimum rating of 4 stars WELS (Water Efficiency Labelling and Standards) except for shower heads due to availability;
- The hot water circulation system will be insulated with high-performance foam to minimise heat escape. The hot water generation plant will include a connection to the cogeneration plant reclaim hot water system;
- Energy efficiency is optimised by:
  - the careful consideration of the building envelope in terms of limiting solar gain and energy loss including orientation and the provision of energy efficient glazing and shading devices;
  - an air-conditioning system that may be closed off to particular areas of the building;
  - the use of high efficiency central plant components;
  - the use of gas powered plant for base heating and power in the Acute Hospital. The use of the 4mW cogeneration plant is expected to reduce carbon emissions by up to 2,000 tonnes per annum;
  - energy monitoring and metering capabilities.

It is recommended that a 2 year post completion operational and commissioning plan with respect to energy efficiency, be implemented with quarterly reviews.

5.12 DEVELOPMENT STAGING AND IMPACTS ON EXISTING USES

The figures below outline the broad phases of staging the construction work. Construction will begin on completion of the already approved early works and site preparatory works. Construction of the new Acute Hospital and Community Health Facility will commence on the eastern portion of the site.

Once all services and functions have been decanted from the existing hospital to the new building, the existing hospital will be demolished and the multi-level car park built in part of its footprint.

A summary of development staging and phasing is as follows:

Stage	Proposed works
1	Construction of Community Health Services Building
2	Construction of new Acute Hospital
3	Refurbishment of Level 2 Douglas Building
4	Construction of multi-level car park, link to Douglas Building and demolition of Building 1 and 2.

The phasing of works within the above stages is proposed as follows:

Phase	Activity
1	Pre-construction planning
2	Design Management
3	Demolition
4	Site establishment
5	Construction
6	Completion Activities
7	Approvals
8	Commissioning and decanting activities

In terms of the impact of the development on existing uses, it is proposed to ensure the continuity of function and the availability of services on the site, an objective to which the proponent is committed to. All medicinal and clinical functions of the site, and the range of services available within, (with the exception of the hydrotherapy pool, which will be re-located off-site), will be retained during construction.

The Emergency Department, the Imaging Department and Women's and Children's facilities will remain in their current locations during construction.

Figure 41 : Stages 1 and 2, prepared by Hyder Consulting

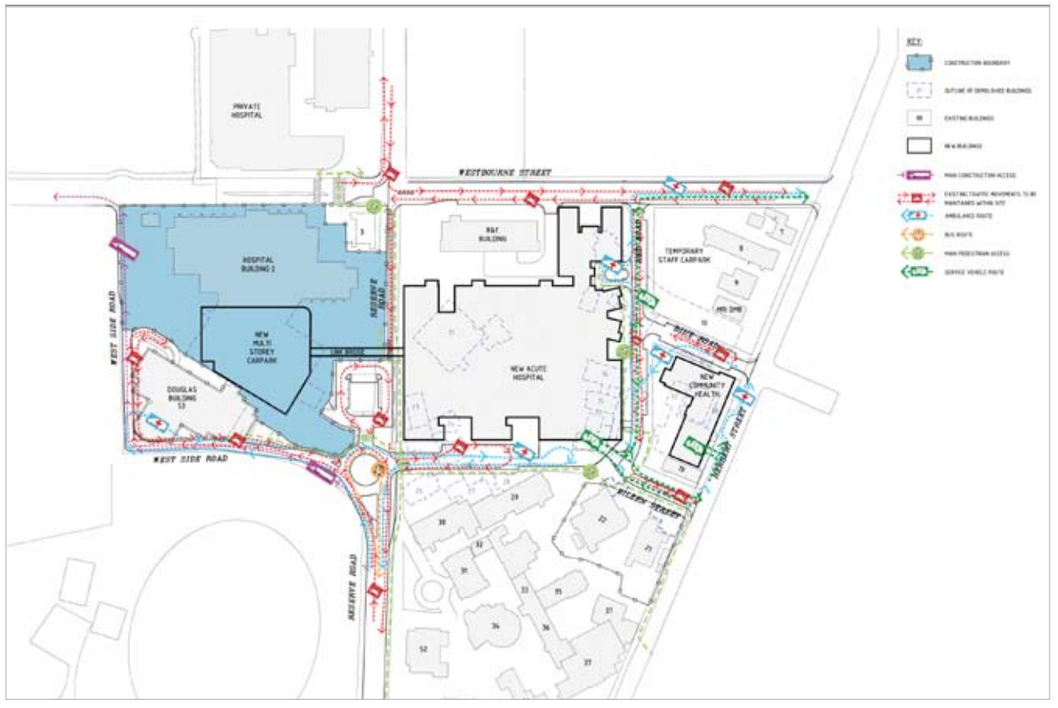


Figure 42 : Stages 3 and 4, prepared by Hyder Consulting

5.13 TELECOMMUNICATIONS

An assessment with respect to the possible implications for existing microwave links, broadcasting signals and electromagnetic radiation (EMR) impacts has been carried out by THL Australia, dated 2006, with regard to the earlier Concept Plan approval. A supplementary assessment has been prepared by Kordia, (formerly THL Australia), which takes into account the variations in design proposed under the current application. Both reports are provided at **Appendix O.**

The THL Report makes the following key observations, as relevant to this application:

- The potential exposure to the public of EMR will be reduced as a result of the proposed development, and that due to the low levels of exposure, it is anticipated that there will be no risk to crane operators during construction.
- The microwave link that is closest to the proposed development traverses the site at the northern potion of the development precinct, north of Westbourne Street). As no development is proposed in this area, no impacts are expected.

However, the report further acknowledges that the use of a construction crane on or near the existing multi-storey car park would need to consider the microwave link.

The Kordia Report concludes:

> *"In consideration of the generally slightly lower building heights of the new development proposal by Thiess at the Royal North Shore Hospital Development site, Kordia recommends that the existing THL report is still valid, and any conclusions and recommendations stated in that report are still current.*
>
> *More specifically:*
>
> - *Risk of loss of line of sight microwave link's are expected to be similar (or slightly reduced) to those indicated in the THL report;*
> - *the EMR impacts upon human health and safety are expected to be similar (or slightly reduced on rooftops) to those indicated in the THL report;*
> - *Impacts on EMI upon electrical equipment and goods are expected to be similar to those indicated in the THL report;*
> - *Potential Ghosting and multi-path impacts are expected to be similar (or slightly reduced) to those indicated in the THL report."*

The proposed development is not expected to have any significant adverse impact on surrounding telecommunication devices and broadcasting infrastructure nor in terms of the potential adverse impacts related to EMR.

5.14 UTILITIES AND SERVICES

5.14.1 Sewer drainage

There are currently several existing sewer drainage systems draining into the Sydney Water sewerage system, from the existing hospital.

Investigations conducted by Sydney Water indicate that the new Acute Hospital can be connected to either of the 225 mm sewer mains currently in the existing hospital site.

Generally:

- inground sewer drainage will gravitate where possible throughout the healthcare campus to convey waste from each proposed fixture point
- the sewer drainage system servicing the existing hospital will be maintained at all times
- all existing sewer drainage pipes that become redundant will be capped off to Sydney Water requirements

The Community Health Building sewer will flow into the existing 225mm sewer in Herbert Street.

Trade Waste Pre Treatment

A grease arrestor will be provided on level 1 to service the new kitchen. The size will be determined during the design development.

Plaster traps and other pre-treatment devices will be provided throughout the Healthcare campus where required.

5.14.2 Potable cold water service

Sydney Water has indicated that the existing 100 mm cold water mains in Westbourne and Herbert Streets are to be amplified to 200 mm and connection for the new Acute Hospital Building is to be taken from the mains extension in Westbourne Road.

It is proposed to install the new incoming potable cold water and fire fighting services from the main along Red Road to the south west corner of the building.

Connection for the fire and domestic water supply for the Community Health Building will be drawn from a 200mm water main in Herbert Street.

Incoming fire fighting systems will be connected to the amplified 200mm Sydney Water water main in Westbourne Street and extended along Red Road to the Fire Brigade booster valve and pump room.

5.14.3 Natural gas system

There is an existing Alinta high pressure secondary 1050 kPa natural gas main in Reserve Road with associated gas metering. Alinta has advised that this connection has the capacity to supply the new Acute Hospital and therefore InfraShore has allowed new connections to suit its plant layout with relocation of the gas meter set in close proximity to the co-generation plant at level 1.

Meters, first and second stage regulators, gas valves, filters, gas leak detectors and automatic shut off valves will be installed as required.

5.14.4 Electrical

The proposed Energy Australia customer substation will supply the new Acute Hospital via 11 kV diverse underground cabling reticulation routes down Reserve Road and n+1 feeder cables that will meet the required current and future power demand. The new Acute Hospital will house 11 kV/415 V substations.

RNSH will be metered as a high voltage (HV) customer. The 11 kV/415 V substations will be located within the new Acute Hospital along the Reserve Road. Substations will include two ring main units, two dry-type transformers and a low voltage (LV) switchboard with interlocking bus-tie.

A cogeneration plant consisting of two gas-fired reciprocating engines will be located on level 1. The cogeneration plant is expected to run on a continuous basis to meet the base-load electrical and thermal energy requirements of the new Acute Hospital. Additional electrical energy demand for the new Acute Hospital will be met by purchasing electricity from the grid. Additional thermal demand of the new Acute Hospital will be met by the package boiler installed as part of the cogeneration facility. The cogeneration facility will also include two diesel generators to provide emergency standby power in the event of failure of the cogeneration plant and grid supply of electricity. It may also be possible to use the diesel generators for peak load lopping.

The Community Health Building will be serviced from a local pad mounted substation located on the western side of the building. The pad mounted substations will have power sourced from Herbert Street.

5.15 TREE REMOVAL

An application, made under Section 75W of the Environmental Planning and Assessment Act 1979, has been lodged to modify the Concept Approval with respect to tree removal.

5.16 BUILDING CODE OF AUSTRALIA

A BCA Assessment for both the Acute Hospital Building and Community Health Facility has been prepared by Hendry Group (NSW) Pty Ltd. These reports are provided at **Appendix Q.**

The preliminary assessments have identified departures from the deemed-to-satisfy provisions of the Code and as such engineered alternative solutions will be required to meet the performance requirements. It is intended that such detailed engineering matters be addressed prior to Construction Certification.

6 COMMUNITY CONSULTATION

A Community Consultation exercise has been carried out as required by the DGRs. The Community Consultation Report has been prepared by Urbis, independent of the Environmental Assessment.

The scope of the consultation exercise has, however, been extended to that outlined in the DGRs to include North Sydney Council, given the proximity of the development site to St Leonards Centre and given that many North Sydney residents rely on the services, particularly community related services, available on the campus.

Stakeholder interviews were conducted with:

- North Sydney Council
- Willoughby Council.

Key issues raised by North Sydney Council staff in relation to the Acute Hospital facility include: the design of the Community Health Facility; ensuring access for clients (in particular mental health clients) during construction; the effect of construction noise upon certain clients; ensuring early advice for outreach services about changes in routine, access or temporary relocations of services or facilities during construction; ensuring adequate signage; clarification of the status of the needle exchange program during this process; and the need for particular attention to aged care and disability access during construction.

Key issues raised by Willoughby Council staff in relation to the Acute Hospital facility include: the likely social impact on the Hospital of re-opening Westbourne Street; parking restrictions in the multi-storey car park for essential workers and patients; the location and presentation of the Community Health Services Building (as a 'user-friendly' building); the potential for a provision of an accessible community meeting room and potential impacts during construction.

While the MoT, RTA and STA declined to be interviewed, they did provide earlier submissions to the Department of Planning. Railcorp was contacted for an interview a number of times, but their nominated representative did not respond.

The issues contained in these submissions were previously addressed.

A newsletter containing information with respect to the proposed development was distributed on 13 October 2008 in the vicinity of the development site.

The circulation of the newsletter was as follows:

- 686 to neighboring residents;
- 395 to neighboring businesses;
- (300) 100 each to Royal North Shore Hospital, Royal North Shore Private Hospital and Northern Sydney TAFE Collage
- A mailed copy to Gore Hill Memorial Cemetery Trust.

As at 27 October 2008, no responses to the newsletter had been received by telephone, mail or email.

The Consultation Report makes reference to those submissions which were submitted by stakeholders in response to the notification of the Preliminary Environmental Assessment. The purpose of these submissions was to assist the Director General in the preparation of the DGRs and therefore the matters raised within them are not directly addressed as such, but rather the relevant matters for assessment as set out in the DGRs are.

All issues raised by key stakeholders that may not already be addressed in the Project Application will be comprehensively addressed in the next stage of consultation, which includes development of a Communications Plan and a process of consultation in relation to the Public Exhibition phase Major Project Assessment. In particular, issues relating to the Acute Hospital and Community Health facility will be addressed. The issues previously raised in submissions or interviews relating to the development site will not be dealt with.

The aim of engaging stakeholders is for the purpose of informing and enabling risk management in relation to the planned development; and to achieve genuine insights into stakeholder and community issues.

The Community engagement process will be in accordance with the guidelines as outlined by the Department of Planning for major project community consultation.

As a result it is proposed that a stakeholder analysis be undertaken, which would then inform the Public Exhibition process. Thus, the proposed methodology includes:

1. Preparation of Communications Plan

The Communications Plan will identify all key stakeholders; identify relevant communications messages/materials and propose consultation techniques appropriate to the stakeholders and the process, according to an agreed timetable.

2. Stakeholder identification strategy

The DGRs identified a limited number of stakeholders to be consulted during the preparation of the Environmental Assessment accompanying the Major Project Assessment Application. These included:

- Willoughby City Council
- NSW Roads and Traffic Authority
- Ministry of Transport
- Railcorp.

At the time, it was indicated that consultation with a broader range of stakeholders would be desirable. A meeting was held with North Sydney Council officers and a newsletter was distributed to surrounding residents and landowners

Hence, it is suggested that, for this process, a more detailed stakeholder identification be undertaken. The stakeholders identified above would be included, and the range of stakeholders could be expanded to include (but not be limited to):

- Relevant Councils
- NSW Department of Environment and Climate Change
- State Rail Authority
- State Transit Authority
- Sydney Water
- Energy Australia
- Community organisations affected by the Hospital redevelopment
- Hospital staff (to be addressed by Communications Team at Royal North Shore Hospital)
- Hospital patients, patient representatives and visitors (to be addressed by Communications Team at Royal North Shore Hospital)
- surrounding residents and land owners.

The Public Exhibition process is seen as being open and deliberative but conducted in a way that is controlled, practical and effectively manages community and stakeholder expectations.

Particular care would be taken to ensure all communities are fully engaged and are not given an unrealistic view of what they can and cannot influence through the Public Exhibition process. It is essential that they are given feedback on the information that is currently known.

The relevant consultation activities for the Public Exhibition process will include the following:

Newsletters

Newsletters are a useful means of outlining project activities to various stakeholders, principally local residents and local landowners. The attachment of a tear-off section to the newsletters and access to a 1800 phone number is also suggested, as a mechanism which is often useful for the reader who, not desiring greater involvement, can nevertheless indicate interest and issues of concern around the project.

Reporting

It is noted that the Department of Planning has made changes to the Major Assessment Projects component of its website, allowing for submissions to be made online and for the collated submissions, together with agency submissions to be provided back to the proponent to summarise and address any issues arising. A summary of responses will be provided. In addition, all other feedback from activities undertaken as part of the Public Exhibition process will be collated and presented in a draft report of outcomes for consideration by Infrashore and forming part of the documentation for the Department of Planning.

7 DRAFT STATEMENT OF COMMITMENTS

The following draft Statement of Commitments is offered to ensure that the proposed development will adequately mitigate any potential adverse environmental impacts during both the construction and operational stages of the development.

The proponent is responsible for the implementation and achievement of any Commitments made as part of this Project Application. The timing for the completion and/or implementation of these Commitments are as outlined below.

GENERAL COMMITMENTS

BCA

All building work shall accord with the provisions of the BCA.

Lighting

All lighting will comply with AS1518 with respect to lighting design for roads and public spaces and AS4282 on "The Control of the Obtrusive Effects of Outdoor Lighting"

Car parking and loading bays

All car parking spaces and service bays shall be designed to comply with AS2890.

PRIOR TO THE COMMENCEMENT OF WORKS

Comprehensive Construction Management Plan

Prior to the commencement of works a Comprehensive Construction Management Plan (CCMP) will be prepared for the development site as a whole, or if considered to be beneficial, for each particular stage dependant on any specific stage peculiarities.

The CCMP will combine all relevant operational and management construction-related methodologies and will be divided into three parts:

- General Construction Management – mitigation of potential environmental impacts, excavation;
- Traffic and Pedestrian Management – vehicular access for both private users, public buses, emergency vehicles, pedestrian access and safety;
- Construction Waste Management – treatment of waste, recycling.

The following criteria and/or objectives will be incorporated in the CCMP in order to satisfactorily address any potential impacts likely to arise during this period:

General Construction Management

- All work, including demolition, excavation and building work shall comply with Australian Standard AS2436: 1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites and DECC Draft Construction Noise Guidelines (2008)
- All mitigation measures to address the impacts associated with noise and vibration from construction activities shall be in accordance with the Acoustic Statement of Commitments, prepared by ArupAcoustics, 23 October 2008.
- Where practicable, the vibration resulting from construction and operation will not exceed the evaluation criteria presented in Environmental Noise Management – Assessing Vibration: A Technical Guideline (Dec, 2006).
- Description of specific mitigation treatments, management methods and procedures that will be implemented to control noise and vibration during construction;
- Review the visual impact of any noise mitigation measures proposed as part of the development to assess the adequacy and potential additional architectural treatments required in the hospital locality.
- Contingency plans to be implemented in the event of non-compliances and/or noise complaints.
- Machinery and equipment will be selected and well maintained to assist in minimising noise levels.
- Mobile plant such as excavators and other diesel operated machinery will be fitted with mufflers and other silencing equipment as far as practical.
- All entry and departure of heavy vehicles to and from the site would be restricted to the nominated construction hours.
- Noisy activities would occur in as short a time space as possible with minimum delays.
- Noise and vibration monitoring, reporting and response procedures.
- All excavation work, including the treatment of unsupported cuts, vertical excavations in rock, retaining walls and foundations shall be constructed in accordance with those relevant recommendations provided in the Supplementary Geotechnical Investigation, prepared by Coffey Geotechnics, dated 23 September 2008.
- Adequate measures shall be taken to prevent dust from affecting the amenity of the surrounding area during the works. In particular, the following measures must be adopted:
  - Physical barriers shall be erected at right angles to the prevailing wind direction or shall be placed; around or over dust sources to prevent wind or activity from generating dust emissions,
  - Earthworks and scheduling activities shall be managed to coincide with the next stage of development to minimise the amount of time the site is left cut or exposed,
  - All materials shall be stored or stockpiled at the best locations,
  - The surface should be dampened slightly to prevent dust from becoming airborne but should not be wet to the extent that run-off occurs,
  - All vehicles carrying spoil or rubble to or from the site shall at all times be covered to prevent the escape of dust or other material.
- All equipment wheels shall be washed before exiting the site
- Construction methodology and equipment will be selected to meet DECC requirements.
- Erosion and Sediment Control will be implemented in accordance with the Erosion and Sedimentation Plan, contained **Appendix L** of the Project Application, and in accordance with Managing Urban Stormwater, Soil and Contamination 4th Edition March 2004.
  - At the completion of construction and stabilisation of the land surface all stormwater control devices will be removed.
- A Tree Protection Plan/Zone will be devised for all trees that are being retained within the site.
- Pedestrian and user safety including the management of vacant premises during construction.
- Appropriate OH&S procedures and protective equipment would be in place during construction and operation.
- A "1 800" number will be available during construction for members of the public to phone and lodge any complaints they may have in relation to the construction activity.

Traffic Management

A Traffic Management Plan will be prepared to minimise construction traffic impacts on the surrounding road network and disruptions from works within road reserves, as far as practicable, and ensure road safety is not compromised, including:

1. Maintaining access along Westbourne Street and liaising with emergency services to ensure emergency response plans are not compromised;
2. Provision of adequate spoil stockpiling capacity for spoil reuse where practicable to limit truck impacts;
3. Informing the local community and road users on changed conditions prior to work commencing and spoil transportation;
4. Arrangements for parking (onsite where practicable) and safe access to work areas from the adjacent road network;
5. Traffic control in accordance with RTA Traffic Control at Work Sites and AS 1742.3 1996, Traffic Control Devices for Works on Roads;
6. Initiatives to promote the use of public transport by construction workers;
7. Backfill trenches with cold-mix bitumen and provide funding for Council to complete the remediation of roads and footpaths after backfilling is completed;
8. Signage for emergency vehicles (NSW Police & NSW Fire Brigades).

Environmental Management

All waste disposal will occur in accordance with the Protection of Environment Operations Act and Regulations and the EPA Environmental Guideline: Assessment, Classification and Management of Liquid and Non-liquid Wastes (1995).

All wastes generated by the project shall be beneficially reused, recycled or directed to a waste facility lawfully permitted to accept the materials.

All wastes would be securely stored to minimise the risk of pollutants escaping.

Stormwater

Stormwater drainage infrastructure shall be designed on the basis that flows leaving the site at critical points as a result of the proposed development will be no greater than those flow rates prior to the commencement of the Project.

To achieve such ends, on-site detention will be provided within the building footprint of the hospital to limit flows to no greater than existing in accordance with Council requirements. Stormwater harvesting will be implemented to minimise adverse environmental impacts caused by increased stormwater runoff by reducing the total volume of runoff being discharged.

Detailed Stormwater Drainage and Infrastructure Plan, generally in accordance with the Stormwater Management Report and accompanying plans, prepared by Hyder, dated October 2008, shall be submitted for the approval of the Director General. Such plans shall be prepared in consultation with Willoughby City Council and Sydney Water.

Dilapidation Surveys

Design measures and management procedures will be developed for implementation during construction to prevent or suitably mitigate, damage to properties, structures and infrastructure (such as from vibration). This will include a process, prior to commencement, for conducting property inspections, and dilapidation surveys, if required, on all structures (including public infrastructure) at risk of impact during construction and formulation of measures to rectify property damage caused by construction at no cost to the owner.

Community Consultation

A Stakeholder Identification and Engagement Strategy will be undertaken, to encompass Local Governments; community service providers; local institutions; business and residents and hospital users affected by the proposed development, for the purposes of more extensive consultation, input and feedback about the proposed development, impacts and issues, during construction.

A Communication Plan will be developed, to address consultation and communication needs at various stages in the development process, (drawing upon the above Stakeholder Strategy).

Signage Strategy

A Signage Strategy for land pertaining to the Project shall be prepared and submitted to the Director-General for approval prior to the commencement of construction of the hospital and community heath facility. The Strategy will provide guidance such as appropriate locations and means to improve wayfinding across the campus.

Heritage

An archival recording of Building 10 will be carried out prior to its demolition.

The use of the former Mortuary Building and Building 10 will be recognised in the site-wide Heritage Interpretation Plan.

A Conservation Works Schedule, and On-going Maintenance Schedule, shall be prepared for the former Mortuary to accompany any future application to adaptively re-use the building.

A preliminary Site Interpretation Strategy shall be prepared with respect to buildings 10 & 19, to inform the overall campus-wide strategy.

ESD

Both the Community Health Facility and Acute Hospital Building are to have a 4 star Green Star Rating under the pilot Green Building Council of Australia's Green Star (GBCA) Health Care Tool.

Prior to the construction of the hospital and community health buildings an ESD Strategy will be prepared outlining measures to be incorporated into the building designs to achieve the desired rating.

The Strategy will include, but may not be necessarily limited to the following matters:

- Façade treatments and thermal performance;
- The siting of rooms which are either to be occupied or in active use, to maximise solar access;
- Stormwater harvesting and re-use;
- Water efficient fixtures and fittings;
- Insulation;
- Air-conditioning management;
- Efficiency of central plant; and,
- Energy monitoring.

Utilities

Prior to the commencement of work the proponent will negotiate and attain approval (if required) with the utility authorities in relation to the location and/ or adjustment of the services affected by the construction works.

Contamination

Prior to the commencement of works a Remedial Action Plan (RAP) and a Hazardous Materials Survey shall be prepared and implemented. The RAP shall be accompanied by a statement from a site auditor accredited by the Protection Agency to issue site audit statements.

The RAP shall include, but not be necessarily limited to:

- an asbestos management and disposal plan;
- methodologies for the treatment of localised areas of contamination as identified in draft Stage 2 Environmental Site Assessment, prepared by Coffey Environmentals, dated March 2007; and,
- contingencies to deal with unforeseen circumstances, such as bulk waste contained in fill material and asbestos pipes.

All soil requiring off-site removal will be classified in accordance with the NSW DECC (2004) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes.

All identified hazardous materials shall be removed from buildings prior to demolition.

All remediation, in accordance with the RAP, shall be carried out prior to the commencement of construction of the approved buildings.

It is acknowledged that any new information which comes to light, during demolition, remediation, or preparatory site works which has the potential to alter previous conclusions about site contamination must be immediately notified to the Department of Planning and DECC where relevant.

Access and Mobility

Prior to the commencement of works, an Access and Mobility Assessment of the detailed design of the buildings will be prepared. The Assessment will demonstrate how the proposed development satisfies the following statutory and regulatory guidelines to ensure effective appropriate and safe use by all people including those with a disability:

a. Federal Disability Discrimination Act;
b. Draft DDA Premises Standards;
c. BCA;
d. NSW Health Facility Guidelines;
e. DDS32; and,
f. AS1428.1, AS1428.2, AS1428.4, AS1735.12 and AS 2890.1.

Copies of Approved Plans

A copy of the approved and certified plans, specifications and documents incorporating conditions of approval and certification shall be kept on the site at all times and shall be readily available for perusal by any officer of the Council or the Department.

Site Notice

A site notice shall be prominently displayed at the boundaries of the site for the purposes of informing the public of project details including, but not limited to the details of the Proponent, Builder and Structural Engineer. The site notices are to satisfy the following requirements:

1. Minimum dimensions of the notice are to measure 841mm x 594mm (A1) with any text on the notice to be a minimum of 30 point type size;
2. The notice is to be durable and weatherproof and is to be displayed throughout the works period;
3. The approved hours of work, the name of the site/ project manager, the responsible managing company (if any), its address and 24 hour contact phone number for any inquiries, including works/ noise complaint are to be displayed on the site notice; and

The notice is to be mounted at eye level on the perimeter hoardings/ fencing and is to state that unauthorised entry to the site is not permitted.

DURING CONSTRUCTION

Construction Hours

The hours of works, including the delivery of materials to and from the site, are as follows:

(a) Between 7:00 am and 6:00 pm, Mondays to Fridays inclusive;

(b) Between 7:00 am and 4:00 pm, Saturdays;

(c) No work on Sundays and public holidays.

Variations to these hours may be undertaken where:

- The delivery of materials is required outside these hours by the Police or other authorities;
- It is required in an emergency to avoid the loss of life, damage to property and/or to prevent environmental harm;
- The work is approved through a Works Management Plan (WMP): or
- The work is approved by the Director-General.

Demolition

The demolition work shall comply with the provisions of Australian Standard AS2601: 2001 The Demolition of Structures. The work plans required by AS2601: 2001 shall be accompanied by a written statement from a suitably qualified person that the proposals contained in the work plan comply with the safety requirements of the Standard.

Parking

Throughout the construction period parking will be retained at existing levels, (including disabled spaces),

Site Audit

A detailed Site Audit Summary Report, Site Audit Statement and Validation Report will be prepared. The site audit must be prepared in accordance with the Contaminated Land Management Act 1997 completed by a site auditor accredited by the Environmental Protection Authority to issue site audit The site audit must verify that the land is suitable for the proposed uses.

Continuity of Function

The medicinal and clinical functions of the site, and the range of services available within, (with the exception of the hydrotherapy pool, which will be re-located off-site), will be retained during construction.

Protection of Trees

All street trees shall be protected at all times during the works. Any tree on the public footpath, which is damaged or removed during the works, shall be replaced, to the satisfaction of Willoughby City Council.

All trees to be retained on the development site are to be suitably protected by way of tree guards, barriers or other measures, as necessary, to reasonably safeguard damage to the root systems, trunk and branches.

Monitoring during earthworks

If during the course of construction/excavation works, unexpected archaeological relics are discovered, all works likely to affects the relic(s) will cease immediately and the relevant State agency will be notified.

PRIOR TO OCCUPATION

Subdivision and land affectations

A draft Plan of Subdivision, indicating all proposed easements, accompanied by a report which addresses the means by which existing easements are to be addressed, shall be prepared and submitted to the Director General for approval.

Workplace Travel Plan

A Workplace Travel Plan shall be prepared and shall consider those initiatives included in the Traffic and Transport Report, prepared by Hyder, dated November 2008.

The Plan shall be informed by a Travel Demand Management assessment and shall be reviewed to further increase public transport use 1 year post occupation of the hospital.

Operational Management Plan

An Operational Management Plan will be prepared prior to the opening of the hospital to the public. The plan will address, but will not be limited to, the following matters:

- Measures to ensure protection of heritage buildings and assets.
- Protection of flora and fauna.
- Minimisation of anti-social behaviour.
- Visitor safety.
- Site security.
- Noise management.
- Traffic and pedestrian management.

Disaster, Fire and Emergency Management Plan

To complement the Operational Management Plan, a Disaster, Fire and Emergency Management Plan shall be prepared in accordance with:

- Australian Standard AS 4083 – 1997 “Emergency Response for Healthcare Facilities”
- Australian Standard AS 4485.1 – 1997 “ Security for Health Care Facilities”
- Australian Standard AS 3745 – 2002 “Emergency control organisation and procedures for buildings, structures and workplaces”
- Australian Standard AS 4083 – 1997 “Planning for Emergencies – Health Care Facilities”
- Australian Standard AS 2293 – 2005 “Emergency escape lighting and exit signs for buildings System design, installation and operation”

Crime Prevention through Environmental Design (CPTED)

Prior to the occupation of the hospital or the community health facility the proponent shall demonstrate, to the satisfaction of the Director General, how the following initiatives have been successfully incorporated into the development:

(a) After hours management measures such as consideration of adequate levels of lighting, CCTV and security patrols at key locations such as building access points, courtyards, loading bays, basements and car park amenities.

(b) Use of robust materials in finishes to minimise the impact of malicious damage

(c) Use of clear signage in relation to pedestrian access clearly marking staff only areas

(d) Installation of clear and prominent signage reminding users not to leave valuables in their cars

(e) Restricting access to car park amenities after hours.

Waste Management Plan

A fully detailed Waste Management Plan will be submitted prior to occupation of the hospital and community healthy facility. These plans will document waste management practices that comply with all relevant legislation relating to waste and resource recovery, environmental protection, and occupational health and safety, including:

- NSW Government Waste Reduction and Purchasing Policy,
- NSW DOH Infection Control Policy (02/45)
- NSW DOH Waste Management Guidelines for Health Care Facilities, Aug. 1998.
- ISO 14001:1996,
- ISO 9001:2000 and
- Relevant Council and EPA requirements.

DURING OCCUPATION

Noise

In order to mitigate and best manage potential impacts acoustic impacts associated with traffic, mechanical plant, helicopter noise and the like, the following criteria will be met:

Internal Design Criteria:

- Background noise levels – AS2107;
- Reverberation – AS2107;
- Building Envelope – Environmental Criteria for Road Traffic Noise (NSW EPA);
- Internal sound insulation – BCA.

Helicopter Noise:

- Air Services Australia Principles and Procedures Guide;
- Fly Neighbourly Guide

Mechanical Plant Noise – NSW DECC Industrial Noise Policy

Traffic Noise (On-site) - NSW DECC Industrial Noise Policy

Traffic Noise (Off-site) - Environmental Criteria for Road Traffic Noise (NSW EPA)

Sleep disturbance - Environmental Criteria for Road Traffic Noise (NSW EPA and World Health Organisation Guidelines.

Fixed Emergency Equipment – EPA Environmental Noise Control Manual

Plant

All cooling towers and water heating systems shall be operated and maintained in accordance with AS3666: 2000, the Public Health Act 1991 and Public Health (Microbial Control) Regulation 2000.

8 CONCLUSION

The proposal includes the timely redevelopment of one of Sydney's major hospitals and features the consolidation of all existing health services on site into a world-class facility on a well planned and beautified hospital campus.

The proposal, in its ultimate form, is the culmination of extensive design and consultation processes with many key experts and stakeholders.

The environmental assessment includes an analysis of all matters requested in the DGRs and finds the proposal to be of minimal environmental impact and of significant public benefit.

Public benefits include:

- the provision of a new, world-class hospital and community health facility on a master planned campus;
- the rationalization of services on the site and the improved level of client service these facilities will deliver;
- stimulation of employment generation both during construction, and operation as well as the employment multiplier effects resulting from the operations of the campus. in the form of further uses such as medical research and like industries;
- greater levels of pedestrian and visitor amenity; improved clarity of wayfinding and new landscaped open areas; and,
- identification and retention of buildings and elements of heritage significance resulting in a positive heritage outcome for the site.

The proposed development is considered to fully satisfy the Director General Requirements and, on that basis , the Minister's approval is sought.

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