

# Private Hospital, St Leonards

## Architectural Design Statement



for

**Dexus Property Group**

By

**Health Projects International**

Architects and Health Facility Planners

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## 2. Introduction

This application is for the initial stage of a development of Hospital facilities on the corner of Westbourne Street and Reserve Road, in the centre of Royal North Shore Hospital.

The development site, part of the site comprised in Lot 1 in DP591747 (known as 12 Frederick Street, St Leonards), is subject of a Planning Proposal to add 'hospital' as a permitted use by a Schedule 1 amendment to Willoughby LEP 2012.

The amendment also includes a permissible 3.0 : 1 FSR, which on the land area of 6,205 m<sup>2</sup> allows a development GFA of 18,615 m<sup>2</sup>.

The initial stage of development totals 11,586 m<sup>2</sup> GFA, as detailed in the Architectural drawings, however the building envelopment of the subsequent Stage 2 Expansion is also indicated to enable a consideration of the likely future scale and urban design of the anticipated future expansion of the completed development in accordance with the Planning Proposal, to the full permissible 3.0 : 1 FSR.

The Private Hospital, St Leonards is a proposed new building to be located at the intersection of Reserve Road and Westbourne Street within the heart of the Lower North Shore medical precinct, which includes the existing North Shore Private Hospital, the Kolling Institute of Medical Research Building (adjacent), and Royal North Shore Hospital.

The proposed building will be a new standalone structure, and will be provided with a dedicated connection to the main building via an overhead link bridge across Reserve Road.

The site has a substantial cross-site level change, approximately 20 m from the high point at the street level of Reserve Road and Westbourne Street, to a low point at its North-Eastern corner.

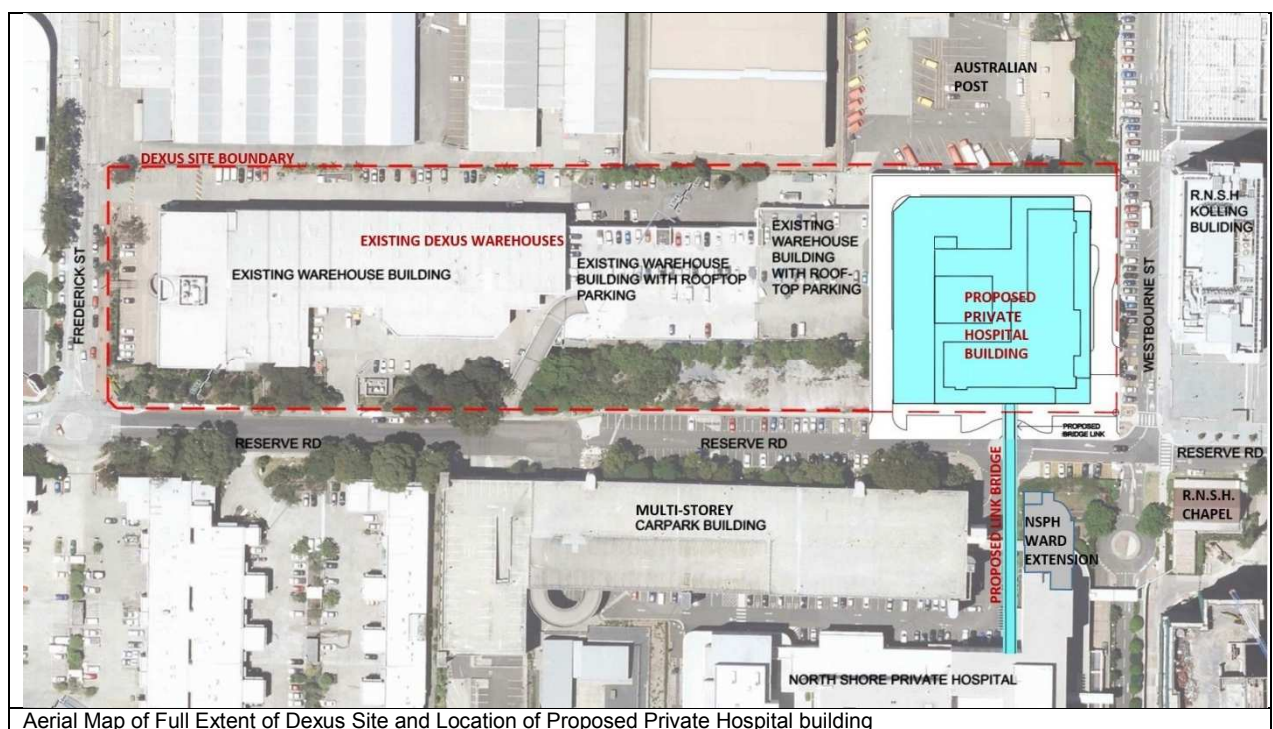
The new Private Hospital, St Leonards building will house new Operating and Procedure Rooms and Inpatient Units as well as a number of medical suites, to accommodate the growing demand for medical services within the local area.

### 3. Architectural Built Form and Urban Design

#### **Site and Surrounding Locality**

The proposed hospital development will occupy only part of a larger parcel of land owned by Dexus Property Group. The full parcel extends the length of Reserve Road between Frederick Street and Westbourne Street (boundary indicated by **red** dashed line in diagram below), and is currently occupied by several industrial and warehouse buildings. The site of the proposed hospital building (marked in **aqua** below) is located on the crest of a natural hill at the intersection of Westbourne Street and Reserve Road.

On its Westbourne Street side, the proposed Private Hospital building directly faces the Kolling Institute of Medical Research building. On the Reserve Road side, it faces the new extension to the inpatient ward wing of the existing North Shore Private Hospital, and the existing multi-storey carpark building.

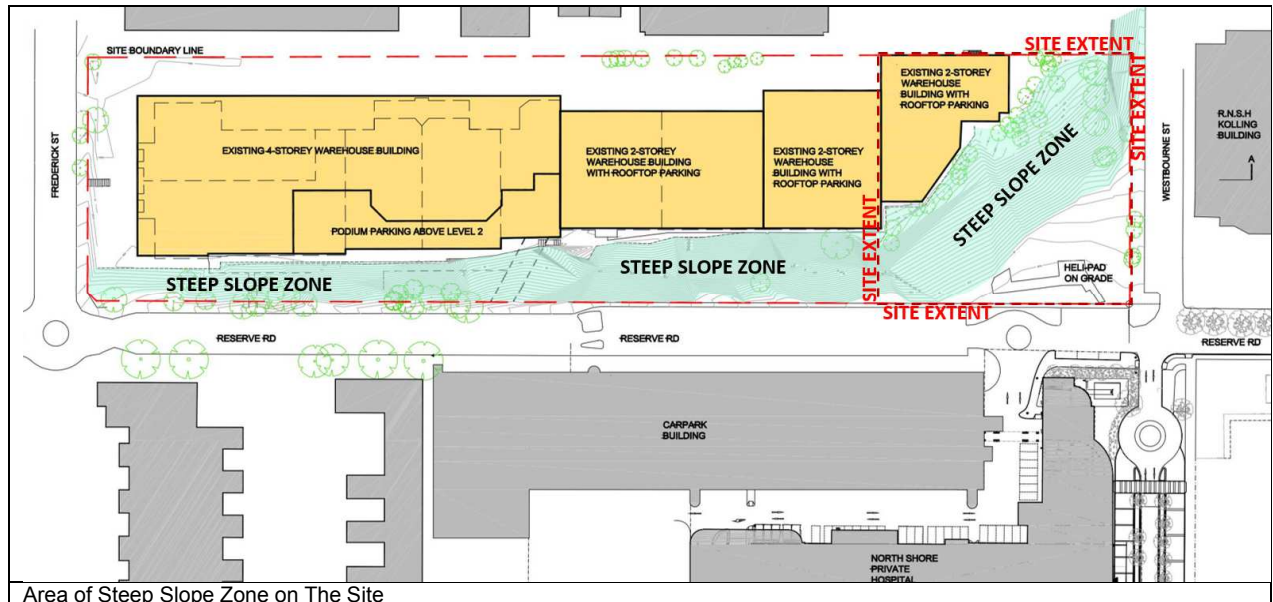


Aerial Map of Full Extent of Dexus Site and Location of Proposed Private Hospital building



## **Topography and Streetscape**

The topography of the proposed hospital site (hereinafter referred to as 'The Site' in this report) was a result of its historical usage as an old shale quarry. The plateau on the south-western corner of the site is level with the intersection of Reserve Road and Westbourne Street. The Site slopes downward along the two adjacent roads from this high point, with a steep internal slope down to the existing warehouse buildings on the north-eastern corner of The Site (lowest point).



Trees cover the Steep Slope Zone, as shown in photos below. The Arborist's Report indicates most trees and vegetation on The Site are not locally occurring native species, and the area also contains numerous weed species.



Photo of Steep Slope Zone, taken from Existing Warehouse Rooftop Parking, looking towards Westbourne Street

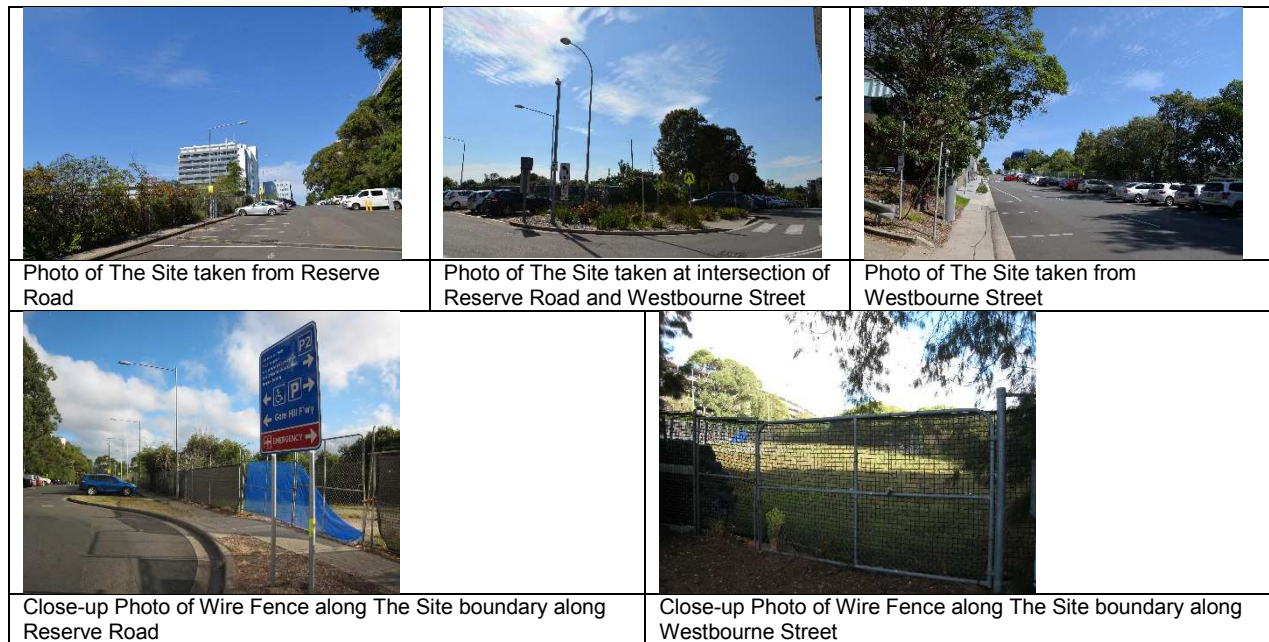


Photo of Steep Slope Zone on taken from Existing Warehouse Rooftop Parking along Reserve Road

Both kerbsides of Reserve Road and Westbourne Street accommodate on-grade carparking spaces. Continuous wire fencing currently surrounds The Site.

A narrow footpath cuts between the boundary fencing and the on-street parking spaces, running in both street directions. Only minor landscaping features can be observed in this area.

Current streetscapes surrounding The Site are captured in photos below.



The proposed facility will become a visual landmark in vistas along Reserve Road and Westbourne Street. Considerable attention has been given to the architectural design of the building, accompanied by landscaping upgrades around the immediate surroundings of the proposed building. Architectural articulation in response to The Site and surrounds is further expanded upon in the text below. Please also refer to the Landscaping Design Report for a detailed description of streetscape enhancement through the introduction of landscaping elements.





### **Massing and Setbacks**

The building is divided into three major components:

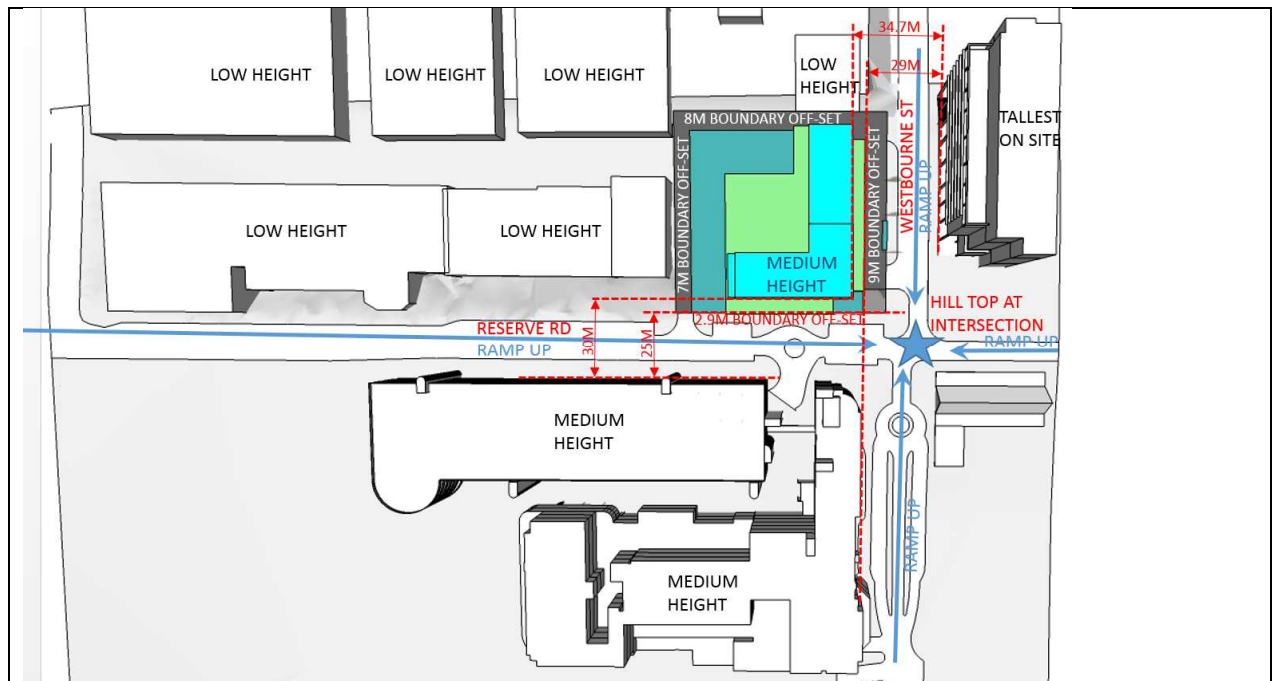
1. **Basement levels** below the level of the Westbourne Street/Reserve Road intersection level, which comprise Back of House and Engineering Facilities, Loading Dock, and Carpark;
2. **Podium levels**, i.e. Ground floor and Level 1, mainly comprising Admin. & Reception, Retail, Urgent Care facility, warm and cold shell Medical Suites, as well as Operating Theatres and Procedure Rooms.
3. **Tower levels**, comprising mainly Inpatient Units and Roof Plant Area.

The three components are stacked one above the other, with each of the components given a distinctive feature/expression based on their role in the architecture. The basement component comprises primarily a basement carpark, partially revealed on the northern and eastern side of the building due to level changes of The Site.

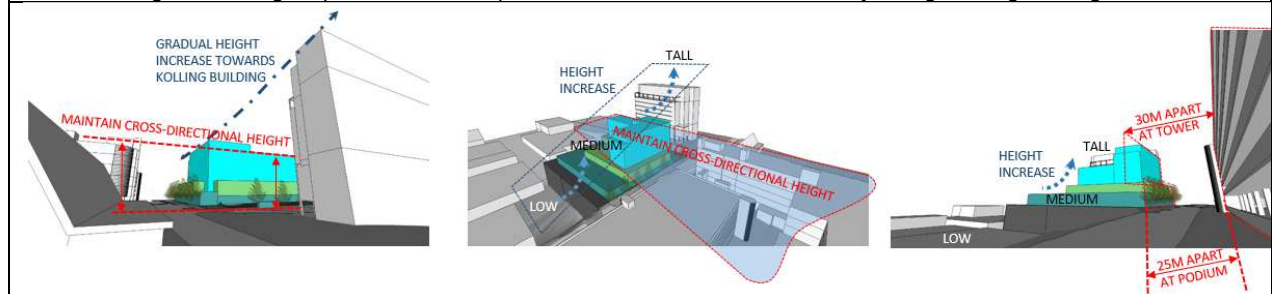
An elevated ring road around the hospital building marks the boundary between Podium and Basement components, providing a 6-metre-wide encircling driveway to cater for emergency vehicle access at all times. It also serves the parallel function of providing a 6-metre setback to the northern and eastern site boundaries. The Level 1 footprint is offset from the ground floor to create a covered canopy above the main drop-off area on the southern façade while increasing the setback on the northern façade.

The overall building mass, setbacks and articulation of the components generally follow a cascading height profile from Kolling Building in the south to the lower height buildings in the north as the proposed building responds to its context. However, it is noted that the context is both dynamic and changing. As the context evolves the cascading form has the capacity to morph into a different profile in response.

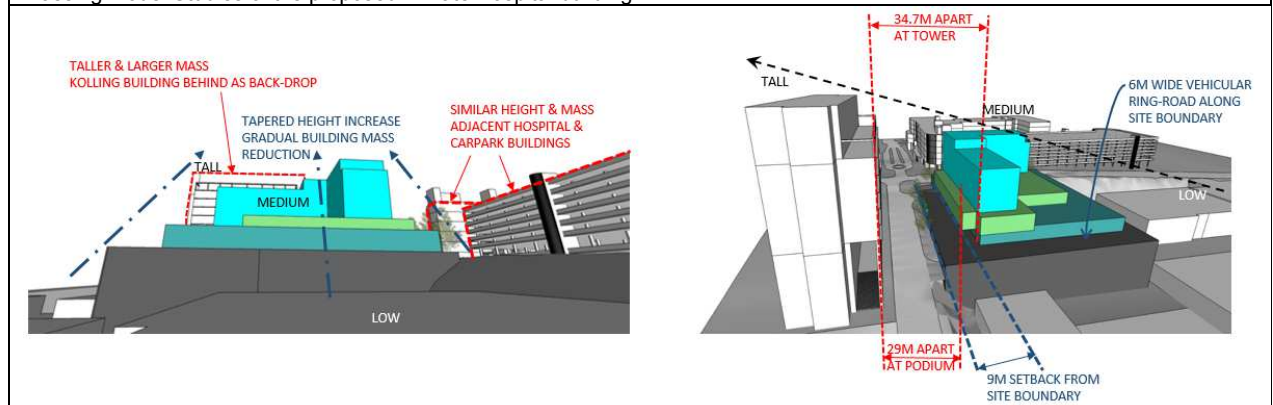




Indicative Diagram showing Proposed Private Hospital Site Setbacks and Distance to Major Neighbouring Buildings



Massing Model Studies of the proposed Private Hospital building



Massing Model Studies of the proposed Private Hospital building

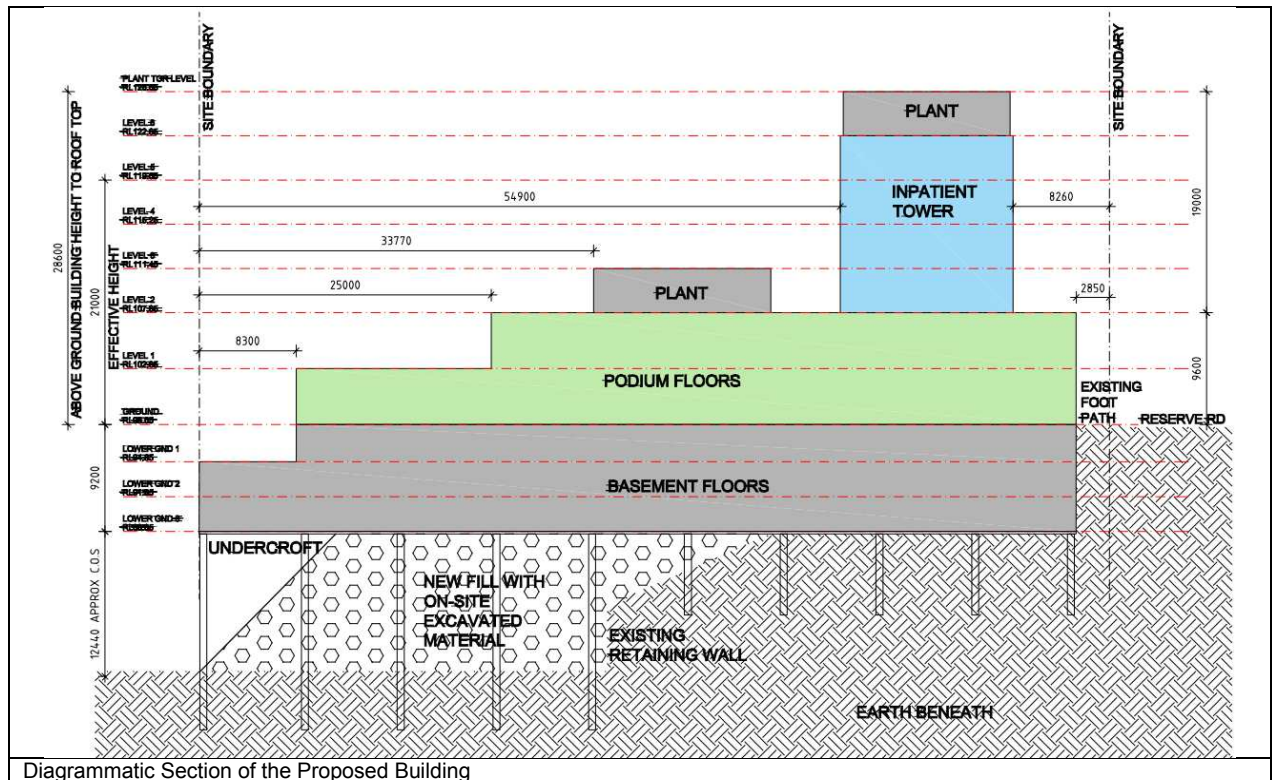
### **Height and Built Form**

The building above street level is approximately 28.6 metres in height measured to the top of plantroom roof, with an effective height of 21 metres measured from the highest habitable floor Level 5 to fire stair exit on Ground Floor. Based on the design philosophy that 'Form follows Function', the building envelope reflects the layout of each floor within.



Podium floors span across The Site taking advantage of the rectilinear form for maximum street-front accessibility and flexible internal planning. The 'L-shaped' slender tower achieves optimal efficiency in a compact Inpatient Ward layout, seeking to eliminate any space wastage.

The proposed Private Hospital building addresses the urban topography and stands at an intermediate height between the tallest neighbouring tower Kolling Building, and the low-rise Dexux Warehouse. Overall built form is of similar bulk and height to both the existing North Shore Private Hospital and multi-storey carpark building on the opposite side of Reserve Road. The proposed design respects the existing neighbouring buildings' contemporary architectural language. It aims to coexist coherently with these buildings, whilst avoiding mimicking any of these in detail or form, as a result generating its own architectural interest.



### **Façade, Materials and Colour**

A cream-coloured brick has been chosen as the material for the podium as it provides a sense of tactile experience and appropriate scale in addressing pedestrian traffic. The material itself also conveys a sense of mass which synergises with the idea of the podium as the support and foundation of the building.

The podium façade is lined with continuous strips of windows, emphasising the horizontality of the podium, as well as the corporeality of brick.

The corners of the podium are omitted to express the rectangularity of the podium. The form echoes the essential characteristic of the material in which it is clad.

The negative corner, as created at the intersection of Reserve Road and Westbourne Street, is addressed by a glass 'box' wrapped in a slim lightweight canopy, providing a contrasting element against the solidarity of the brick construction, and drawing visitors into the glass-like interior of the lobby. This is reinforced on the southern façade at the drop-off entry where the brick podium is

also lifted by concrete columns, and visitors are drawn into the lobby through the glass façade below.

The glass 'box' is also intended to serve a retail function, thus providing street activation on this strategic and prominent corner.

The canopy around the glass 'box' folds down to form the archway that will define the airlock entry from Reserve Road, creating a zone of human scale and interaction.

The façade of the tower component is marked by regular punched windows on an even flat white surface. This provides interesting contrast elements against the design of the podium as follows:

- The small scale modular bricks communicate a sense of mass, while the aluminium panels are large scale modular elements and communicate a sense of relative weightlessness.
- The network of brick and mortar joints gives the podium texture, contrasting with the clean and smooth façade of the tower
- The strip windows convey a sense of compression while the regular punched windows by contrast seem to be floating effortlessly against the sky

The connection between the two components is provided by tall towering stair shafts at the corners and either end of the ward tower, which visually lock and anchor the tower in place on top of the podium. The stair shaft is clad with corrugated metal cladding to further emphasise its verticality and to provide a texture to the tower component.

While the brick podium and the white tower allow the new Private Hospital to respectfully relate to the existing private hospital building across Reserve Road, the design is a contemporary interpretation of the same construction as the older building. The proposed building becomes part of a unified facility with the old but at the same time it is read as a standalone landmark with a unique identity in its own right.

Below the podium is a three-level carpark, dropped below street level, but with visual exposure along the north and west façades from the Australia Post driveway entry from Herbert Street. The design of the screen cladding acknowledges its surroundings, using a palette of greens and blues referencing the bushland and the sky. The screening system comprises perforated metal fences providing necessary ventilation and physical security protection for the carpark.



Concept Model of proposed Private Hospital building viewed from Australia Post driveway entry on Herbert Street



Concept Model of proposed Private Hospital building viewed from Dexu Warehouse driveway entry on Frederick Street

### **CPTED Principles**

Crime Prevention Through Environmental Design (CPTED) seeks to influence the design of buildings and places by:

- Increasing the perception of risk to criminals by increasing the possibility of detection, challenge, and capture
- Increasing the effort required to commit crime by increasing the time, energy or resources which need to be expended
- Reducing the potential rewards of crime by minimising, removing or concealing 'crime benefits'
- Removing conditions that create confusion about required norms of behaviour.

The proposed Private Hospital building design employs the four CPTED assessment criteria as its crime prevention techniques:

#### **Surveillance**

Passive/ natural surveillance to the public realm is enhanced with the fully glazed lobby on ground floor, maximising vantage into the public realm along Westbourne Street. This is further reinforced by generous horizontal strip glazing along the perimeter of level 1. The rectilinear building form also minimises blind spots along the perimeter of the building.

#### **Access Control**

Access to the hospital is strictly controlled with a hierarchy of security privileges defined and attributed through an electronic key tag system, which is also reinforced with a CCTV system and full time security patrol. Fire stair doors are locked to disallow travel into the floor from within and discharge doors to the fire stairs are locked from street access thereby preventing unauthorised entry into the building from the perimeter.

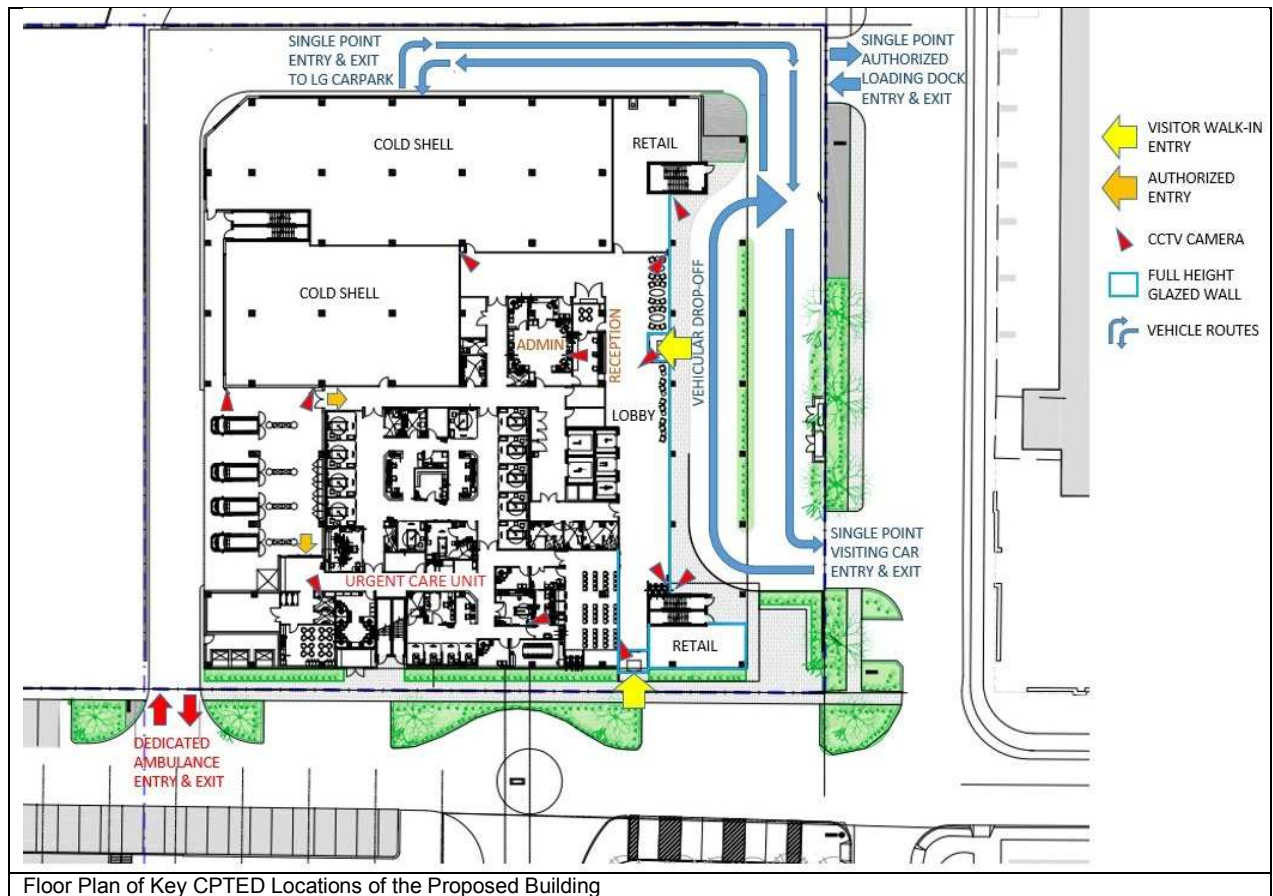
#### **Territorial Reinforcement**

The elevated front entry naturally helps reinforce the notion that the hospital entry and the elevated road as a semi-private space.

#### **Space management**

Public space such as the forecourt at the intersection of Reserve Road and Westbourne Street is furnished with urban furniture and utilities that are both attractive and robust, thus discouraging the presence of vandals and maintaining the quality of the public space.





## 4. Floor Plans and Facility Design

The proposed Private Hospital has been designed with 7 levels above ground (Ground to Level 6 plantroom inclusive) and 3 levels of lower ground carparking. The facility is broadly divided into two functional parts. These parts are closely related in operation and design.

### Private Hospital Key Elements

The Private Hospital will comprise the following key elements:

- 128 inpatient beds (single bed rooms)
- Operating/Procedure Rooms
- Bay for up to 4 ambulances (including Non-Ambulance Transfer Service)
- Support services including:
  - Medical Records
  - Administration
  - Central Stores
  - Linen Services
  - Waste Management
  - Housekeeping
- Radiology Diagnostic Imaging centre
- Urgent Care
- Specialist medical consulting suites
- Retail tenancies such as coffee shop, florist, and retail pharmacy

## Building Configuration

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The facility is designed in accordance with the latest health care design methodology, and complies with current Australasian Health Facility Guidelines. Internally, relationships between various components are critical, as they affect the flow of patients, staff/goods, and visitors. These are carefully considered and orchestrated.

In the case of patient facilities, the 'patient journey' from the entrance to the 'point of care' and final discharge, as well as all the intermediate processes, dictate the building configuration. In the case of support services, the movement of goods, trolleys, and staff from the loading dock to the various storage and processing areas creates discrete paths of travel throughout the building.

The visitor's path from the entrance lobby to the patient's bedside or consulting suites takes another discrete and controlled path. Public and visitor amenities are provided throughout the building in appropriate locations.

The facilities and planning principles of the facility are described floor by floor below.

### **Ground Floor**

The main pedestrian entrance to the building is from Reserve Road, identified by an architecturally sculpted portal that opens up a glass 'box' at the intersection of Reserve Road and Westbourne Street.

The sculpted portal and the glass 'box' together provide a marked contrast with the brick podium, creating a welcoming entry at this strategic corner.

This entrance leads to the lobby, waiting area, hospital reception, admission office, lift lobby and various tenancies.

Alternatively, visitors may also enter the building via the covered visitor drop-off zone on Westbourne Street. Due to site level variances, the drop-off zone is on an elevated platform which forms part of the ring road around the proposed hospital building.

The Ground Floor contains:

- Public Lift Lobby (3 lifts)
- Services Lift Lobby (2 lifts)
- Hospital Reception and Admission
- Security Office
- Urgent Care Facility
- Ambulance/Patient Transport Bays
- Medical Imaging
- Medical Suite Tenancy
- Retail tenancies
- Public Amenities

The Front Reception counter directly faces the Main Drop-off Entry, placed to best greet visitors. The reception is centrally located as a welcoming point, providing guests with directions and information about all the various departments within the building. The Public Lobby is conveniently located next to the Reception, and is visible to all street entries of the hospital.

An Urgent Care Facility is located on the Reserve Road side, with easily identifiable ambulant walk-in entries from both Reserve Road and Main Drop-off area.

Linked to the Urgent Care Facility are the Ambulance/Patient Transport bays, and access to these is afforded via entry and exit driveway off Reserve Road.

A staff corridor connects the Services Lift Lobby to all active departments on the ground floor, providing convenient and discreet staff access, concealing the busy hospital activities from the calm and steady front of house area and main public activity axis.

### **Vehicular Access**

The building is surrounded by a 6-metre-wide ring road that provides continuous perimeter emergency vehicular access around the building.

This ring road is accessed via Westbourne Street, leading up to a generous under-cover drop off area with its own separate doors to the lobby and leads to the carpark entry on the eastern facade of the building.

The Ambulance bay is located under cover on the Northern façade and is accessed via a dedicated driveway off Reserve Road.

This ring road allows for Fire Brigade (FRNSW) access to all four elevations of the building.

Loading dock entry is located at the eastern end of the site from Westbourne Street.

### **Level 1**

Level 1 is designed as the Hot Floor of the new private hospital building. Level 1 comprises:

- Operating and Procedure Rooms
- 6 Medical Suite Tenancies
- Allied Health Service Offices
- Education and Conference facilities
- Public Amenities

The circulation system in the Operating and Procedure Rooms zone is most critical as various flows must be separated and a strict air pressurisation regime must be maintained for infection control. The Operating and Procedure Rooms zone is designed as a self-contained unit to preserve a sterile requirement.

The unit has its own waiting and reception areas directly adjacent to the Public Lift Lobby. The Pre-operation area has convenient connections from both Waiting area and Services Lift Lobby to cater for receiving of day patient and inpatient cases to the unit. Operating and Procedure Rooms are strategically located between the main sterile corridor and a rear services corridor leading to the unit's sterilising facility. This is to physically enforce the unidirectional flow of soiled and clean equipment to and from each of the theatres. Self-contained staff changing facilities and staff room are discreetly attached to the back of the unit with staff access away from the Public Lobby.

The movement of patients on beds, trolleys, food, supplies and waste is kept separate in the service lift lobby utilising two service lifts. One will be regarded as relatively clean and the other relatively dirty.



### **Level 2 - 5**

The tower floors of the new proposed hospital contain the Inpatient Units (IPUs). Each tower floor is designed with an identical L-shaped floor layout. This reduces the chance of visitors and patients feeling disoriented between different floors. The layout also enables the same staff training and workflow process to be carried out on any given IPU floor.

The back-to-back Public and Services lifts continue from Ground Floor and Level 1, connecting all the IPUs at the centre of the L-shaped floor plates. The staff quarter and the main staff station directly face the Public Lift Lobby. All visitors to the inpatient floor will be greeted by the ward staff upon arrival.

Each IPU is split into 2 separate wings of the same floor. West Wing faces Reserve Road, where South Wing faces Westbourne Street. Each wing equally contains 16 single bed rooms, making each IPU a total of 32 patient beds capacity. Each IPU contains its own Clean Utility and Dirty Utility, as well as store room, beverage room, accessible toilet, and patient lounge room.

### **Level 6**

Level 6 is the building's roof plantroom, containing important building services plantrooms and lift motor room. This level is stepped back with an overhanging roof.

### **Lower Ground 1 to 3**

The new Private Hospital Building contains its own underground paid-parking facility. The design offers 220 car parking spaces including 7 accessible parking bays.

LG1 is where the building car park entry is located. The entry and exit point is connected to the internal ring road of the new hospital. Upon leaving the drop-off area on Ground Floor, vehicles have the choice to exit the premises via Westbourne Street, or use the parking facility underneath the hospital via this LG1 entrance. Once past the ticketed boom gates, vehicles can continue driving down to the carparks on LG2 and LG3. To cater for cyclists, a secure bicycle store and end-of-trip staff amenities are also provided on LG1, with both lift and stairway access.

Most of the back of house services including waste collection and the loading dock are located on LG2. Loading dock entry and exit point is directly connected to Westbourne Street. The services lifts terminate on LG2, accessed by back of house departments. The public lifts connect all carpark levels to Ground Floor and all the way up to Level 5 IPU. A Substation chamber is located next to Westbourne Street with direct off-street access. The generator chamber and main switchroom are collocated nearby.

## **5. Facility Future Proofing**

The facility will include provision for future expansion for hospital and ancillary uses such as accommodation, medical suites etc. of 6,997 m<sup>2</sup> to take FSR up to 3.0 :1. The Architectural design ensures that the future proofing of the new Private Hospital facility is an integral part of the architectural design.

This is evident in the design of the inpatient unit tower which has been located to allow for the horizontal expansion of a future wing for hospital and ancillary functions.

A concrete roof slab over the ground floor also allows for the expansion of the Operating and Procedure Room complex on level 1 with minimal disruption to the floor below. The current plantroom serving the operating theatre on level 2 is also separated from the inpatient unit tower, allowing it to expand readily in a future phase.

Substantial provision for future expansion has also been made on the ground floor with allowance for future hospital services in the form of cold shell space and future expansion on the concrete floor slab above the LG carpark entry.

## 6. Signage and Wayfinding

The wayfinding strategy of the new proposed Private Hospital will generally be in line with the International Health Facility Guidelines (iHFG) Part W – Hospital Wayfinding and can be separated into two categories:

1. via interior design
2. via a structured hierarchy of signage

The interior design of the facility will relay subtle visual cues to assist visitors to orientate themselves in an alien environment. This can be achieved via usage of materials, colours, patterns, or a combination of these to create different themes and landmarks to identify important nodes such as lobby, waiting space and staff stations, and also main axis of travel.

The Signage system will be designed around the visitor's journey and be separated into a clear hierarchy of signage as listed below:

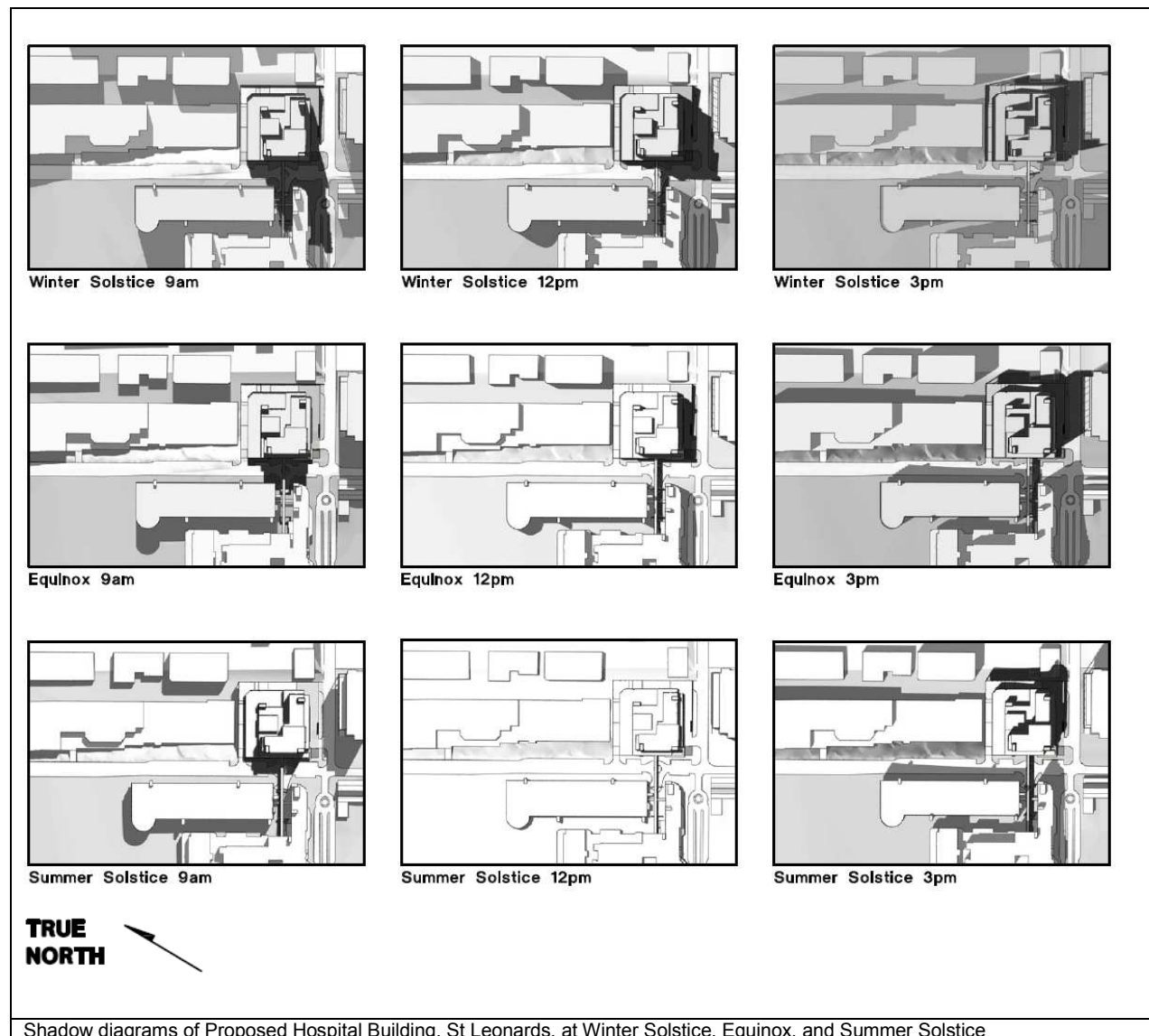
1. Street signage
2. Main external entrance signage
3. Main entry directory board
4. Lift lobby directory board
5. Interdepartmental signage
6. Department Entrance signage
7. Inter-departmental signage
8. Room / Bed Bay signage

All of the above will be designed with a unified design language with subtle changes in the design such as font sizes to ensure a clear understanding of their hierarchy is subtly conveyed to the visitors.

Elaborate design will be avoided to minimise unnecessary visual stimulation that would distract the visitors from digesting the wayfinding information.

## 7. Environmental Amenity

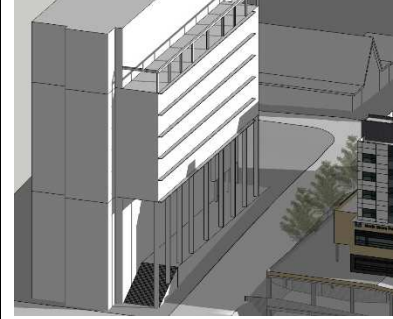

### Solar Access and Shadow Diagrams



As shown in the Shadow diagrams above, the proposed building has minimum shadow cast onto nearby existing buildings for majority of the year. The longest shadows are produced at 9:00 am in the Winter Solstice onto North Shore Private Hospital, noting that bulk of the existing hospital Eastern facade will be overshadowed by the existing multi-storey carpark building at the same time.

The proposed building also casts shadow onto the northern façade of the Kolling Building in the afternoon during winter. As a 6-storey tall building (above street level) it can only cast a shadow to the recessed lower levels of the Kolling Building, as depicted in figure below:



	
Low Level Shadow cast on Kolling Building Northern Façade at Winter Solstice 3:00 pm	No Shadow cast on Kolling Building Northern Façade at Equinox Solstice 3:00 pm

The northern façade of the existing Kolling Research building has extensive shading devices protruding in front of the windows. On the upper floors (level 4 and above), most of the windows are shaded externally. On the lower floors the façade is deeply recessed within its upper floors' own shadow or otherwise shaded with internal roller blinds.



Photos taken in summer of Kolling Building Northern Façade showing deep recessed façade on the lower floors

It is well understood that the proposed Private Hospital building inevitably casts shadows to the existing buildings near the Site. Through building setbacks, careful planning and massing articulation, the overshadowing effect is minimised to both existing North Shore Private Hospital and the Kolling Building.

### **Visual Impact and Privacy**

The external view of the existing North Shore Private Hospital building towards Reserve Road is mostly blocked by the multi-storey carpark building as-is. Even with the extension of the Inpatient Unit at the corner of Reserve Road and Westbourne Street, the main views are towards Royal North Shore Hospital campus, which will not be affected by the proposed new build on-site. No patient privacy is affected by the new building for the same reason above.

All external windows of the proposed Private Hospital building are tinted, with operable visual blinds behind. Above photos of the Kolling Building's Northern Façade indicate tinting, and operable blinds are also apparent. The face-to-face distance of the two building towers is over 34 metres, which assists in reducing overlooking. Therefore, it is considered a mutual respect of privacy is achieved for both buildings.

### **Acoustic Impact**

The acoustic performance brief for the proposed Private Hospital complies with general requirements of the current version of NCC and BCA. Please refer to the Acoustic Report for a detailed examination of additional noise sources in the proposed Private Hospital building, as well as the background noise, and how the noise source will impact surrounding properties.

### **Wind Impact**

With appropriate massing and setback design of the proposed Private Hospital building, the wind conditions for the street frontage of the Site are expected to remain similar to existing conditions. Refer to Wind Assessment Report for details.

## **8. Summary**

The proposed Private Hospital building is a high-quality addition to this thriving medical precinct.

It is simple, dignified and respectful to the existing Private Hospital without directly copying its details or appearance. It will enhance the streetscape by relating various elements of human scale, by addressing the corners, and careful detailing at close quarters, whilst creating a well-articulated silhouette from a distance.

The proposal should be appreciated by the community not only for the valuable health services it will bring but also for the architectural interest it will add to the streetscape.