

06 Building in Context

Building Scale

The floor area has been based on the anticipated clinical services demand in the Westmead Area for the next 10-15 years.

The overall height of the building is established through the adoption of best practice floor to floor heights, suited to the services and infrastructure requirements of a contemporary health service building.

Consideration has been given to the need to connect the CASB with the two main hospitals and research facilities on many different levels, thus storey levels match key levels within the building.

The form height and massing of the Acute Services Building are required to respond to the proposed staging and growth of clinical services, whilst capitalising on the opportunity for increasing the future density on the site.

Extending the Acute Services building to fourteen levels of accommodation responds to the need to increase density in this portion of the site and establishes a frame work for future scale

Building RL's

The top RL of the building is proposed to be RL 86.000. This is the top level of the Lift overrun and associated lift motor room that serves the Helipad on Level 14.

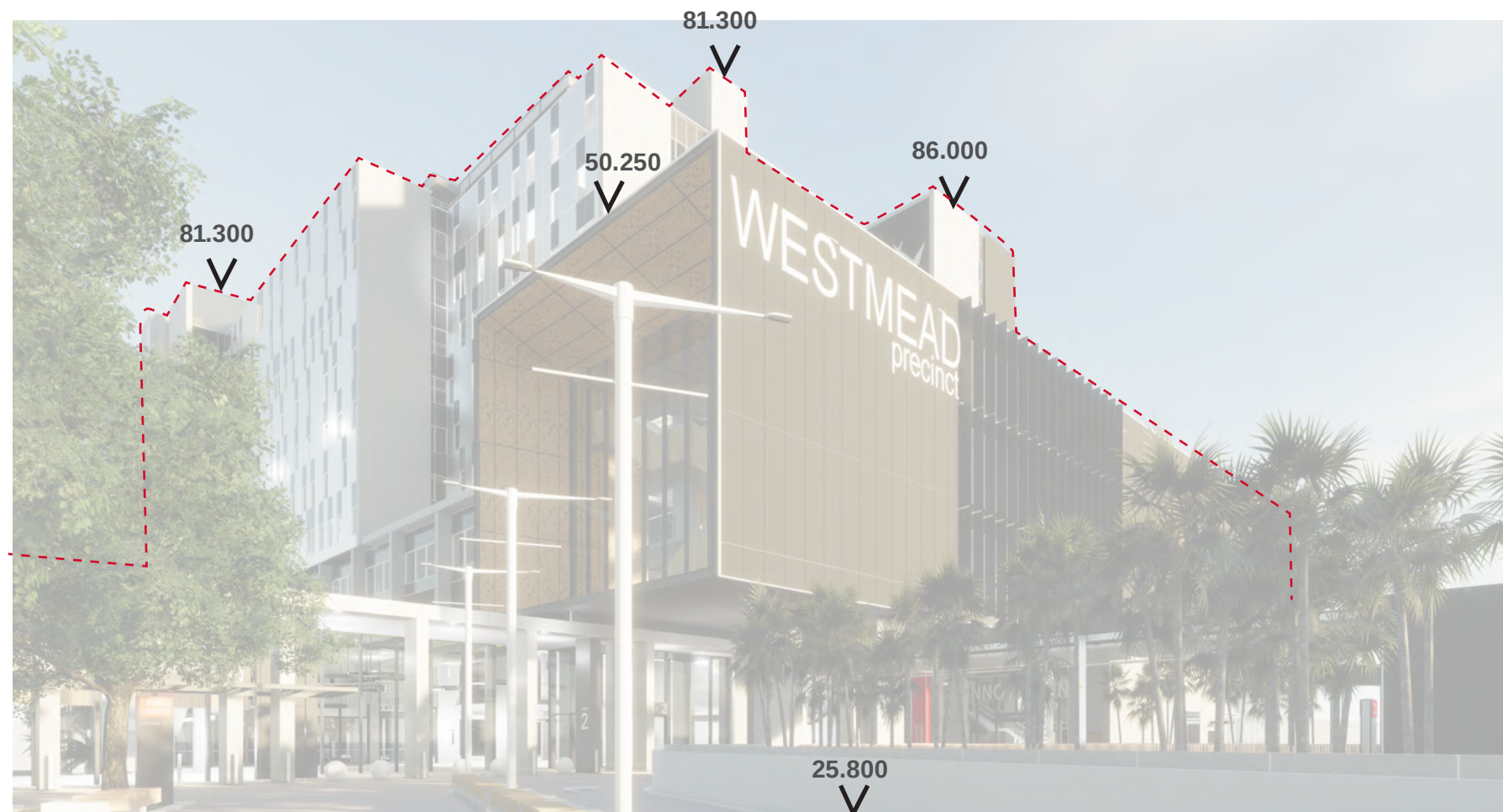


Diagram showing proposed Levels to Building Mass

06 Building in Context

Building Site

The location of the proposed CASB facilitates the creation of a truly integrated campus, in which clinical services are arranged to achieve close linkages to the existing facilities. The building has been centrally located within the hospital campus to align with the clinical requirements of both Westmead Adults Hospital and The Children's Hospital at Westmead.

The buildings location has also allowed a true integration of not only the two hospitals but also by allowing key connections to the research precinct.

In order to facilitate the Master plan principles of car parking provision a new under croft car park has been provide below the proposed plaza and in close proximity to the hospital drop off location an new front door.

Placement of the CASB towards the south of the Hospital Campus provides improved community accessibility from Public Transport (Westmead Station and local bus services), and will create a new landmark address for the hospital.

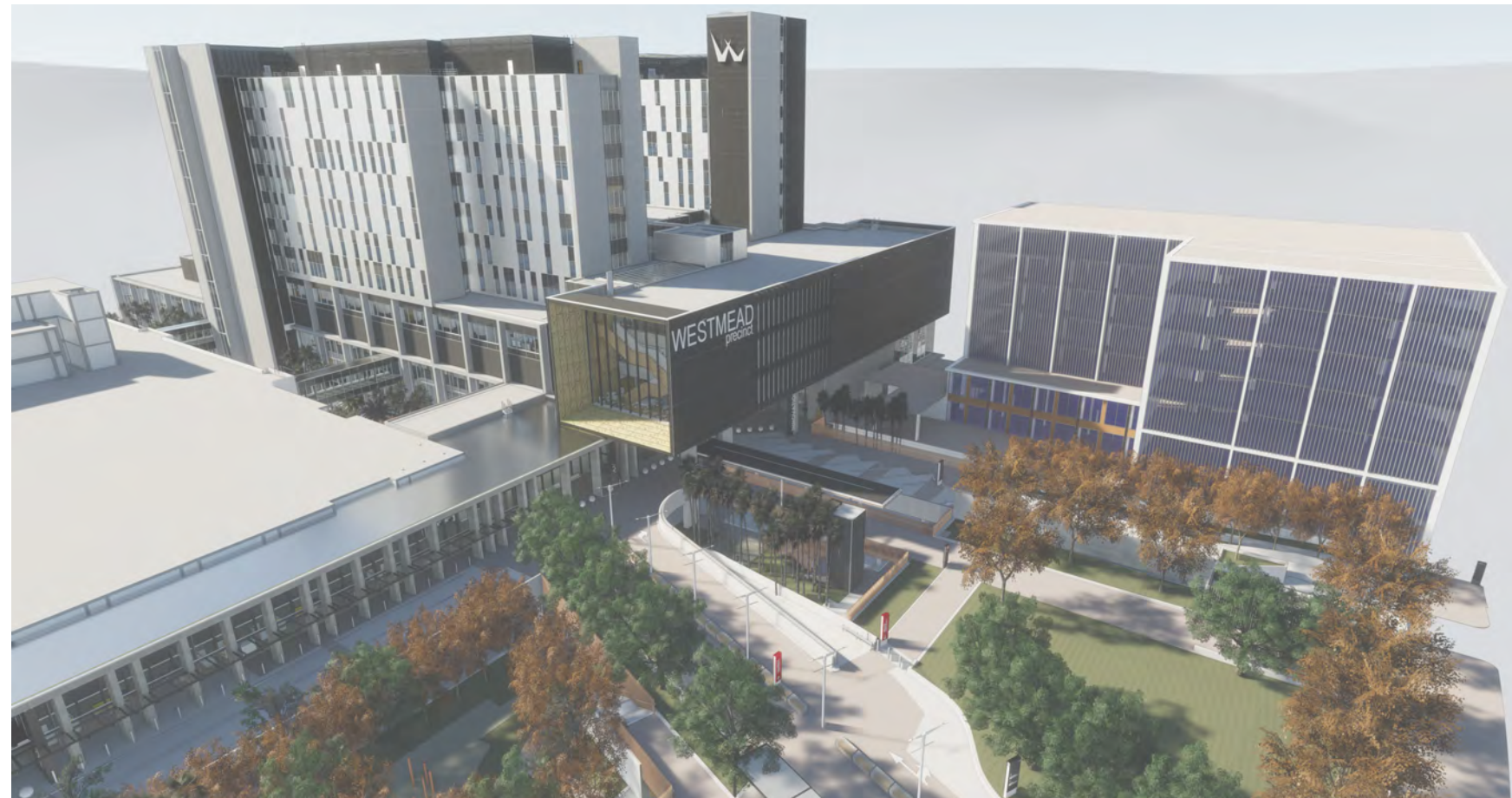
The central concept provides a consolidated response to these parameters by:

- Reinforcing the precinct focus and promoting integration between adults and children's hospitals by locating the acute services in the integrated services zone
- Reinforcing Hawkesbury Road as a precinct entry boulevard thus supporting logical way-finding to the various health service entries.
- Providing greater urban presence to the new CASB by means of the new large forecourt – making this a premier address for this flagship development
- Making better use of the public transport infrastructure along the Hawkesbury road corridor, including closer proximity to Westmead Railway station and the future light rail
- Connecting children's and the adults' hospitals via the interface zone and so fostering staff collaboration and sharing of support services
- Promoting separation of traffic flows – as a result, most public access is now from the south via Hawkesbury Road with ambulance, logistics and staff access from the north via Institute and Redbank Roads and the new road to be constructed from Mons Road on the ADHC site.



Proposed Site Plan

06 Building in Context



Building in context

- Improving the resilience of helipads across the site by allowing the children's and adult's hospitals to share a new helipad located at a height which will not compromise future building developments
- More closely integrating with the precinct research institutes, thus further promoting and enhancing opportunities for 'bench to bedside' research
- Using this flagship building to promote the integration of clinical care, education and research facilities wherever possible
- Containing the horizontal site foot print by promoting a vertical solution for the new CASB, thus decreasing the hospital's reliance on horizontal circulation and reducing travel times between key departments and services.

The planning will deliver a balanced response to the initial Stage of the Westmead Redevelopment (between new and existing services), and the short, medium and long term development strategy for Westmead Hospital and the Westmead Precinct.

Streetscape

The main frontage to the new hospital will have its greatest impact along Hawkesbury Road.

Hawkesbury Road varies considerably in both use and scale on its north and south aspects. To the north of the street lies Westmead Hospital campus which comprises a multitude of Health and Research buildings which range from 3 storeys in height up to 8 storeys (Westmead Institute)

To the south of Hawkesbury Road a number of residential form the main frontage to the street. The vast majority of these range between 2 -4 storeys high. One large residential block located on the corner of Hawkesbury Road and Caroline Street which extends to 9 habitable storeys



Context section through Hawkesbury Road

06 Building in Context

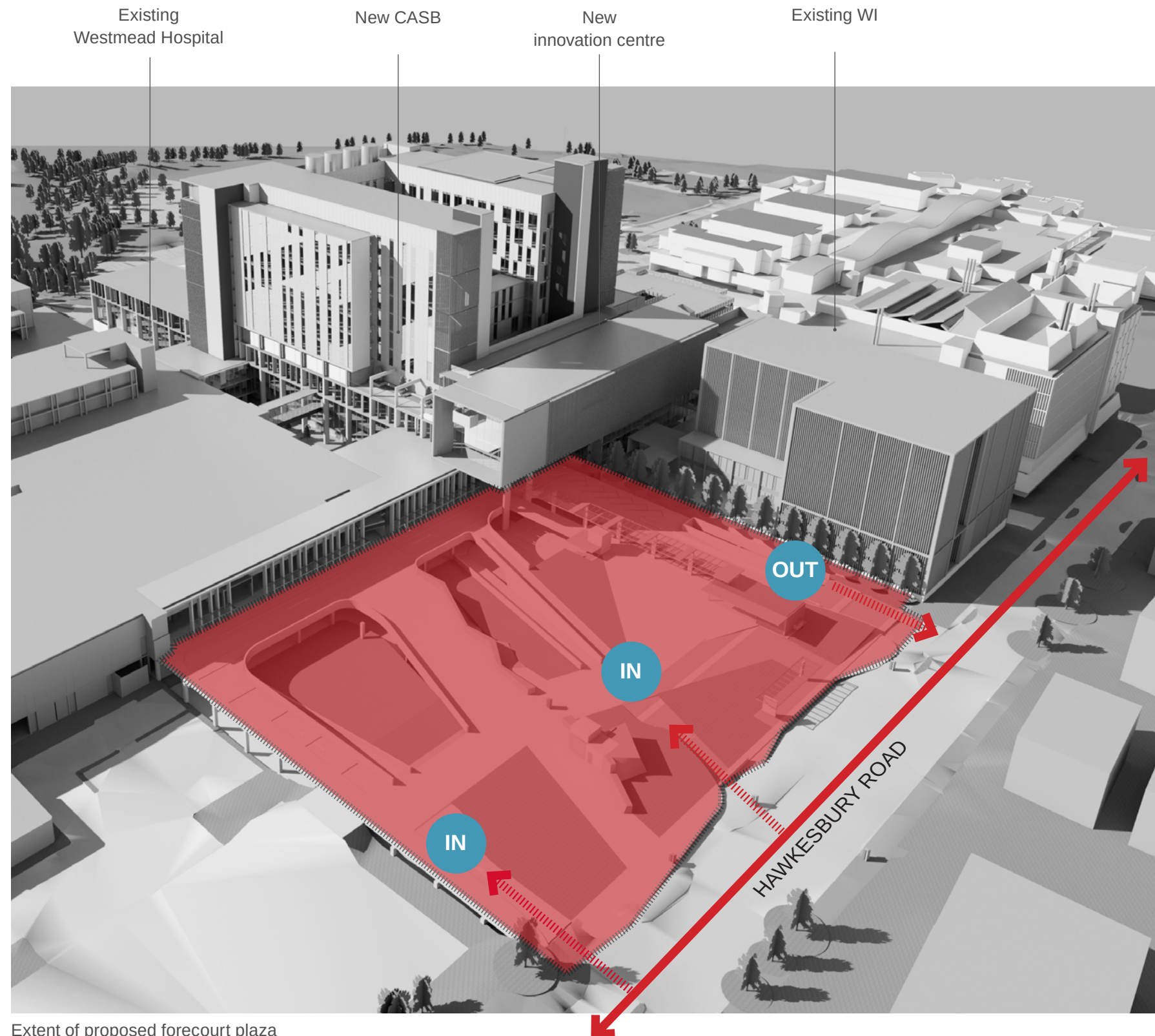
Entry Plaza Overview

In developing a new CASB building for Westmead hospital, a new civic forecourt space has been created including a multi level underground car park.

This civic space is multifaceted, bounded by the Hospital to the North, the Westmead institute to the East, the existing car park to the west and Hawkesbury road to the South, the 110M x 90M forecourt contains:

- Access road forming a drop off to Westmead Hospital and continuing to the East to form a drop off area to the relocated Children's Hospital emergency department,
- Access and egress ramps for the new underground car park,
- Lift access to the new underground car park,
- Landscape spaces
- Paved connections
- Seating areas
- A new Café and a new Bus stop

VEHICULAR ACCESS



Extent of proposed forecourt plaza

06 Building in Context

Creation of Place

A new civic space has been created that exemplifies place making. Strong lines and connection reinforce the concept of destination. Promotion of both wellbeing and health has been achieved through the creation of contemplative seating spaces, landscape and linking the new Hospital entrances to Hawkesbury road. As the civic place is itself part of the Hospital precinct, an opportunity has been provided for both patients and visitors to enjoy the created landscape spaces through gathering, meal spaces, conversation, visual relief and quiet contemplation.

Positioning the Café in close proximity to the bus stop and linking this to the entrance to the Children's Hospital emergency department has created a synergy and vibrancy that contributes to the place making.

The two main landscape spaces also form a connection to the lower level, providing visual amenity and relief through landscape for the Adult Emergency department, located on the lower level.

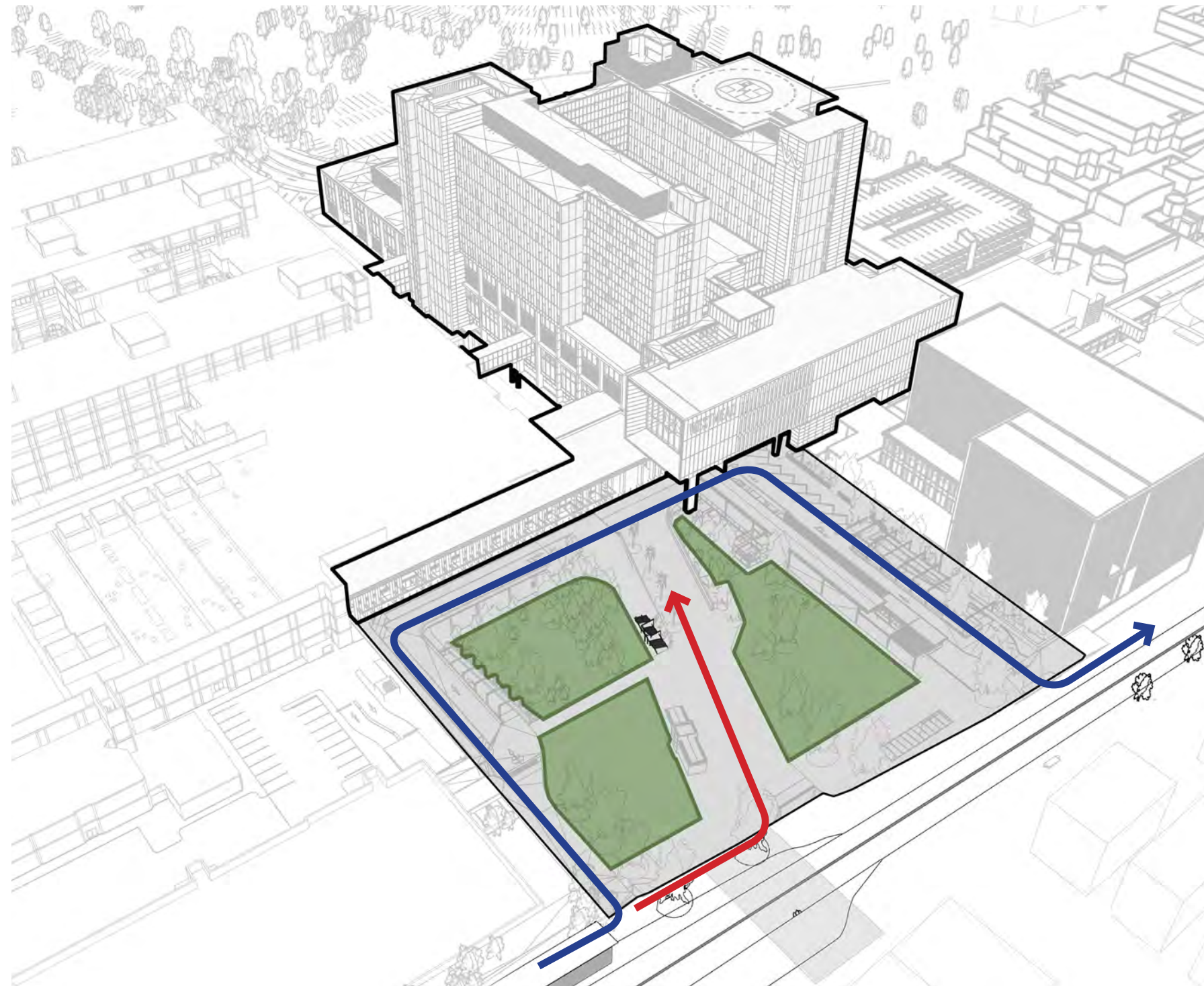
Car Park and Vehicular movement

As part of the forecourt a new multi-level carparking opportunity has been created with a total of 265 carspaces. This has been divided up into the following levels :

- Level 2 forecourt — General hospital drop off spaces and Children's emergency department drop off spaces
- Adult emergency department entry and drop off - Level 1 drop off
- Carpark Level C1
- Carpark Level C2

As vehicles enter the forecourt, they are provided with a choice to either stay on grade and drop persons off to the hospital or Children's Emergency Department, making use of the pedestrian friendly drop off areas in a format similar to an airport drop off area; alternatively vehicles can access the lower levels via the ramps.

A separate access to the Children's emergency department is also provided as a point of choice and providing direct access to the emergency department. Drop off parking spaces are clearly defined with the forecourt landscaping softening the approach.



Indicative sketch of vehicular movements through courtyard

06 Building in Context

Pedestrian movement

An important part of place making is the movement and journey of pedestrians through and within the civic space. This has been achieved through clearly defined lines and connections which are in themselves multi faceted and functional as all types of pedestrian use and journey has been considered.

Clear paths defined by paving, seating and landscape allow the direct journey to be achieved as the Hospital entries are celebrated through sight line.

Soft landscape and seating provide pedestrians engaged in contemplative movement through the site an opportunity to pause and reflect. Seating also provides pedestrians with an opportunity to delight in conversation and cuisine. Landscape within the seated areas provides relief via shading.

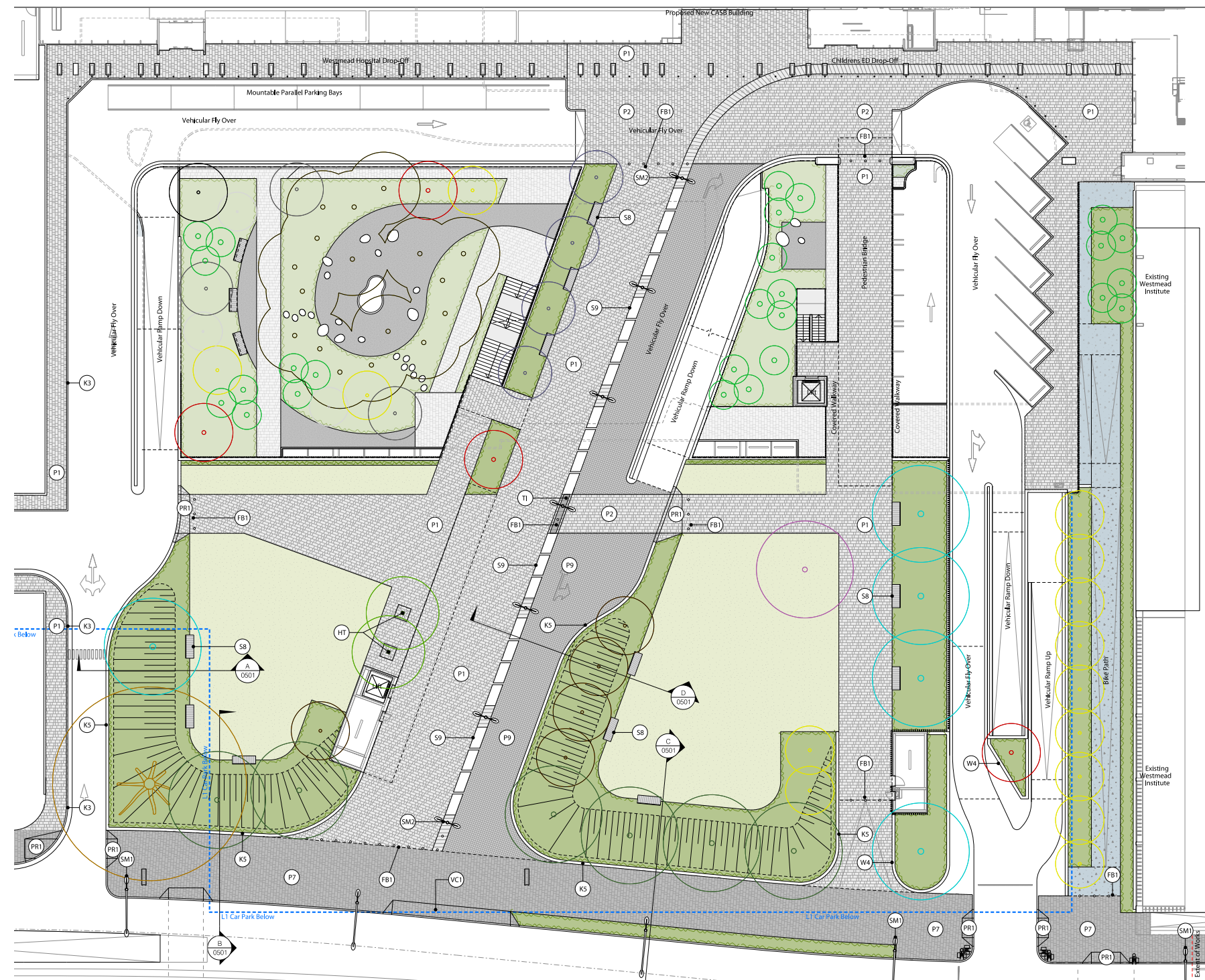
Persons arriving by public transport have been provided with bus stop and clear sight lines to paths leading to the hospital entrances. The on-site bus stop (alongside the east-west axis of the CASB's podium) is itself in close proximity to a café.

Bicycle parking is provided under cover on the car parking levels adjacent to the vertical access routes to the plaza.

The area is readily accessible by pedestrians arriving by public transport and private vehicles, and as well as independently.

Summary

The new civic space defined as a forecourt to the Hospital and new CASB building is visualised as a readily identifiable place for those utilizing the hospital facilities, as well as space accessible to the community as a whole. The hierarchy of pedestrian movement and vehicular movement is softened and complimented by landscape and pedestrian activity within the civic space.

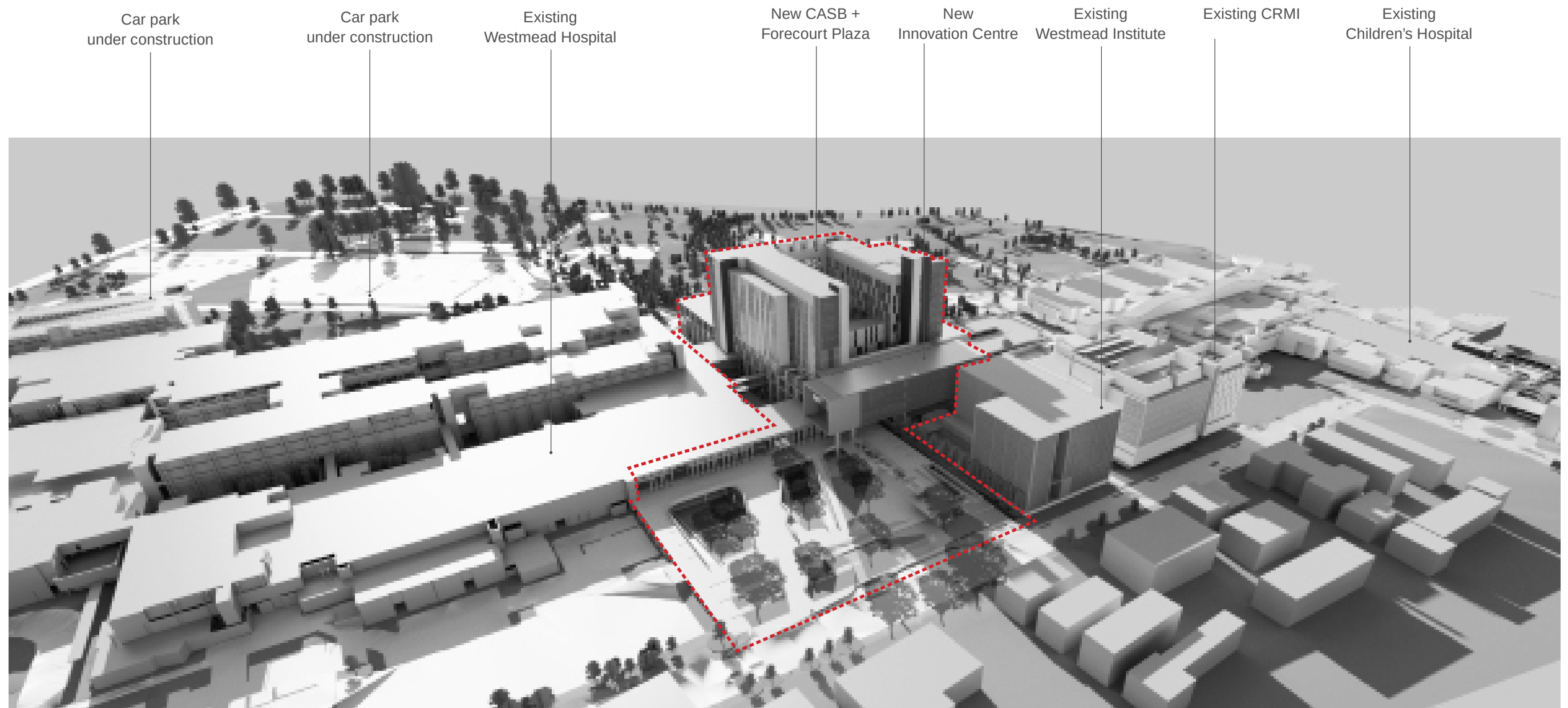


Proposed Landscape Plan to Main Forecourt Plaza
(Tract Consultants Pty Ltd)

06 Building in Context

Gateways

At 13 storeys high the new CASB will provide a notable landmark on the Westmead Hospital Campus. It is setback approximately 100m from Hawkesbury Road adjoining a new forecourt plaza. It will be the tallest structure within the campus and will be easily sighted from Westmead station.



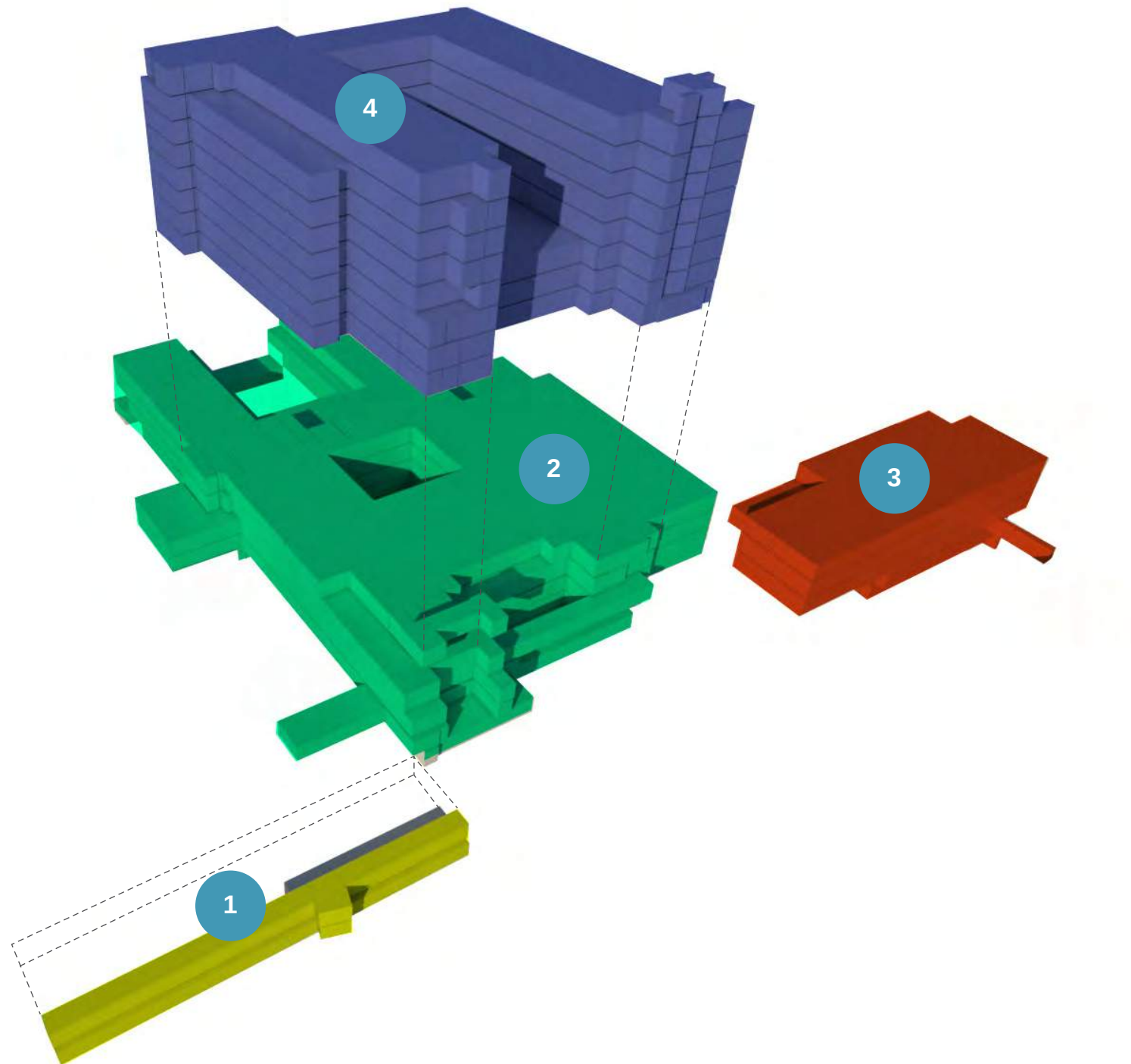
Proposed massing of CASB + forecourt

07 Building Articulation

Primary Elements

The new CASB has been derived from four separate elements and is representational of a form follows function building.

1. The entry zone will create a civic prescence to the new landscape plaza. it will act as an arrivals and departure zone for patients, staff and visitors and has key linkages to the new CASB and existing hospitals.
2. The Podium will contain the specialist facilities that are key to the workings of the new CASB. Public movement will exist on Level 2 while secured clinical movement will occur on Level 3. Courtyards are placed within the footprint to allow daylight into the lower levels.
3. The Innovation centre form extends of the main drop off demarcating the entry point for the building assembly.
4. Two wings of hospital accommodation extend a further 8 levels above the podium and directly above the plant. Generally these will allow occupants of Inpatients bedrooms to enjoy far reaching views across Sydney to the east and the blue mountains to the west.



Indicative sketch showing breakdown of elements

07 Building Articulation

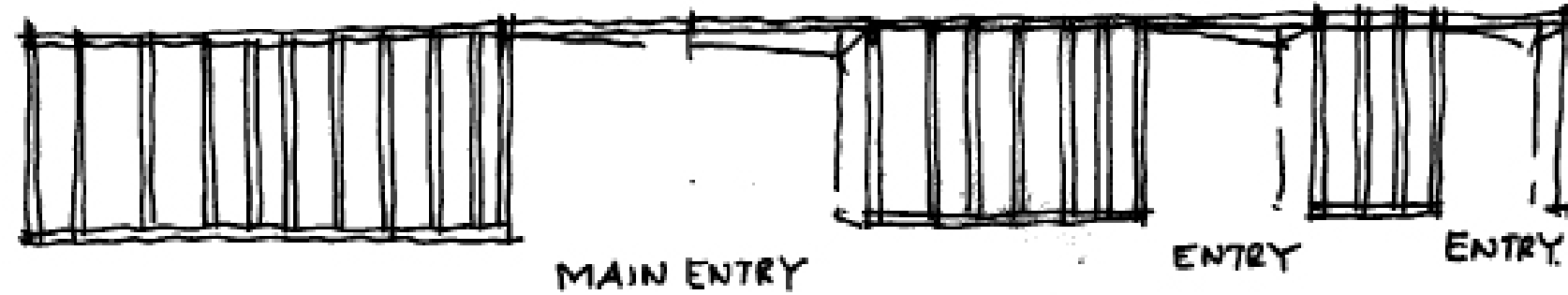
Entry

On the South Eastern Facade fronting the main plaza a new entry is proposed that will provide a new landmark address to the Hospital Campus. A number of entries will be consolidated within this area including:

1. The Main Entrance to the CASB
2. Entry to the existing Day Surgery department
3. Entry to Adults ED at Level 1
4. Entry to Children's ED at Level 2
5. Entry to the Innovation Centre.
6. Secure Clinical Linkage (L3) to The Children's Hospital at Westmead as well as Public Linkage (L2).



Indicative sketch showing entry locations off Plaza



Indicative sketch highlighting entry

07 Building Articulation

Defining Entry

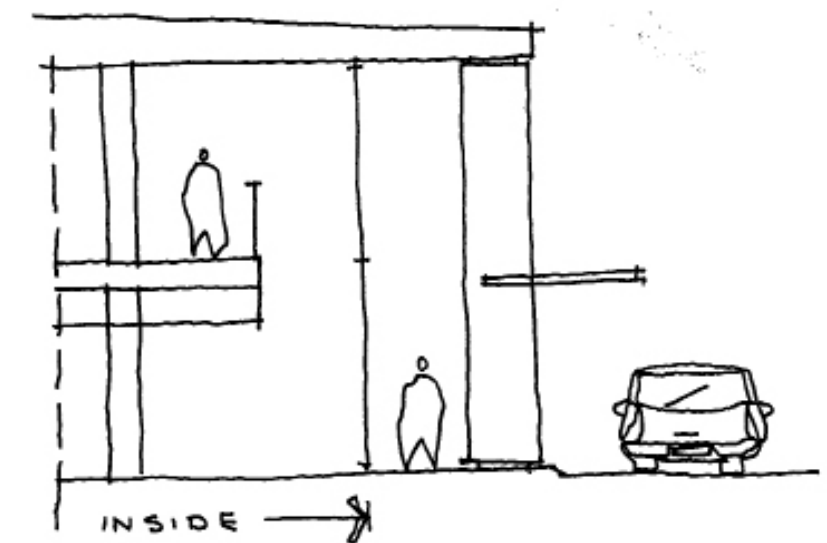
An exo skeleton frame is proposed to define the main entry and arrival zone. It is envisaged that the exposed frame will assist in:

1. providing a new street address to the hospital
2. create a contextual relationship with the scale and height of the adjoining Westmead Institute building
3. provide shelter from the main drop off area
4. provide shade to the internal environment

Entry to the building is further defined by simply making the grid wider in those instances. These will be further refined by making the airlocks stand out through material and colour.



Indicative view showing entry drop off



Indicative section through entry zone

07 Building Articulation

Podium

The podium forms the critical connection between the existing adults and children's hospitals and the specialist units that will exist in the new CASB

The plant levels sit directly on top of the podium which will act as the platform on to which the future Stage hospital will be constructed.



Indicative view showing build up of Podium

Indicative view of streetscape and Podium adjacent to the east-west axis on the southern boundary of the CASB

07 Building Articulation

Innovation Centre

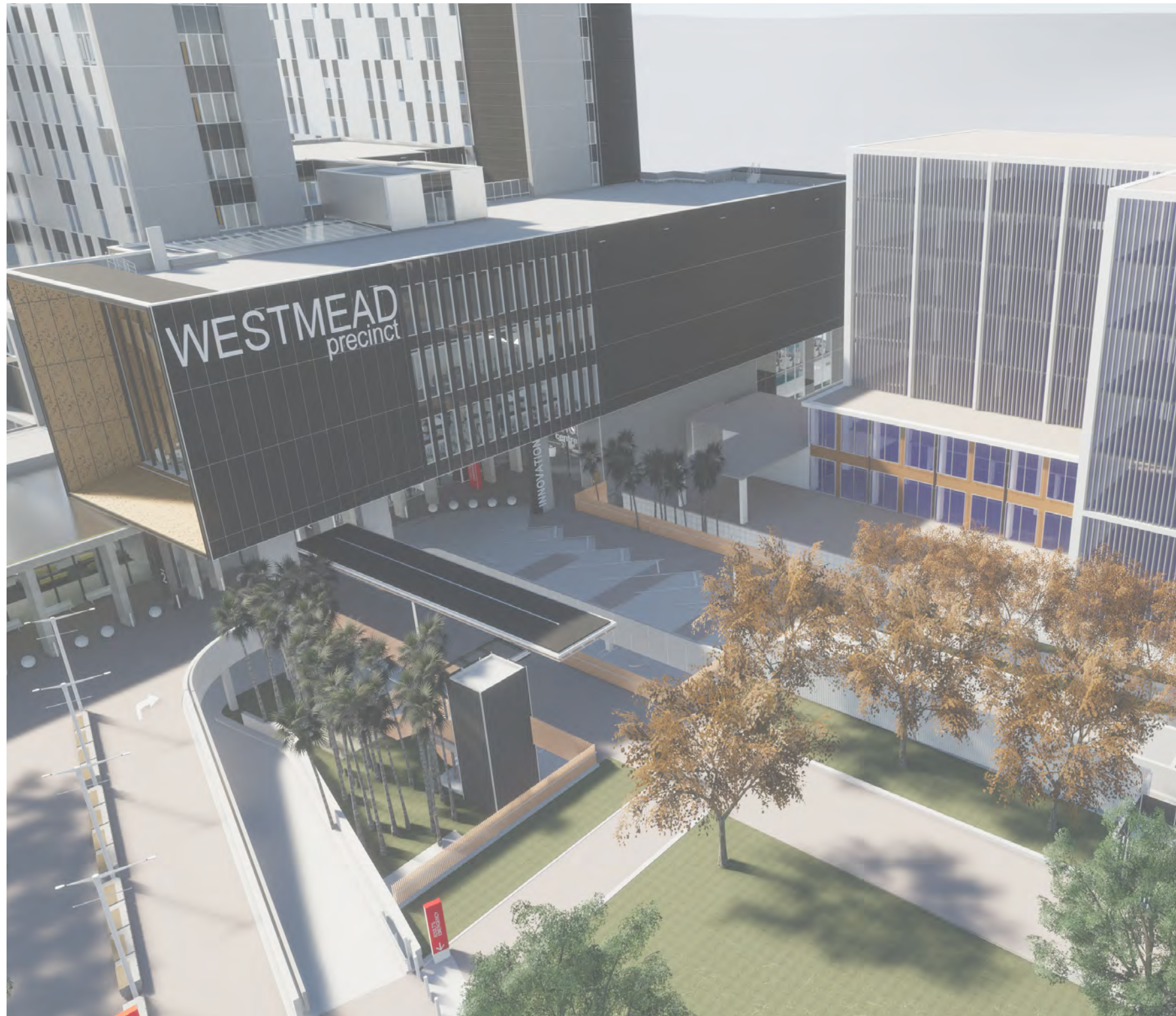
The Innovation Centre has been sited to enable connectivity and collaboration within Westmead campus. It will have direct linkages to the new CASB, the existing hospitals and the existing research buildings.

It is elevated above the drop off zone and creates a covered entranceway to the CASB, Children's ED and the Innovation Centre

The lower level is formed as a glazed link that extends from the Main Entry Plaza, and has a direct relationship to the Westmead Institute lower level.

Similarly at the upper levels the facade takes reference from the Westmead Institute providing privacy and shading

At night it will act as a Landmark beacon further defining entry and street address



View highlighting Innovation Centre and associated external zones

07 Building Articulation

Tower

The first stage of the CASB tower will provide 2 wings of accommodation extending over 8 levels. A central core will join the two wings and contain public, clinical and logistics lifts as well as support services.

Stage 2 of the CASB tower will allow 2 further wings to be constructed in a mirror image of the first stage.



View highlighting Tower arrangement

07 Building Articulation



Rooftop and Mechanical Plant

Level 14 will provide a Helipad to serve the new CASB. The Helipad is located on the North East wing above the plant on Level 13. Two “hot” (Staff Restricted) lifts give access to the remainder of the hospital and connect directly to Level 2 giving direct access to the clinical bridge link towards the Childrens hospital on Level 3.

A series of Chillers (whose exact number and height have yet to be confirmed) are located on the central core and do not impede with the Helicopter Flight Path (they do not extend above the line of the lift core). For further information please refer to the aviation report.

Access is restricted to the Helipad via Staff only lifts and a Staff only stair.

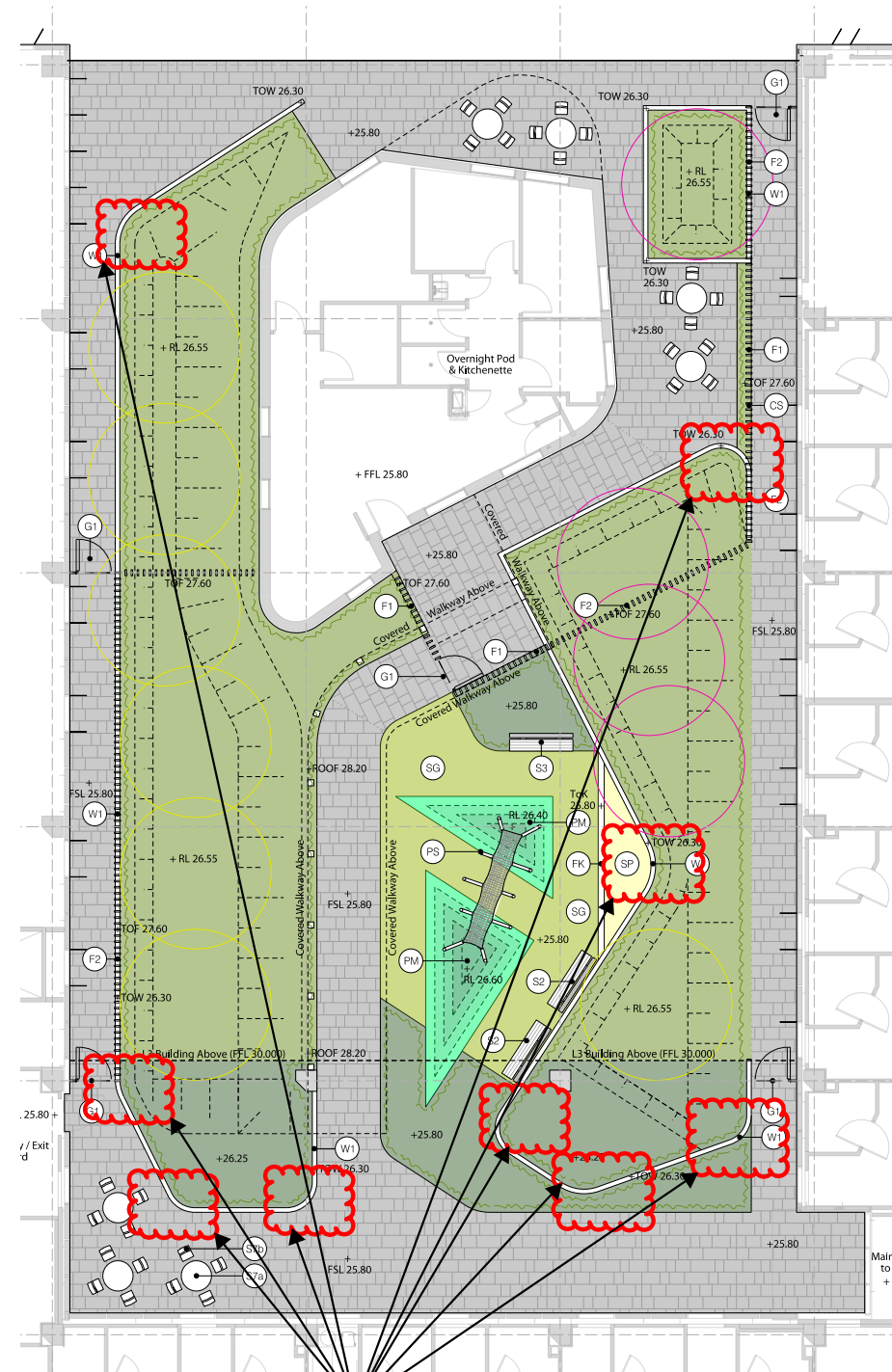
Diagram showing rooftop Helipad and associated plant.

07 Building Articulation

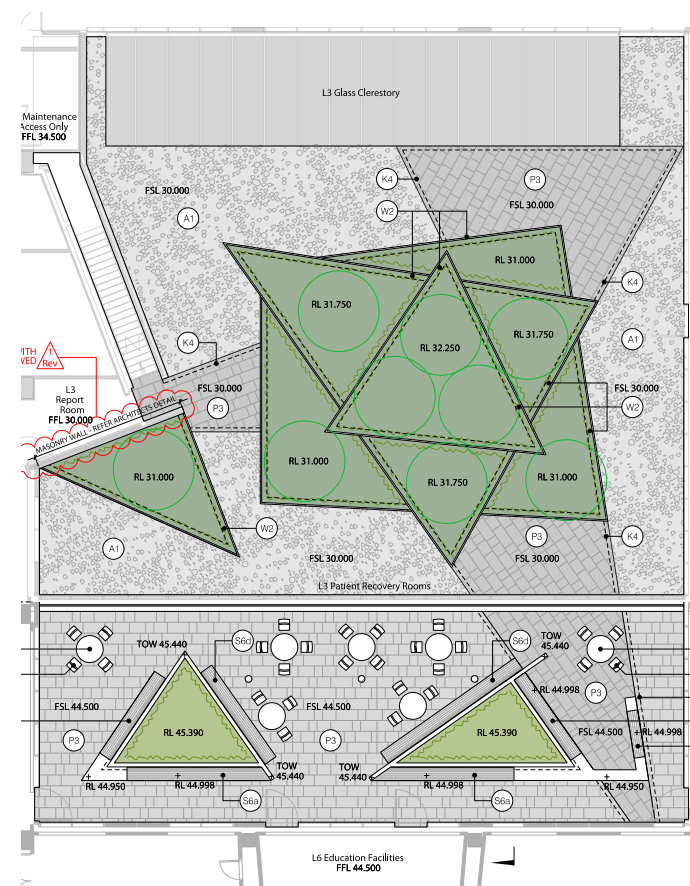
Courtyards

A number of courtyards are provided through out the new CASB and Innovation centre each with their own identity and function. These include;

1. Children's Play area. located on Level 2 adjacent to the main waiting room in the Emergency Department .
2. Level 2 Deck. located on Level 2 in the north facing courtyard.
3. Level6 Roof Deck for use by the Innovation Centre users



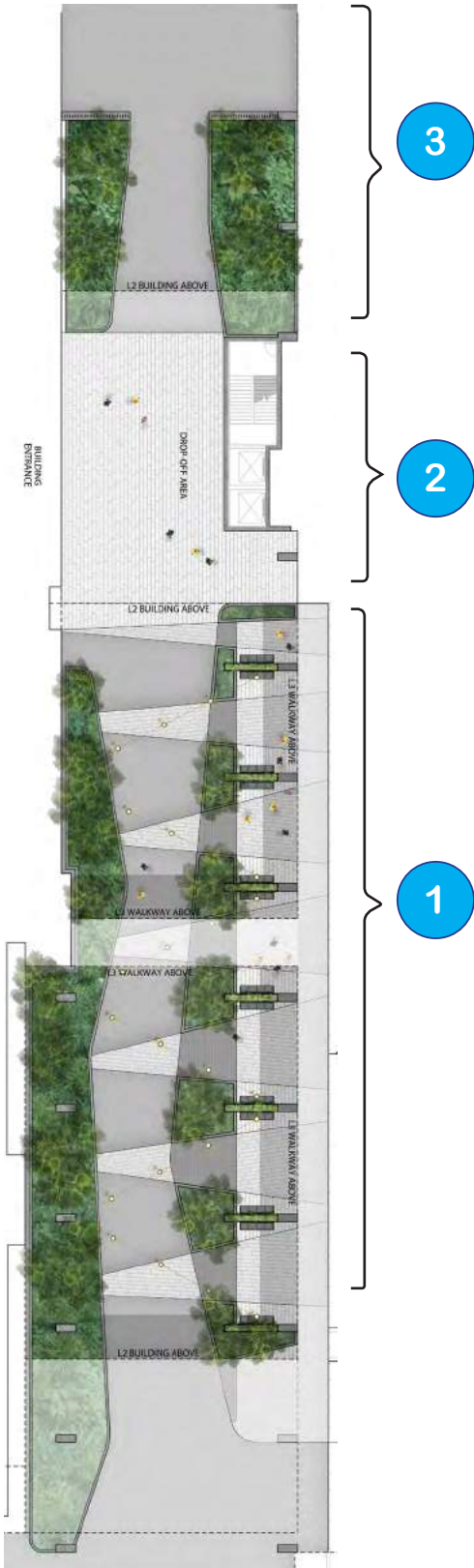
Landscape plan of Level 2 Courtyard



Landscape plan of Level 6 Courtyard



Indicative view of shared boulevard



Plan of shared boulevard

07 Building Articulation

Shared Boulevard

A central shared vehicular and pedestrian space is planned between the existing and proposed CASB. It will provide amenity for the hospital and create a new accessway towards the north of Westmead Campus.

The space will allow a restricted Patient transport service to traverse the area. it can be segregated into three main zones ;

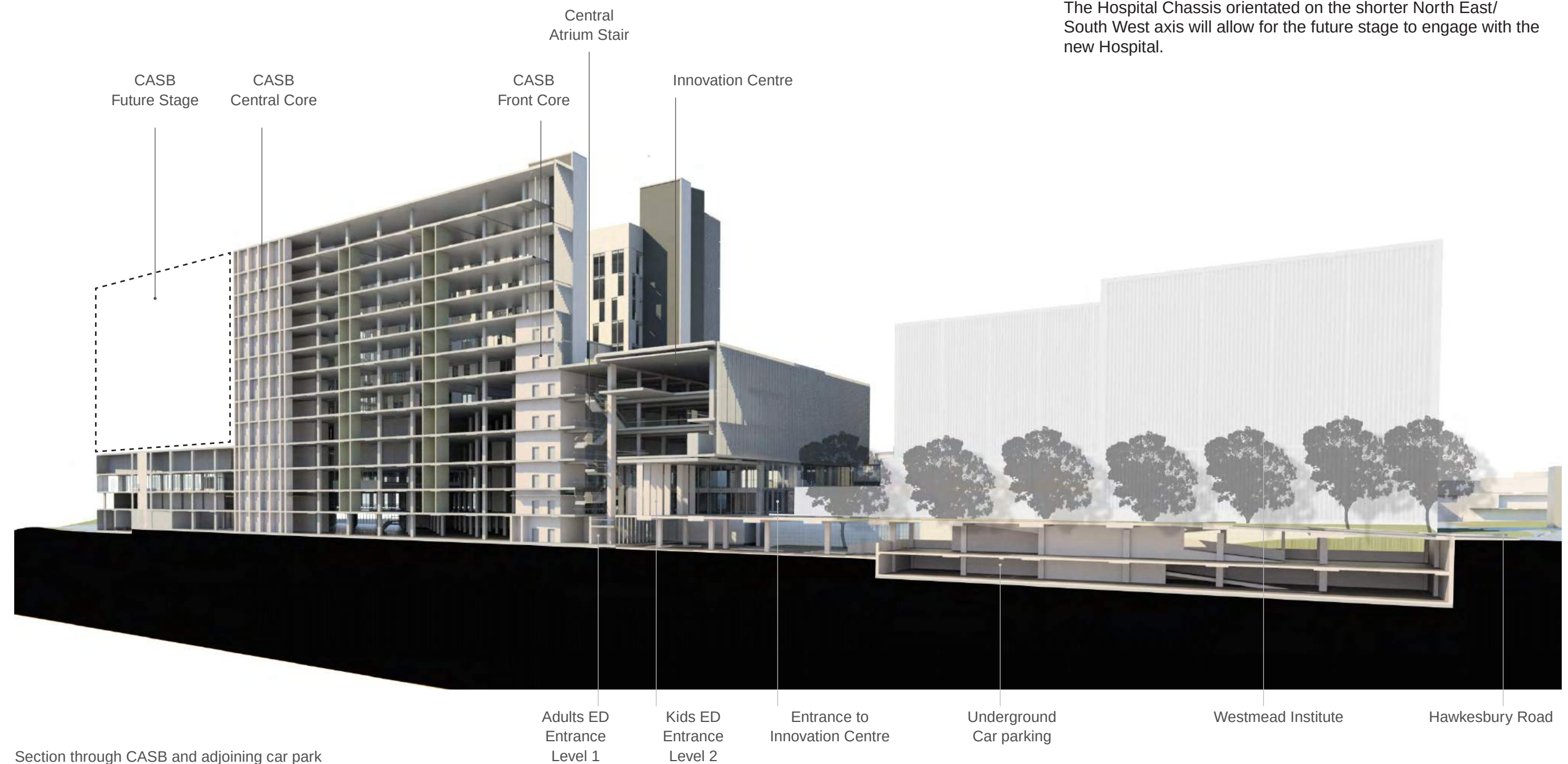
- 1. Patient / Staff/ Visitor Amenity zone to the south
- 2. Bus Drop Off .
- 3. Loading and Logistics connection from Westmead Hospital

07 Building Articulation

Building Axis

The footprint of the building is orientated on a North West / South East Axis and is centrally located within the Hospital campus. The longer axis is aligned with the landscaped street at Level 1 and extends via the underground car parking towards Hawkesbury Road

The Hospital Chassis orientated on the shorter North East/ South West axis will allow for the future stage to engage with the new Hospital.

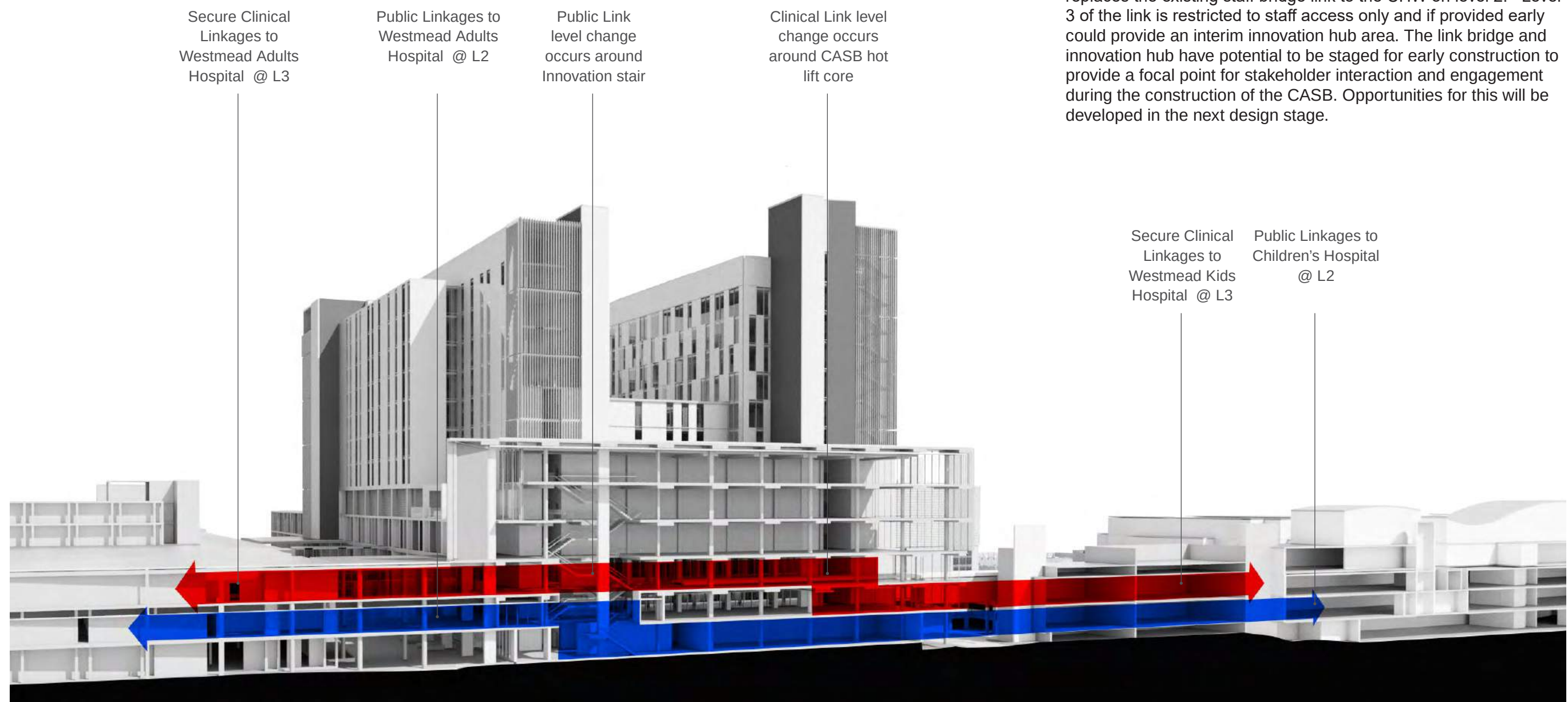


07 Building Articulation

Bridge Links

Various new bridge links will be provided across to facilitate circulation and separation of flows between the new CASB, existing hospital and the CHW. These bridges will build on the existing network of circulation providing horizontal links and a vertical separation of flows.

The main east west link is provided south of the new CASB and replaces the existing staff bridge link to the CHW on level 2. Level 3 of the link is restricted to staff access only and if provided early could provide an interim innovation hub area. The link bridge and innovation hub have potential to be staged for early construction to provide a focal point for stakeholder interaction and engagement during the construction of the CASB. Opportunities for this will be developed in the next design stage.



Internal Cross links between Adults and Children's Hospital using the CASB

07 Building Articulation

Facade - Creating Interest through Scale

Interest to the building has been defined by creating animation at varying layers of scale throughout the building. These include:

Primary Layer; Building Form

The mass of the building has been broken into four main parcels each with a distinguishing scale and materiality.

1. The Base creates a civic presence to the new landscaped forecourt.
2. The Innovation centre defines entry and has a direct relationship to the adjoining neighbours.
3. The Podium enables connectivity to occur between the new CASB and the existing Westmead Hospital Campus
4. The Tower defines a new landmark and address within the Hospital Campus

Secondary layer - Elemental

Within the primary layer, vertical cores and material changes break down the apparent scale.

Tertiary Layer - Detail

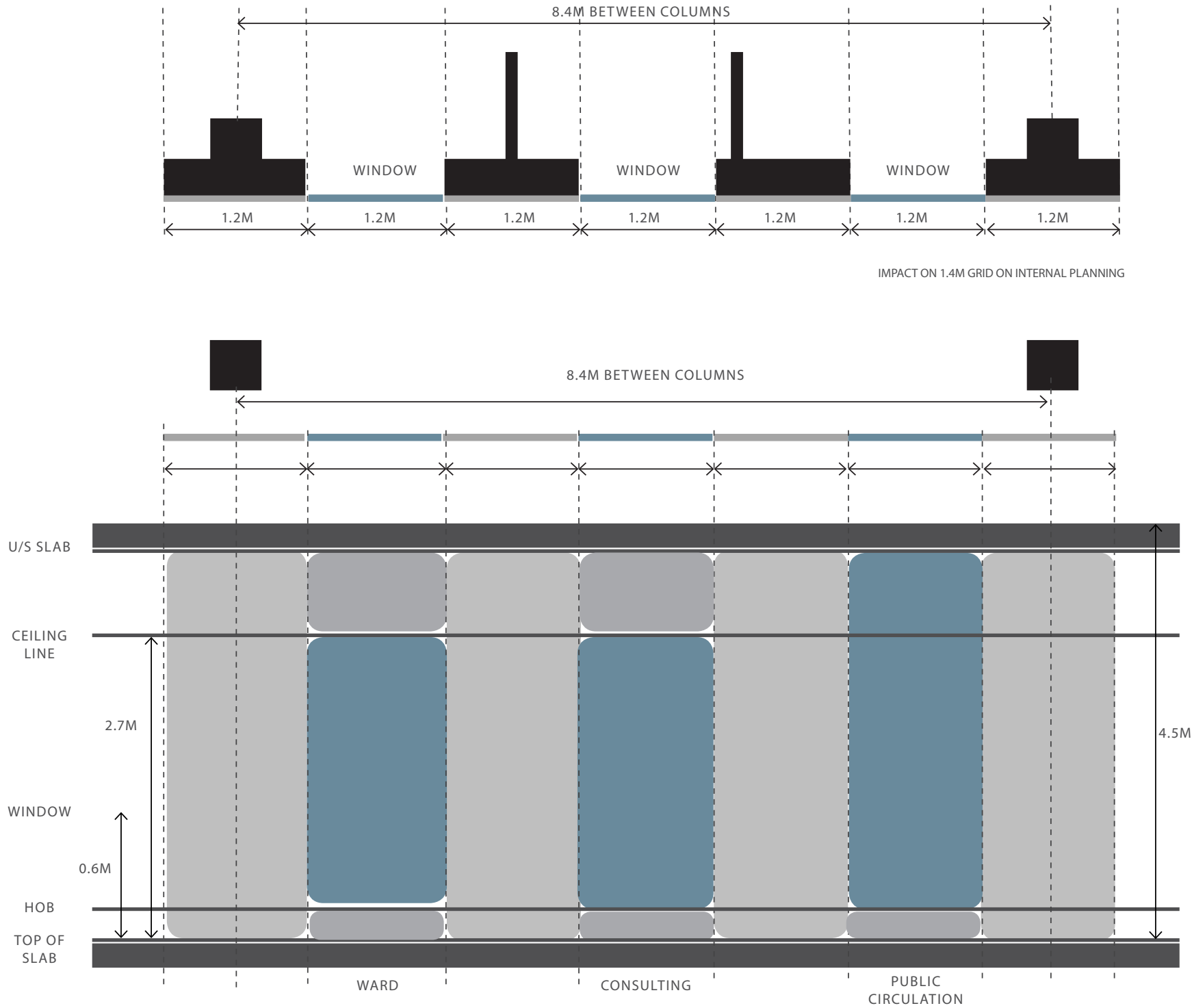
Blades, fins and panelisation add a final layer of detail to inform horizontal and vertical relationships .

07 Building Articulation

Facade Breakdown

Similarly as with a flexible floor plate , the elevational treatment will allow flexibility to enable a number of outcomes to occur within the internal environment.

Wards for example may have a window sill at 300mm for operative purposes , while public spaces will try to maintain as much internal external connectivity with a lowered sill line.



EXAMPLE OF FLEXIBLE FACADE GRID.

08 Materials

Building

The materials selected for the new CASB have been identified to create a building that is of its time, but also sensitive to the local environment. They have been selected to be pragmatic, fit for purpose and visually appealing.

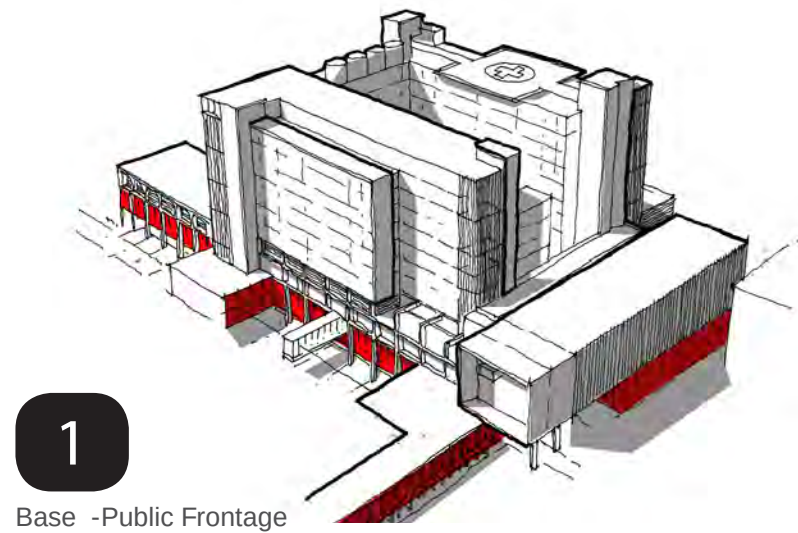
Landscape

The materials used in the landscape design are intended to be simple and robust. They will create a new setting for the CASB and act as the base that cojoins the existing spaces to the new building.

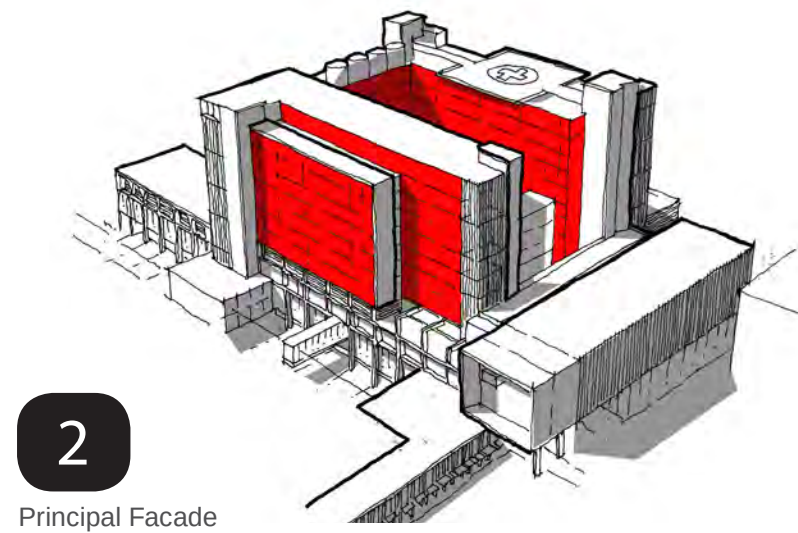
Palette

The materials palette for the building envelope is limited to 3 key materials

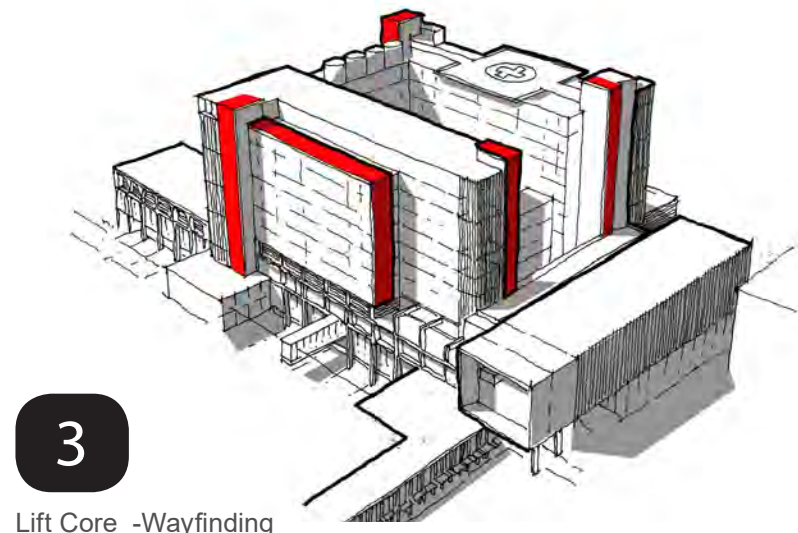
1. Concrete to the base and core reinforcing solidity and connection to the surrounding buildings
2. Glazing at low level that extends the forecourt internally into the building and allows visual connectivity from the main internal public spaces to the external environment.
3. A flexible panelised facade to the tower that will accommodate internal planning and ensure thermal, acoustic and visual performance



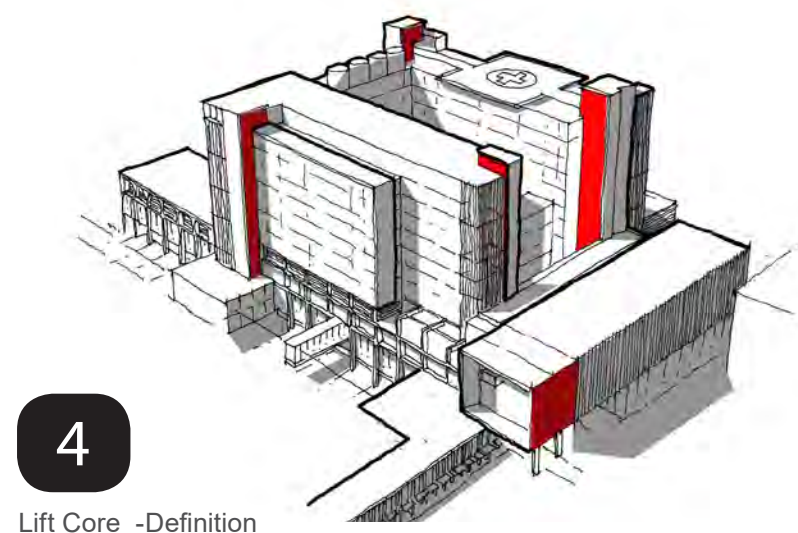
1
Base -Public Frontage



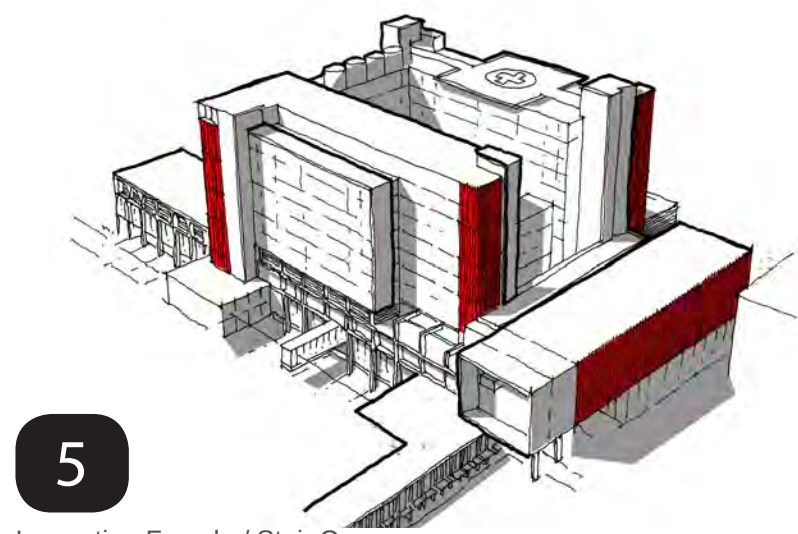
2
Principal Facade



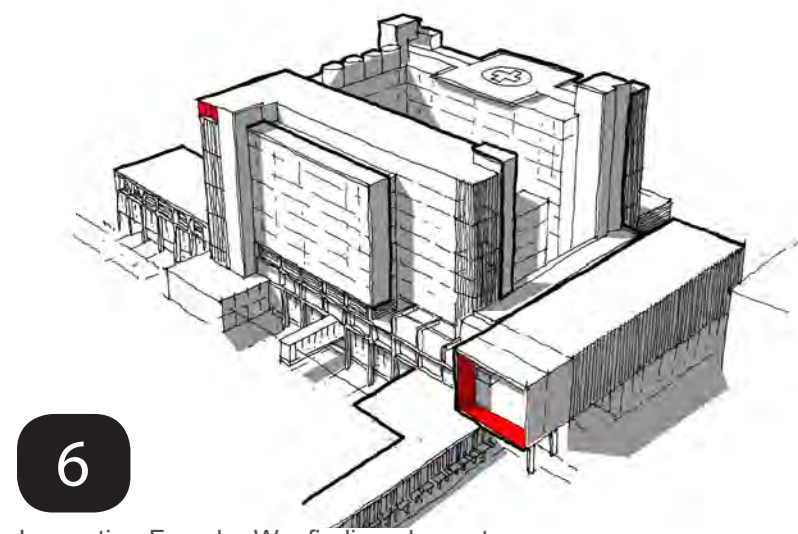
3
Lift Core -Wayfinding



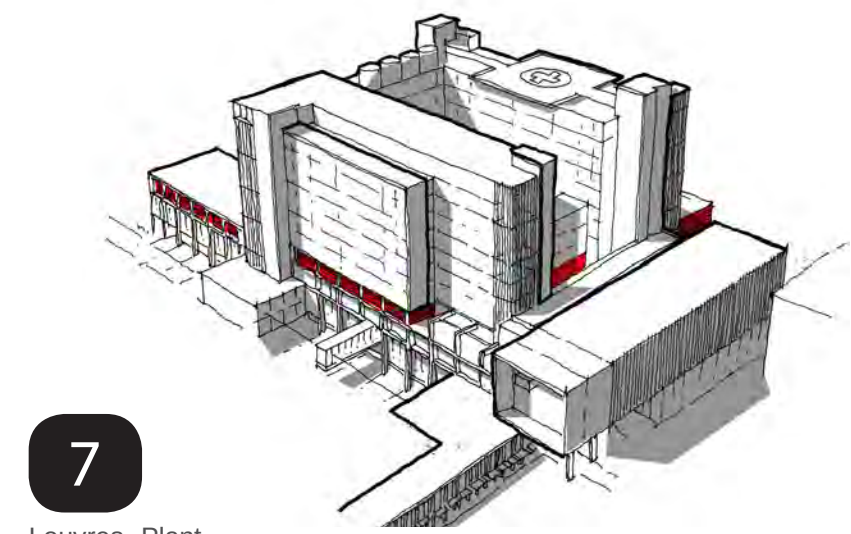
4
Lift Core -Definition



5
Innovation Facade / Stair Core -



6
Innovation Facade -Wayfinding element



7
Louvres -Plant

08 Materials



Sandstone

Type 1

Location : Drop Off Area

Concrete

Type 2

Location : Cores

Concrete. with expressed horizontal joint at Floor levels

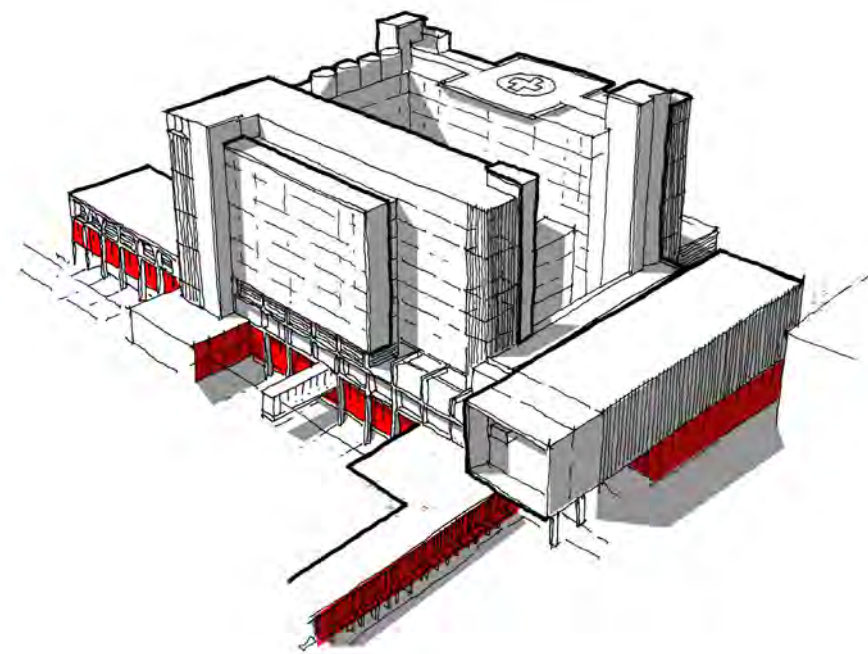
Regularly spaced Bolt Holes plugged with matching concrete

Colour : light grey tbc

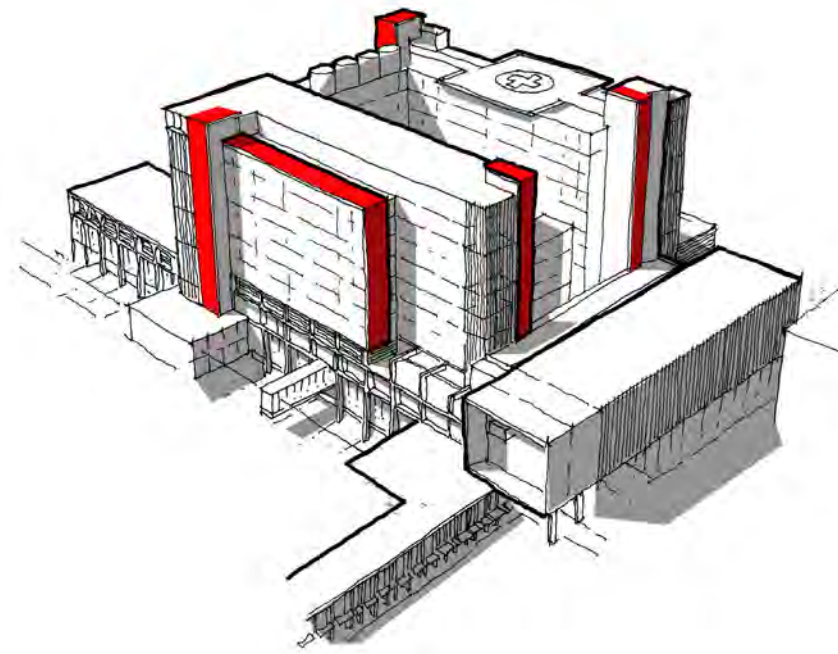


Type 1

Type 2



Location of Type 1



Location of Type 2

08 Materials

Low Level Curtain Wall -

Location : main entry and Public Areas

Type: Structural Glazing Double glazed Units

Nom. 10mm silicon seals and joints between glass panels.

Factory pre finished powdercoated exposed steel mullions with powdercoated cleat plates

Glazing : Low Iron clear glazing tbc

Frame : powdercoated steel and aluminium (Spanish Silver)



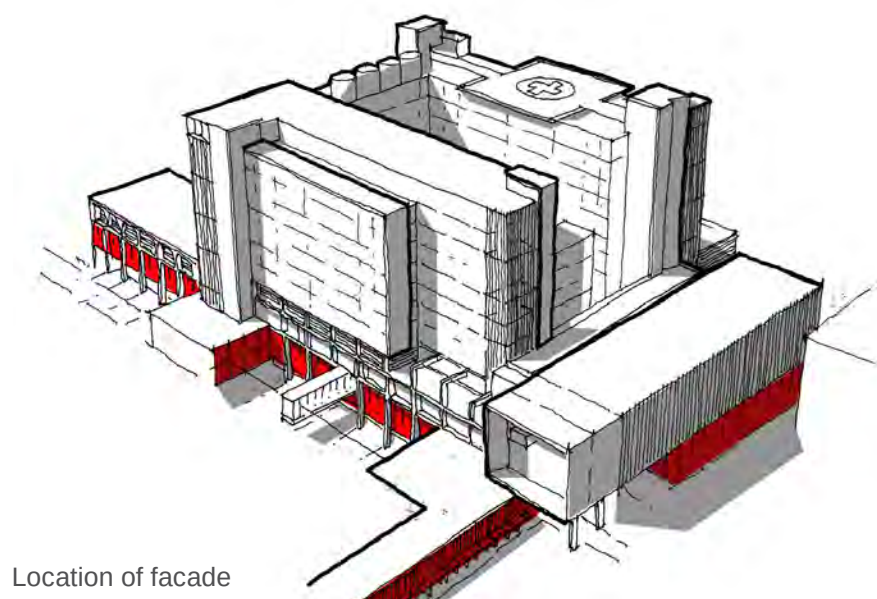
Example of low level curtain wall
(Vertical Expression)



Colour of Frame (Powdercoated grey)



Indicative view of south
west facade



Location of facade

08 Materials

Metal Panels

Metal panels are used to define:

1. Cores that extend beyond the main building mass
2. Innovation Centre
3. Enable the integration of colour to denote Entry

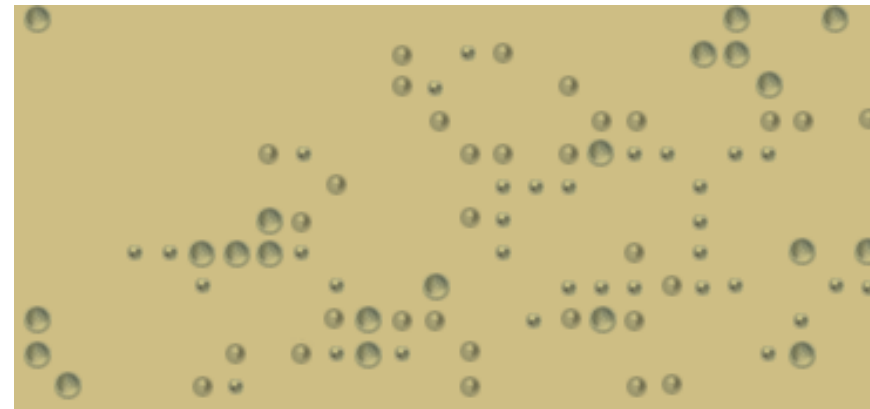
Type 1
Colour Dark Grey

Type 2
Colour Mid Grey

Type 3
Colour Aluminium Sheet



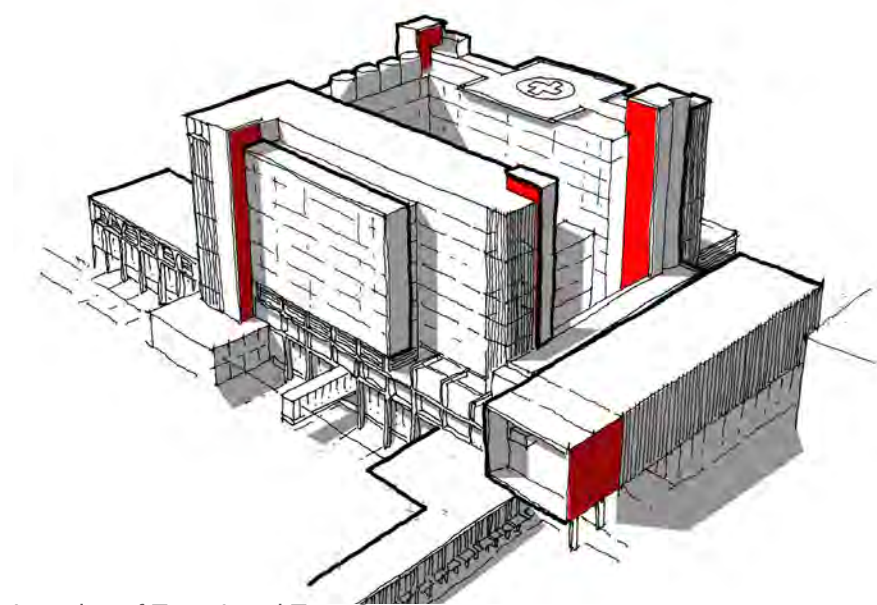
Type 1



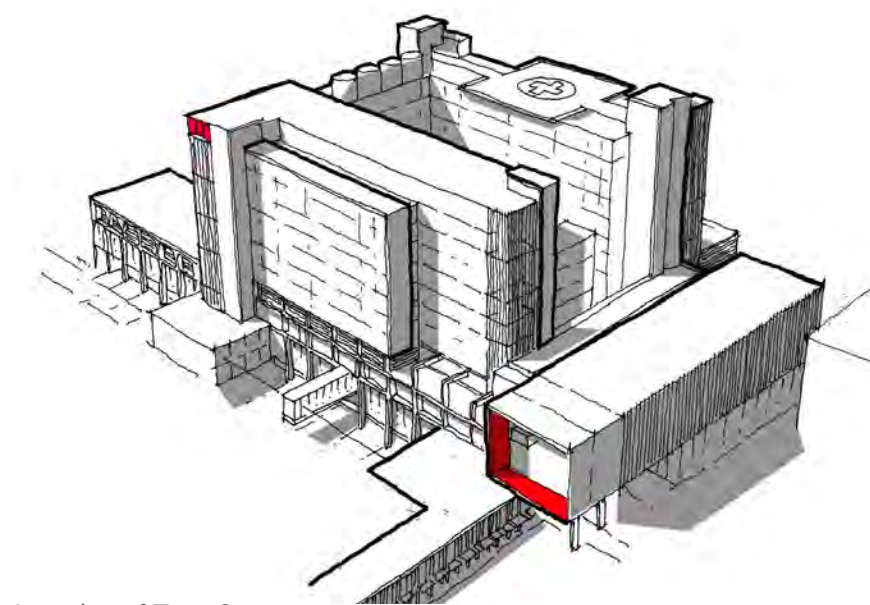
Type 3



Type 2



Location of Type 1 and Type 2



Location of Type 3



08 Materials

Vertical louvres

The louvres are used to:

1. provide Solar shading and privacy to the building
2. relate and respond to the adjoining neighbours (Westmead Institute)

Location : North West external facade

Colour : grey,

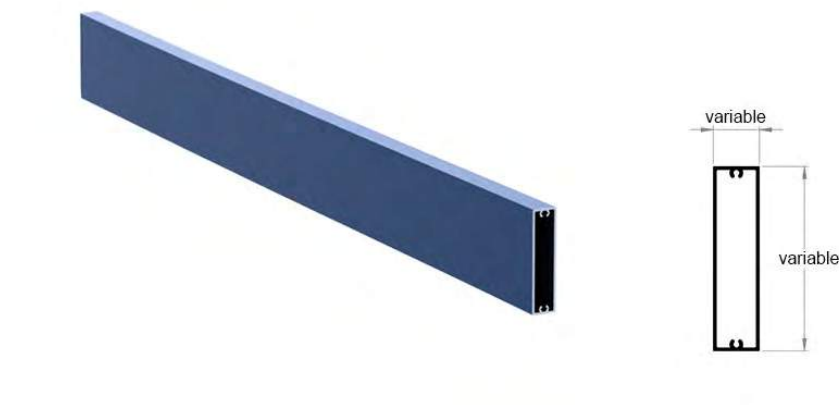
Type: Extruded Aluminium Blades.

Finish: powder coated aluminium

Blade size : 600 x 75mm

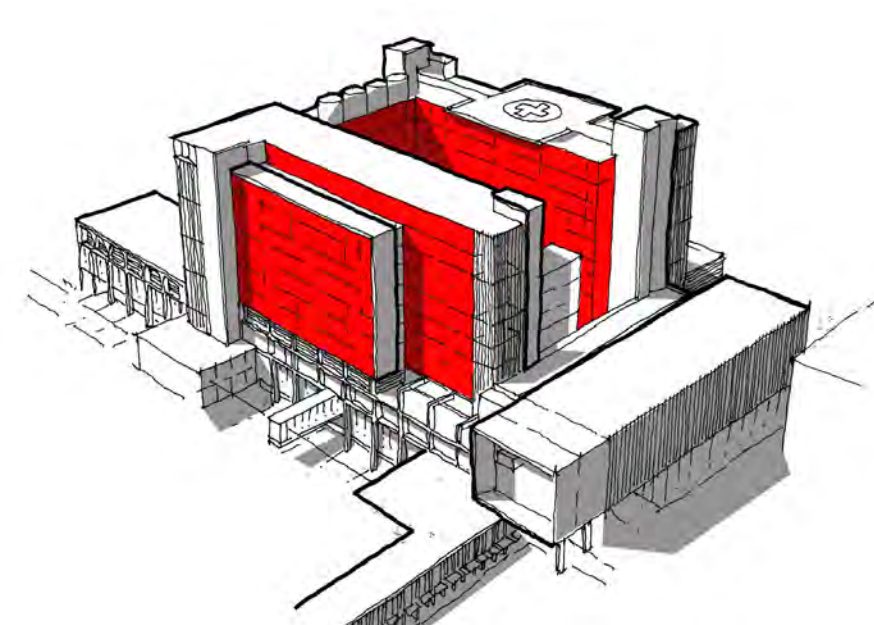


Grey

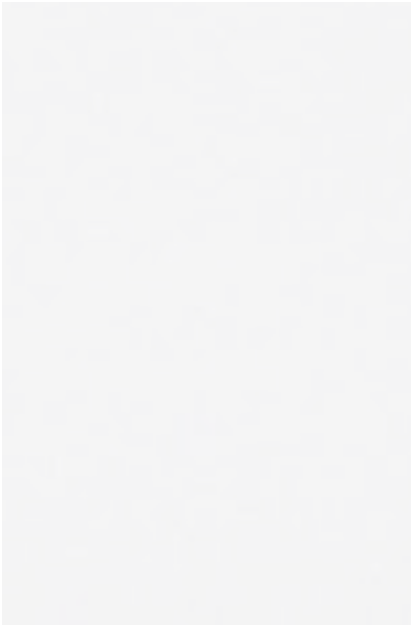


Typical Breakup of Panels

08 Materials



Location of Facade Type

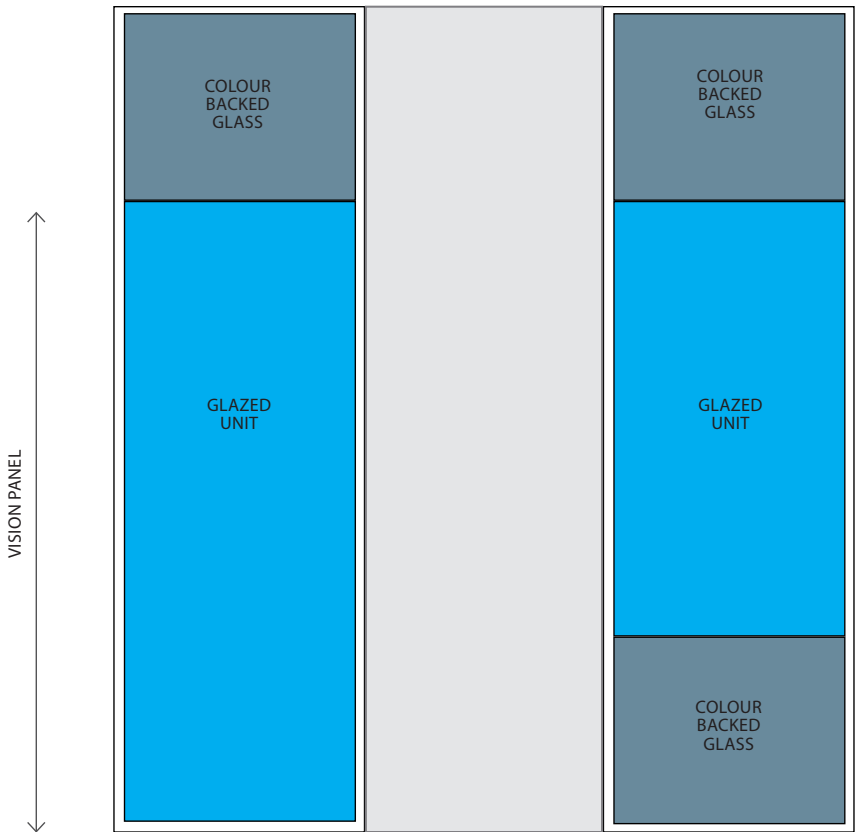


Panel Materials

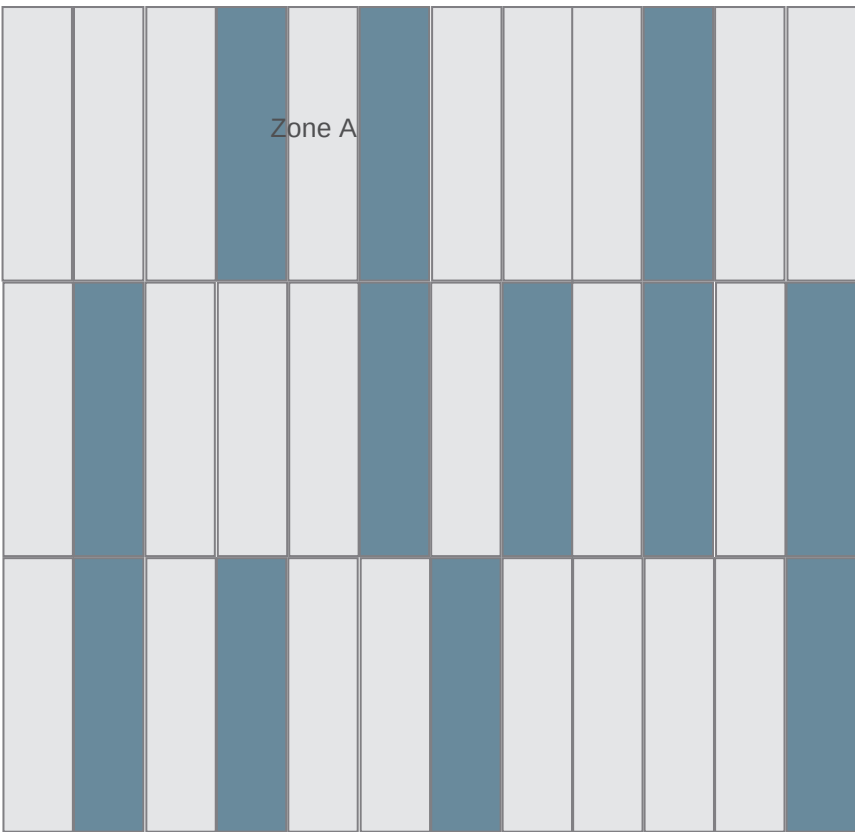
Tower Facade - High Level

The main facade will respond to internal requirements and is designed to allow flexibility of clinical configurations. It will need to perform thermally, visually and acoustically to provide optimum comfort for occupants.

- Location : Main Tower Facade
- Type: Double glazed panels units with exposed vertical Mullions.
- Horizontal transoms at floor levels
- Uncapped transoms at ceiling levels
- Glazing: Low Iron clear glazing tbc
- Panels : Panellised sheeting (Gloss White and White interspersed)
- Frame : powdercoated steel and aluminium



Typical Breakup of Panels - Zone A



Facade panel design allows internal flexibility

Tower Facade varies during the day

08 Materials

Plant room Louvres

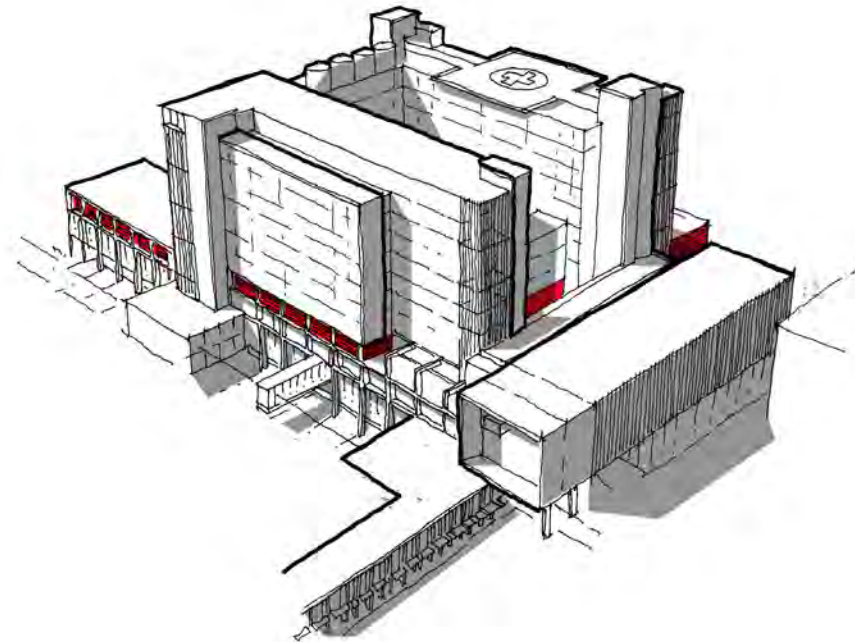
The plant room has been designed to be an integrated floor within the building mass.

Location : Between Podium and Main Tower

Type: Horizontal Louvres (Acoustically attenuated where required)

Panels : Dark Grey

Frame : powdercoated steel and aluminium



Location of Facade Type



Precedent Image for Plant Room Louvres

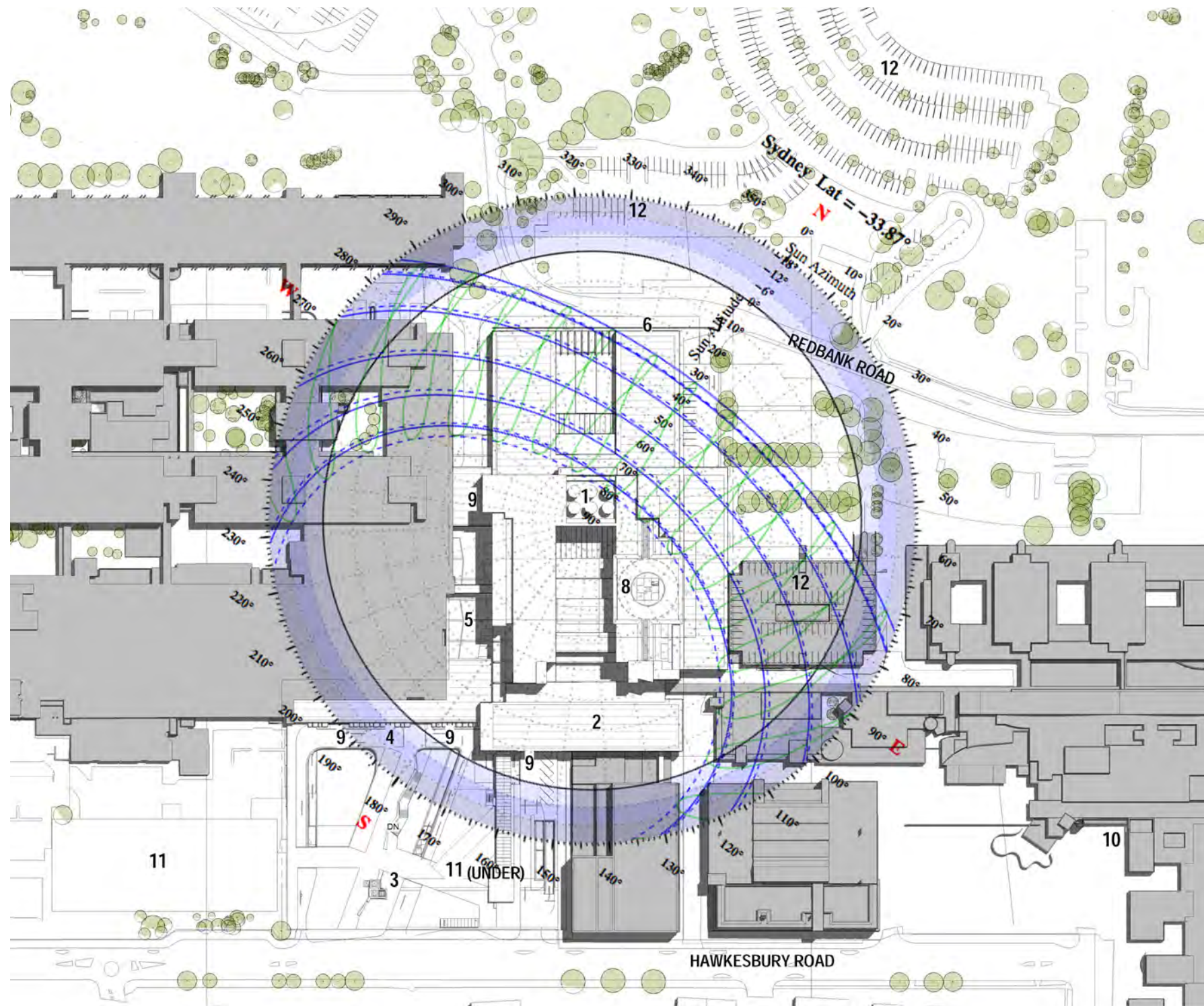
09 Environmental Amenity

Solar Access

The building has been designed to maximise the amount of natural daylight that envelops the building. Passive design measures will be used to promote an environment that provides well being for the patients and a place for staff that ensures a comfortable working environment and reduces stress.

These measures will include:

1. Maximise natural light
 2. Reduce Glare
 3. Enhance the visual outlook
 4. Create a comfortable working environment (Thermal and Acoustic)
 5. Connectivity to the outside
- The building design includes the following to aid Environmental Sustainable Design.
 - Use of Courtyards and Lightwells to improve daylight in Larger floorplates at lower levels
 - IPU wings in tower have narrow floor plate to allow daylight into patient rooms
 - Floor to ceiling glazing where possible to allow daylight deep into floor plate
 - High performance building envelope
 - Public areas at lower level shaded by concourse
 - Deep reveals to windows at podium level
 - Shading of windows to prevent solar penetration in summer but allow passive heating in winter;
 - The façade is conceived as a high performance panelised façade system that allows flexibility for internal configuration and is thermally, acoustically and structurally efficient to allow for a comfortable environment for occupants
 - Materials are robust and the unitized wall infill panels are to be an Aluminium Composite Panel which are recyclable.



Solar Path Diagram

09 Environmental Amenity

Overshadowing

The Overshadowing diagrams highlight the period of greatest impact throughout the year being the winter solstice (2pm-4pm). The Building has been setback from the boundary edge and has been designed to protect the mid winter solar access to the neighbouring residential properties along Hawkesbury Road.

Visual Privacy

The CASB is located centrally to the Westmead campus and is set back over 100m from the Residential properties on Hawkesbury Road. Furthermore the building height would suggest the inpatient units will generally look out over the dwellings rather than directly at the properties.

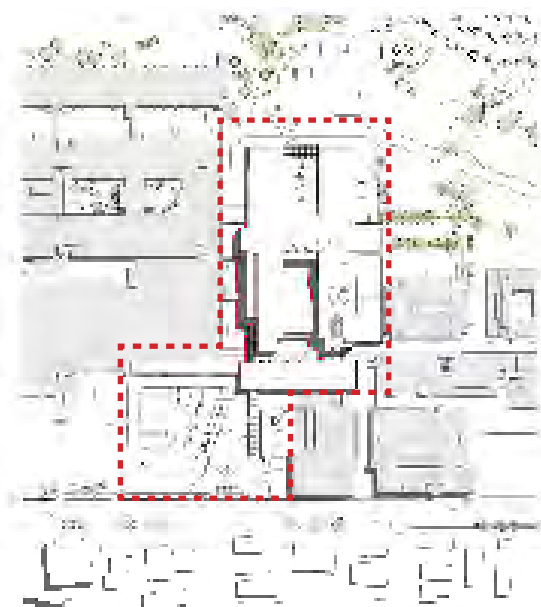
Acoustic Impact

The upper levels of the CASB tower will require acoustic attenuation as a Helipad is proposed on Level 14. Please refer to the Acoustic Report for further information



Shadow Study

Summer 9AM



Summer 12PM



Summer 3PM



Shadow Study

Winter 9AM



Winter 12PM



Winter 3PM

09 Environmental Amenity

Lighting Impacts

No lighting design has been prepared for the CASB and Innovation hub. However it is proposed that a Lighting Strategy be prepared for the development in the next stage of design development. This will be based on the following design principles;

- Lighting should integrate with the buildings architectural style
- Buildings will have a strong night time presence and entries will be well defined from their primary vehicular and pedestrian access paths
- Consider the use of white halide light
- Visible point sources of building illumination will be minimised.
- Lighting will inform a safe, secure environment to external spaces.

Wind Impacts

Please refer to the Wind Report for further information.

10 Crime prevention

Crime Prevention Through Environmental Design (CEPTED Principles)

The CASB has been designed to reduce crime prevention through :

Natural Surveillance

Main public routes through the CASB have a direct relationship to the external environment. This will aid natural surveillance over external spaces.

Lighting

Lighting should at least meet minimum requirements under Australian Standards (AS 1158 for external lighting and AS 1680 for interior lighting).

White’ light is best for natural surveillance as it allows for clarity of vision.

Direct lighting to the the external environment and car park so that guardians or passers-by can see inside the area. Ensure the lighting extends to the edges of the parking areas, not just vehicle and pedestrian routes.

Consider painting the car park interior white. This can assist lighting to be effective and can save money through lower wattage demand.

CCTV

The use of CCTV should be considered where feasible. To be an effective crime prevention tool, cameras must be monitored.)

Movement

Clearly marked, open, visible pedestrian access ways have been provided throughout the landscape to destination points.

Circular movement of traffic provides more constant natural surveillance of the landscape.