

An aerial photograph of a coastal town, likely Sutherland, Australia. The town is built on a peninsula or coastal plain, with a large bay or inlet to its north and west. The surrounding area is hilly and covered in vegetation. The image is darkened to serve as a background for the text.

THE SUTHERLAND HOSPITAL

OPERATING THEATRE UPGRADE PROJECT

STATE SIGNIFICANT DEVELOPMENT ARCHITECTURAL DESIGN STATEMENT

Document Number : 10192314-HDR-AR-RPT-DA01

Version: 5.0

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THE SUTHERLAND HOSPITAL REDEVELOPMENT. DOCUMENT ISSUES - VERSION CONTROL				
VERSION	STATUS	DATE	AUTHOR	CHECKED BY
1.0	WIP INFO ONLY	03/07/20	AB	N/A
2.0	FINAL DRAFT	13/11/20	AB	DS
3.0	FINAL DRAFT UPDATE	19/11/21	AB	DS
4.0	RESPONSE TO PLANNING QUERIES	09/07/21	AB	DS
5.0	RESPONSE TO PLANNING QUERIES	05/08/21	AB	DS

01 Purpose of the Report

This report is in response to the SEARs for The Sutherland Hospital Operating Theatres Expansion Project

In particular the report seeks to demonstrate how design quality will be achieved in accordance with the above Key Issues including:

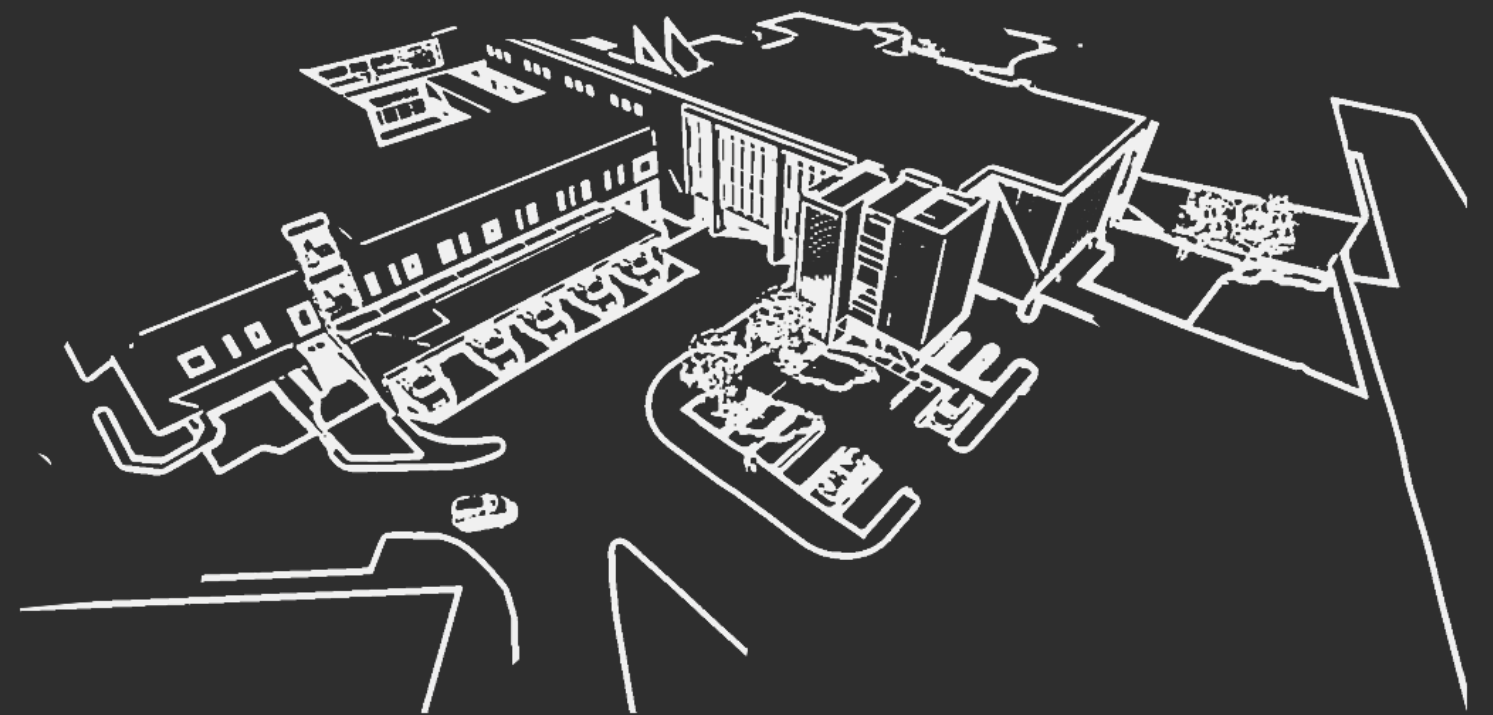
1. Architectural design statement
2. Diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal
3. Detailed site and context analysis
4. Analysis of options considered including building envelope study to justify the proposed site planning and design approach
5. View analysis identifying potential impacts on the surrounding built environment and any adjoining heritage items
6. Summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice
7. Summary report of consultation with the community and response to any feedback provided

The design proposal responds to the framework derived from the project aspirations that articulate the vision for the Sutherland Hospital. The purpose of these aspirations and the resulting framework is to provide guidance to those planning and designing the Hospital.

The built environment aspirations focus on providing a built environment to which people can connect, and that promotes the pursuit of skills, knowledge, and healthcare. The key aspects of this pursuit include: creating an environment, appropriately scaled, that enhances connectivity and offers way-finding solutions that support these pursuits, and through this process creating a flexible, adaptable and expandable platform that ensures the separation of different movement and work flow streams throughout the facility.

This report address the built form and Urban Design issues as set out under the Secretary's Environmental Assessment Requirements (SEARs) for the Hospital

02 Existing Site Location



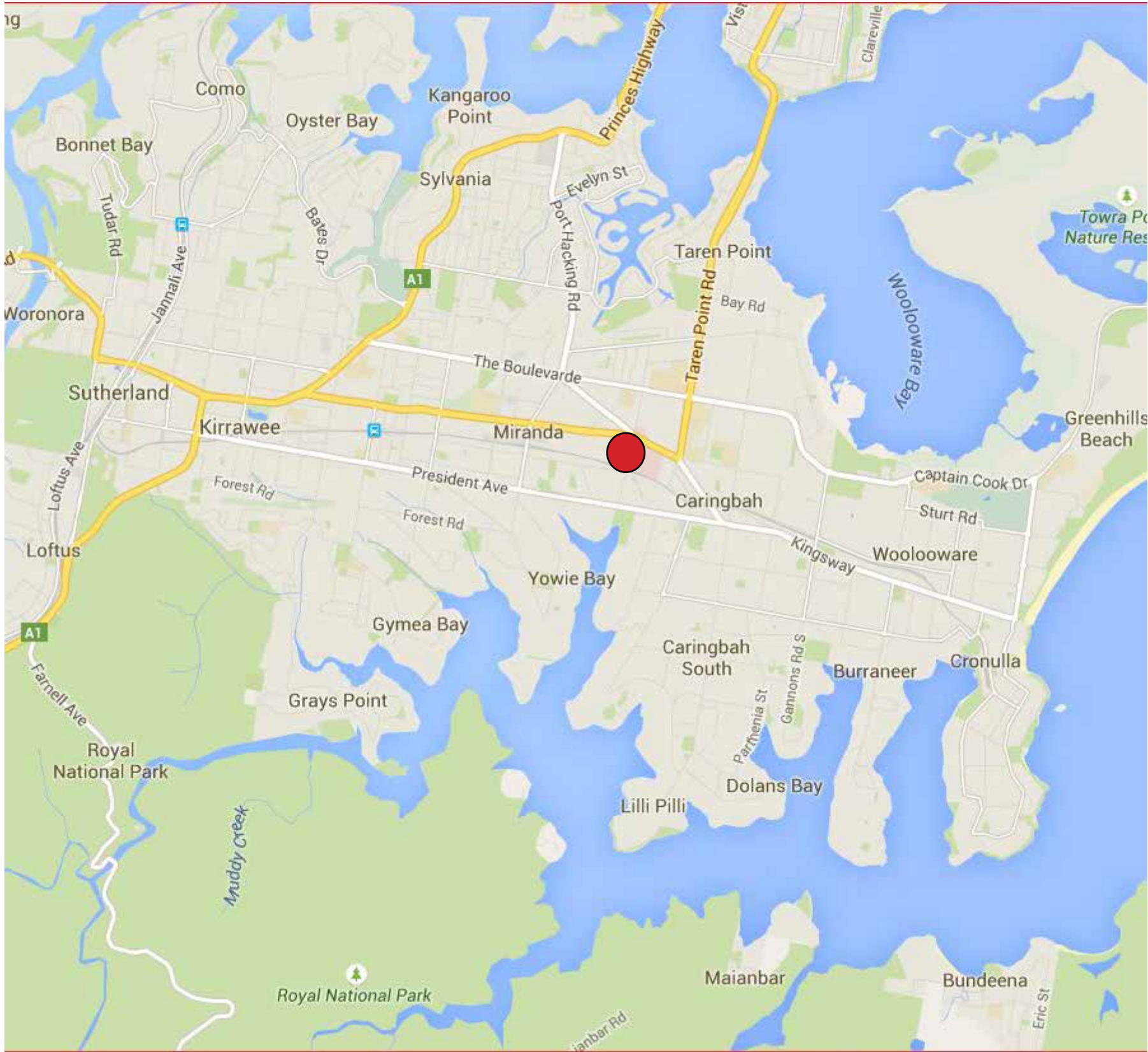


Fig 1: Strategic Context Diagram

02 Location

Strategic Context

The Sutherland Hospital (TSH) is a 375-bed major metropolitan and teaching hospital located in the Sutherland Shire, approximately half an hour drive south of Sydney in the suburb of Caringbah (corner of Kingsway & Kareen Rd). The campus offers a comprehensive range of inpatient and community services to Sutherland Shire residents, including surgical, medical, emergency, maternity, child, youth and family, critical care, aged care, rehabilitation, mental health and community-based services.

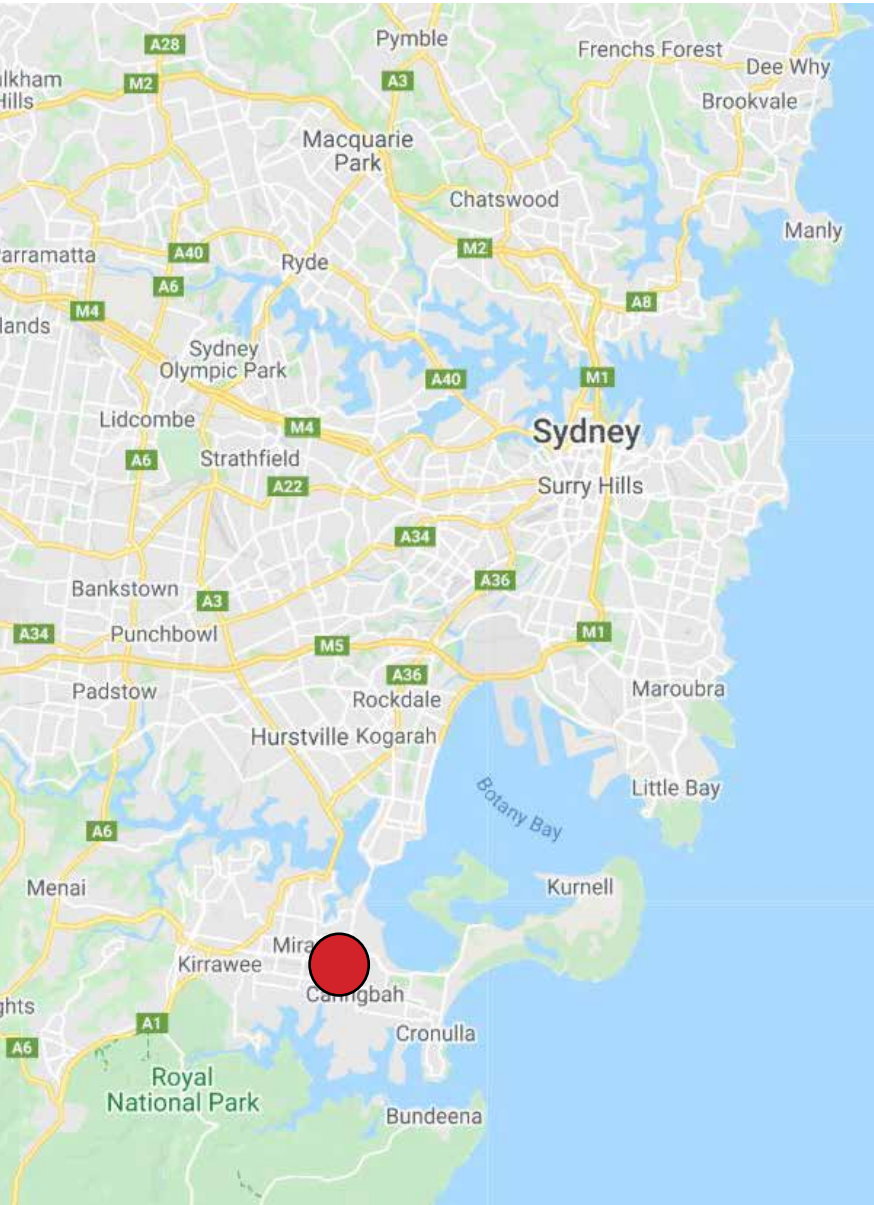


Fig 2: Strategic Context Diagram

02 Location

Local Context

TSH provides for an increasing role in education and provides an opportunity for health and medical researchers to conduct research that will directly service the needs of patients. TSH is part of the South Eastern Sydney Local Health District..

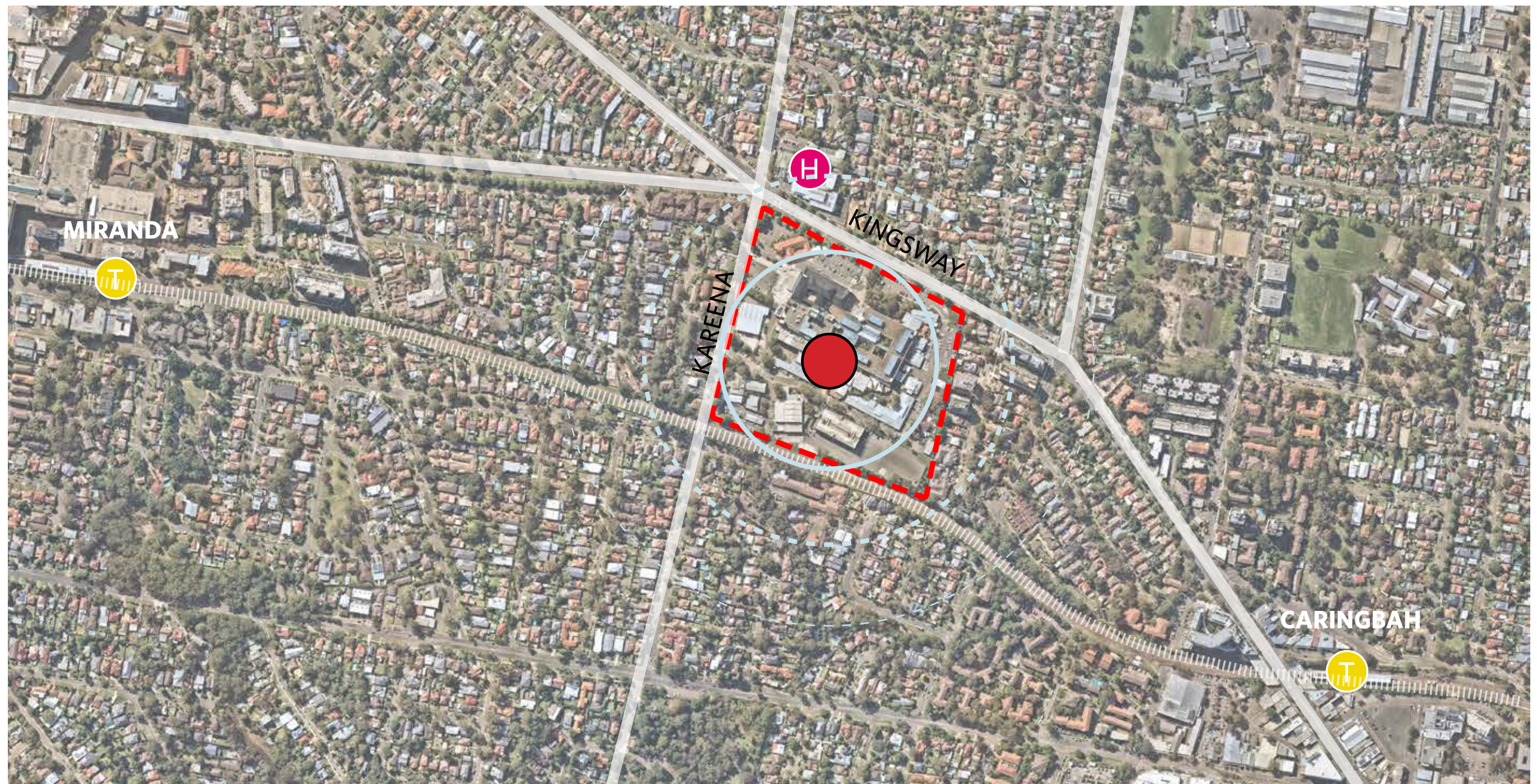
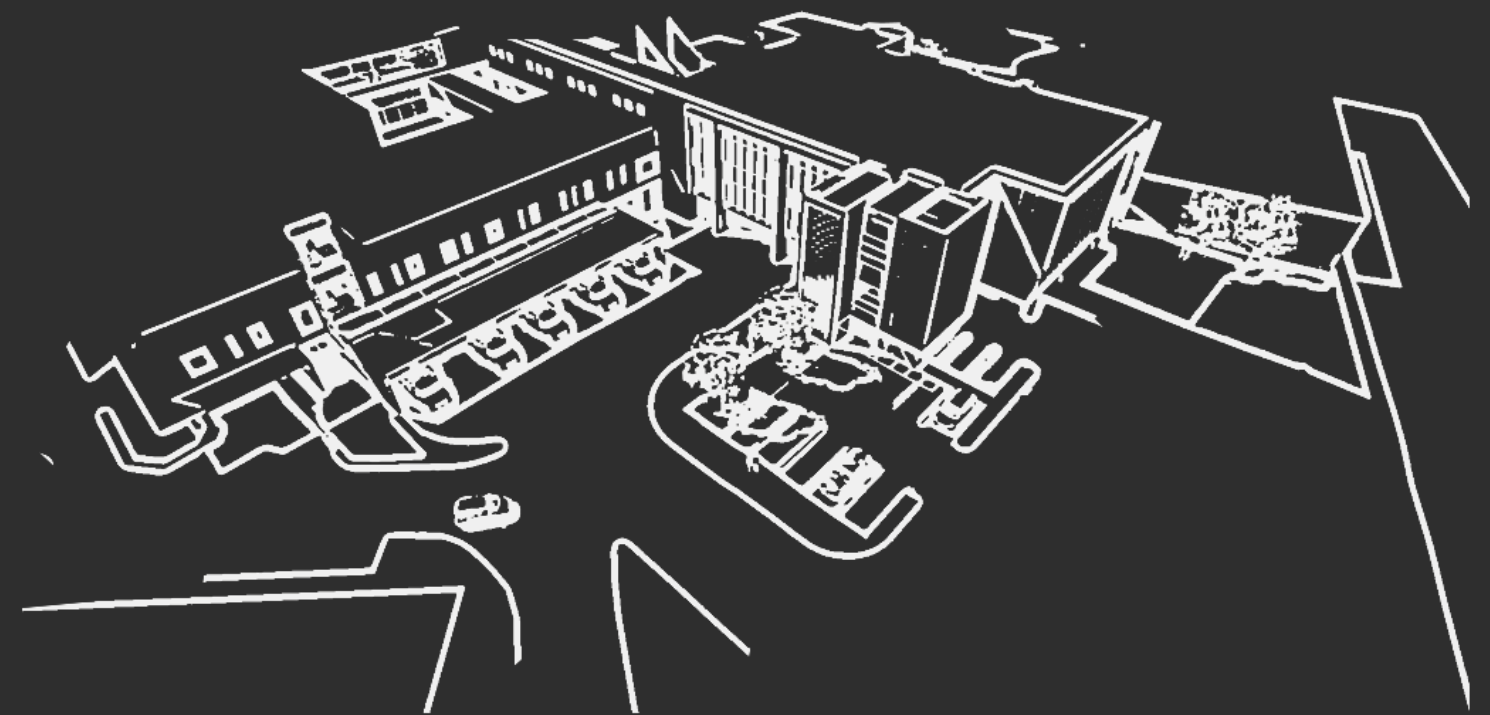


Fig 3: Site Context Diagram

03 Existing Site Analysis



03 Existing Site

Surrounding Context

The hospital site sits to the south of a major arterial road KINGSWAY to the east of KAREENA ROAD. It is bounded rail tracks to the south and residential properties to the east. The Urban centre of Miranda is located within a 5min drive to the West of the site. Similarly Caringbah is located within a 5min drive to the east.

The proposed Operating Theatre Expansion Upgrade is located to the west of the hospital site within close proximity to the existing Ambulance Station.



Legend

- | | |
|--------------------------|--|
| 1 Existing Hospital | 7 Caringbah Oval |
| 2 Ambulance Station | 8 To Caringbah Centre |
| 3 Multi Deck Car park | 9 Camelia Gardens |
| 4 Caringbah School | 10 Endeavour School |
| 5 Rail line | 11 To Miranda Centre |
| 6 Caringbah Bowling Club | 12 Medical Precinct Under construction |

Fig 4: Surrounding Context Diagram

03 Existing Site

Topography

The surrounding topography is generally flat with a fall from the north to south, of approximately one metre in the development zone.

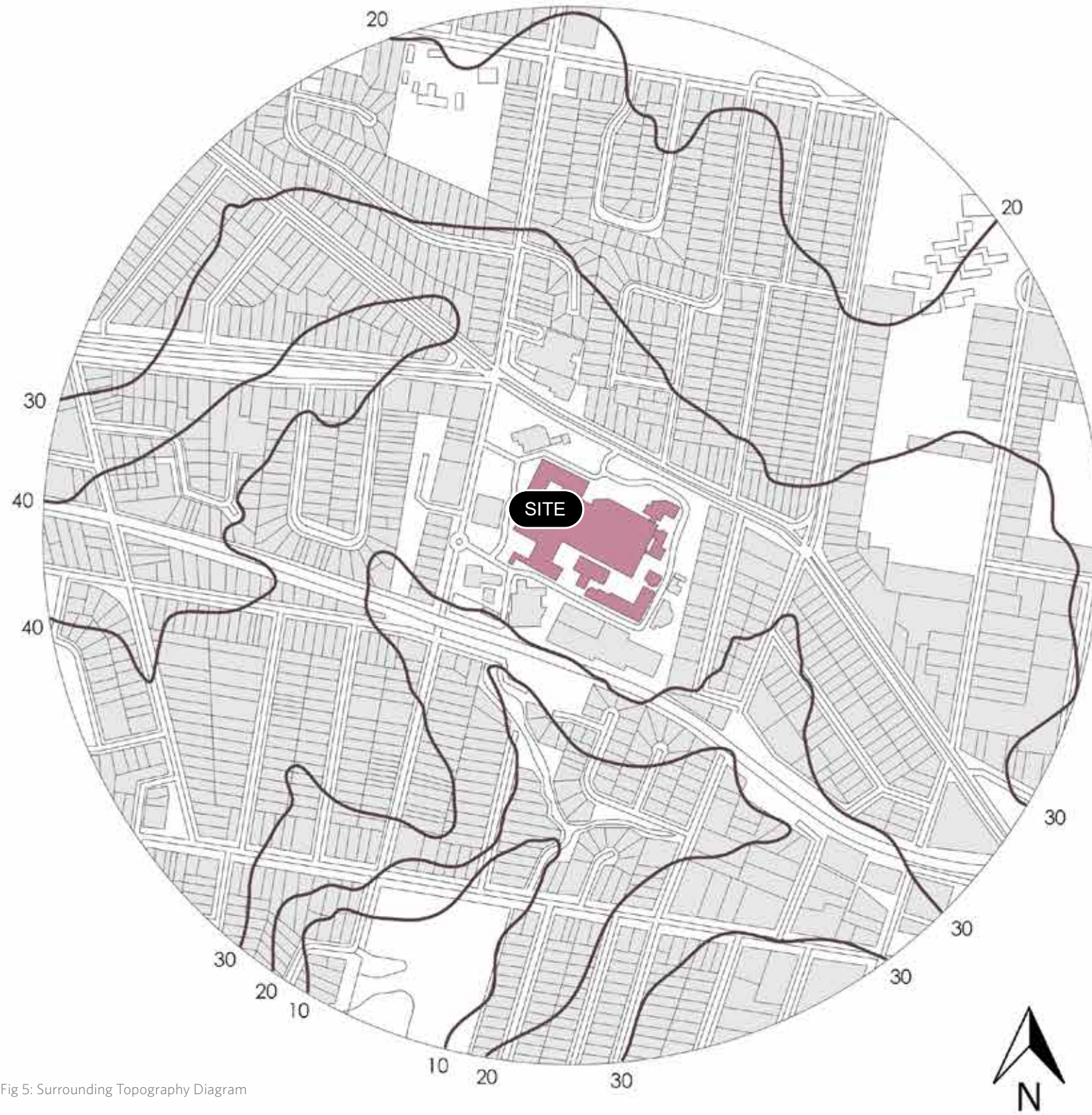
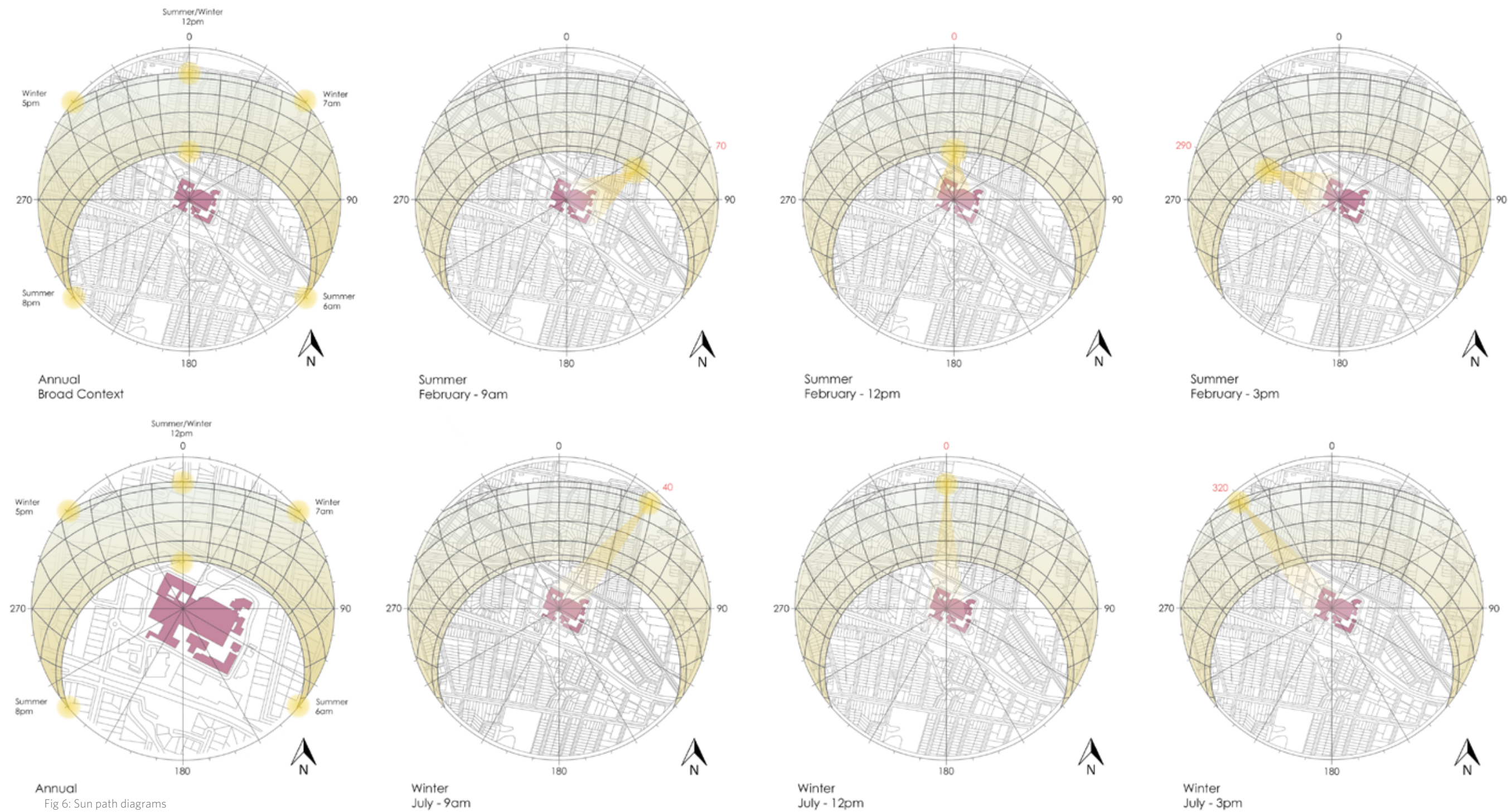


Fig 5: Surrounding Topography Diagram

03 Existing Site

Solar Path

The footprint of the building is rotated 20deg on a West / East Axis and is located to the west of the existing hospital.



03 Existing Site

Prevailing Winds

The wind rose diagrams below highlight the main wind directions during winter and summer. Southerly busters and Nor- easters are prevalent during the summer months with Westerly weather fronts during winter..

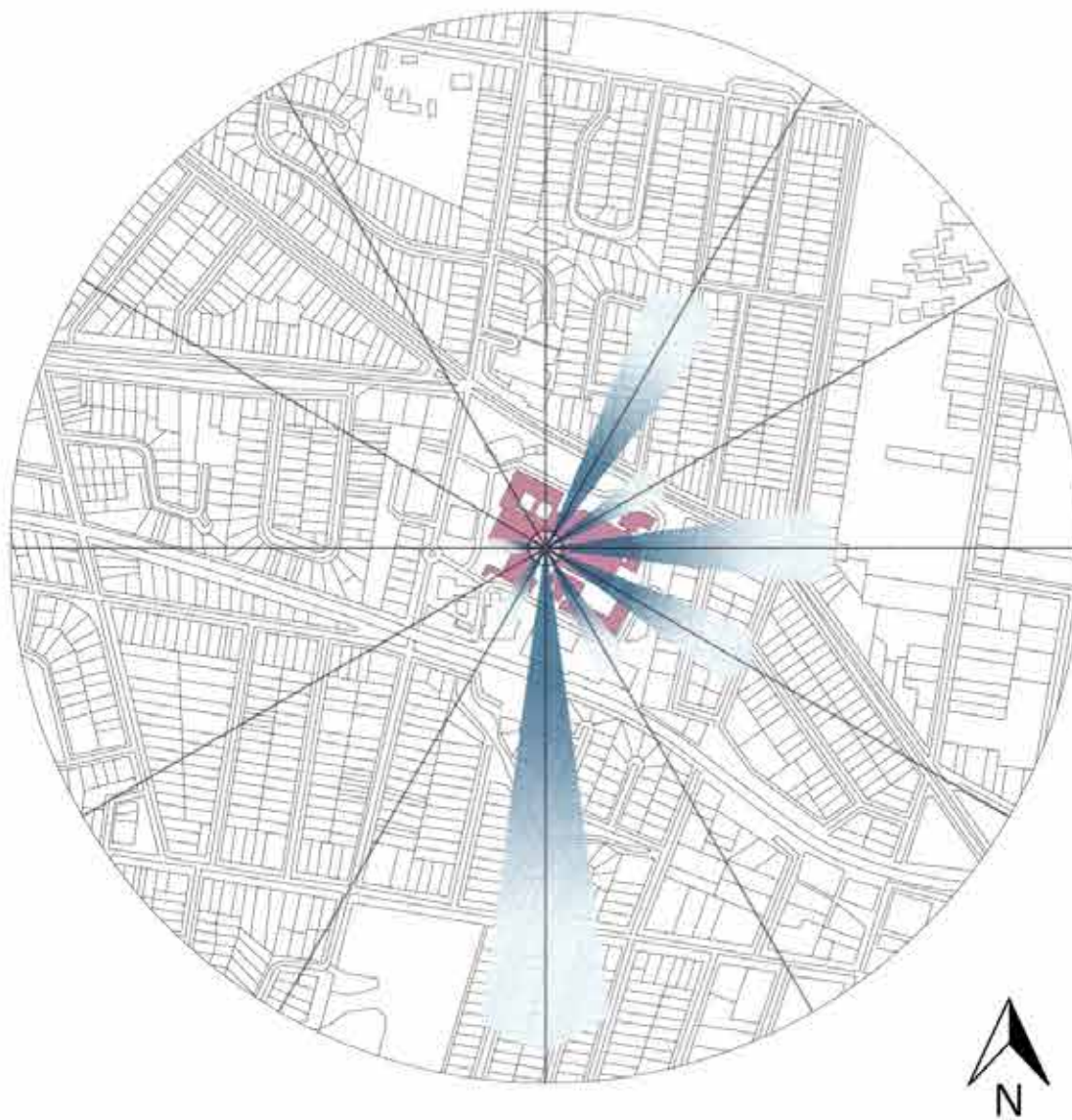


Fig 7: Wind Rose diagram Summer

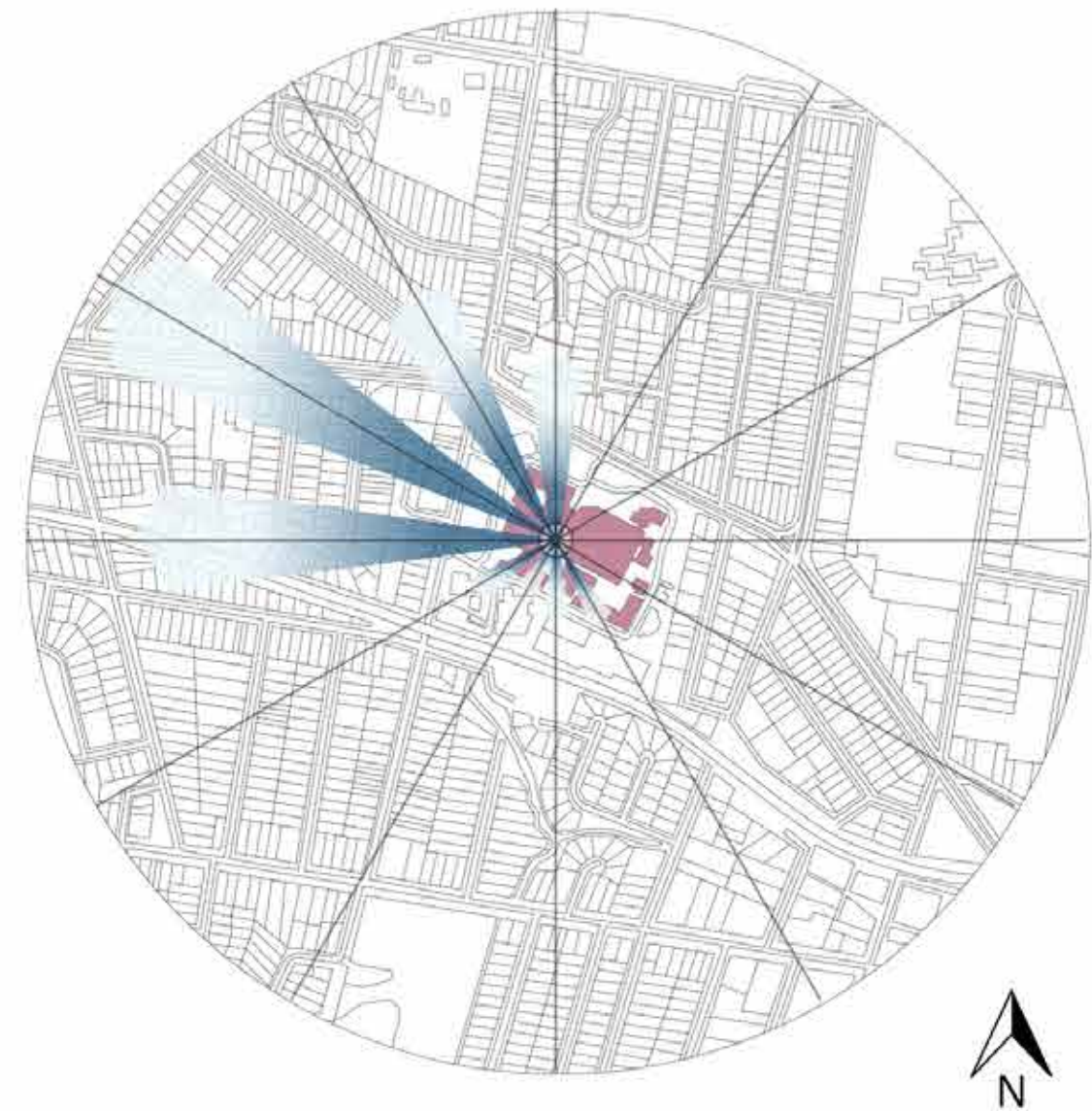


Fig 8: Wind Rose diagram Winter

03 Existing Site

Sustainable Travel Strategy

Bus access to the site provides a good level of access directly to the front the hospital site along Kingsway. Whilst these bus services are not utilised well by staff, they provide an alternative means of access for visitors who do not have access to a car, and staff who choose to travel by this mode due to their accessibility to the route.

Existing Bus routes s262 travel along the Kingsway towards the hospital and give access from Miranda.

Cycle routes are generally on road and run along Kingsway and Kareena Road.



Legend

Existing Bus Routes

Cycle Routes

Bus Stop

Train Line

Train Station

Fig 9: Sustainable means of Travel

03 Existing Site

Title Boundary

The Sutherland Hospital campus comprises three lots, being:

- Lot 1 DP 432283;
- Lot 1 DP 119519; and
- Lot 1 DP 398975.

The first two lots are occupied by existing hospital buildings, while a NSW Ambulance station occupies the third lot which adjoins Kareena Road to the west.

The NSW Health Administration Corporation owns the above three lots and third lot which is occupied by the ambulance station under the operation of NSW Ambulance.







Fig 10: Title Boundary

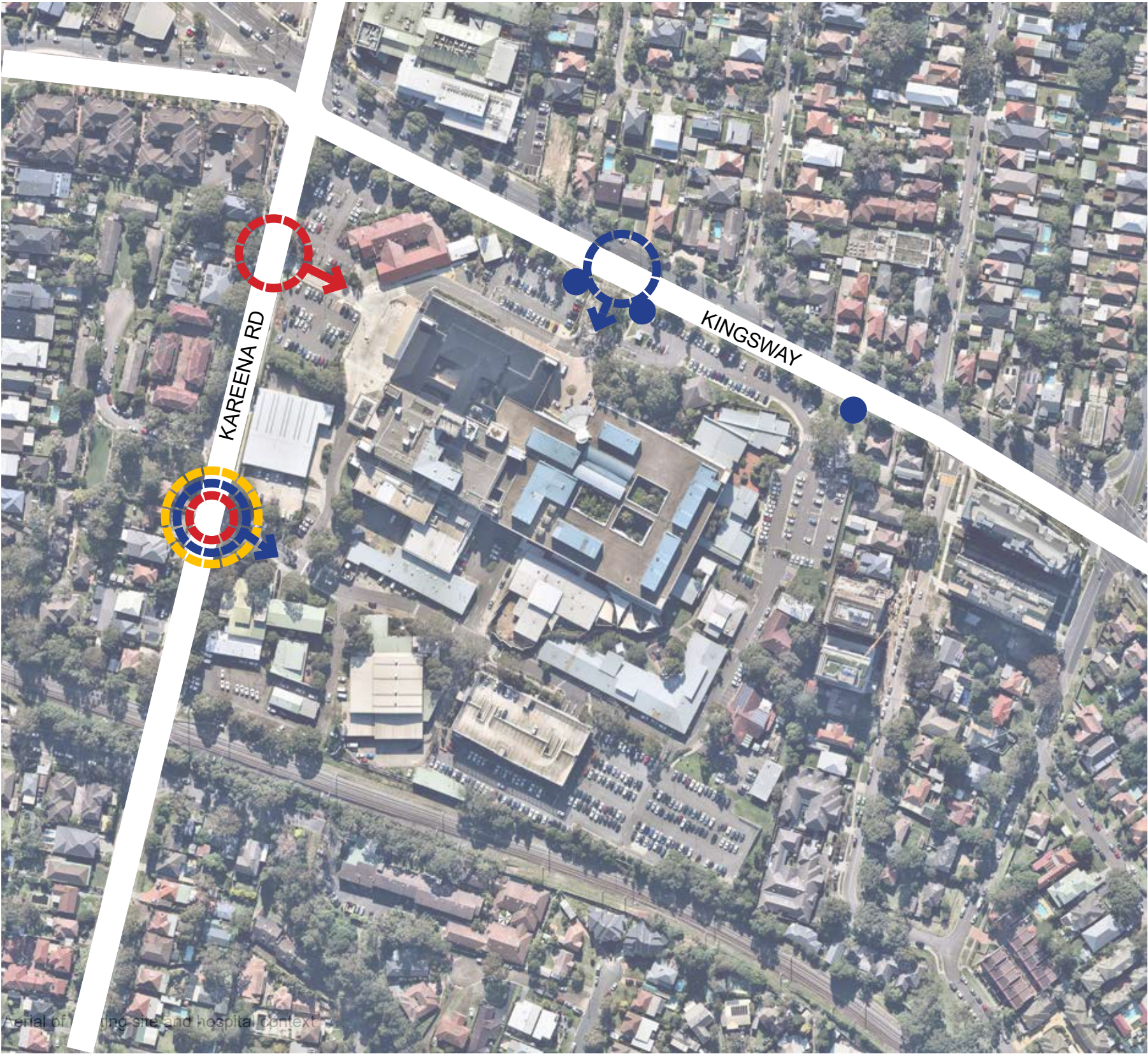
03 Existing Site

Site Access

There are three main access ways to the site. The general traffic can enter and exit the hospital via Kingsway and southern access off Kareena Road. All the loading activity occurs via southern access off Kareena Road. Ambulances can approach the site through northern and southern access off Kareena Road. The ring road around the main hospital building allows vehicle access to all the areas.

Legend

-  Public Vehicle Entry to Site
-  Ambulance Entry to Site
-  Logistics Entry to Site
-  Pedestrian Access to Site



Aerial of existing site and hospital context

Fig 11: Title Boundary

03 Existing Site

Site Constraints

The site is bounded to the North and West by two main roads. Kingsway in particular has a large amount of Traffic associated with connecting Miranda and Caringbah. A large intersection is located to the North West of the site.

Low rise residential is located to the West of the site and has associated off street parking along Kareena Road.



Legend

- 1 Major Intersection
- 2 Main Road - Noise
- 3 Railway - Noise and Vibration
- 4 Surrounding Low Rise Residential
- 5 Main Road - Noise

Fig 12: Hospital Site constraints diagram

03 Existing Site

Existing Site Massing

The Sutherland Hospital is the most prominent building within the locality. It is a low scale hospital extending from 2 - 3 storeys on its perimeter to 5 storeys within the centre of the site. The building mass is contained within parking zone which extend to the site boundary. A large number of mature trees envelope the site especially on the North side fronting the Kingsway.



Fig 13: Existing site massing sketch

03 Existing Site

Existing Building Typology

Health buildings are the focus of building typology in the locality. The Sutherland Hospital forms the centre of the district with the Private Hospital located across the Kingsway to the north. Typically the remainder of the building types are residential blocks.

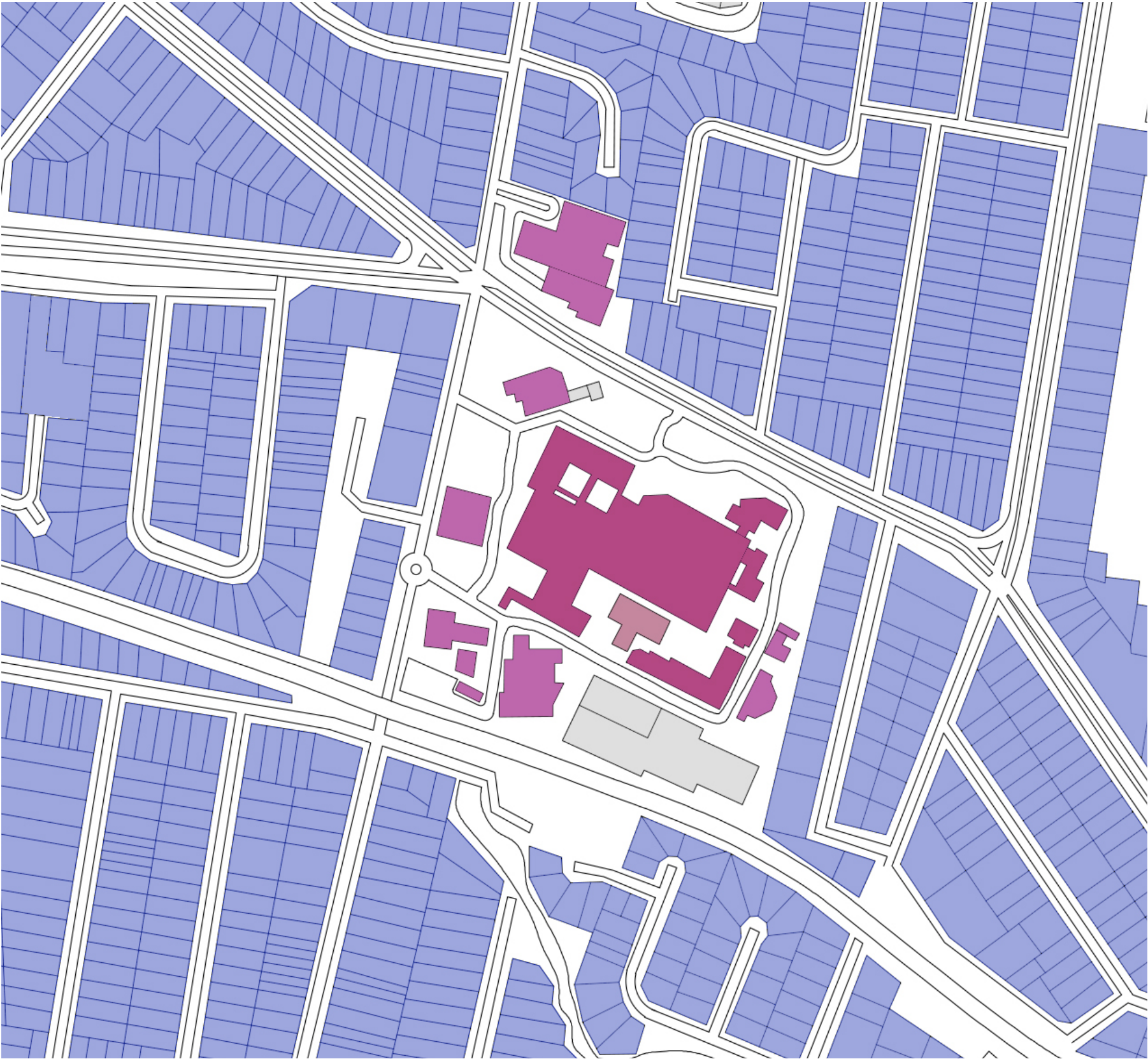


Fig 14: Local Building Typologies

Building Typology

- Residential
- Health
- Education
- Commercial

03 Existing Site

Existing Site Building Typology

The adjacent diagram identifies the development of construction since its establishment.

1958 - Hospital Establishment

The original Sutherland Hospital, Kingsway Building, was built where the latest 2017 ED development is currently located and was a four storey building with 3 wings.

1984 - Hospital Additions

An additional wing was added to the south side of the original hospital building. It consisted of a 30 bed children ward, 30 bed psychiatric ward, new operating theatre suites and other allied health departments. This has since been refitted as the current South Wing.

2000's - Reconstruction of New Main Hospital

New Main Hospital opened in 2003 after which the original Kingsway Building was demolished. Other support department buildings were also built during this period including the Community Health Care Centre, Mental Health Rehab Unit, Dialysis Unit, and Heart Clinic.

2017 - Stage 1 Development

A new Emergency Department on Level 2 with 3 resuscitation bays, 41 treatment bays and an Emergency Short-Stay Unit. Level 3 included an expanded ICU and HDU and additional general medical and surgical inpatient beds, now totaling 60 beds on Level 3.



Fig 15: Existing site typologies

03 Existing Site

Vehicle circulation

The hospital site has access roads aimed to enable efficient circulation of vehicles dedicated to the public, emergencies, and services/deliveries. A ring round around the main hospital building allows vehicle access to all areas of the site.

There are two main public vehicle routes identified in this diagram. One enters from Kingsway, enters the drop off outside the Main Hospital Entry and then continues to various public parking along the northern edge of the site. The second enters from Kareena Rd, enters the drop off outside the secondary entrance next to Community Mental Health and then continues to the multi-storey carpark.

The emergency vehicle route identified can enter and exit from either of the two site entries on Kareena Road. This allows set down at either the Ambulance Station or ED Ambulance Bay and indicates this internal road is primarily used for Emergency vehicles.

The services vehicle route enters from Kareena road and loops out the same way avoiding the Main Entry and Emergency Department Entry.

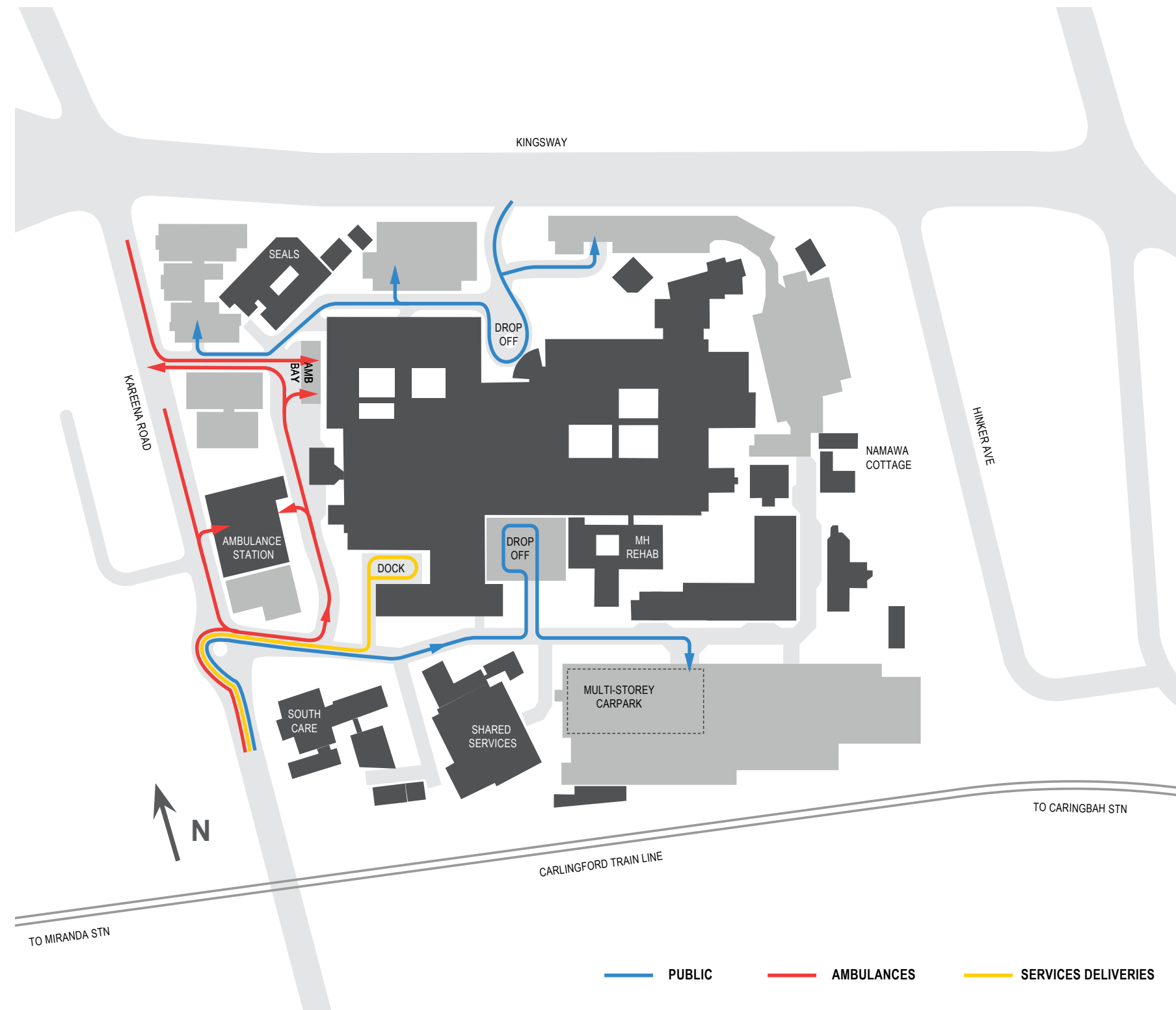


Fig 16: Existing site circulation

03 Existing Site

Car Parking and Access

This diagram illustrates the major points of access to the site, entries to the main hospital building, and site parking.

There are three major points of access to the site. One off Kingsway and two off Kareena Rd.

There are several entries to the main hospital building. The main public entry is on the north face of L2. The Emergency Department entry is beside this also on the north face of L2. A secondary entry is located on L1 of the south face providing access from the southern multi-storey carpark and direct access to the Community Mental Health Department. Another secondary access along the east face of L1 provides access from the eastern carparks and connects the main hospital to an external Dialysis Unit. The main back of house entry is located on L1 to the south-west of the building. It provides a loading dock connection to the Kitchen, Linen, Cleaning, and Maintenance departments.

On grade parking is provided around the perimeter of the site on all side of the Main Hospital Building. These car parks are connected by a ring road. A four storey car park is located to the south of the site. A restricted car park is located next to the Ambulance Station for staff only use.

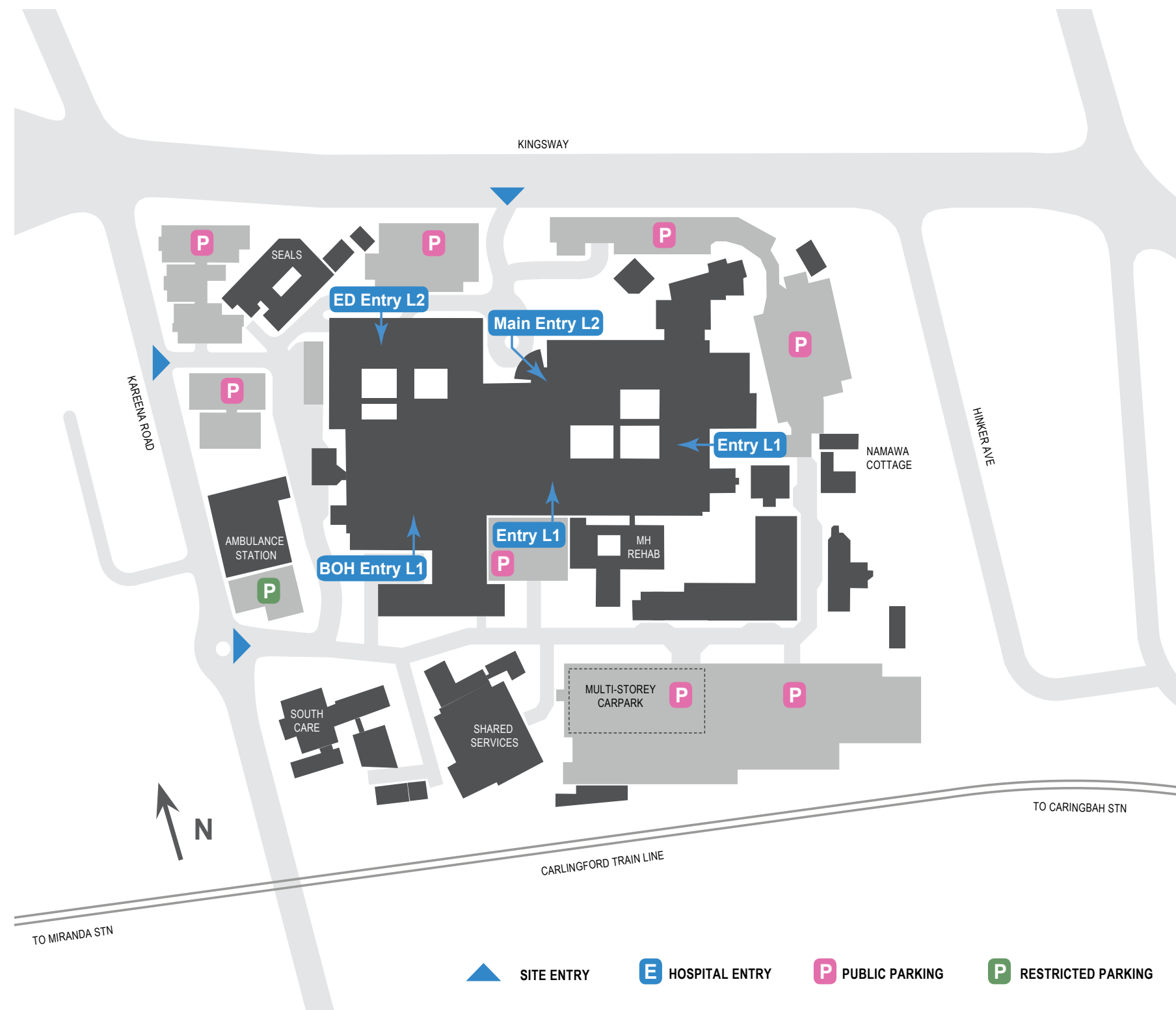


Fig 17: Existing access and car parking

03 Existing Site

Existing Site Photographs Surrounds



Fig 18: View from South on Kareena Road



Fig 19: View from North on Kingsway



Fig 20: View from corner of Kingsway and Kareena



Fig 21: View from corner of Kingsway and Kareena

03 Existing Site

Existing Site Photographs Campus



Fig 22: View of main hospital entrance



Fig 23: View of southern entry



Fig 24: View of southern entry



Fig 26: View of loading area



Fig 27: View of bulk oxygen supply



Fig 25: View of southern entry

03 Existing Site

Existing Site Photographs Adjacent



Fig 28: View of ambulance station



Fig 29: View of ambulance station



Fig 30: View of emergency drop off



Fig 31: View of multi deck car park



Fig 32: View of loading bay



Fig 33: View of emergency drop off



Fig 34: View of stage 1 building

03 Existing Site

Existing Site Photographs Proposed Site



Fig 35: View of proposed site car park in foreground



Fig 36: View from south



Fig 37: View of existing entry

03 Existing Site

Development Site

The development site for the new hospital theatre expansion is located to the west of the existing hospital. The scope includes a part new build and part refurbishment of the hospital.

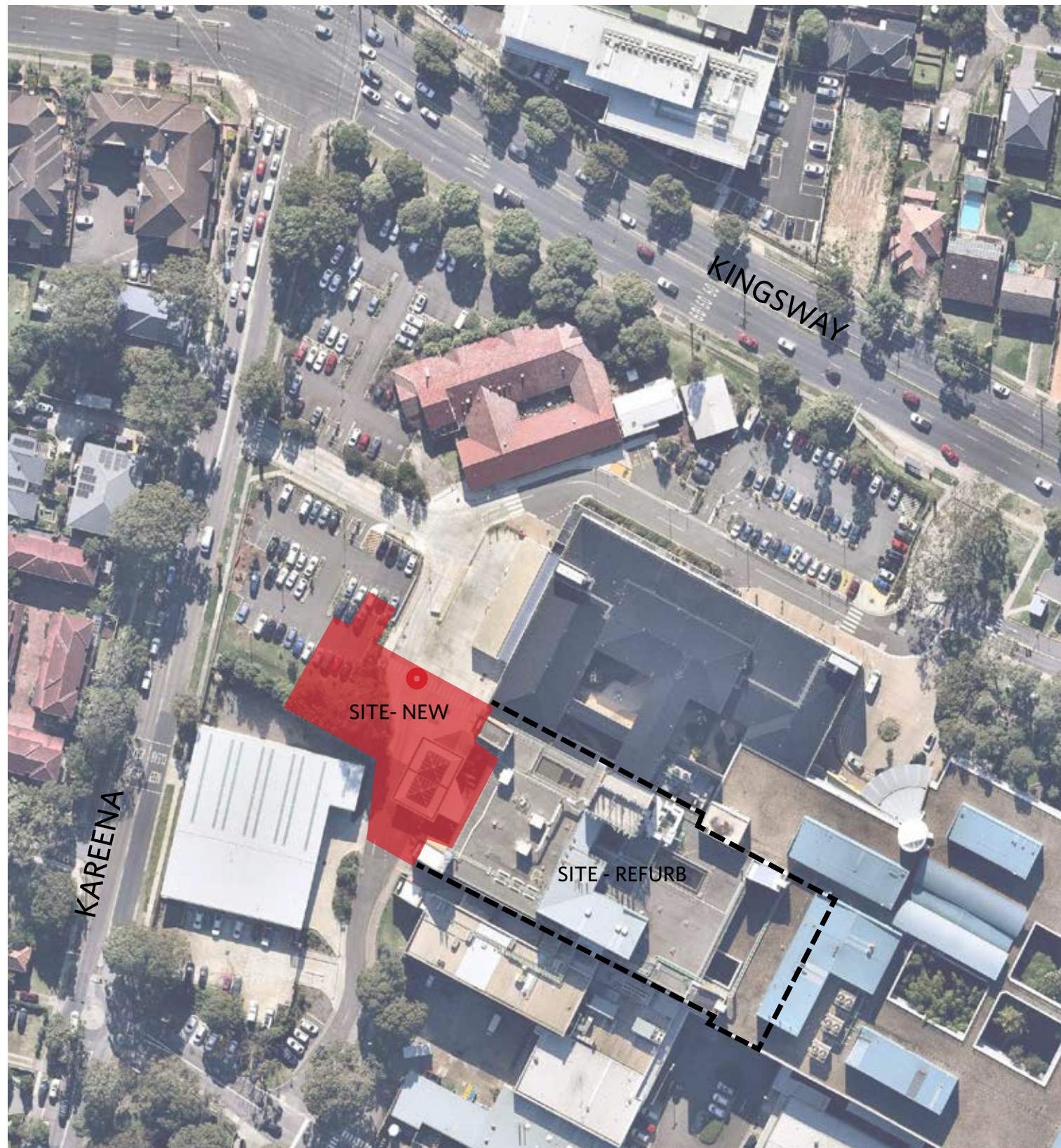


Fig 38: Site Location



Fig 39: View of site from south

03 Existing Site

Constraints to Proposed Site

The proposed site is located to the west of the hospital site and will connect directly into the hospital circulation chassis. It is constrained to the west by the existing ambulance station, and to the north by the existing ambulance parking zone. Existing residential properties are located across Kareena Road and are low density and scale. Access to the Ambulance parking is provided off Kareena road.

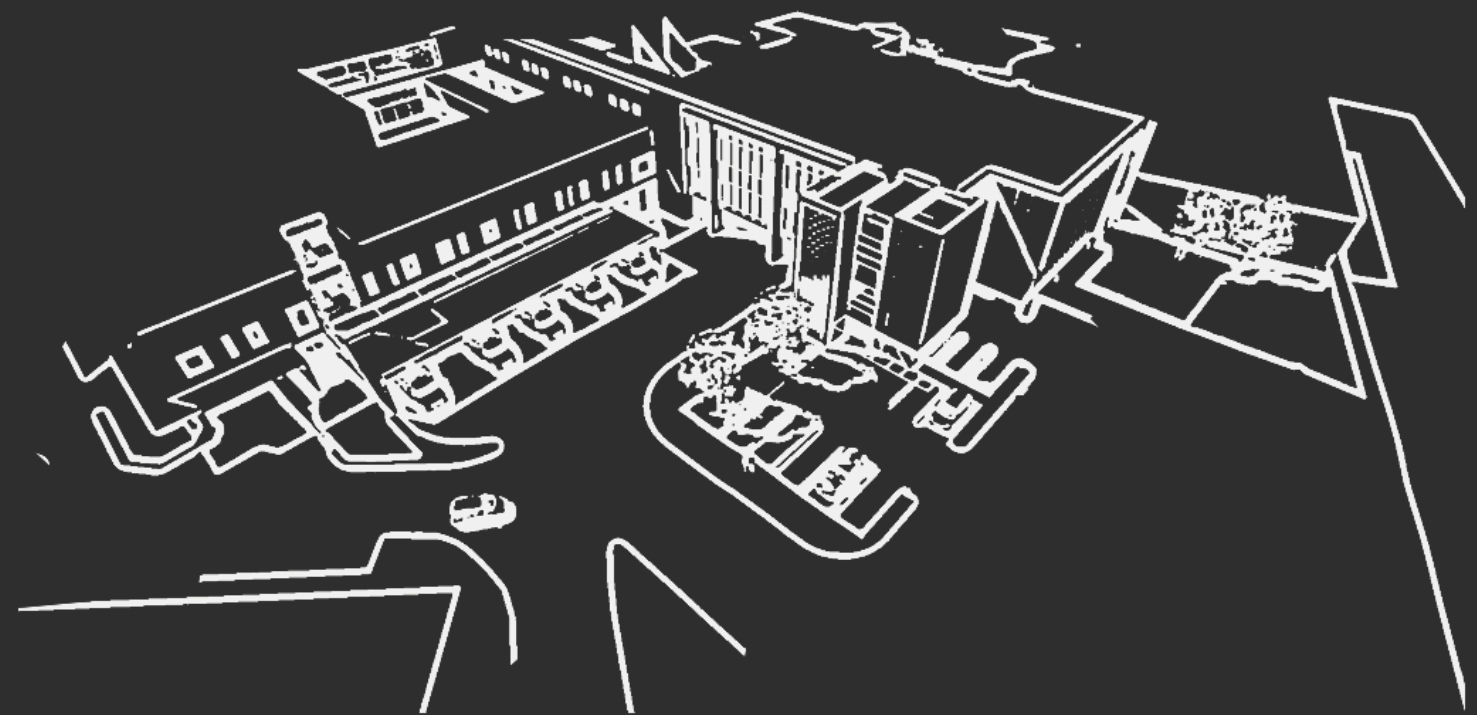


Fig 40: Site Evaluation Diagram

Legend

- 1 Main Entry
- 2 ED Entry
- Building Edge of Neighbouring Properties
- Building Edge - On Site
- Existing Trees
- Local Roads
- P Parking Zones
- P Ambulance Parking Zone
- Proposed Site- New build
- Proposed Site - Refurbishment
- Site Vehicle Circulation - Cars
- Site Vehicle Circulation - Ambulance

04 Architectural Intent



04 Architectural Intent

Key Design Principles

The conceptual framework of the western expansion building of Sutherland Hospital will include the following:

- Planning for the development to support future expansion of capacity for key services, and proposing an architectural form that is flexible and supports future growth.
- Supporting greater integration of the existing Hospital on the precinct.
- Consideration of local context through height, bulk scale and setback.
- Ensuring the links between existing and new expansion are maintained and enhance future potential growth
- Using the clinical chassis and building circulation to respond to and enhance the existing public and clinical separation principles on the site



PATIENT CENTERED DESIGN



CONTEXT INTEGRATION

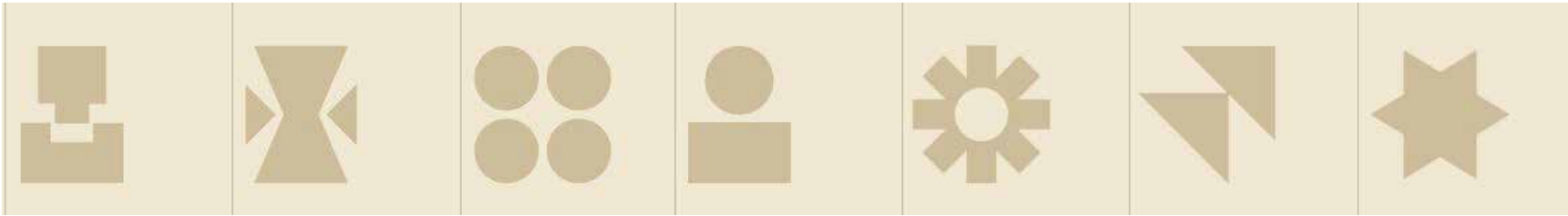


CAMPUS INTEGRATION



ROBUST + TIMELESS

04 Architectural Intent



Objective 1 Better Fit	Objective 2 Better Performance	Objective 3 Better for Community	Objective 4 Better for People	Objective 5 Better Working	Objective 6 Better Value	Objective 7 Better Look and Feel
<p>The siting of the building has been carefully considered to respect the surroundings, connect to existing thoroughfares and enable a positive outlook from the building</p>	<p>The building has been orientated to take advantage of passive solar design principles maximising glazing and outlook to the north through transient spaces The development has been designed to meet Section J +10%</p>	<p>The new Operating Theatre Expansion has been commissioned to address the growing population of the Sutherlandshire It has been sited and designed so not to preclude future improvements or development of the Hospital precinct should it be needed</p>	<p>Comfort for occupants is of utmost importance for the hospital. Stringent thermal, acoustic and lighting requirements will be met to ensure a comfortable environment is provided. Natural Light, oversight of vegetation and successful planning are all seen as key factors in the Health and Well being of Patients, Staff and Visitors.</p>	<p>The design process enables users to have direct say into how their building is to be used. Key factors based on the clients experience in providing hospitals in NSW will ensure the building is both flexible and adaptable.</p>	<p>The new building and its associated landscape will raise standards and quality to the Precinct. This will act as a catalyst for further investment and bring staff to the area.</p>	<p>The new building will be aesthetically pleasing and endure a sense of place.</p>

Reference to Better Placed - An integrated design policy for the built environment in NSW.

In response to GANSW’s Better Placed document we consider the new development to be a well designed, better connected and creates the best possible outcome for the local community.

We have outlined our key points in response to the reports main Objectives in the adjacent diagram.

04 Architectural Intent

Campus Masterplan

The Sutherland Hospital Campus has been subject of a number of developments over the last forty years.

The most recent development, referred to as “Stage 1 Development” includes a new Emergency Department on Level 2 with 3 resuscitation bays, 41 treatment bays and an Emergency Short-Stay Unit. Level 3 included an expanded ICU and HDU and additional general medical and surgical inpatient beds, now totalling 60 beds on Level 3.

NSW Ambulance were granted approval to build a station on site, although the long term accommodation of the station on campus is unlikely. Prior to this a new multi-storey carpark was built to the south of the site

There was significant expansion in the 2000's when the reconstruction of the Main Hospital took place as well as Community Health Care Centre, Mental Health Rehab Unit, Dialysis Unit, and Heart Clinic were built.

The building of the refurbishment component of the project is referred to as the South wing as it was an extension to the original 1958 Hospital located where the current Stage 1 development sits.

A site selection process was undertaken by the project during the Masterplan Phase and documented in the Masterplan Report. The Project team reviewed a number of potential expansion possibilities including North, South, West and upward.

Legend

- 1 Expansion North Option
- 2 Expansion South East Option
- 3 Expansion South West Option
- 4 Expansion West Option
- 5 Expansion Up Option
- 6 Expansion Down Option



Fig 41: Masterplan Option Appraisal

04 Architectural Intent

Key Design Drivers

The scope of the building includes the expansion of the Operating theatre department. The highly serviced areas called for a definitive approach to design the form around the function. The key design drivers informing the function of the building included :

- Continuation of the Existing Hospital Chassis,
- Distribution of Highly serviced areas around Hospital Circulation,
- Not preclude future expansion of the facility should it be required at a later date.
- Ensuring the expansion beds into a new landscape setting.

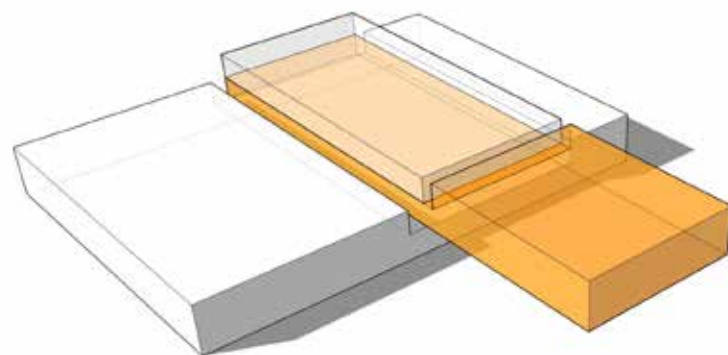


Fig 42: insertion into existing building

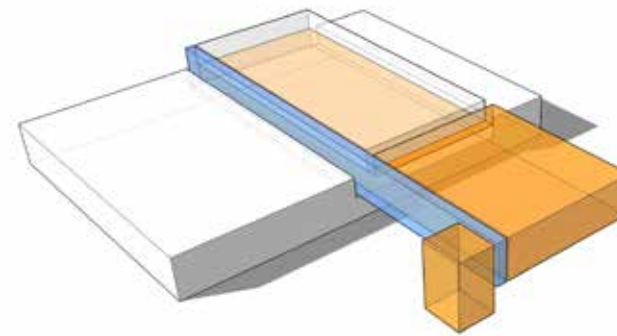


Fig 43: Manipulate form to extend circulation spine

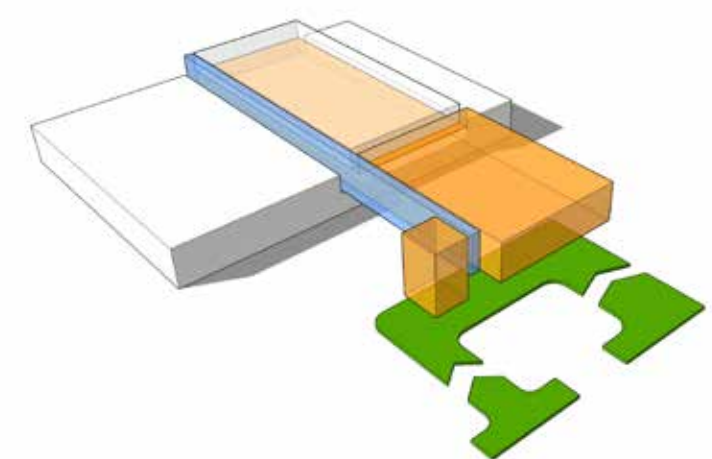


Fig 44: Bed into Landscape

04 Architectural Intent

Hospital Circulation Chassis

One of the key master plan design drivers was the ability to integrate and expand the existing hospital circulation routes within the hospital. The current main East to West circulation routes were extended to provide clear circulation paths to the Operating theatre expansion zone. It also allowed for the potential future provision along the same axis.

Circulation has been separated vertically to minimise interaction of Public and Clinical. The main public circulation flow exists on Level 3 with a new Clinical flow established on Level 3.

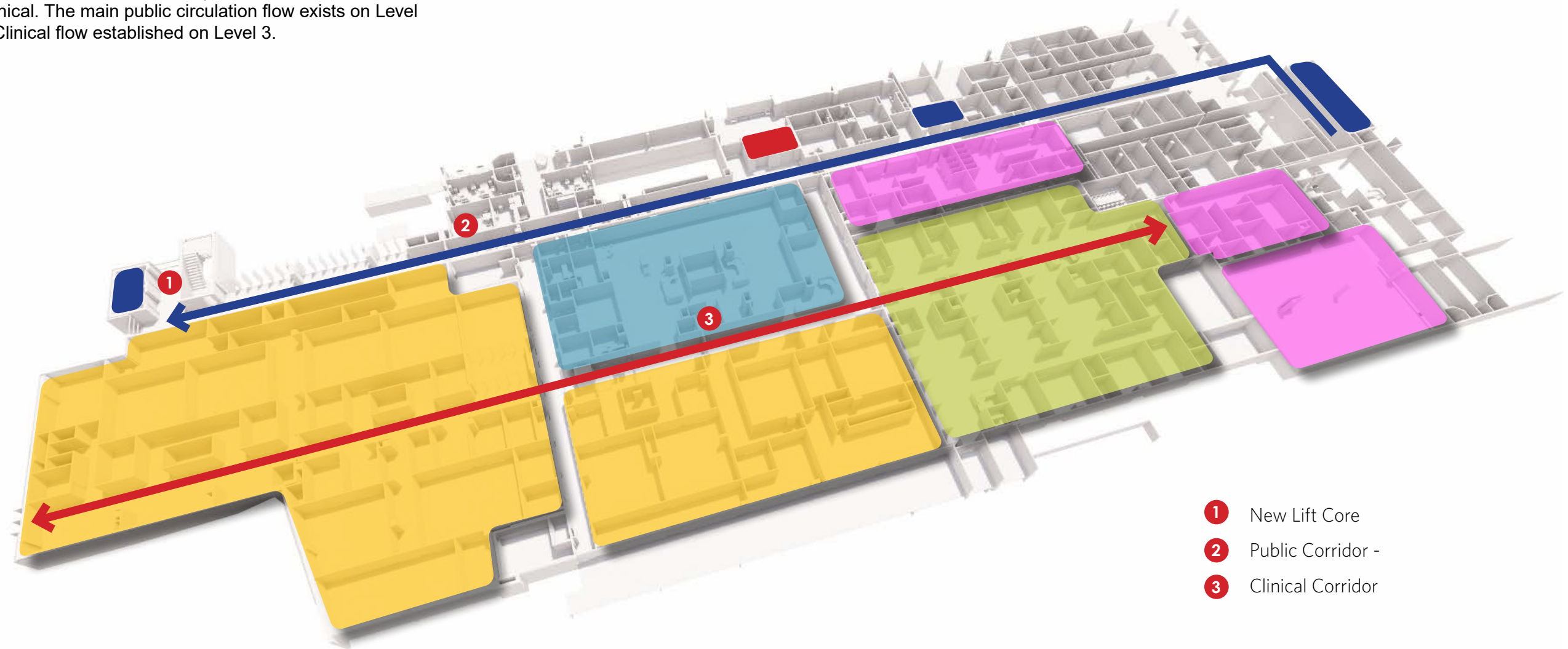


Fig 45: Circulation strategy at Highly Serviced Operating Theatres Level 3

04 Architectural Intent

Site Setting

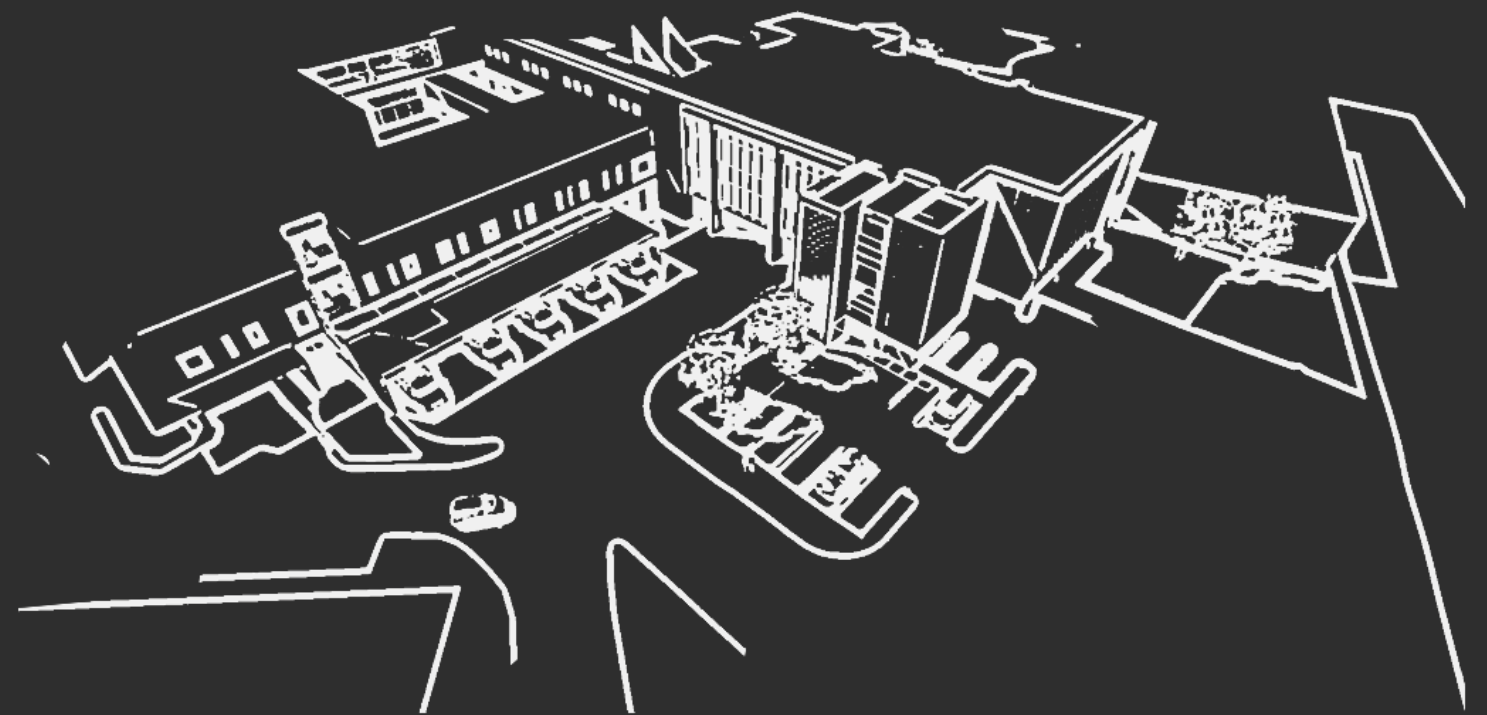
In response to GANSW 'Better Placed' Document the siting of the building to the west of the existing hospital has been carefully considered to respect the surroundings, connect to existing thoroughfares and enable a positive outlook from the building. The new building has been sited to link all new services to the existing building, located to the east of the site with minimal disruption to existing site services.

The site presents the opportunity to capitalise on the local views available to the north and east.



Fig 46: Proposed site plan

05 Building Use



05 Building Use

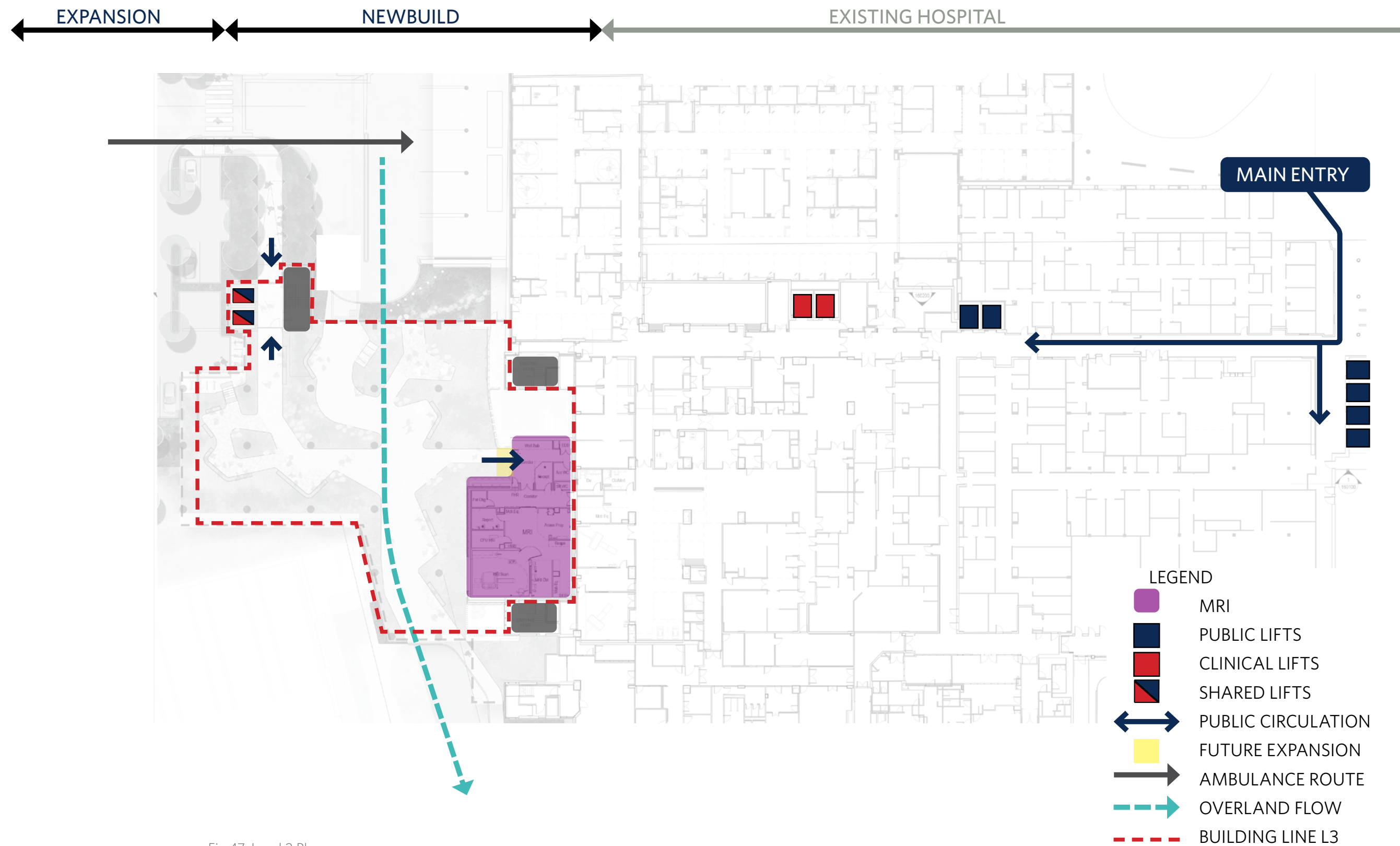
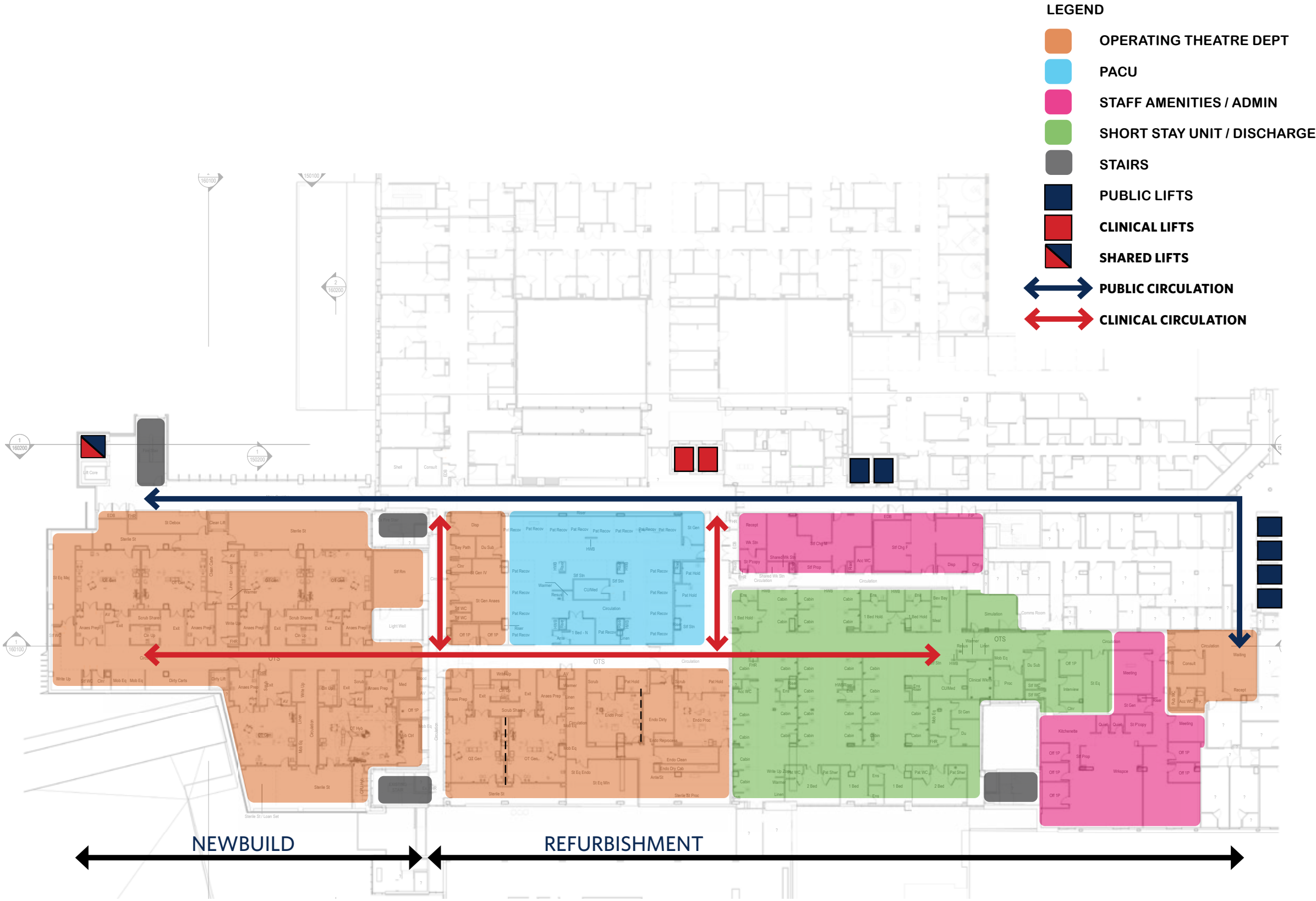


Fig 47: Level 2 Plan

05 Building Use



05 Building Use

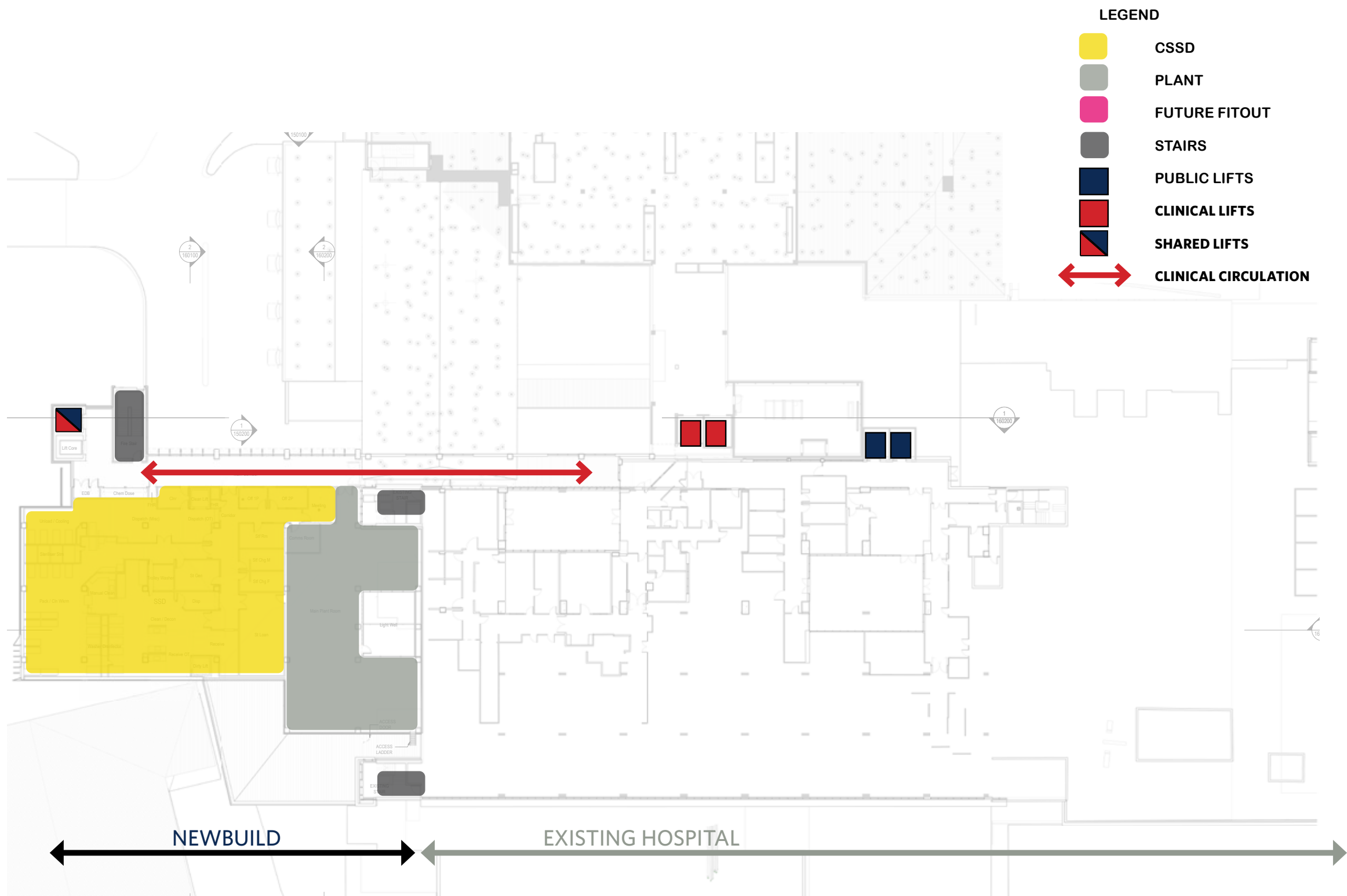


Fig 48: Level 4 Plan

05 Building Use

- OPERATING THEATRE DEPT
- PACU
- STAFF AMENITIES / ADMIN
- SHORT STAY UNIT / DISCHARGE
- CSSD
- PLANT
- MRI

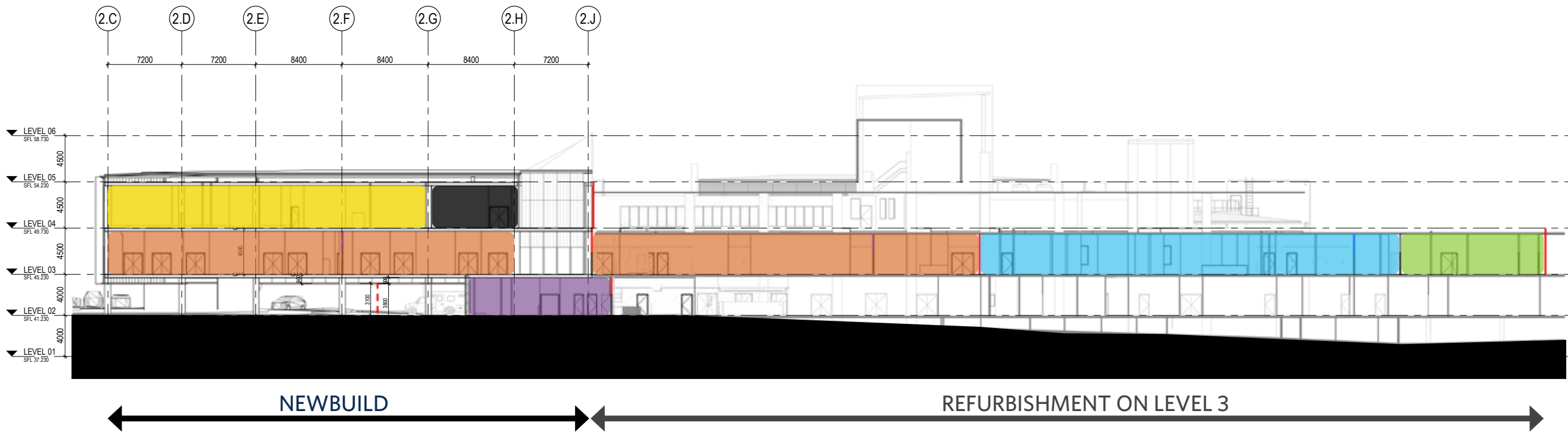


Fig 49: Indicative building use section

05 Building Use

- OPERATING THEATRE DEPT
- CSSD
- STAFF CIRCULATION
- PUBLIC CIRCULATION

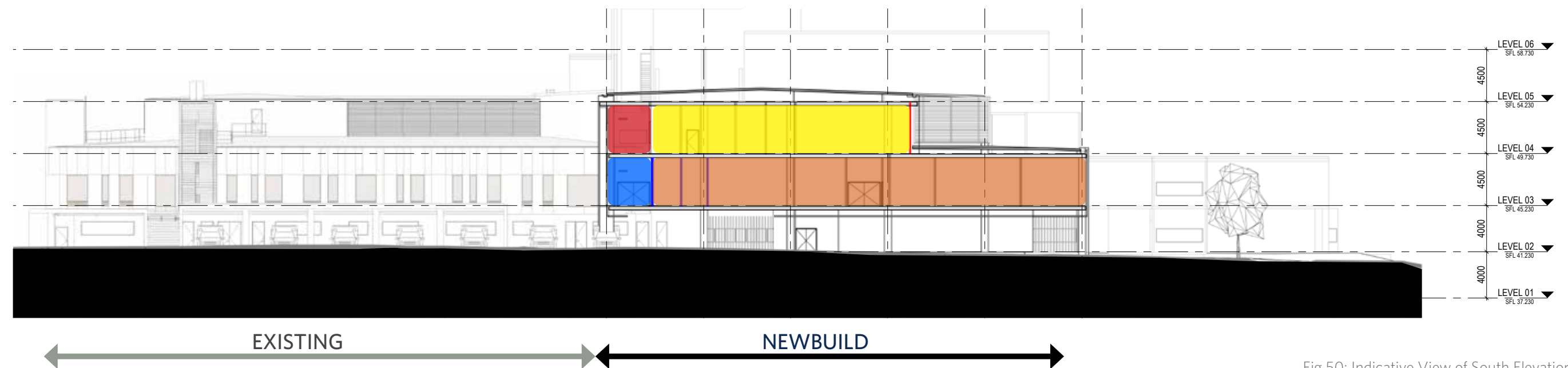
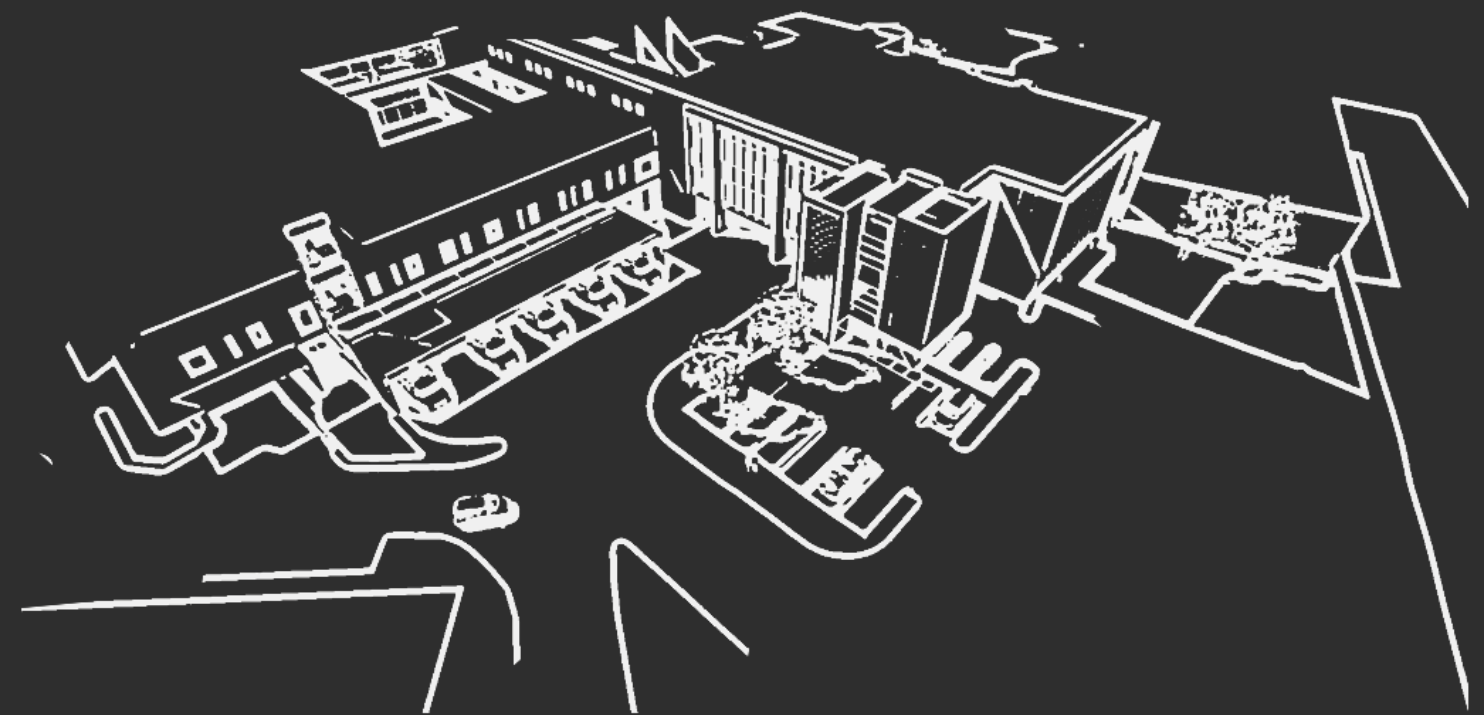


Fig 50: Indicative View of South Elevation

06 Building in Context



06 Building in Context

Site and Landscape

The expansion to the Operating Theaters includes for a Part new build and part refurbishment of the existing hospital/
The new build element extends west from the existing hospital and is set back from Kareena Road. An existing car park will be maintained and will act as a buffer between Kareena road and the new extension.

A new core is planned on the North west corner and will give secure access to staff.

A landscape buffer zone will be provided between the car park and the ambulance road.

As the building is set on columns the area under the building will be landscaped to provide a safe secure environment for users and staff,

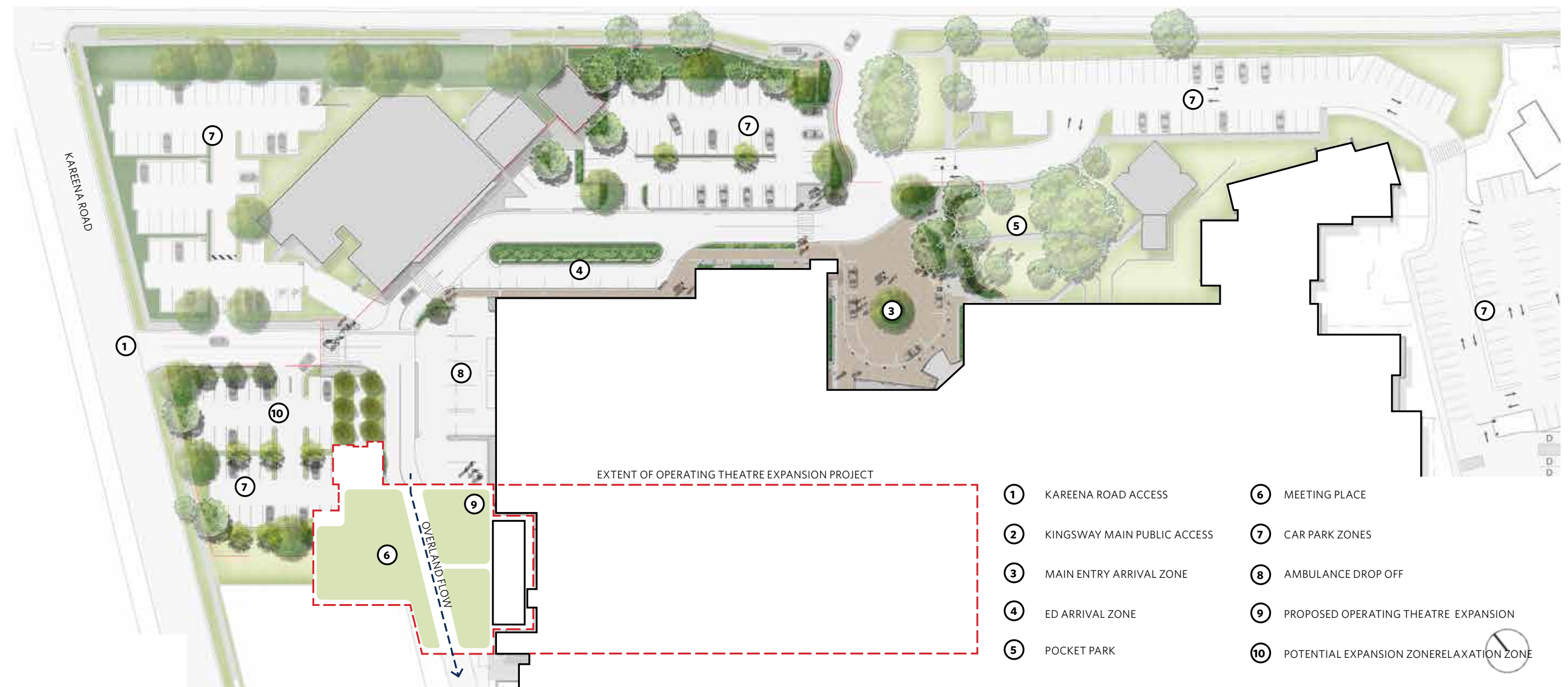


Fig 51: Site Plan

06 Building in Context

Setting

The new expansion beds itself firmly within the existing mass of the existing hospital. On the northern edge the new lift and stair core located on the north western corner acts as an anchor to the new building allowing the central zone to bridge across the existing road.

The core grounds itself within the existing car park which forms a buffer between the expansion and Kareena Road.

Vertical windows associated with circulation routes within the building allow activation of the facade and encourage natural surveillance over the local surroundings.



Fig 52: Indicative massing from South

06 Building in Context

Building Form

Conceptually, the new building is seen as an extension to the existing hospital strengthening the precinct axis.

Its form is created by an extension west containing pods of Operating Theatre on Level 3 and plant and SSD on Level 4. The form follows function approach extends over the existing roadway at Level 1.

Building elements such as fire stairs and lift core articulate the building and extend the building towards the ground.

Floor to floor heights in the new building have been designed to achieve the preferred 4500 mm floor to floor height.



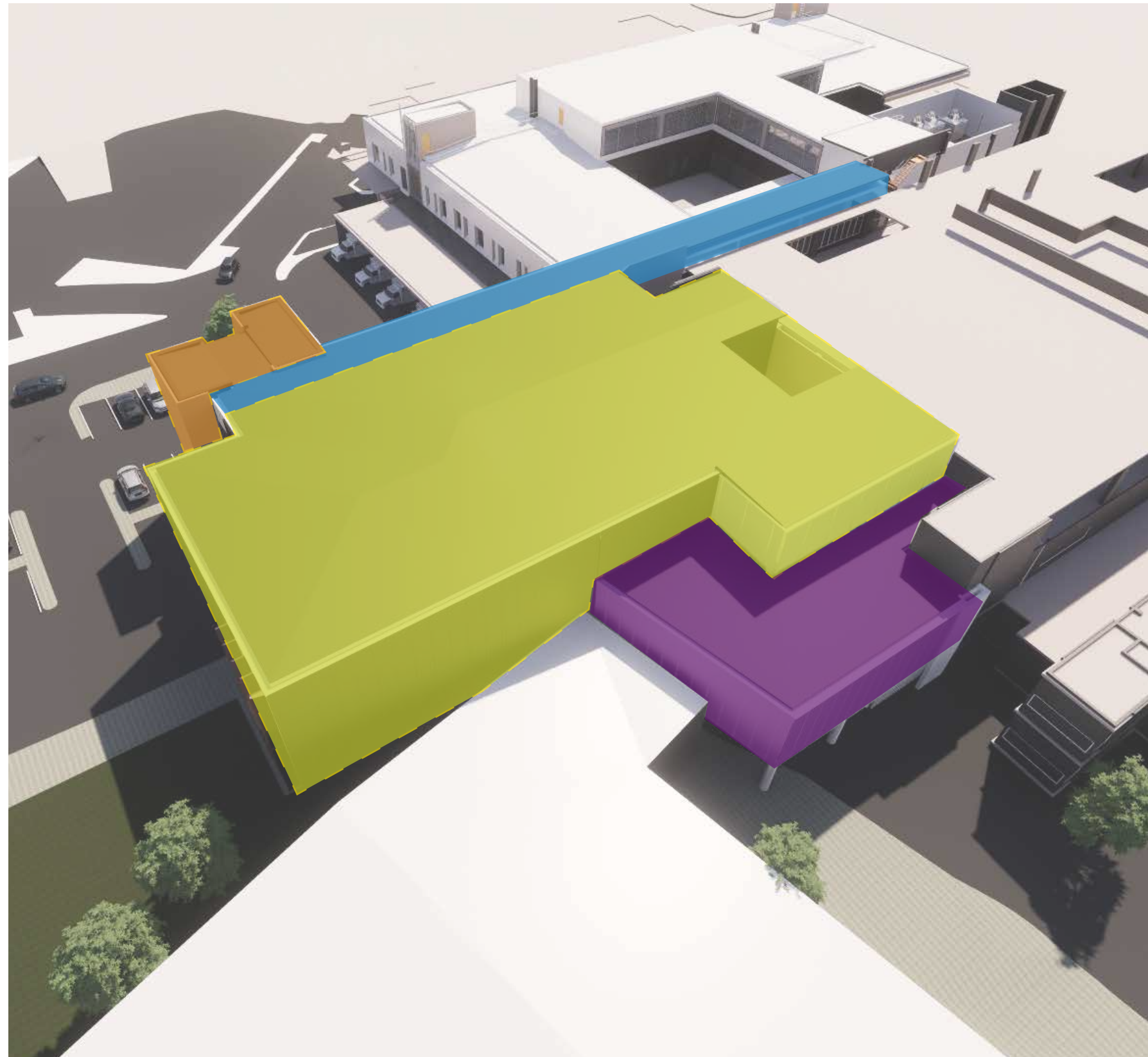
- Core
- Link
- Hospital Services
- Pop Out

Fig 53: Building Form from North West

06 Building in Context

Building Form

Towards the south the form steps down towards the Ambulance station. The larger form is maintained towards the center and extends fully on its western edge, creating a new street presence.



- Core
- Link
- Hospital Services
- Pop Out

Fig 54: Building Form from North West

06 Building in Context

Relationship to existing levels

The levels of this development will match with the Stage 1 development levels..

That is, level 3 will match with the existing level 3 RL, however as level 3 to 4 will entail a 4.5m floor to floor height as opposed to the existing floor to floor height of 4.1m. the proposed level 4 will not match with the existing.

The floor level of level 2 future enclosure of the undercroft will be RL41.23 to match the existing level 2.

This development as per Stage 1 will allow for upward future expansion of two more levels with the building levels of this development aligning.

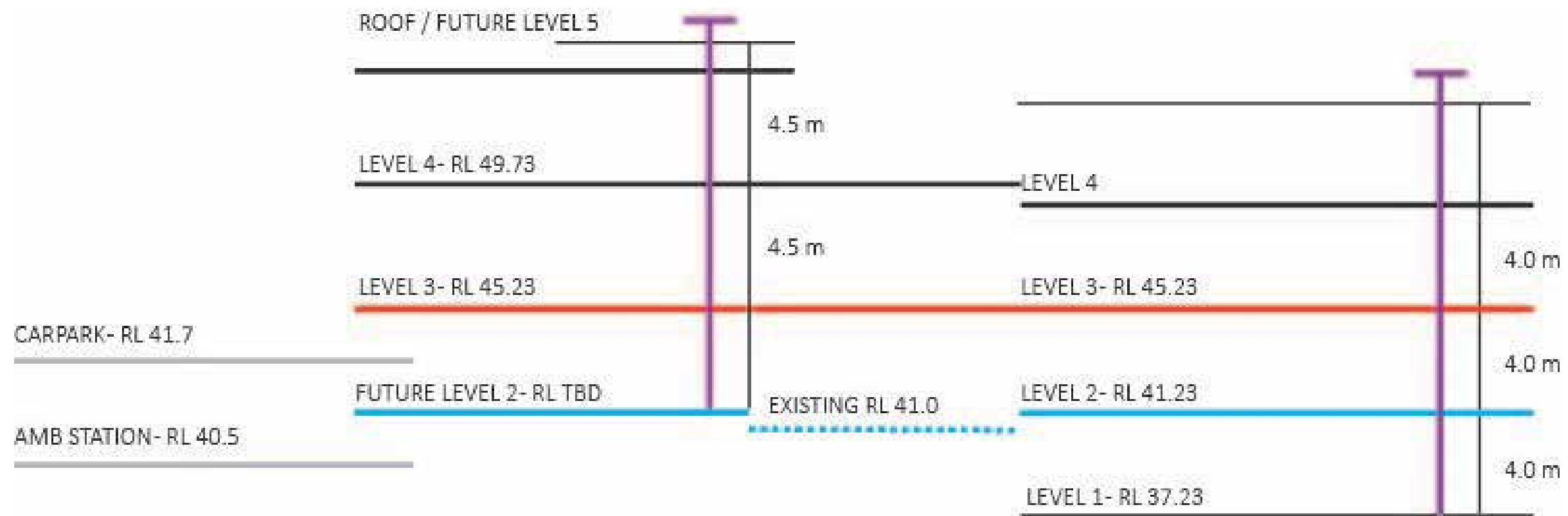


Fig 55: Existing and Proposed Levels

06 Building in Context

Building Scale

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.

The form height and massing of the 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.

The new building maintains the height precedent set within the existing hospital campus and comprises of three levels. Within the mass two full levels of accommodation are raised above ground ensuring that overland water flow at ground level is maintained

Building RL's

The top RL of the building is proposed to be RL 55.440. This is the ridge level of the metal roof. The Lift overrun and associated lift motor room RL is 55.230

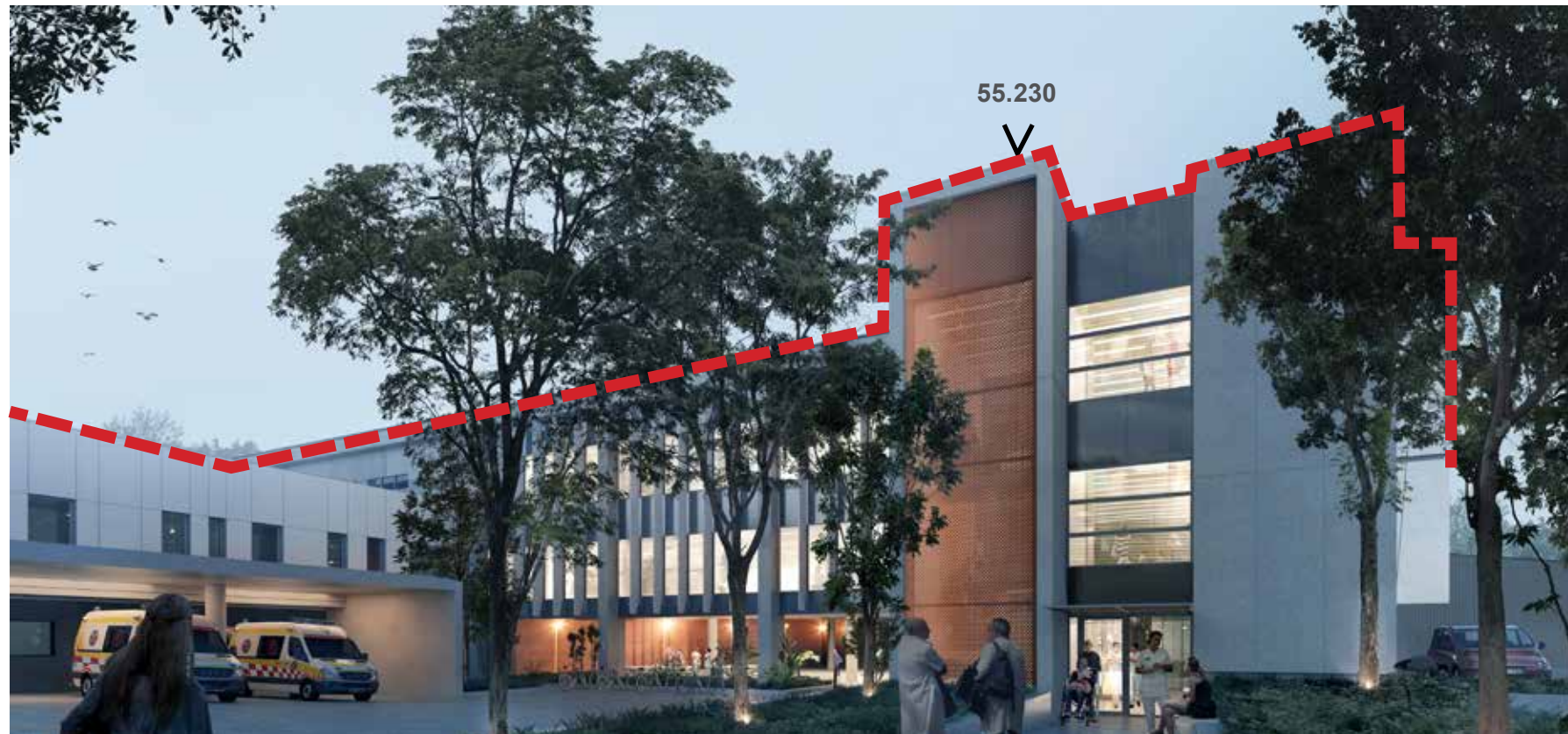


Fig 56: View from north highlighting RL's

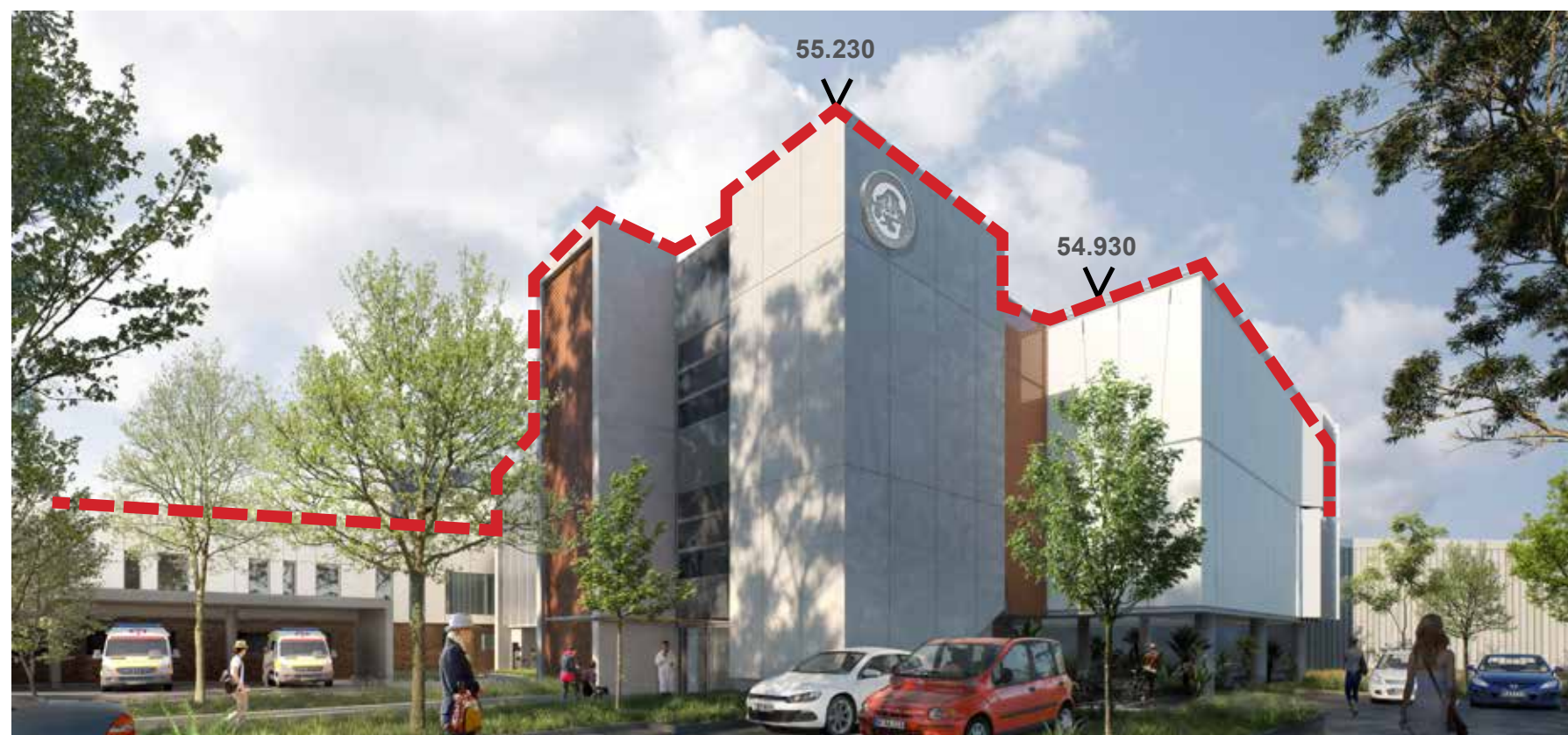


Fig 57: View from south highlighting RL's

06 Building in Context

Relation to Existing Hospital - Form

The new expansion zone takes reference from the adjoining hospital to the east. Constructed in 2017 the existing hospital is contemporary in nature and uses specific elements to break up and create interest within the building form. These include the egress stair towers and the carved undercroft elements.

As a response to this the new building reciprocates these elements to ensure continuity with the new hospital vernacular established in 2017.

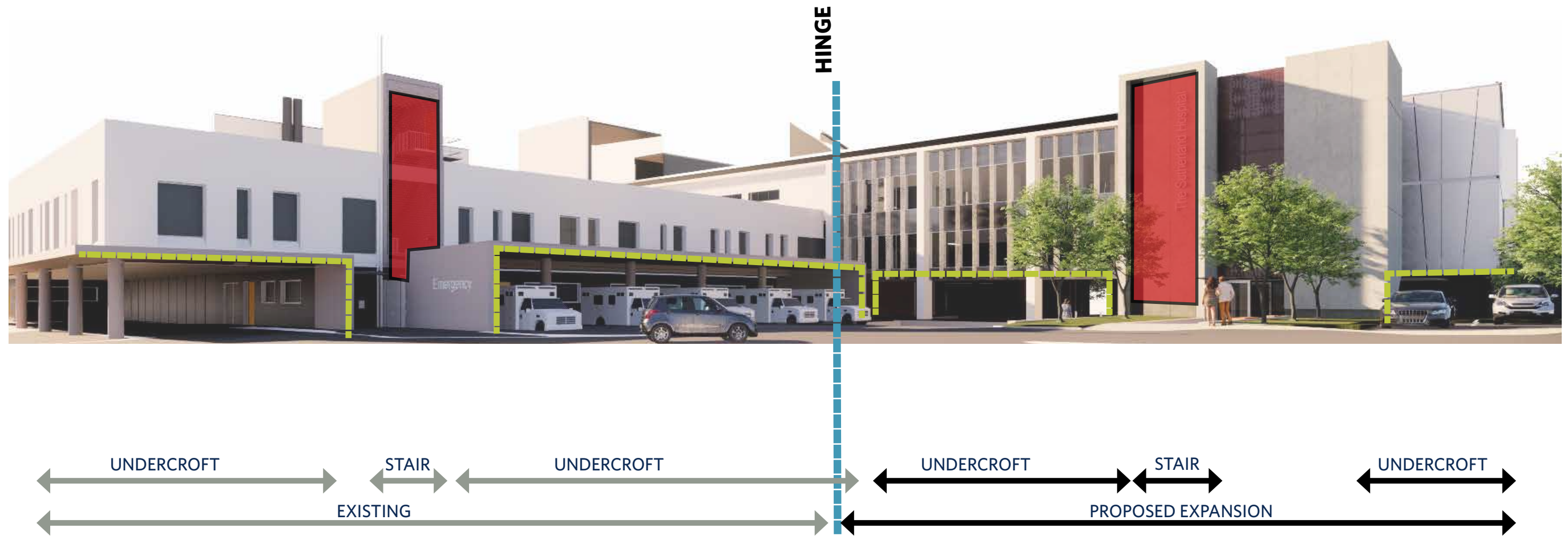


Fig 59: Response to surroundings diagram

Fig 58: Indicative showing response to neighbouring building

06 Building in Context

Solid v Transparency

The building has been broken up into parcels of solid and transparent elements. This creates interest and rhythm across the facade.

The glazed elements reflect the local surrounding and at night this natural rhythm of the design is enhanced as it allows artificial light to permeate from the building form



Fig 60: Solid v Transparency North Elevation



Fig 61: Solid v Transparency West Elevation

06 Building in Context

Local Views and Vistas

A band of existing trees to the Northern and Western boundary will provide an outlook from the main circulation corridor on the north facade. Similar existing trees to the west provide an outlook for public and clinical corridors through picture windows terminating on the eastern facade.

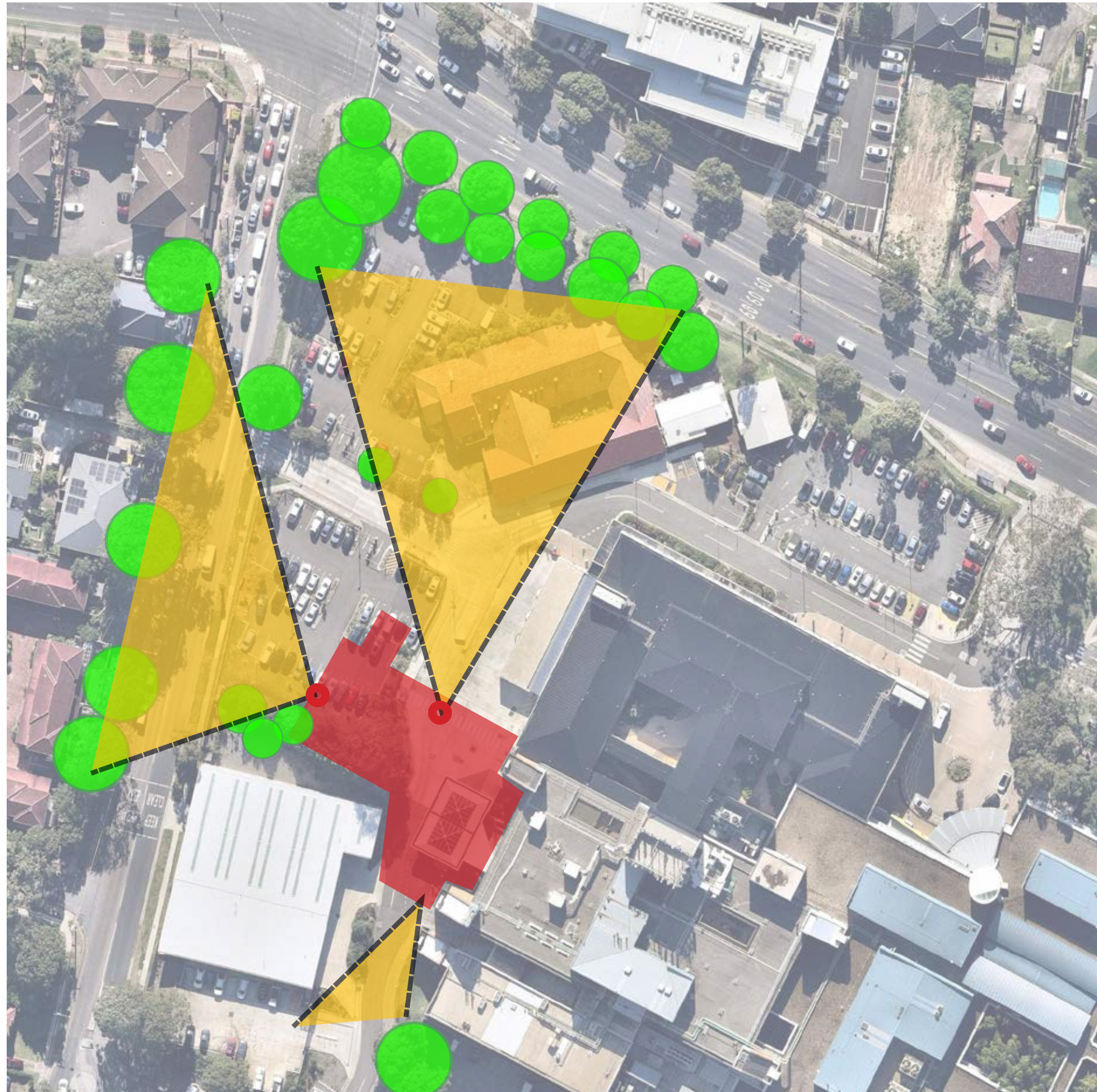


Fig 62: Digram highlighting views of local surroundings

06 Building in Context

Building Setbacks in relation to surrounding context

The proposed Operating Theatre Expansion is setback from the Kingsway by approximately 113m and Kareena Road by approximately 51m.



- 1 51m (Distance Site to Residential Properties West)
- 2 27m (Distance Site to Kareena Road Kerbt)
- 3 92m (Distance Site to Kingsway North)
- 4 113m (Distance Site to Kingsway/ Kareena Rd North)
- 5 46m (Distance Site to Kareena Rd West)

Fig 63: Diagram highlighting setbacks to Kareena Rd and The Kingsway

07 Building Articulation



07 Building Articulation

Building Elements

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

1. Core which grounds the building.
2. Bridge structure connects the grounded elements.
3. Base containing MRI.
4. Operating Theatre plant room is located on the upper most level of the building . These will be screened visually and acoustically. Generally plant is designed to be part of the building form and is set back where permissible from the main facade.



Fig 64: Digram highlighting building mass

07 Building Articulation

Facade - Creating Interest through Scale

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

Primary Layer; Building Form

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

Secondary layer - Elemental

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

Tertiary Layer - Detail

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



Fig 65: Digram highlighting primary layer



Fig 68: Digram highlighting primary layer

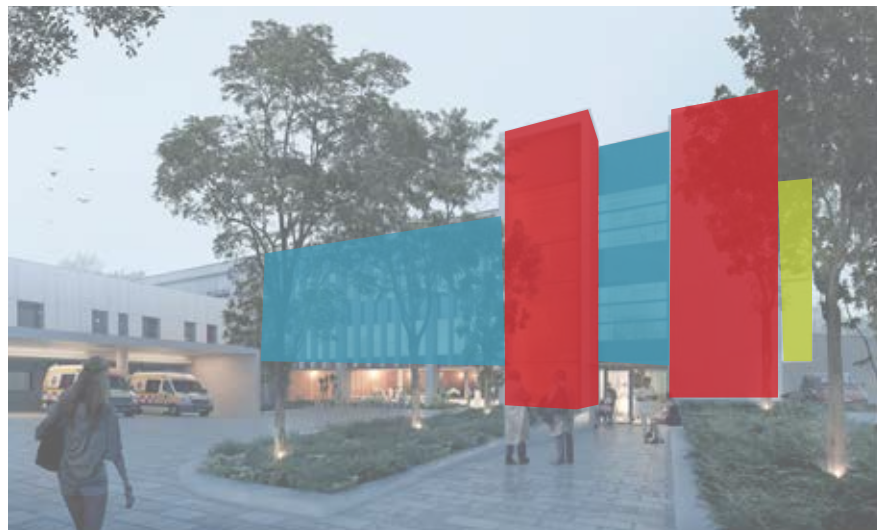


Fig 66: Digram highlighting secondary layer



Fig 69: Digram highlighting secondary layer



Fig 67: Digram highlighting tertiary layer



Fig 70: Digram highlighting tertiary layer

07 Building Articulation

Defining Street scape

The proposed building is set back from the boundary edge, with an existing car park providing the buffer between building and roadside kerb.



Fig 71: Indicative view approaching new expansion

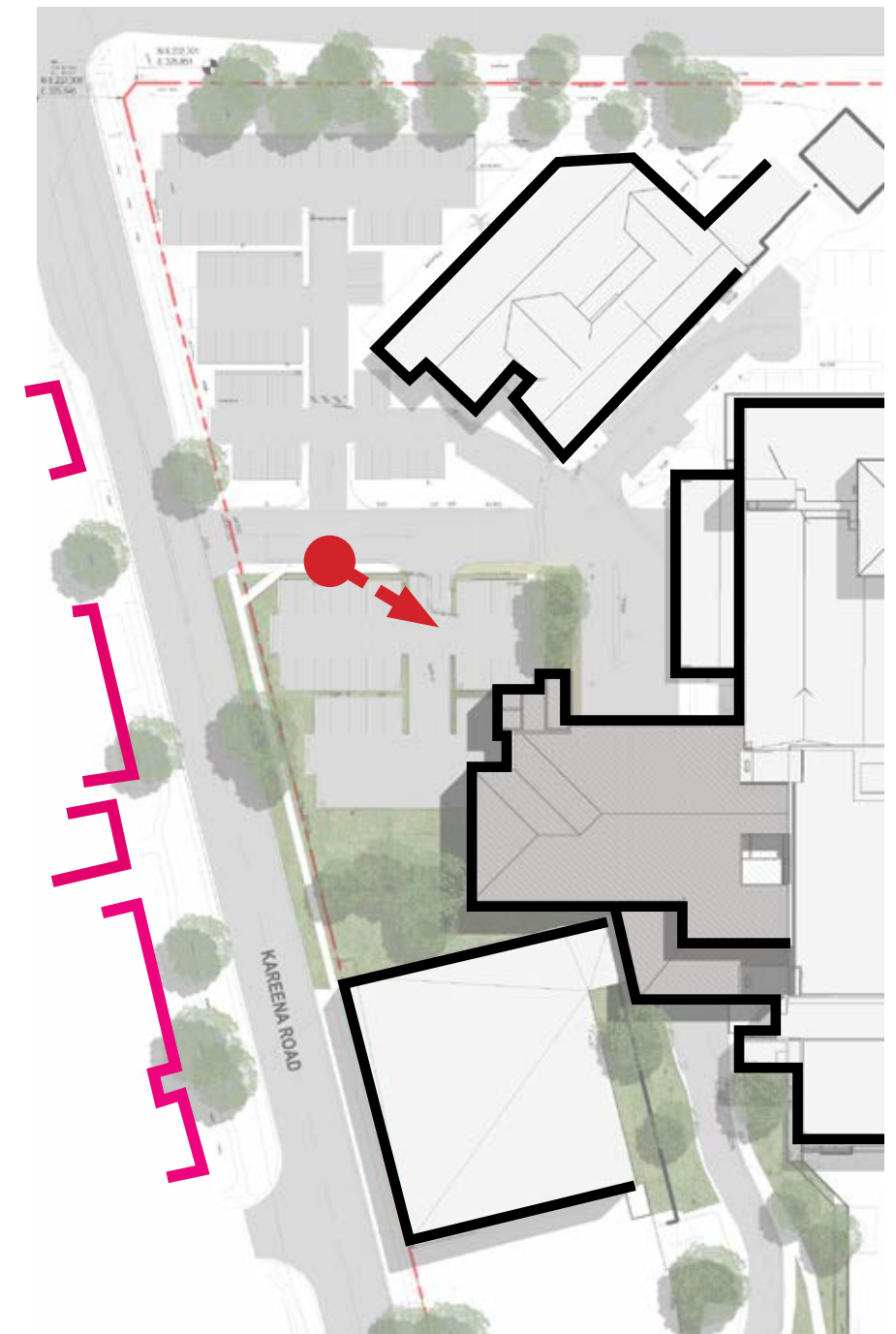


Fig 72: Diagram highlighting building edges

- 1 Existing Car Parking
- 2 Landscaped Zone
- 3 Undercroft with MRI expansion
- 4 Staff access Stair

07 Building Articulation

Northern Facade

The northern facade is prominent from Kingsway and Kareena Road and will respond to the adjacent hospital.



Fig 74: View of proposed building from north

07 Building Articulation

- 1 Lift Core
- 2 Existing Car Park
- 3 Sunshade Fins n
- 4 Staff access Stair

Western Facade

To the west the facade undulates expressing its form as 2 separate elements dissected by a glazed curtain wall that forms the end of the main internal circulation zones..



Fig 75: Indicative View of West Elevation

07 Building Articulation

Public Art

Health Infrastructure, have instigated a Art in Health program, a program designed to guide the integration of arts into the NSW healthcare system by supporting collaboration between local health services and the arts sector.

Art in Health aims to improve patient, staff and carer experience in health services through artistic engagement. Exposure to The Arts has a profoundly beneficial impact on patient wellbeing through its use in health promotion and messaging.

As well as contributing to health Art can be used in key areas to promote Wayfinding throughout the Hospital.

The adjacent diagram highlights potential areas within Public entry level where art installations could be placed to promote way finding, community integration and encourage wellbeing.

As part of the Health program it is envisaged that the art is developed with the community to celebrate the local cultural heritage

Arts and health refers broadly to the practice of applying creative, participatory or receptive arts interventions to health problems and health promoting settings to create health and wellbeing across the spectrum of health practice from primary prevention through to tertiary treatment.

NSW Health & the Arts Framework 2016

Arts in Health is most successful when it employs artists and arts as a communication tool between the health service and community it seeks to serve.

It includes all art forms: heritage, literature, visual, performing and dramatic arts



Fig 76: Health Infrastructure Arts Program Roadmap

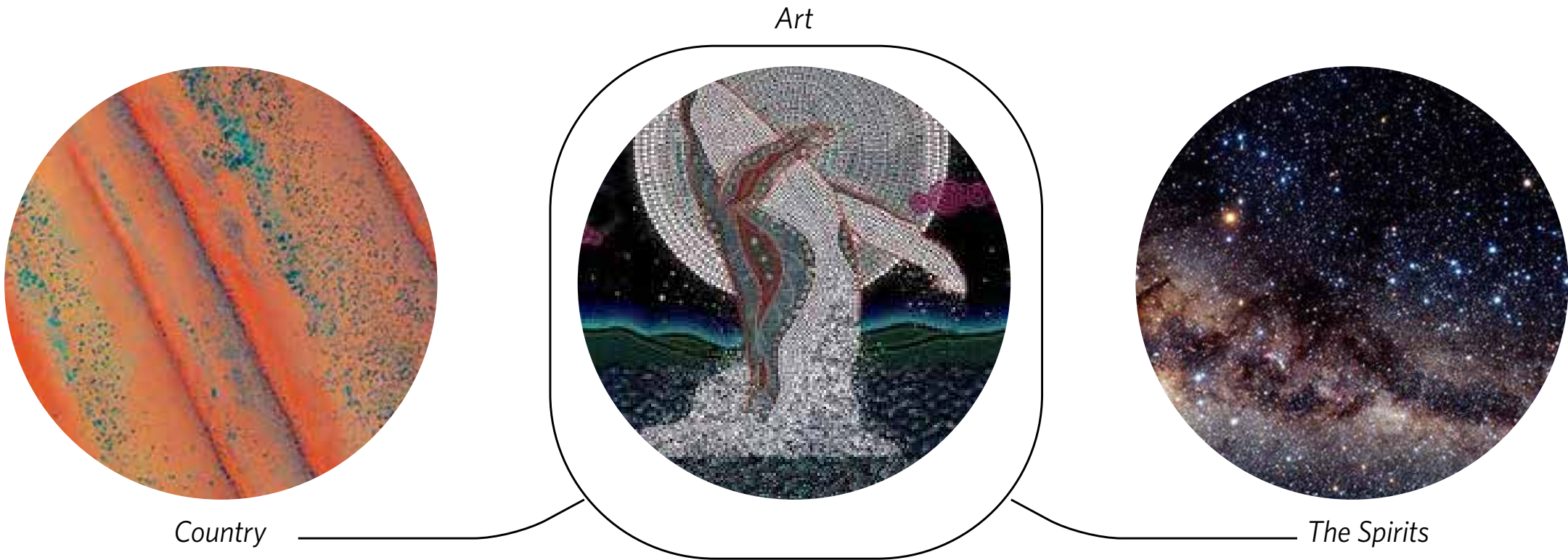
07 Building Articulation

Public Art Concept

Art is seen as integral to the design of the proposed hos[ital operating theatre expansion, The team have been involved in a number of consultations with the local indigenous community to better under stand their requirements for integrated art. Following from this consultation a number of zones were identified (internally and externally) to encourage connection to country through art and song.

‘Aboriginal people express their connection to country and The Spirits through songs, dances, story telling, paintings and engravings. They also recognise their connection to country through their totemic life. Totems are a demonstration of each individual’s connection to both the ‘Real World’ and the ‘Spirit World’. In the Sydney Basin the three major totems are Whales,Kangaroos and Snakes. ’

Reference DHARAWAL The story of the Dharawal speaking people of Southern Sydney. A collaborative work by Les Bursill, Mary Jacobs, artist Deborah Lennis Dharawal Elder Auntie Beryl Timberly-Beller and Dharawal spokesperson Merv Ryan



07 Building Articulation

Public Art Concept

Three key principles were identified by the group through the consultation. They include a connection to country through art, a connection to country through song and the creation of a meeting place.



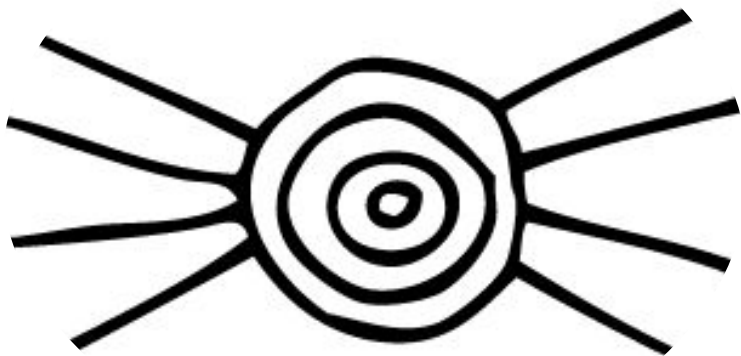
CONNECTION TO COUNTRY THROUGH ART

THE DESIGN APPROACH OF THE TEAM IS TOO SUBTLY COMMUNICATE THE CONNECTION TO SITE SO THAT OCCUPANTS HAVE THE OPPORTUNITY TO REFLECT WHILE USING THE SPACE. EXTERNALLY OR INTERNALLY



CONNECTION TO COUNTRY THROUGH SONG

THE HISTORICAL SIGNIFICANCE OF SONG AND STORY TIME PROVIDES A LIVING LINK TO ANCIENT AUSTRALIANS



CREATION OF MEETING PLACE

TO REFLECT THE IMPORTANCE OF STORY TELLING AND CONGREGATING IN INDIGENOUS CULTURE A SERIES OF SPACES HAVE BEEN DESIGNED WHICH CAN BE USED AS MEETING ROOMS, LUNCH NOOKS OR PLACES OF RESPITE FOR THE PUBLIC

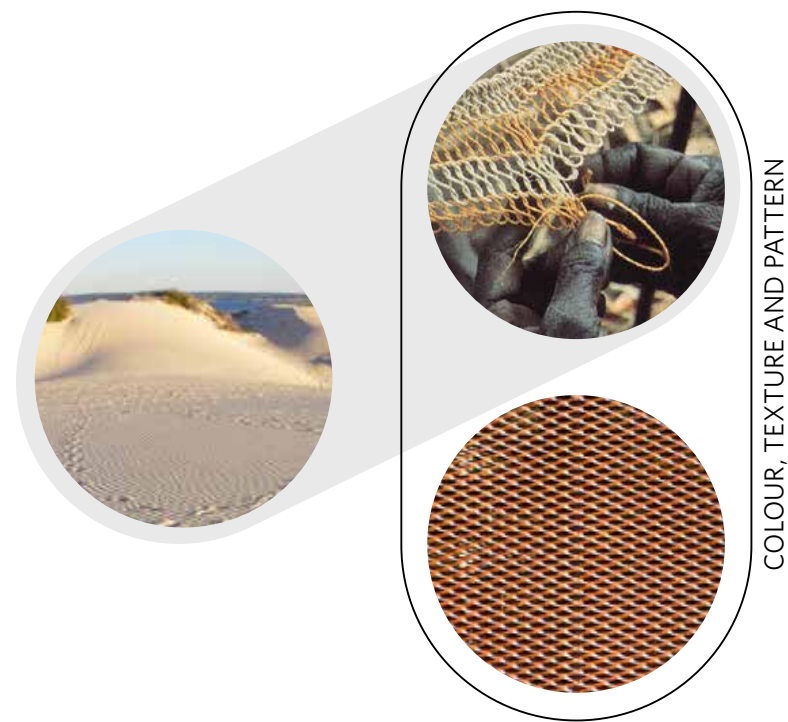


Fig 78: Concept of the external screen

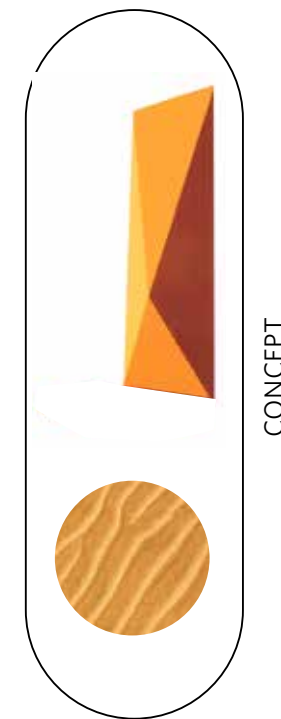


Fig 79: Potential overlay of pattern onto screen (this will be part of Art Consultant design

07 Building Articulation

Public Art

Externally the building form provide opportunity for integrated art within the building fabric.

In particular the stair tower suggests a prominent piece of local art could be applied to the building. It resonates in its relationship with the external landscaped zone .

As part of the Art in Health program the team will work in close association with the artist to ensure the art is truly integrated .



Fig 77: View showing opportunities undergoing investigation for Art in Health

07 Building Articulation

Public Art - Internal Environment

The adjacent diagram highlights potential areas within Public entry level where art installations could be placed to promote way finding, community integration and encourage wellbeing. A UK Case Study: Impact of music in pre-operative patients, and those mechanically ventilated suggests

In relation to distress and anxiety, two Cochrane Reviews explored the impact of music upon patients awaiting surgery and patients being mechanically ventilated:

- The possible physiological effects of preoperative anxiety, including slower wound healing and increased risk of infection.
- It found that listening to pre-recorded music significantly diminished patients' anxiety, bringing about a small reduction in heart rate and diastolic blood pressure; and
- 'One large study found that music listening was more effective than a sedative in reducing preoperative anxiety and equally effective in reducing physiological responses'.
- With mechanically ventilated patients, the second review found that listening to music diminished anxiety and respiratory rate and caused systolic blood pressure to be reduced, which suggested relaxation in an otherwise stressful situation.

In order to assist the healing of patients within the operating theatre environment sound showers will be considered as part of the Cabin design. Other art options to undergo investigation will include wall and ceiling art installations

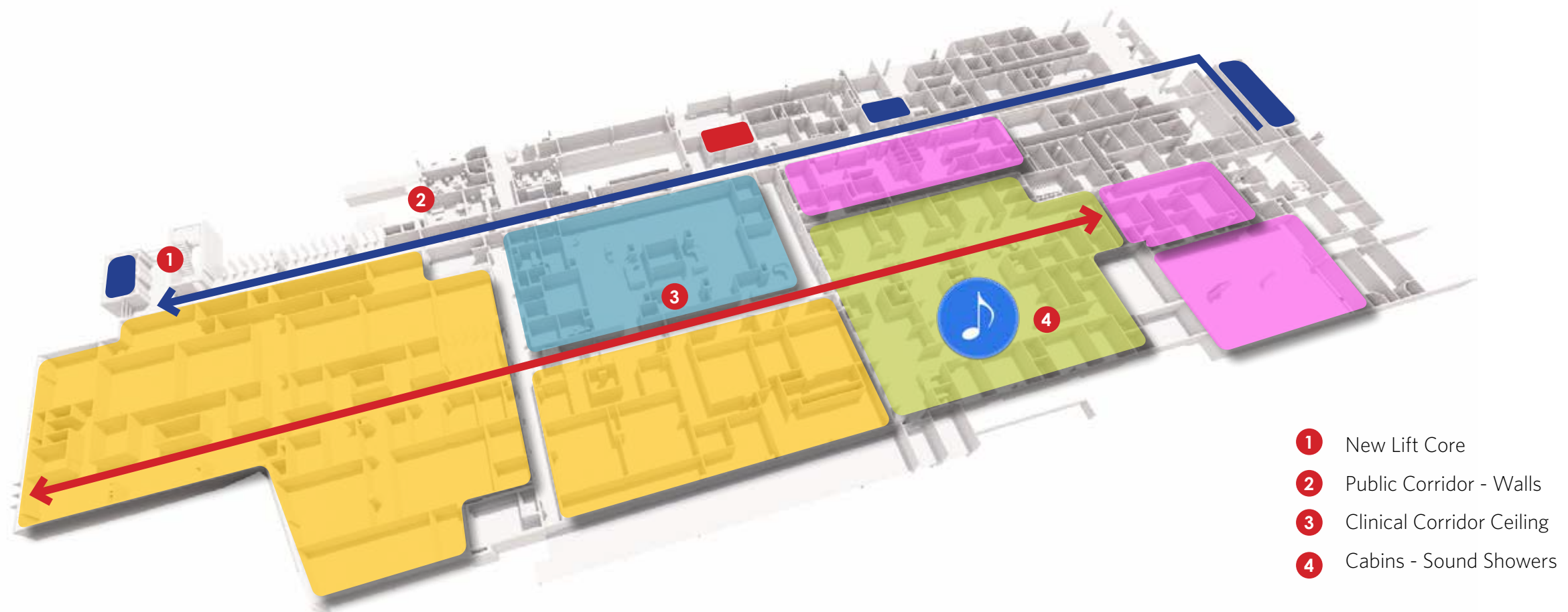
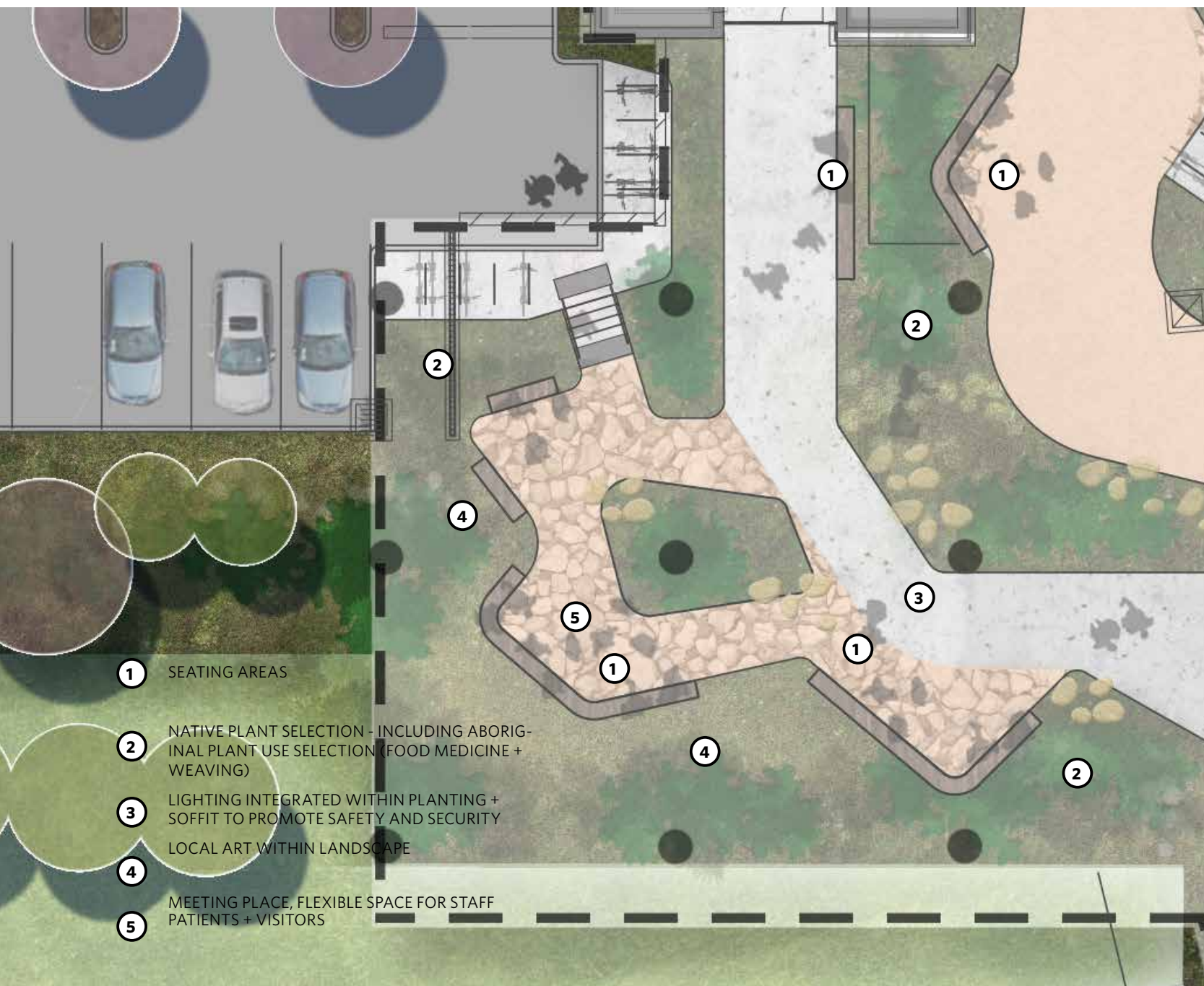


Fig 80: Indicative locations for Public Art - Internal

07 Building Articulation

Public Art

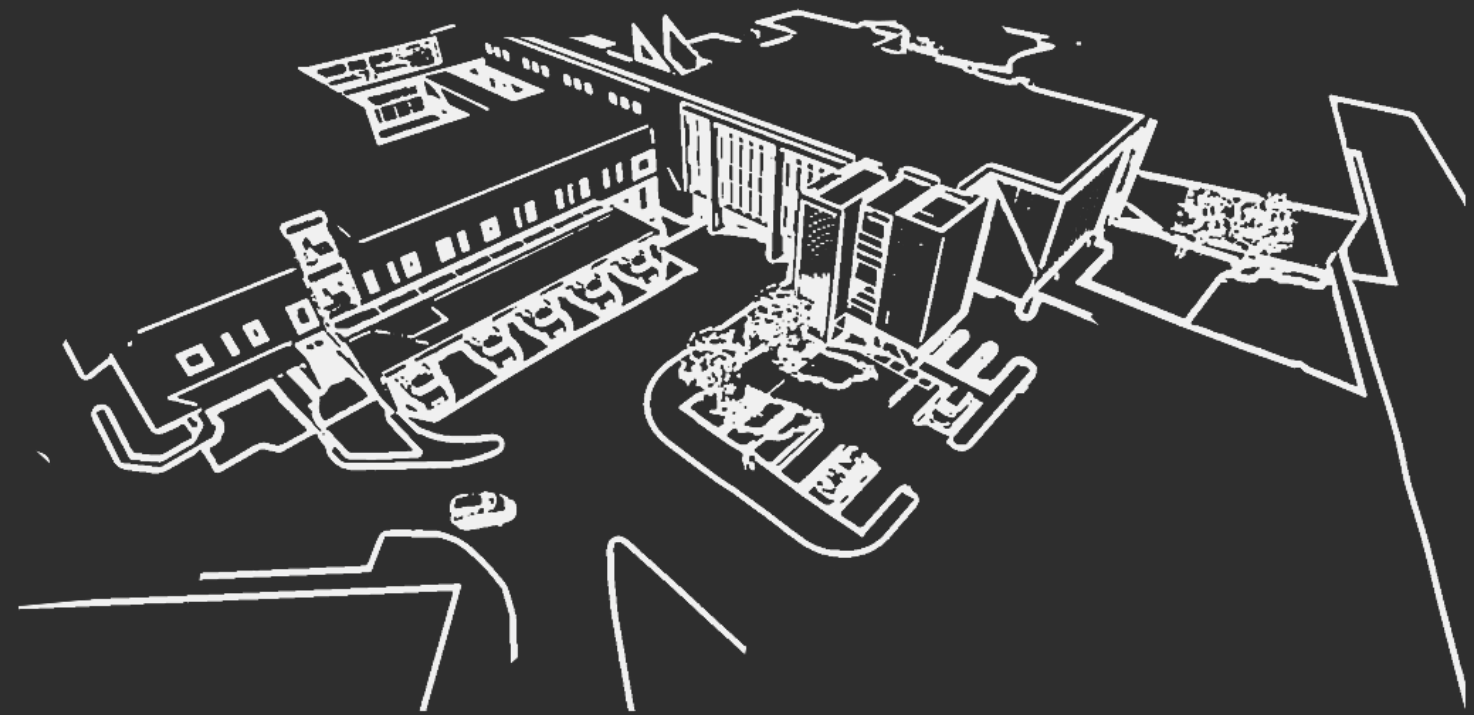
A new externally landscaped space has been designed for the Level undercroft area. Designed in association with the local aboriginal the space provides a new meeting place for users and staff within the hospital. It will be interspersed with native planting and sculptures to create a calming environment.



ABORIGINAL PLANT USE SELECTION (FOOD MEDICINE + WEAVING)



08 View Analysis



08 View Analysis

Methodology

This analysis has identified key existing viewpoints around the hospital and assessed the visibility of the proposed development. The determination of the visual impacts is based on two criteria - the sensitivity and the magnitude.

Sensitivity is defined as “The sensitivity of a landscape character zone or view and its capacity to absorb change. In the case of visual impact this also relates to the type of viewer and number of viewers.”

Magnitude is defined as “The measurement of the scale, form and character of the development proposal when compared to the existing condition. In the case of visual assessment this also relates to how far the proposal is from the viewer.”

The combined assessment of the sensitivity and magnitude provides the rating for the visual impact

Visibility of the Proposal

The locations of the selected viewpoints are illustrated in the adjacent diagram.

The visibility of the proposal, from the surrounding residential area, is reduced by the existing hospital buildings, existing vegetation and landscape.

Identification of view points

The selection of viewpoints, has been based on identifying:

- Views that assess the impact of the proposal at a range of distances (short, medium and long) from the proposal and therefore provide a range of visual detail
- Views with issues specific to that certain viewpoint
- Views from major approach routes to the hospital



Fig 81: View analysis location plan

08 View Analysis

View 01

Description: This view is from the junction of Kingsway and Kareena Road looking south east towards the proposed site.

Sensitivity: The view primarily comprises of mature trees and vegetation to the south with the main hospital as the dominate feature. Therefore the sensitivity of the view is considered to be Low / Moderate.

Magnitude: The proposal is set further away than the existing Hospital retaining the Multi Block building as the dominant feature. The proposed buildings are less visible in this view as shown indicatively in the diagram to the right. Therefore the magnitude of the proposed development on this viewpoint is considered Low.

Assessment of impact: The combination of the sensitivity of the viewpoint and the magnitude of the proposal on the view provides an integrated impact of Low. The level of impact is lessened by existing trees providing coverage for the proposal.

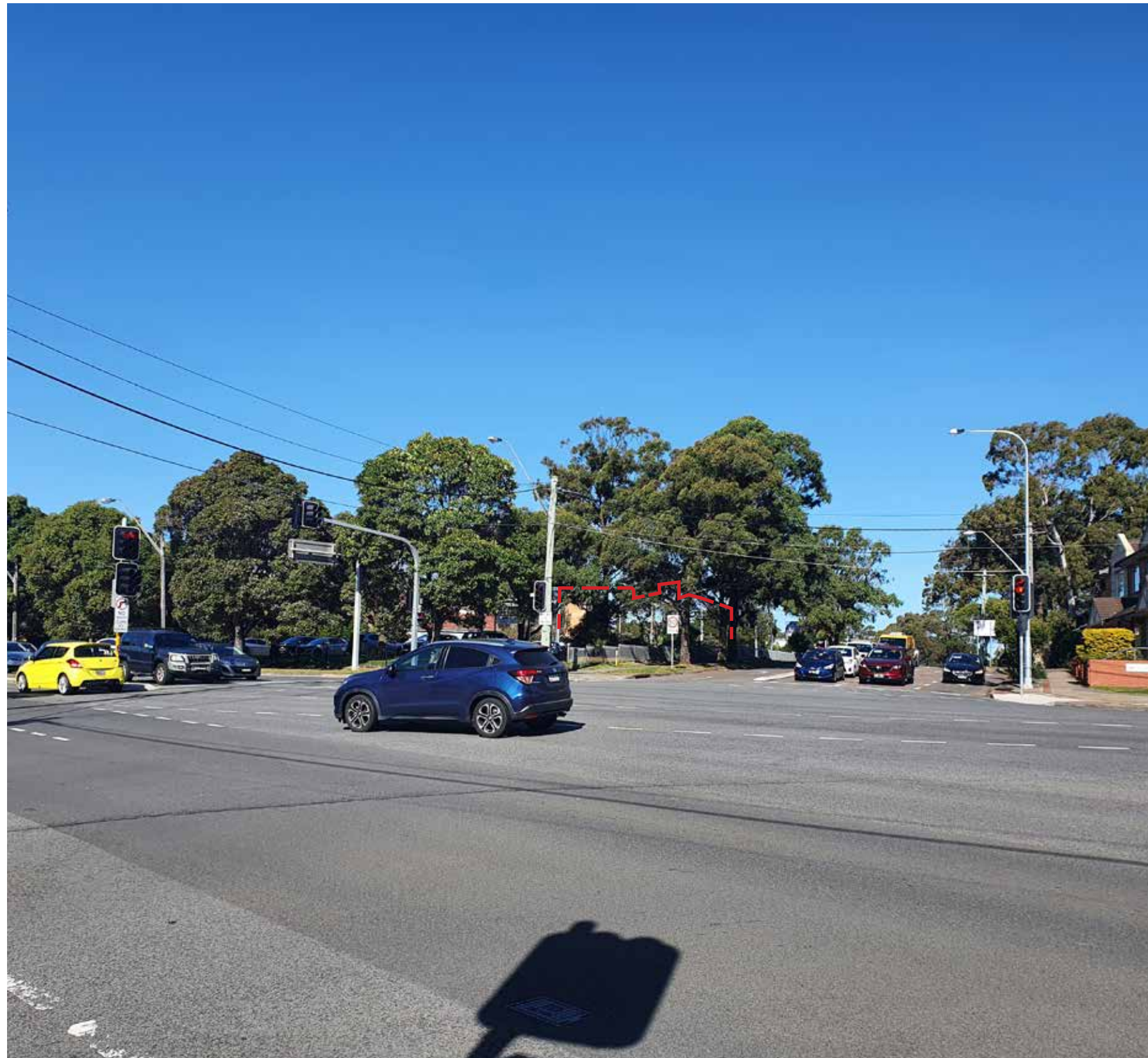


Fig 82: View 1 .From intersection Kareena Road and Kingsway

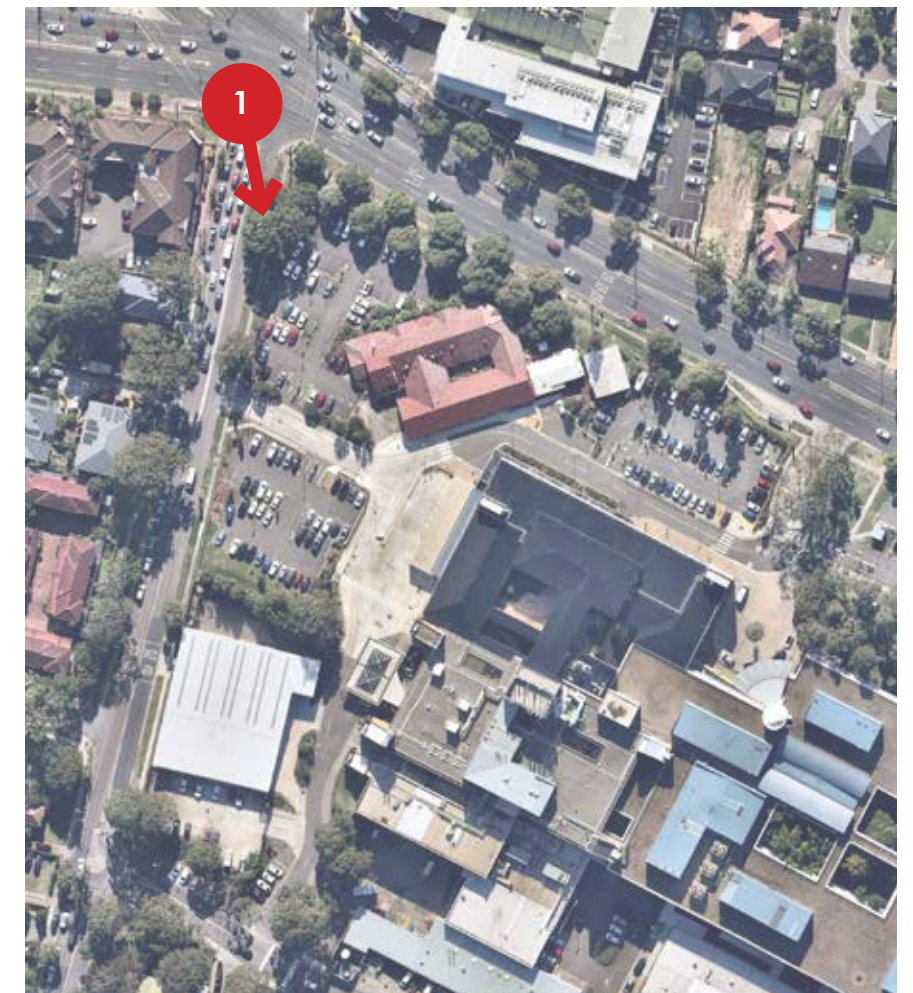


Fig 83: View 1 .From intersection Kareena Road and Kingsway

08 View Analysis

View 02

Description: This view is from Kareena Road looking south east towards the proposed site.

Sensitivity: The view primarily comprises of mature trees and vegetation to the east with the hospital as the dominate feature. Therefore the sensitivity of the view is considered to be Low / Moderate.

Magnitude: The proposal is set closer than the existing Hospital and the proposed buildings are more visible in this view as shown indicatively in the diagram to the right. .Therefore the magnitude of the proposed development on this viewpoint is considered Moderate.

Assessment of impact: The combination of the sensitivity of the viewpoint and the magnitude of the proposal on the view provides an integrated impact of Moderate. .

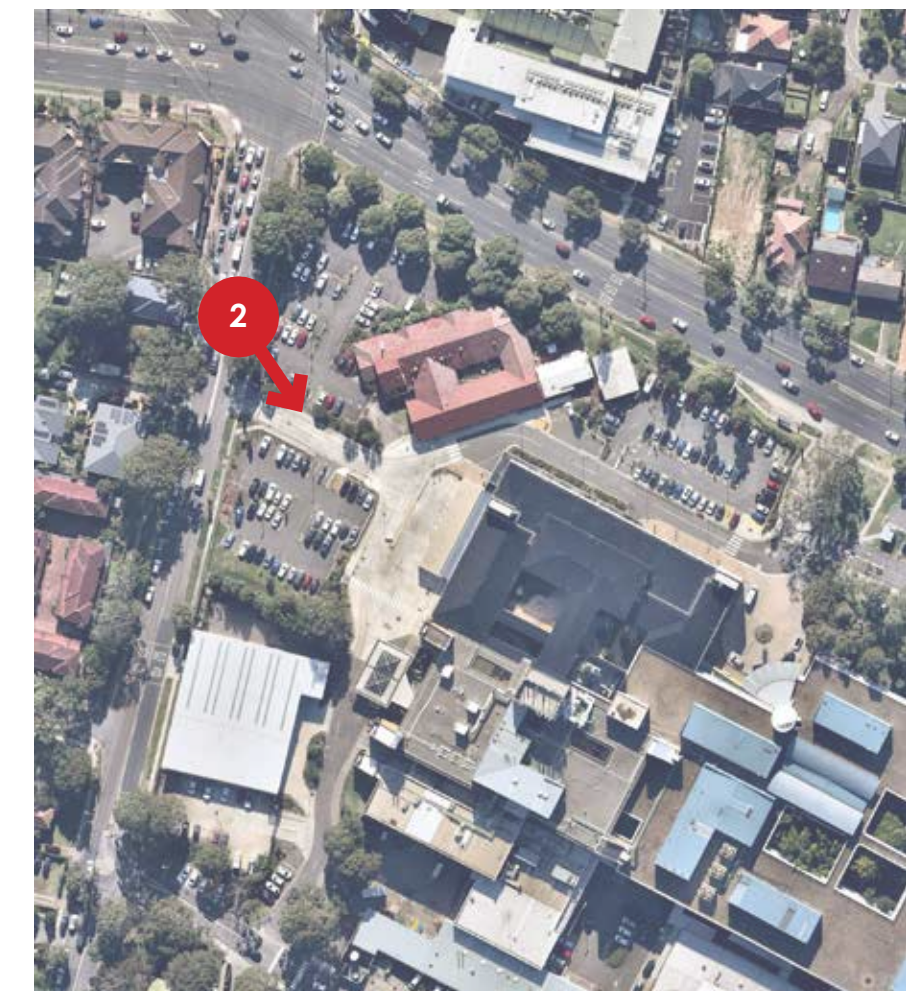


Fig 84: View 2 .From Kareena Road

Fig 85: View 2. From Kareena Road

08 View Analysis

View 03

Description: This view is from the North of the site looking south towards the proposed site.

Sensitivity: The view primarily comprises of mature trees and vegetation in the foreground with the main hospital as the dominate feature behind. Therefore the sensitivity of the view is considered to be Low / Moderate.

Magnitude: The proposal is set further away than the existing Hospital retaining the Multi Block building as the dominant feature. The proposed buildings are less visible in this view due to the vegetation as shown indicatively in the diagram to the right. Therefore the magnitude of the proposed development on this viewpoint is considered Low.

Assessment of impact: The combination of the sensitivity of the viewpoint and the magnitude of the proposal on the view provides an integrated impact of Low. The level of impact is lessened by existing trees providing coverage for the proposal



Fig 86: View 3 .From Kingsway

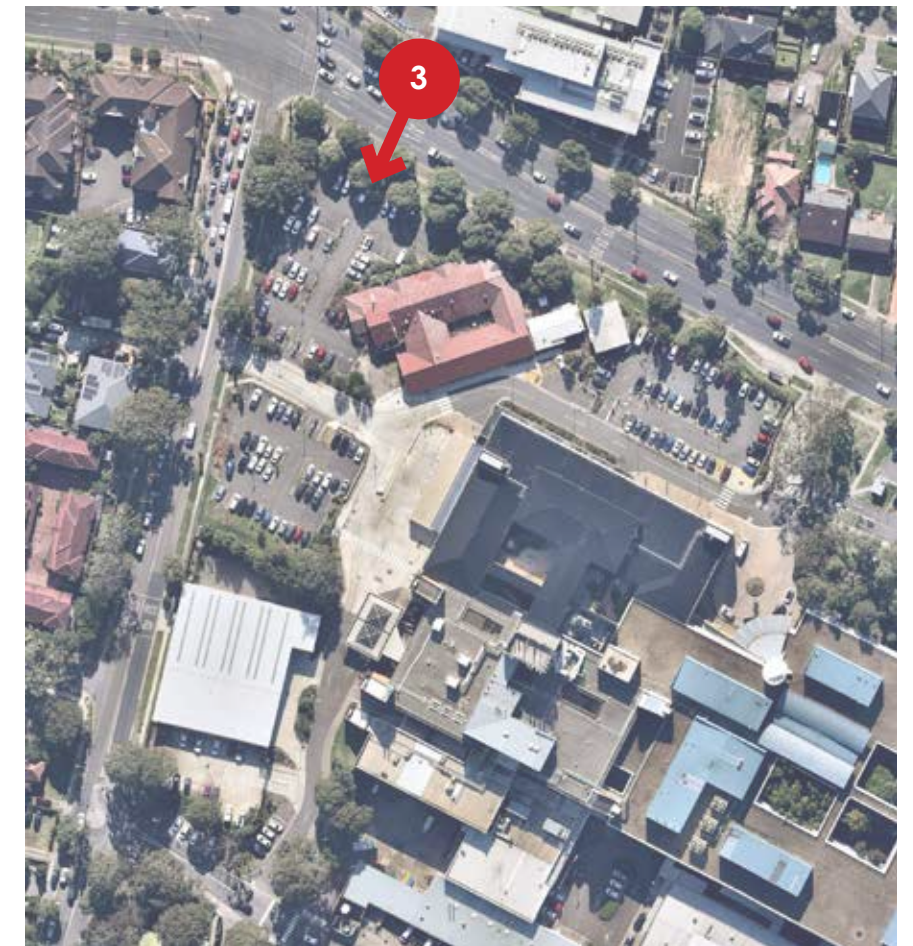


Fig 87: View 3 .From Kingsway

08 View Analysis

View 04

Description: This view is from Kareena Road to the south looking north east towards the proposed site.

Sensitivity: The view primarily comprises existing houses, and ambulance station and mature trees with an obscured view of the main hospital

Therefore the sensitivity of the view is considered to be Moderate.

Magnitude: The proposal is set back from the boundary of the site. The proposed buildings are less visible in this view due to vegetation. Therefore the magnitude of the proposed development on this viewpoint is considered Low.

Assessment of impact: The combination of the sensitivity of the viewpoint and the magnitude of the proposal on the view provides an integrated impact of Low. The level of impact is lessened by existing trees providing coverage for the proposal.

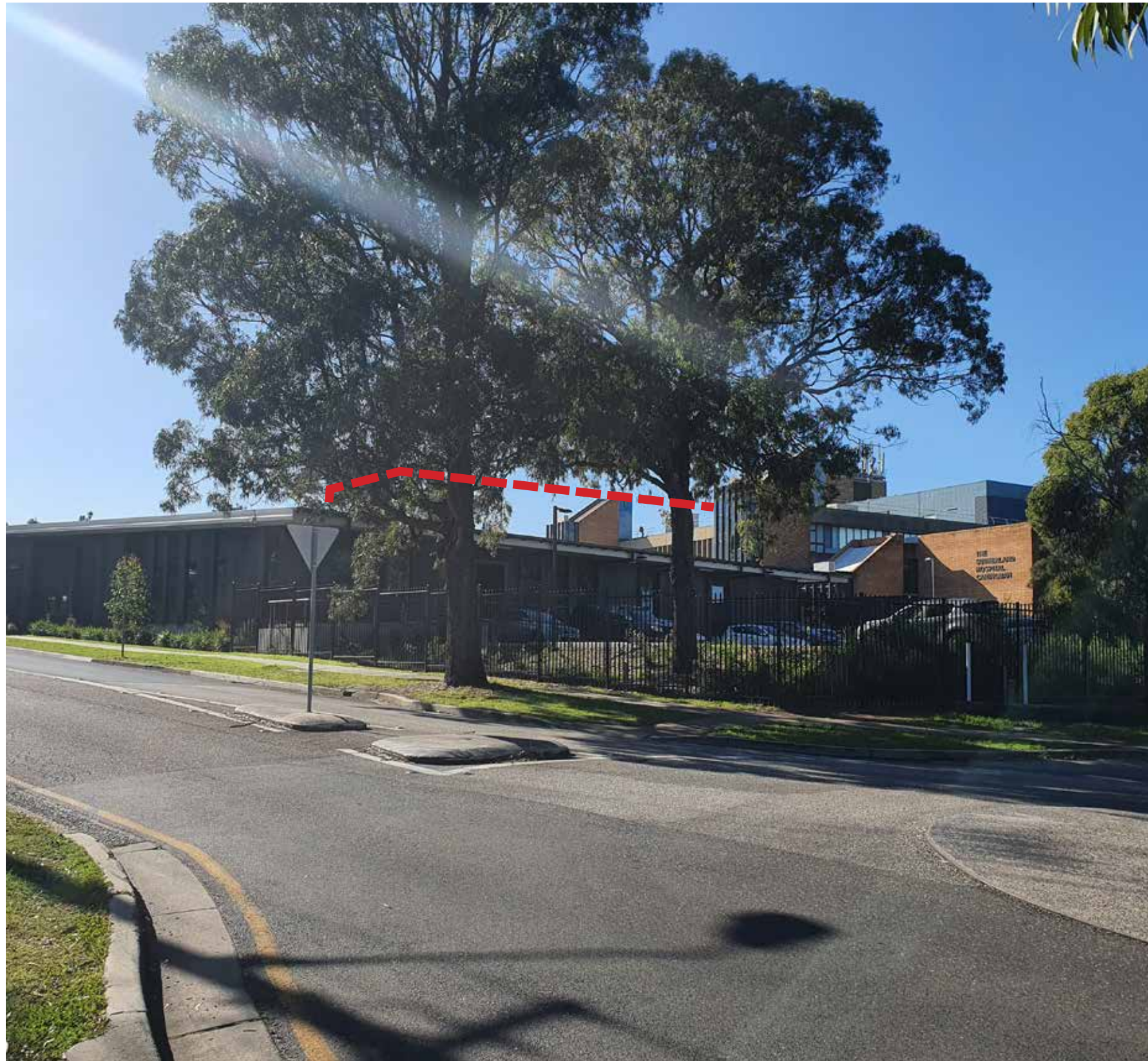


Fig 88: View 4 .From Kareena Road

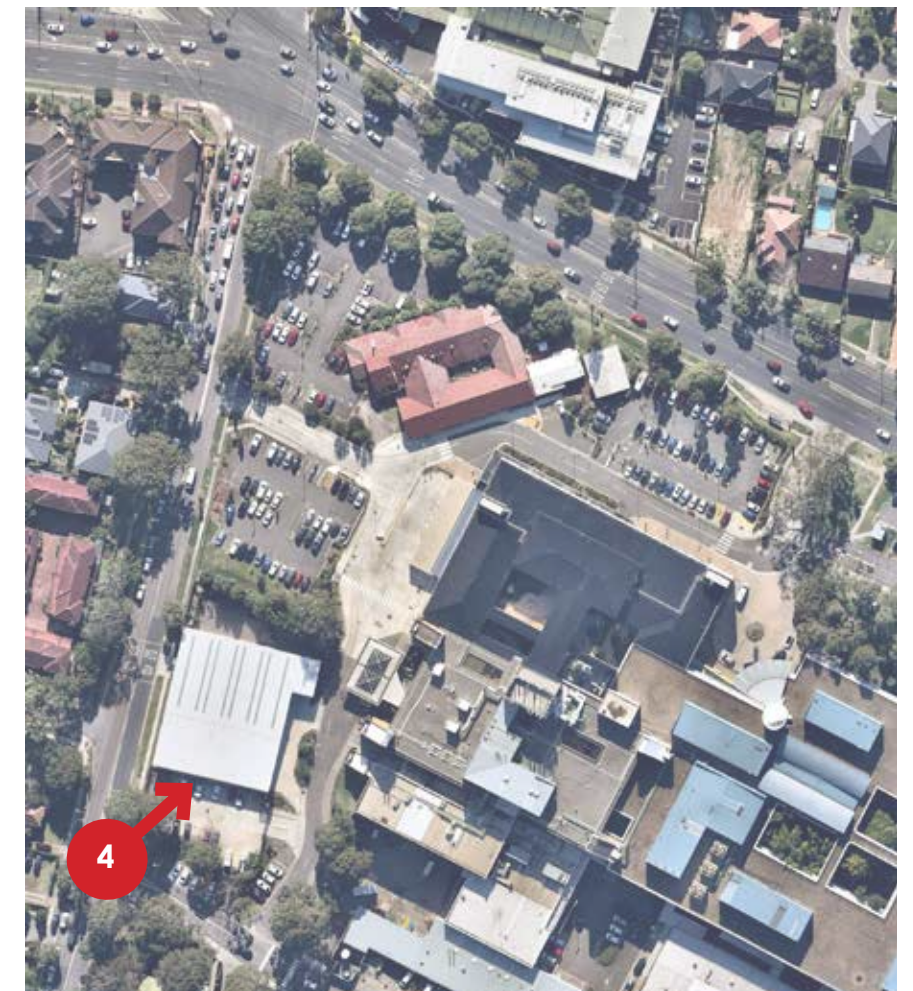


Fig 89: View 4. From Kareena Road

08 View Analysis

Indicative View 01



Fig 90: Indicative view towards new Operating Expansion building

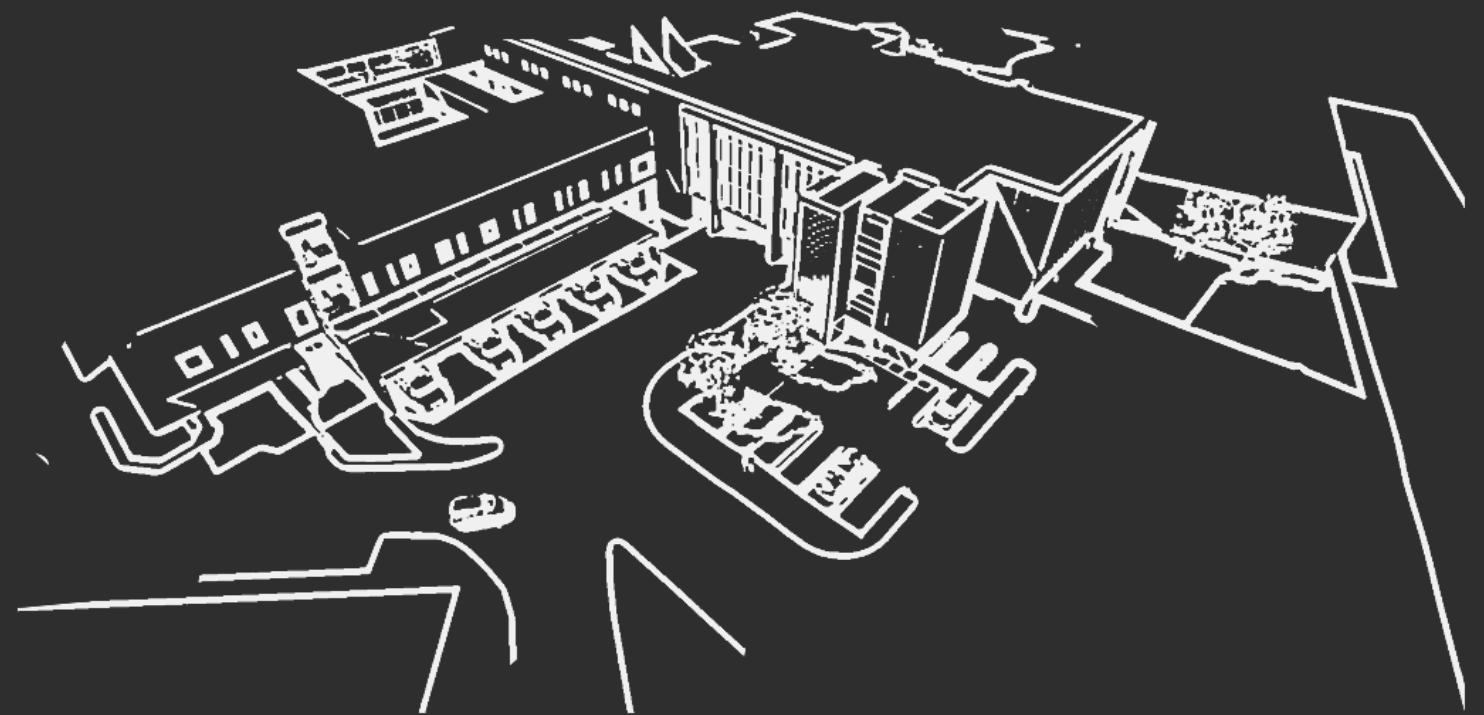
08 View Analysis

Indicative View 02



Fig 91: Indicative view towards new Operating Expansion building

09 Materials



09 Materials

Palette

the chosen materials were selected as a direct response to the existing site and as a requisite to the aboriginal narrative of 'colours for country'. As well as colour, texture and pattern were required to enhance the response to indigenous culture.

The materials selected for the new hospital 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.



COLOURS FOR COUNTRY

+



RESPONSE TO EXISTING SURROUNDINGS

=



MATERIALS PALETTE - COLOUR TEXTURE + PATTERN

09 Materials

Reference to existing Hospital

The selection of external cladding materials for the Operating Theatre expansion will take it reference from the existing hospital building directly adjacent to the new site.

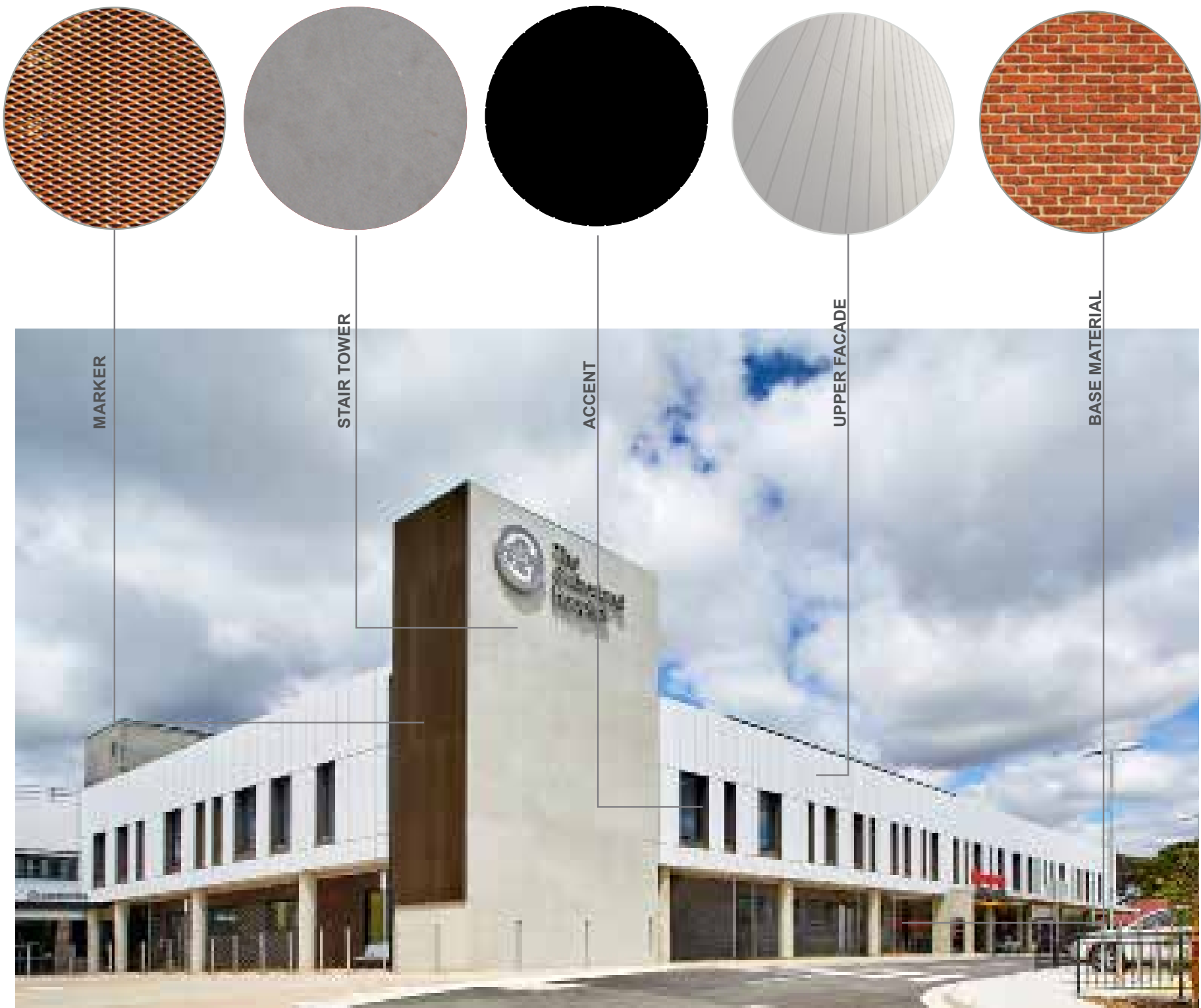


Fig 92: View of recent hospital expansion building



Fig 93: View of recent hospital expansion building

09 Materials

Building

The palette of materials proposed for the new building have been selected with reference to its surrounding context. The core which beds the building to the ground will be concrete panels and has a direct correlation to the ambulance bay and fire stair elements on the Stage 1 building. Similarly the windows and black accent reveals will reference back to the existing hospital. High performance glazing with solar attenuation at upper levels will provide an ever changing façade through reflection and light between the existing hospital and the new lift core.

The windows work within this 1200 module with sub modules of 600mm. Generally the window openings have been sized as 600mm and 1200mm, wide openings reflecting the size and function of the room.

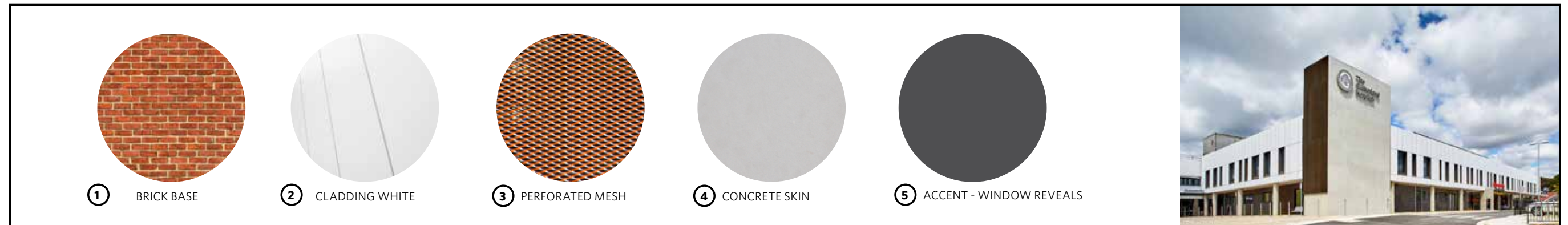


Fig 94: Existing palette of materials within Stage 1 Hospital

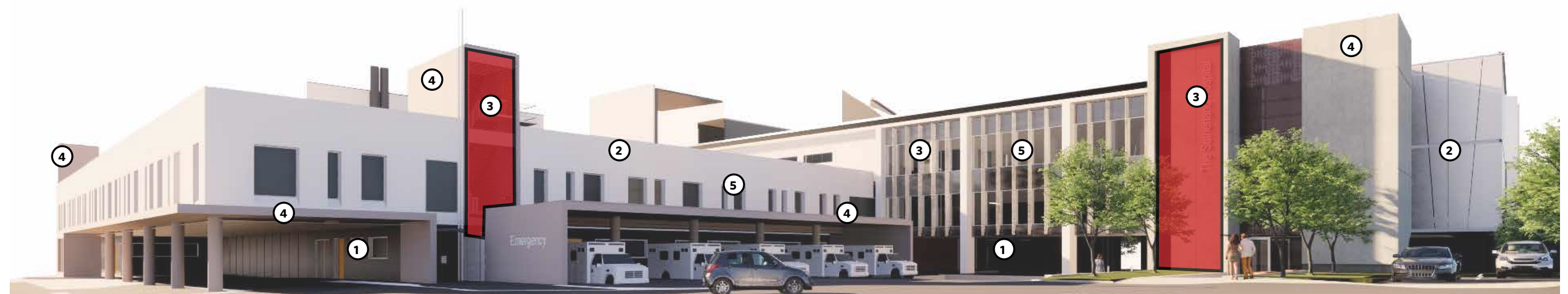


Fig 95: Diagram highlighting material palette of existing and proposed

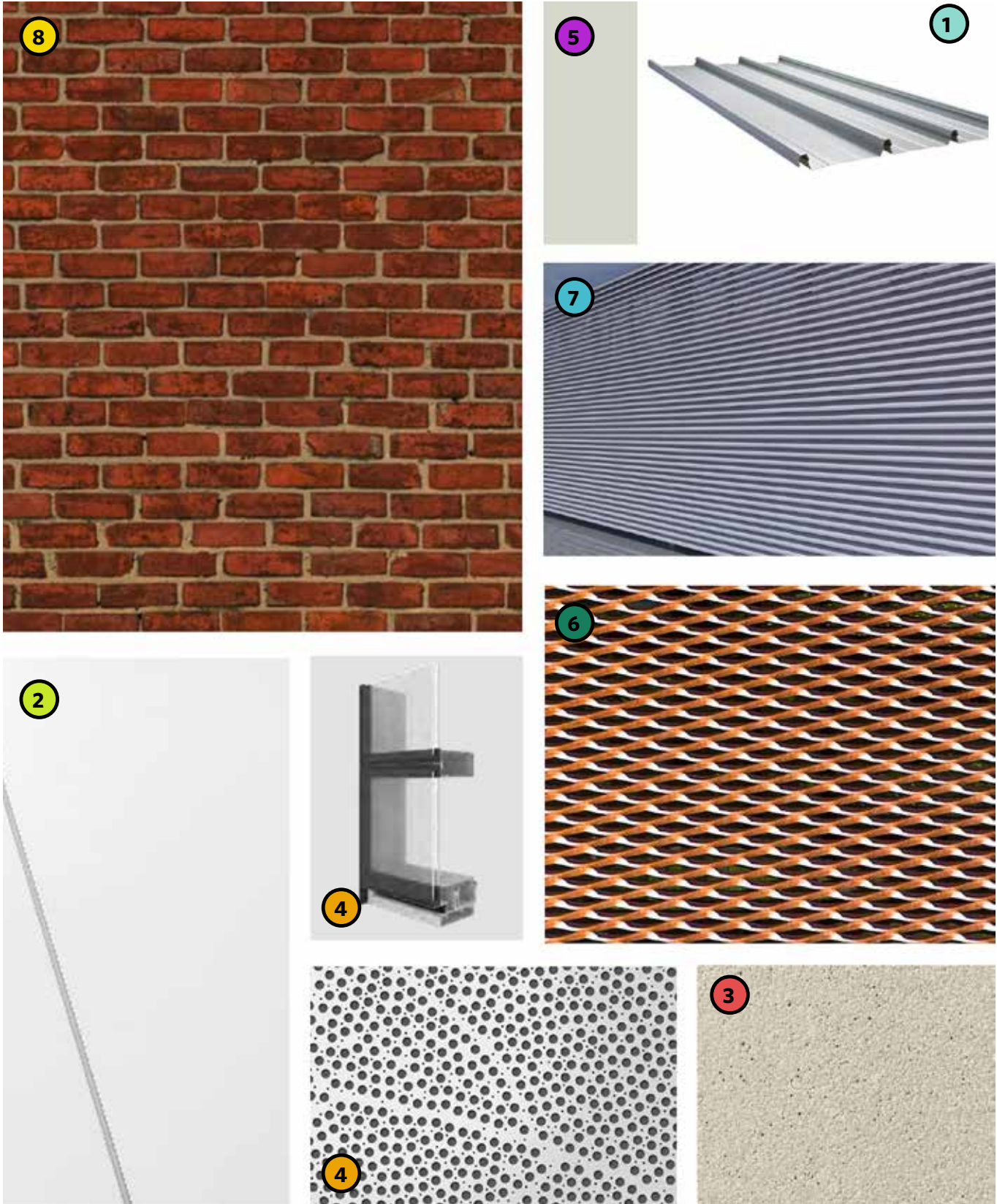


Fig 96: Proposed materials palette

09 Materials

Palette

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

1. Concrete to the core reinforcing solidity and connection to the surrounding buildings
2. Brick base that ties into existing hospital
3. Glazing at key circulation zones that allows visual connectivity from the main internal public spaces to the external environment.
4. A flexible panelised facade that will accommodate internal planning and ensure thermal, acoustic and visual performance.

- 1 PROFILED METAL DECK ROOF COLORBOND KLIP LOK
COLOUR - SURF MIST
- 2 ASYMMETRIC METAL PANEL CASSETTE
COLOUR - WHITE
- 3 REIDLER OR SIMILAR APPROVED CONCRETE SKIN
- 4 UNCAPPED DGU CURTAIN WALL SYSTEM WITH PERFORATED
SUN SHADING EXTENDED OFF MULLIONS
- 5 METAL MESH SCREEN (INTEGRATED ART WITH CLIENT AND ART
CONSULTANT)
- 6 CURTAIN WALL
- 7 STAGE 2 WEATHERPROOF LOUVRES
COLOUR SURF MIST
- 8 BRICK TO MATCH EXISTING STAGE 1 SELECTION



Fig 97: View from north highlighting material selection and coverage

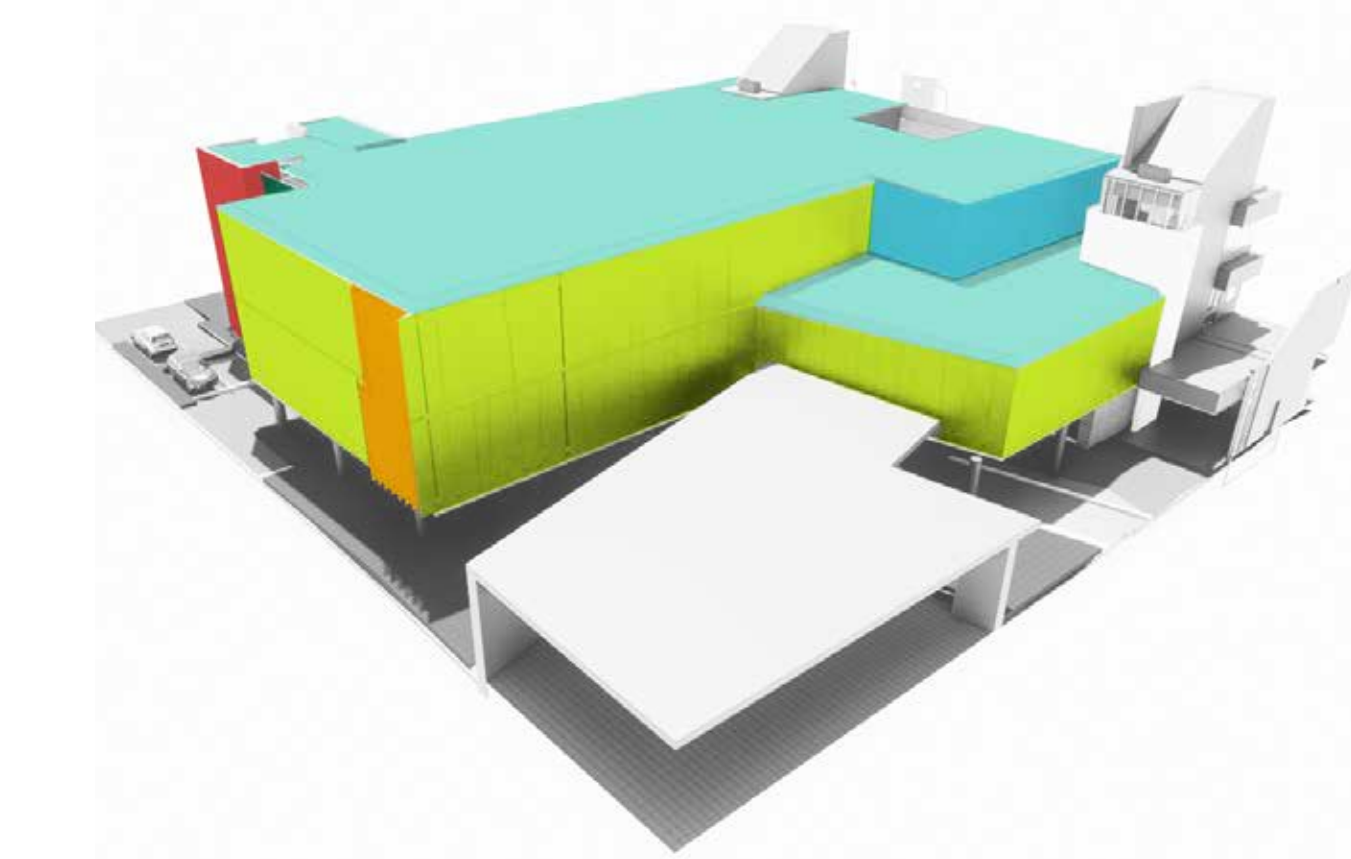


Fig 98: View from south highlighting material selection and coverage

09 Materials

Application

The adjacent diagram highlight the location of the selected materials for the project.

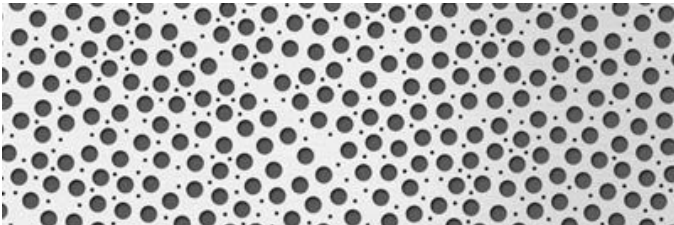
- 1 PROFILED METAL DECK ROOF COLORBOND KLIP LOK
COLOUR - SURF MIST
- 2 ASYMMETRIC METAL PANEL CASSETTE
COLOUR - WHITE
- 3 REIDLER OR SIMILAR APPROVED CONCRETE SKIN
- 4 UNCAPPED DGU CURTAIN WALL SYSTEM WITH PERFORATED
SUN SHADING EXTENDED OFF MULLIONS
- 5 METAL MESH SCREEN (INTEGRATED ART WITH CLIENT AND ART
CONSULTANT)
- 6 CURTAIN WALL
- 7 STAGE 2 WEATHERPROOF LOUVRES
COLOUR SURF MIST
- 8 BRICK TO MATCH EXISTING STAGE 1 SELECTION

09 Materials

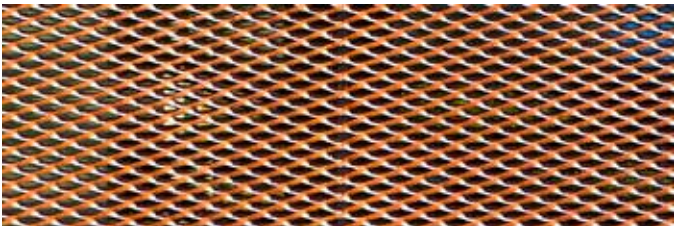


Fig 99: View from north highlighting material selection and coverage

09 Materials



SUN SHADING SCREEN



PERFORATED MESH



CONCRETE

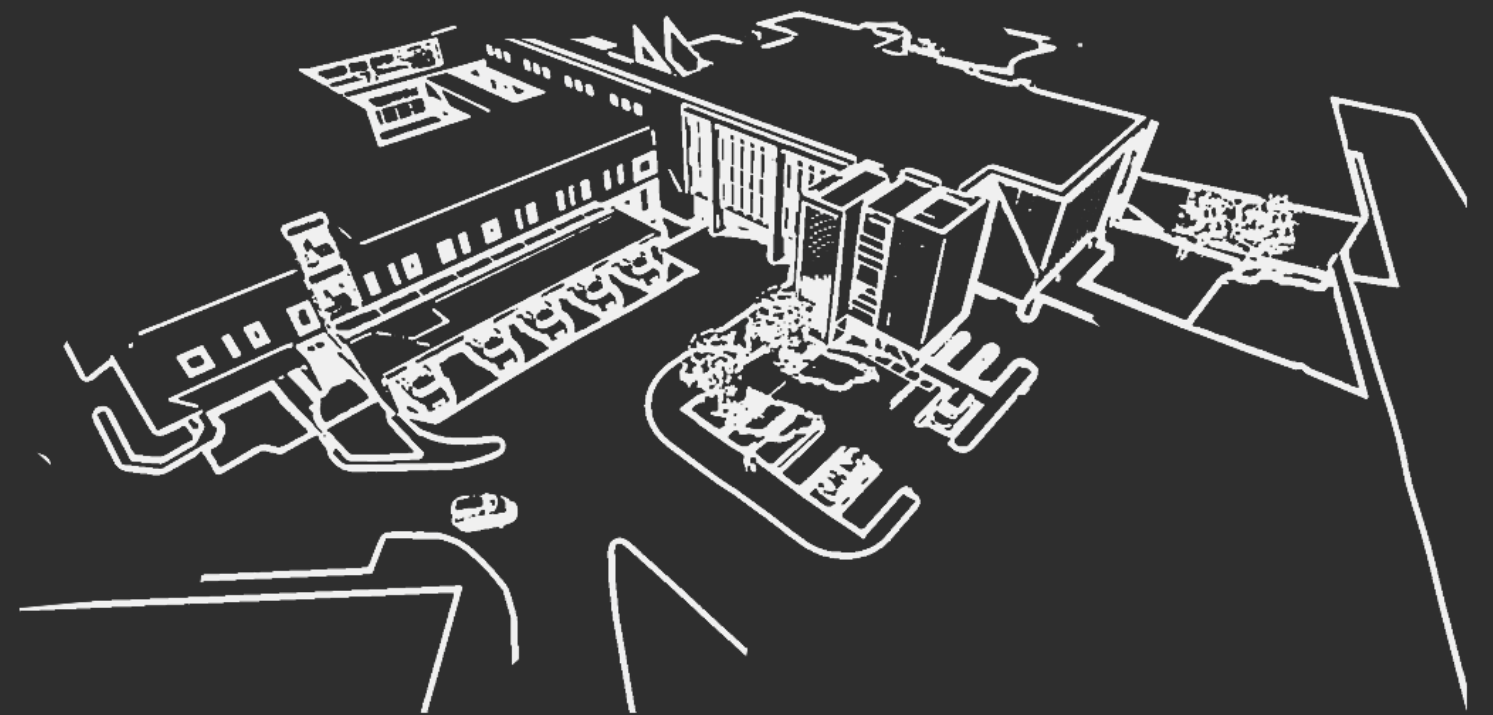


ACCENT



Fig 100: View from west highlighting material selection and coverage

10 Environmental Amenity



10 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

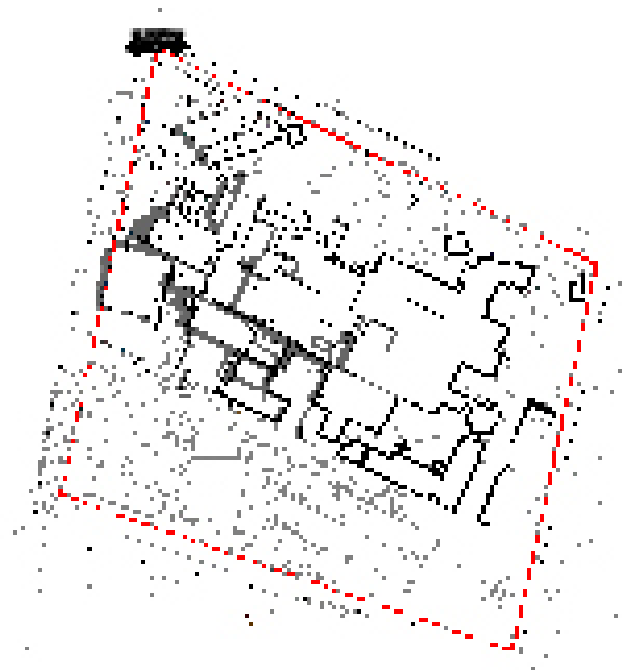
The building design includes the following to aid Environmental Sustainable Design.

- Use of a Light well to improve daylight in Larger floor plates at lower levels
- Transient spaces to maximise views and natural light
- High performance building envelope
- Public areas at lower level shaded by concourse
- The facade is conceived as a panelised facade 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

10 Environmental Amenity

Overshadowing

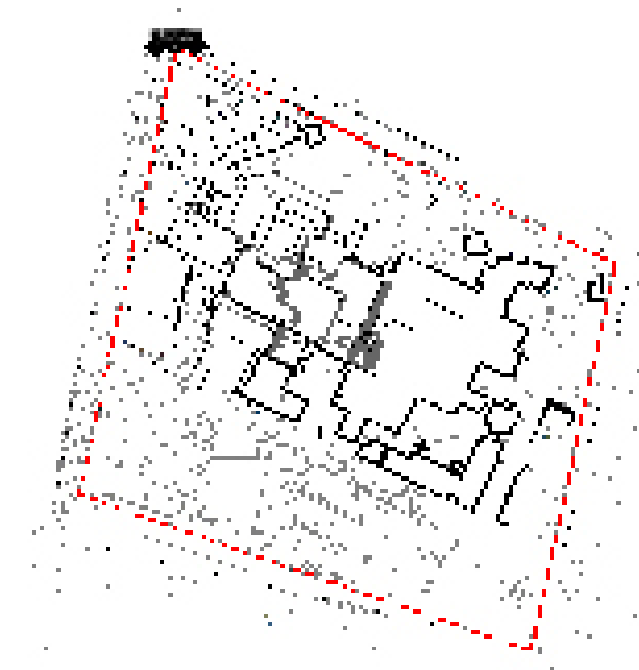
The Overshadowing diagrams highlight the period of greatest impact throughout the year being the winter solstice (2pm-4pm). The Building has been setback from the boundary edge and has been designed to protect the mid winter solar access to the neighbouring residential properties.



Summer 9AM



Summer 12PM



Summer 3PM



Winter 9AM



Winter 12PM



Winter 3PM

10 Environmental Amenity

Response to CSIRO impacts of Climate Change

In response to CSIRO the building has been designed to minimise the impact of Climate Change using the following principles:

1. Hotter days and more frequent heatwave events

As part of Health Infrastructure's Engineering Services Guideline this building will have a mandatory requirement of delivering a 10% improvement on the national construction code (NCC) section J. To assist in this compliance the building will have:

- Improved thermal performance of the building envelope over NCC requirements
- Low-e glazing to reduce solar heat gain
- Improve efficiency of mechanical services as per mechanical statement.
- Shading fins provided on North Western façade to reduce summer heat gain

2. Extended drought periods

- Landscaping with native low-water plant species

3. More extreme rainfall events

- Increase peak stormwater discharge capability
- Increase over-flow drainage from site
- Minimise removal of trees on site to prevent soil erosion

4. Gustier wind conditions

The construction of the new building will be designed to be robust and structurally will be able to withstand strong wind conditions

Air filters for mechanical services will be designed and resilient to address stronger wind gusts.

10 Internal Amenity

Interior Design

The internal design takes reference from the existing palette of materials developed in Stage 1 which uses neutral colours as a base. Pattern texture and colour have been selected using site as a reference point.

The coastal colours of Sutherlandshire are reflected in the interior design as spatial and way finding markers.

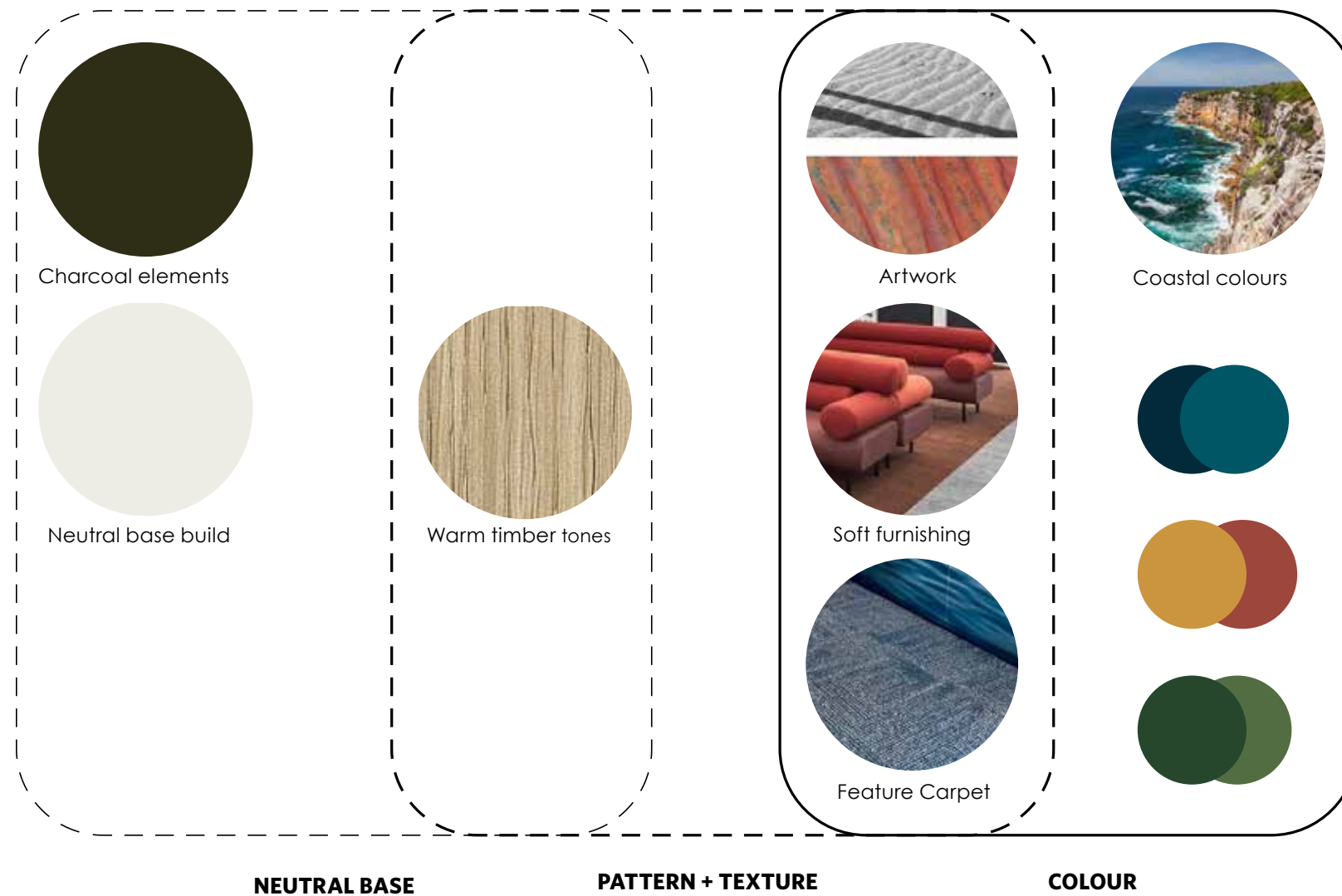


Fig 101: Interior design concept and colour palette



Fig 102: View of existing stage 1 development clinical space



Fig 103: View of existing artwork



Fig 104: View of existing waiting zones

10 Internal Amenity

Operating Theatres

The key component of the Expansion project is the provision of additional operating theatres. The spatial design and finishes are based on the needs of the clinical staff

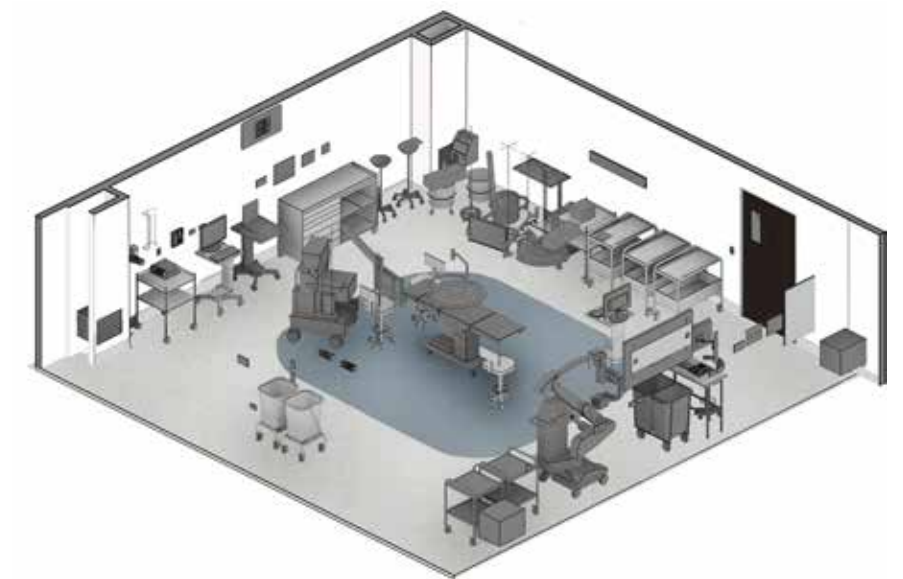


Fig 106: Diagram highlighting clinical space and medical equipment

Fig 105: View of proposed operating theatre

10 Internal Amenity

Natural daylight

The new building is designed to maximise daylight to transient zones which will encourage better way finding and provide natural surveillance across the local environs. In clinical areas windows have been placed where required to ensure adequate daylight is provided to enable staff to carry out their duties and patients to feel comfortable. In certain zones daylight is not beneficial and thus no windows have been provided.

A light well has been incorporated into the heart of the Operating theatre department. This allows light to permeate deep into the plan providing natural light to the operating theatre staff room and the main clinical corridor.

Vertical Shading devices are provided on the North West and West façades to alleviate glare and Heat gain to these zones.

Acoustic Separation

Façades and internal walls are designed to meet stringent acoustic criteria within the hospital to ensure that acoustic privacy is maintained.

Connection to Landscape

The new building will enable views of both the local and regional environment. Transient zones to the North will ensure views of the local environment

A Landscaped courtyard has been provided on Level 3 and will encourage Staff to rest and socialise in the open air.



Fig 107: View of proposed staff room with outlook into lightwell

10 Crime prevention

Crime Prevention Through Environmental Design (CPTED) Principles.

**CPTED Includes 4 main principles . Surveillance
Territorial re-enforcement, Access control and
space/activity management.**

Surveillance

Surveillance to the TSH Expansion project will be provided through a combination of Natural Surveillance and Technical / mechanical surveillance. .

Natural surveillance will be achieved through building orientation and the provision of circulation corridors on the building edge to promote surveillance of the surrounds. On the upper floors the main circulation public corridor is located to the north of the proposed site and will have direct views of the car parking area and the surrounding area. .

Similarity the main stair and lift core has direct views across the car park to the north and west.

The internal planning of the Theatre department will provided natural surveillance from the main circulation corridor and touch down space. This area will be the most occupied area within the space and so will provide the optimum amount of surveillance available. From this area surveillance will be provided from the building edge, the western car park and Karrena Rd footpath.

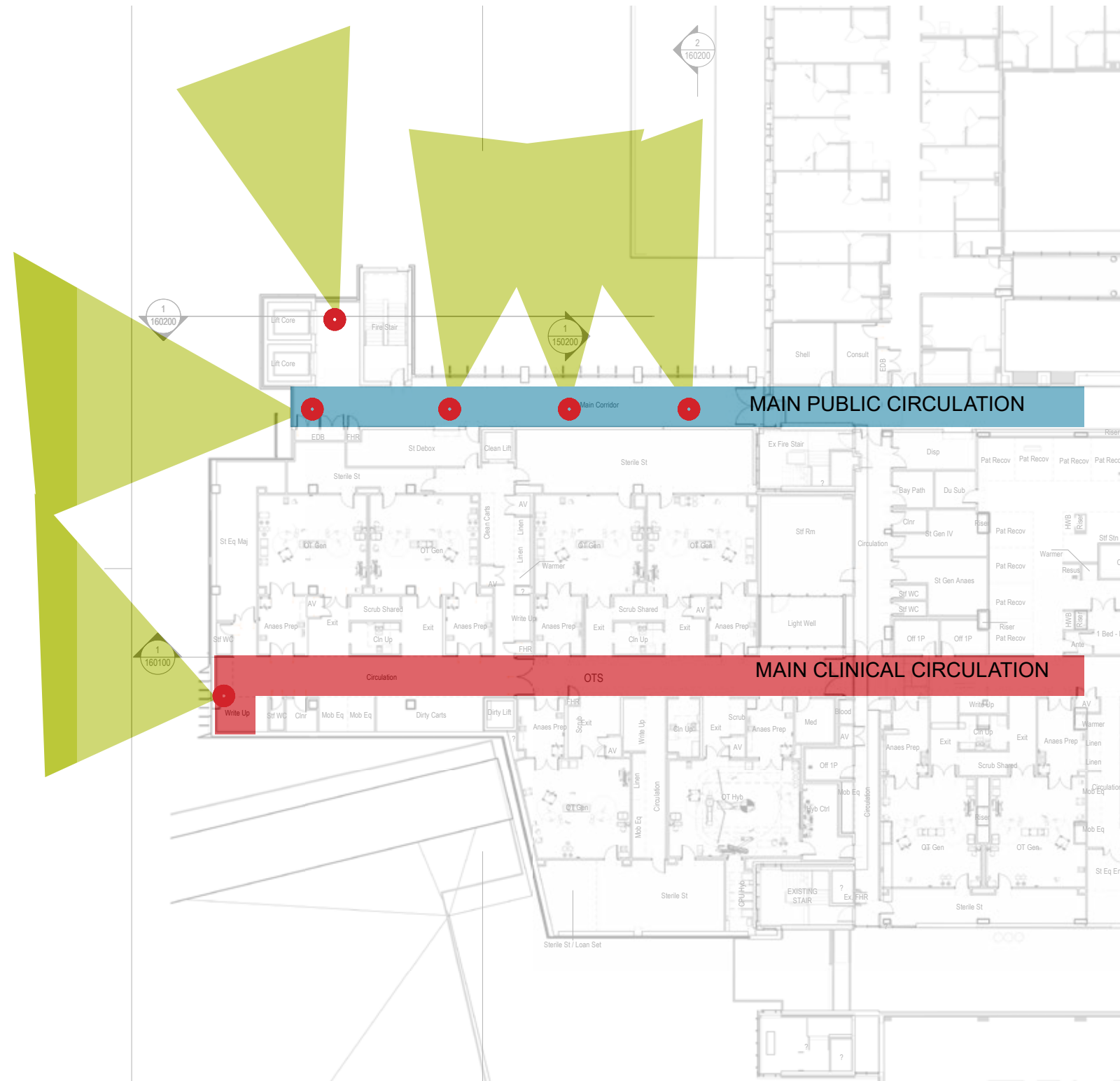


Fig 108: Level 2 plan showing natural surveillance points from circulation corridors

10 Crime prevention

At ground floor surveillance will be provided through both natural via legible pathways through the site and Technical/mechanical surveillance through CCTV, and help points and used to supervise areas where required by the LHD.

Clearly marked, open, visible pedestrian access ways have been provided throughout the landscape to destination points while circular movement of traffic provides more constant natural surveillance of the landscape

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

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

Territorial Re-enforcement

The area at ground floor is designed to promote health and well being and bring a sense of community ownership to the public space . It is a space of respite for health workers and escorted patients and will be owned and cared for by both community and the LHD.

Through extensive community consultation with staff and indigenous groups on the external space, groups have already formed an effective guardianship of the space which will allow people to feel spatially 'connected' to a place and feel an association with, or responsibility for it.

The highly lanadscape area including Art pieces specifically design for the space and zones for specific activities acts as symbolic markers, to 'connect' people with space and to encourage communal responsibility for the public space.



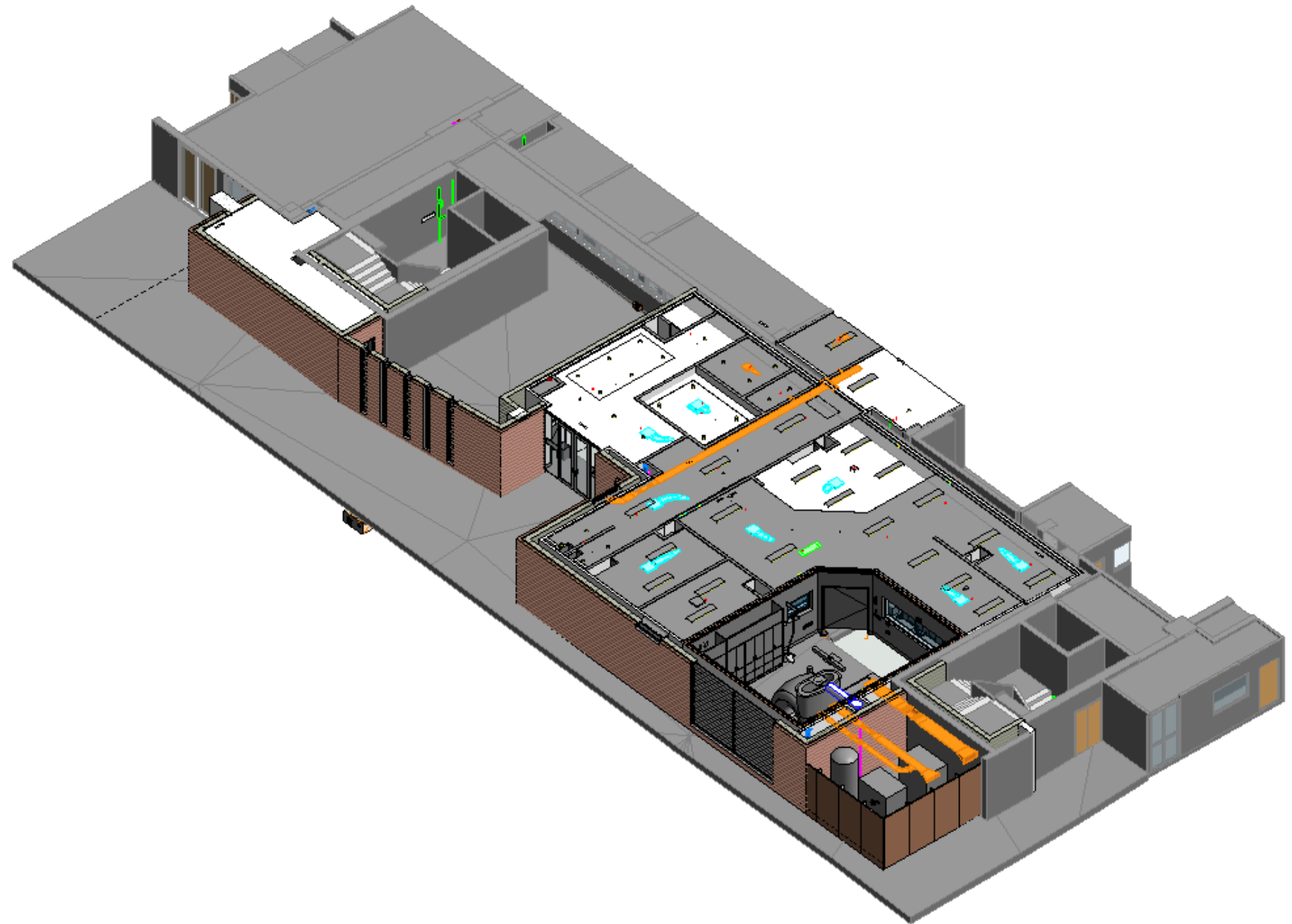
Fig 109: Ground floor plan highlighting landscape design to undercroft and associated car parking

In response to commentary recieved from the DPIE regarding the inclusion of windows on the ground floor western elevation our team responds as follows:

A brick wall has been provided from the northern edge of the site extending in a singular form towards the entry. This ties into the ground floor brickwork aesthetic already established from the Emergency department extension and seeks to remove the indentations along that portion. By doing this we have limited the areas of potential non natural surveillance. The activities behind the brick wall include a secure passage for egress from the fire stairs towards a point of safety and a breezeway which has no public access. The passage will only be used in case of fire and is a combination of a fire egress route and an engineering travel zone.

Towards the south of the MRI entry the department contains the MRI room, patient changing and a Reporting room.

The MRI room requires faraday cage protection within the external facade and the patient change requires privacy thus in these areas windows are not possible.



Access Control

Fig 110: Ground floor axo highlighting western facade at configuration

10 Crime prevention

Access control treatments restrict, channel and encourage people and vehicles into, out of and around the development. Way-finding, desire-lines and formal/informal routes are important crime prevention considerations. Effective access control can be achieved by using physical and symbolic barriers that channel and group pedestrians into areas, therefore increasing the time and effort required for criminals to commit crime.

Natural access control includes the tactical use of landforms and waterways features, design measures including building configuration; formal and informal pathways, landscaping, fencing and gardens.

Technical/Mechanical access control includes the employment of security hardware. Crime, Design and Urban Planning: From theory to Practice Formal (or Organised) access control includes on-site guardians such as employed security officers.

Formal (or Organised) access control includes on-site guardians such as employed security officers.

Space/Activity Management

Space/Activity Management strategies are an important way to develop and maintain natural community control. Space management involves the formal supervision, control and care of the development. All space, even well planned and well-designed areas need to be effectively used and maintained to maximise community safety. Places that are infrequently used are commonly abused. There is a high correlation between urban decay, fear of crime and avoidance behaviour.

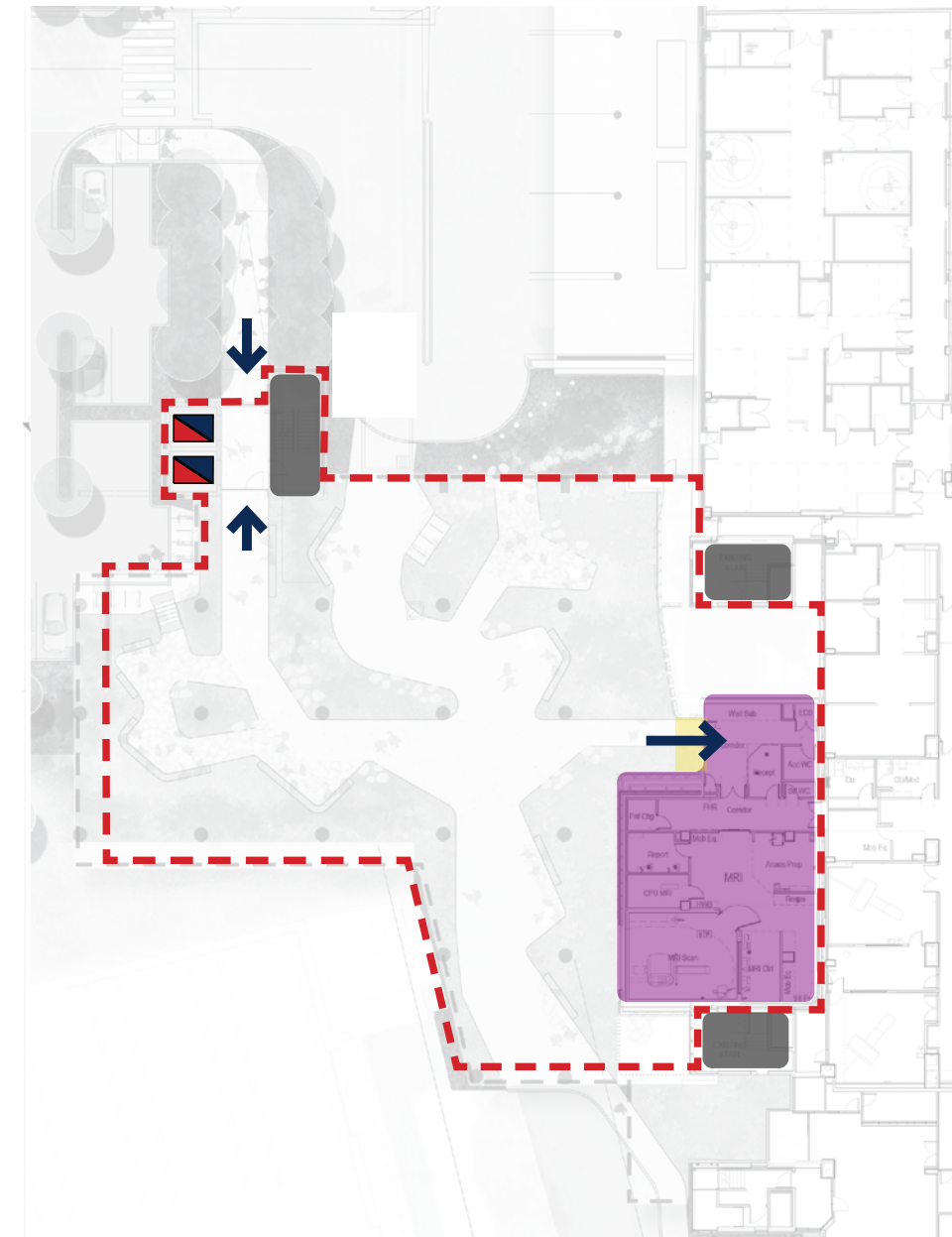
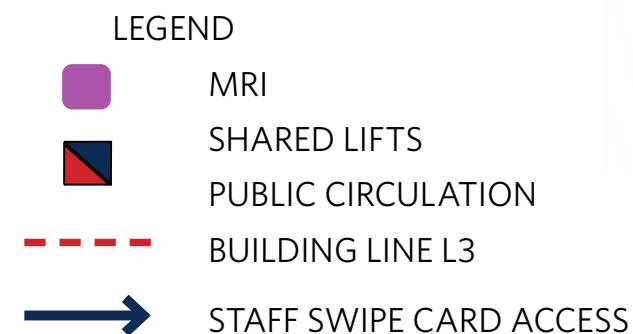
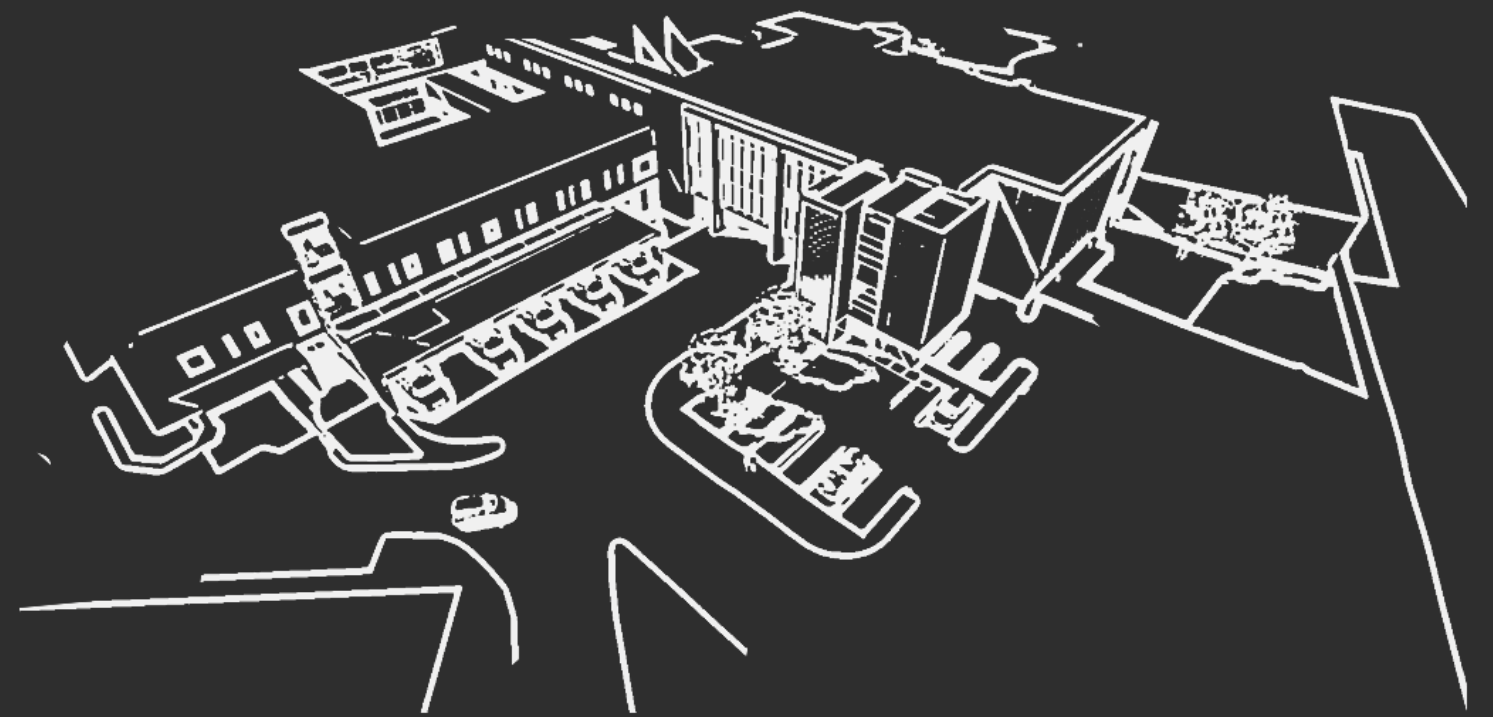


Fig 111: Ground floor Access points to expansion project

11 GANSW Consultation



11 GANSW Consultation

The design team were given the opportunity to consult with State Design Review panel on three separate occasions. The first consultation involved briefing the panel on the site and proposed building use. The second consultation focused on the building form and internal planning while the third consultation addressed the panels comments and elaborated on materiality.



0.0 PROJECT OVERVIEW



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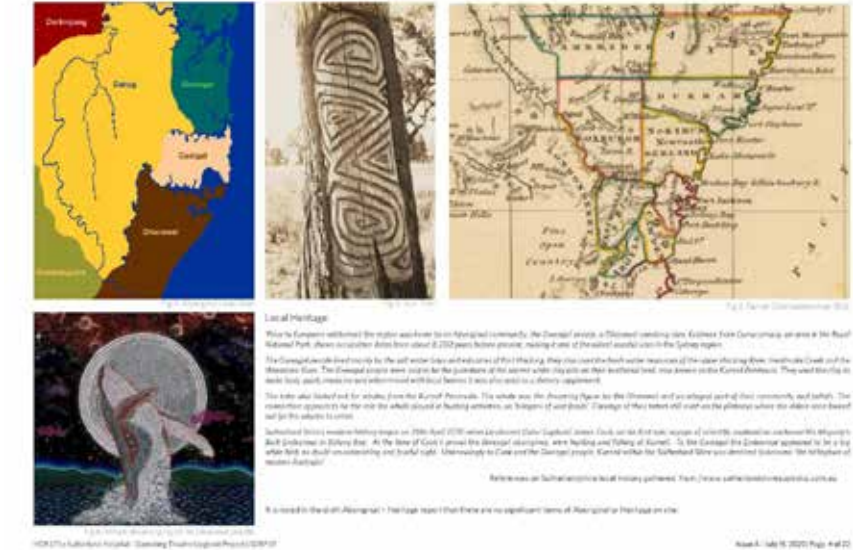
1.0 STRATEGIC CONTEXT PLAN



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1.1 HISTORICAL CONTEXT PLAN



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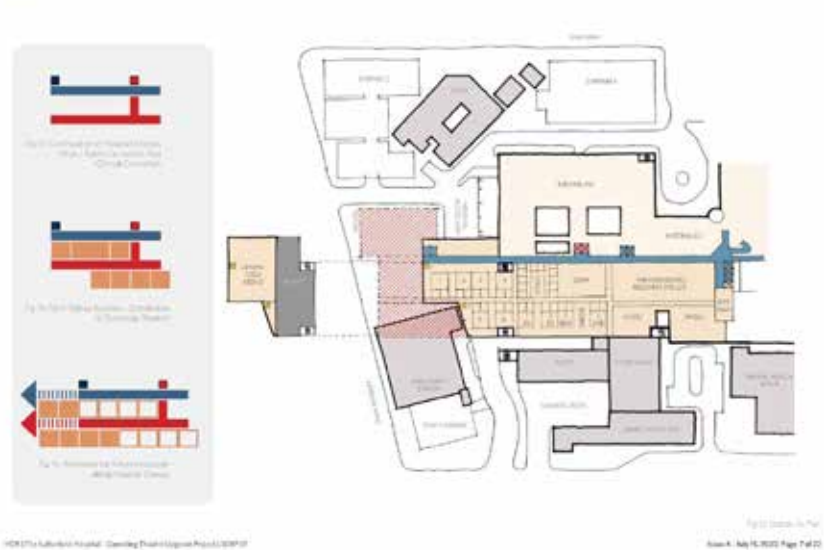
1.2 URBAN CONTEXT PLAN + ANALYSIS



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2.0 MASTERPLAN SELECTION + KEY DESIGN DRIVERS



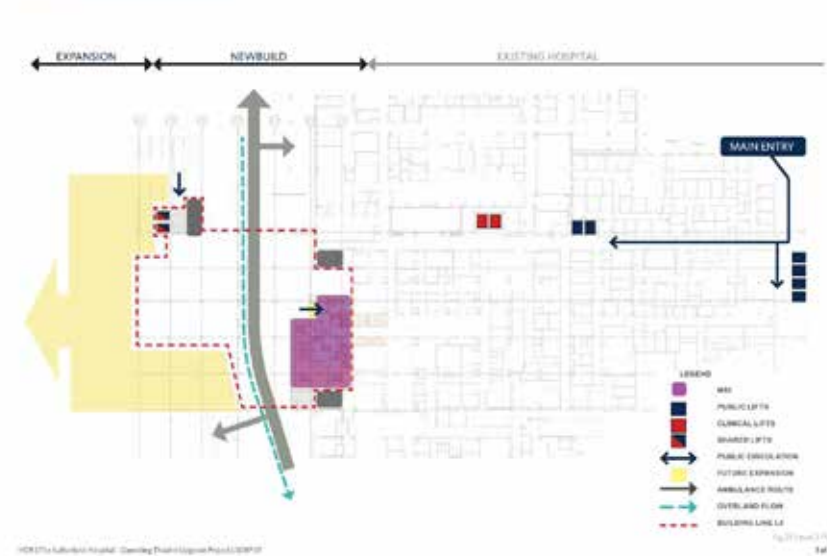
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3.0 PROPOSED MASSING + SITING



4.2 SCHEMATIC PLANS LEVEL 2



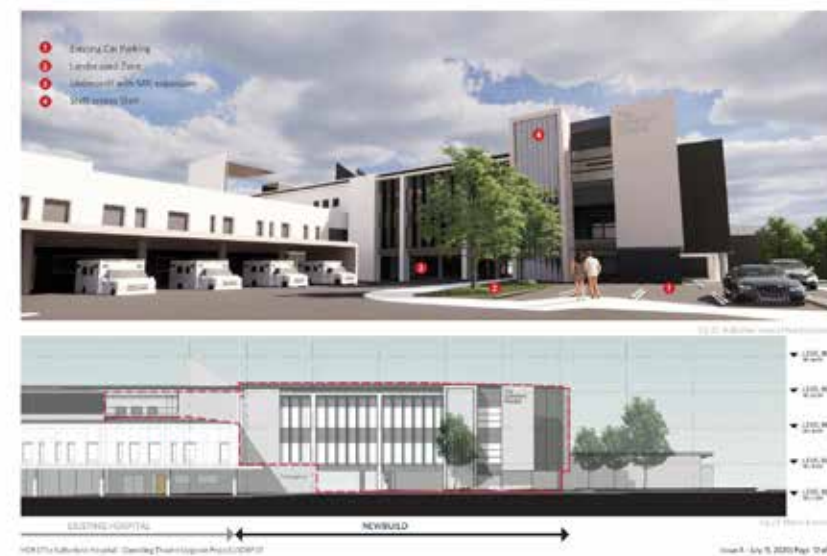
5.1 ELEVATIONS + 3D VIEWS



4.0 SCHEMATIC PLANS LEVEL 3



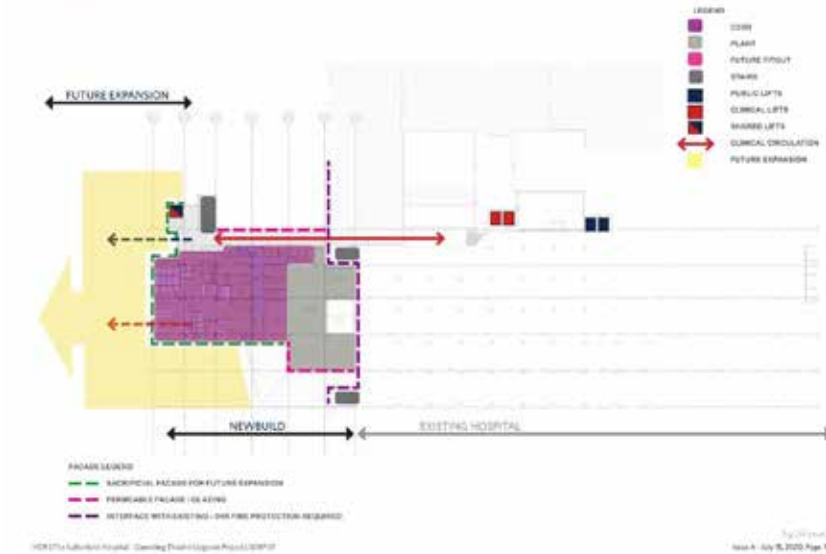
5.0 ELEVATIONS + 3D VIEWS



5.2 ELEVATIONS + 3D VIEWS



4.1 SCHEMATIC PLANS LEVEL 4



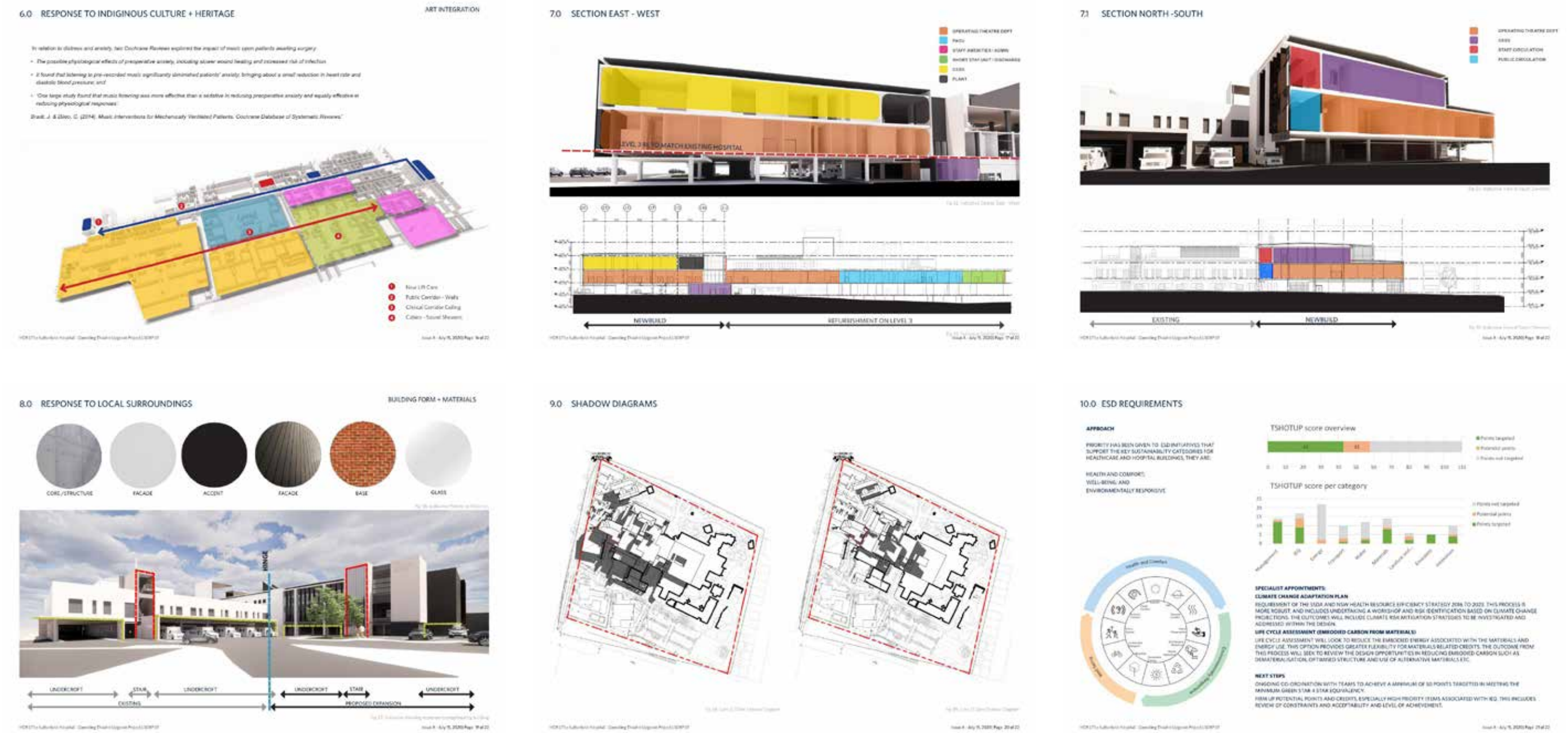
5.1 ELEVATIONS + 3D VIEWS



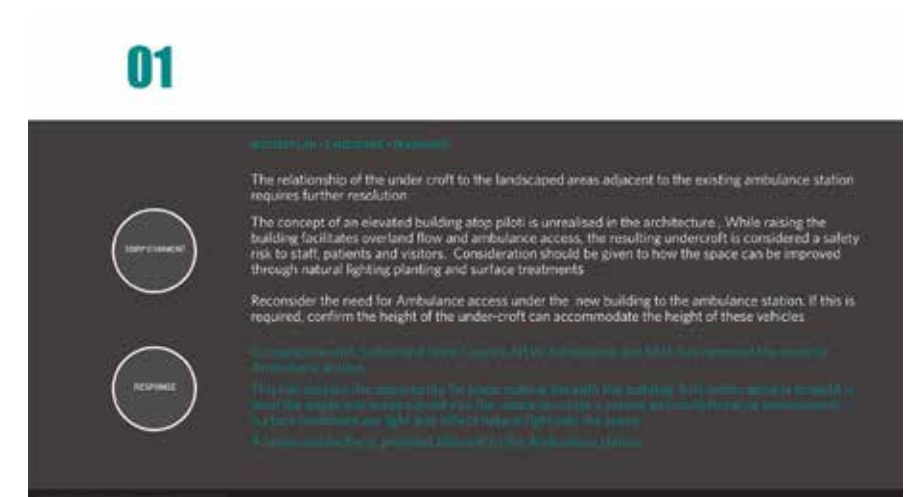
6.0 RESPONSE TO INDIGENOUS CULTURE + HERITAGE



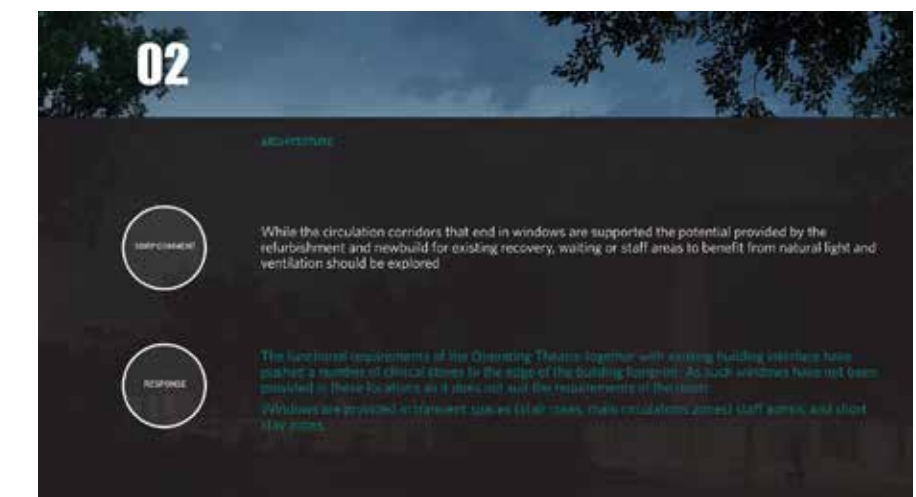
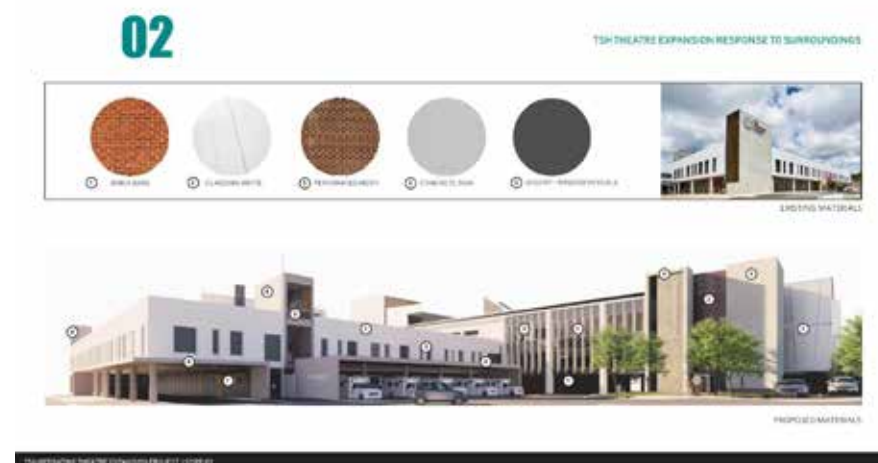
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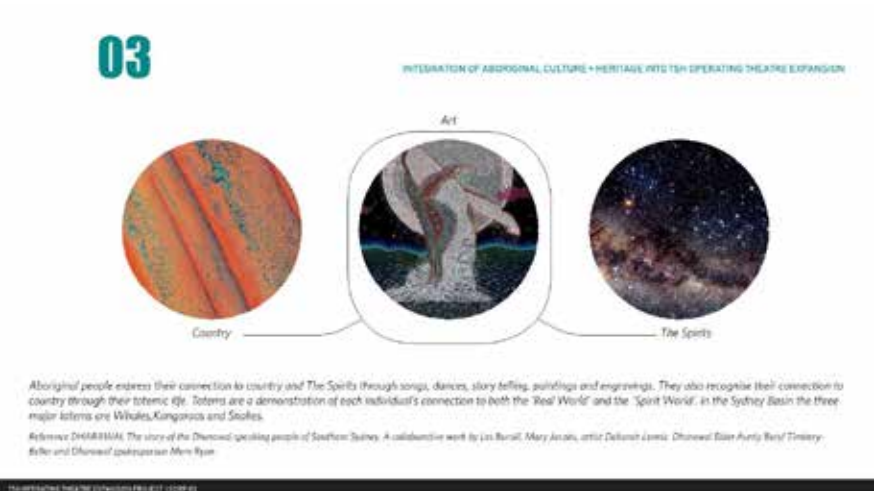
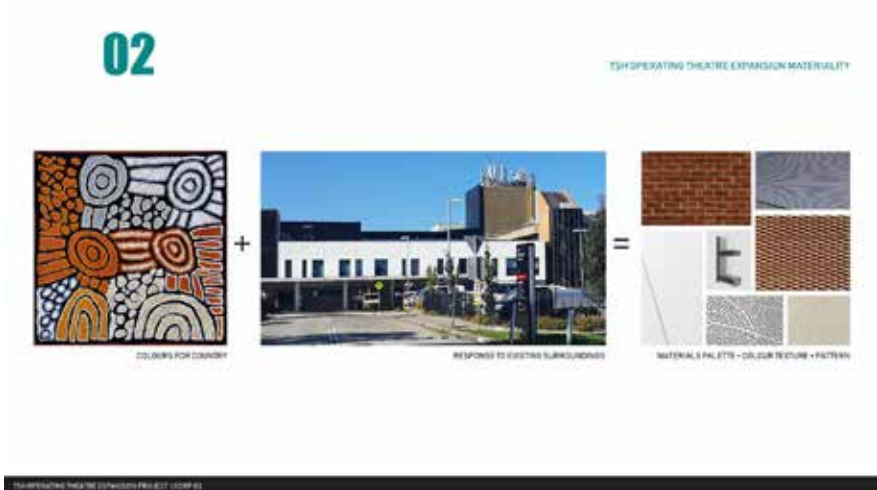
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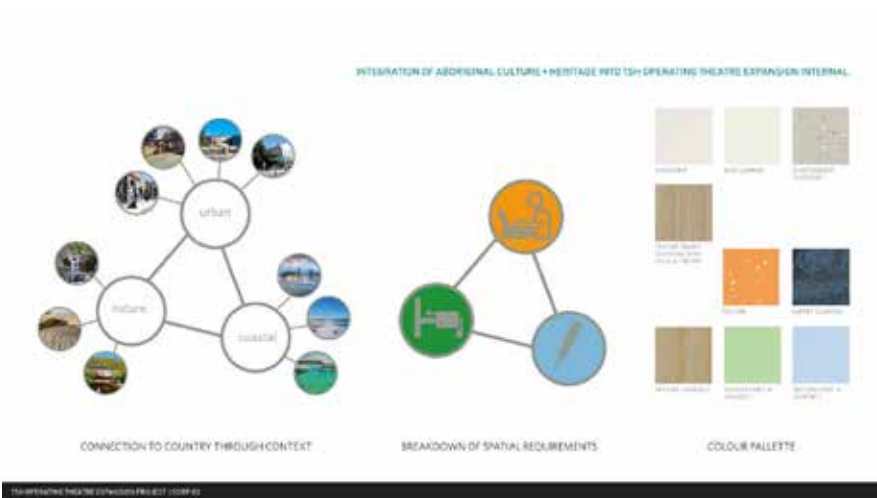
11 GANSW Consultation



11 GANSW Consultation



11 GANSW Consultation



12 Landscape Response

SITE ANALYSIS



ARCADIA Sutherland Hospital, Operating Theatre Upgrade
SDRP

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ARCHITECT: HDR
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12 Landscape Response

01

LANDSCAPE MASTER PLAN + TSHOTUP



TSH OPERATING THEATRE UPGRADE PROJECT | SDRP #3

12 Landscape Response

LANDSCAPE PLAN - CANOPY COVER



LEGEND

- Scope Boundary
(Total Landscape Area 4881m²)
- Existing Trees Retained
(96m² Canopy area)
- Proposed Trees
(1167m² Canopy area at mature growth)
- Trees omitted from Arborist Report or omitted from Species Data.
- Large Shrubs/Small Trees omitted from Arborist Report or omitted from Species Data.
- Trees Removed

A total of 20 trees are proposed which will compensate for those trees being removed from the site. Existing tree canopy cover pre-development is 16% (772m²) and post-development is 26% (1263m² – estimated mature growth of trees). Existing tree canopy cover on the site is estimated to be 772m² by the arborist. (total calculated from 'Crown Spread' column of '6.0 Table 1 - Tree Species Data' in the January 2021 Arborist Report)

COMPENSATORY TREE PLANTING;

To compensate for trees required to be removed as part of the works, and for the creation of amenity for hospital users and for presentation to the public domain, a total of 20 trees are proposed to be planted. These trees are a combination of native and endemic species to the area.

TREE CANOPY COVERAGE;

Arcadia landscape architects have calculated the proposed tree canopy cover for the site accounting for trees removed and proposed. In summary proposed tree canopy cover is 26% (1263m² of landscape area – estimated mature growth of trees). The Draft Greener Places Design Guide sets an overall target for the Greater Sydney Region to achieve 40% tree canopy cover. However the extent of works are located within a medium/high density Precinct. The achievement of 26% tree canopy cover for the extent of works area is consistent with achievable canopy cover in medium/high density precincts.

12 Landscape Response

LANDSCAPE PLAN



LEGEND

- ① 1:20 Ramp access to lifts
- ② Existing vegetation buffering and screening
- ③ Improving the safety of crossing conditions
- ④ Exposed Agg paving to match existing
- ⑤ Feature long bench seating
- ⑥ Respite spaces
- ⑦ Meeting/Congregation Space
- ⑧ Main path of egress
- ⑨ Emergency/service & maintenance access considered



ARCADIA Sutherland Hospital, Operating Theatre Upgrade
SSDA LANDSCAPE PUBLIC DOMAIN REPORT

1:200 @ A3



PREPARED BY
CLIENT
ARCHITECT
PROJECT NO.

Arcadia Landscape Architecture
Health Infrastructure NSW
HDR
20-693

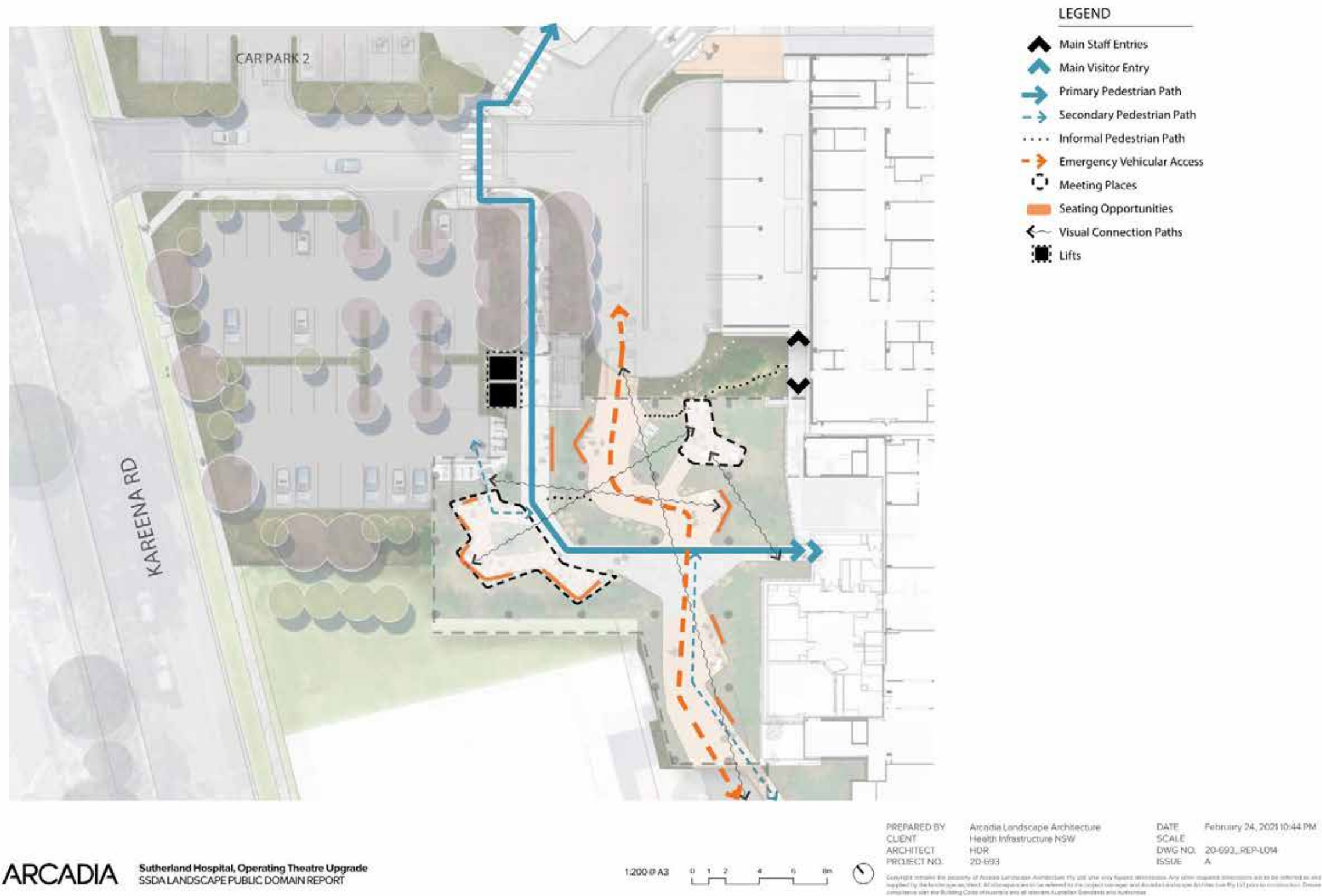
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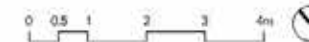
LANDSCAPE CONCEPT DIAGRAM



- 1 Meeting/Congregation Space
- 2 Planting relieving light
- 3 Feature concrete benches
- 4 Proposed bicycle parking
- 5 Access down from car park
- 6 Resting spaces for staff, patients, visitors
- 7 Feature paving to key spaces
- 8 Emergency/vehicular service access considered
- 9 Main egress through to MRI
- 10 Controlled access for vehicles



1:100 @ A3



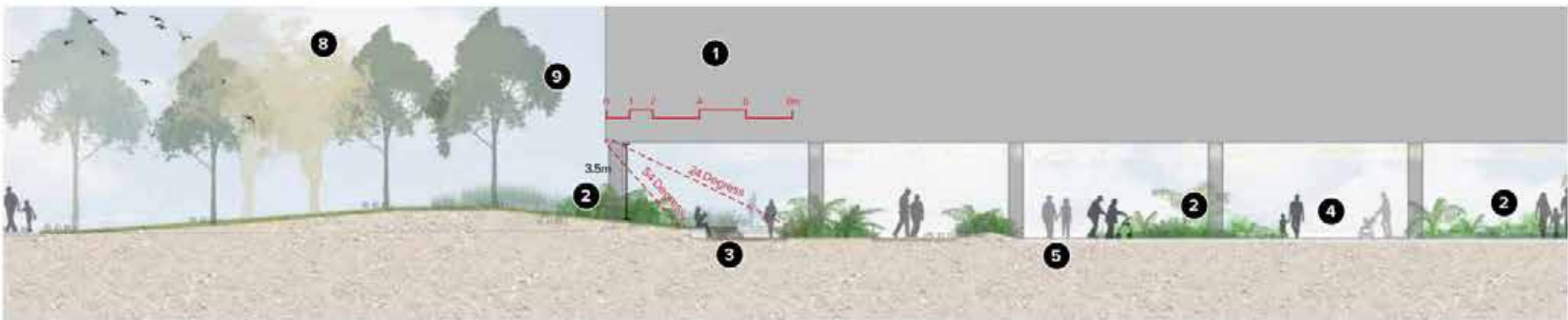
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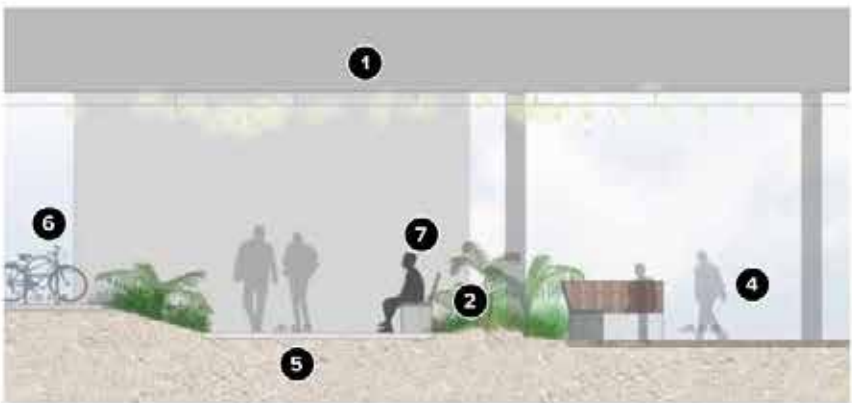
7

12 Landscape Response

LANDSCAPE SECTIONS



SECTION A
1:100 @ A3
0 1 2 4 6 8m



SECTION B
1:50 @ A3
0 0.5 1 2 3 4m

- LEGEND
- 1 Proposed building extension
 - 2 Lush native planting
 - 3 Congregational spaces
 - 4 Shared path
 - 5 Main pedestrian path
 - 6 Bicycle parking
 - 7 Feature seat
 - 8 Proposed Native Trees
 - 9 Trees to be retained

ARCADIA Sutherland Hospital, Operating Theatre Upgrade
SDRP

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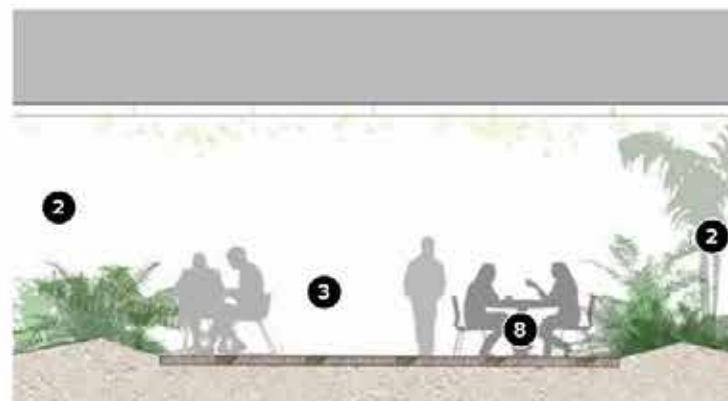
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12 Landscape Response

LANDSCAPE SECTIONS



SECTION C
1:50 @ A3
0 0.25 0.5 1 1.5 2m



SECTION D
1:50 @ A3
0 0.25 0.5 1 1.5 2m

LEGEND

- 1 Proposed building extension
- 2 Lush native planting
- 3 Congregational spaces
- 4 Shared path
- 5 Main pedestrian path
- 6 Feature seat
- 7 Proposed Native Trees
- 8 Fixed furniture for small groups

ARCADIA Sutherland Hospital, Operating Theatre Upgrade
SDRP

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LANDSCAPE PLANTING AND SHADE CONSIDERATIONS



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12 Landscape Response

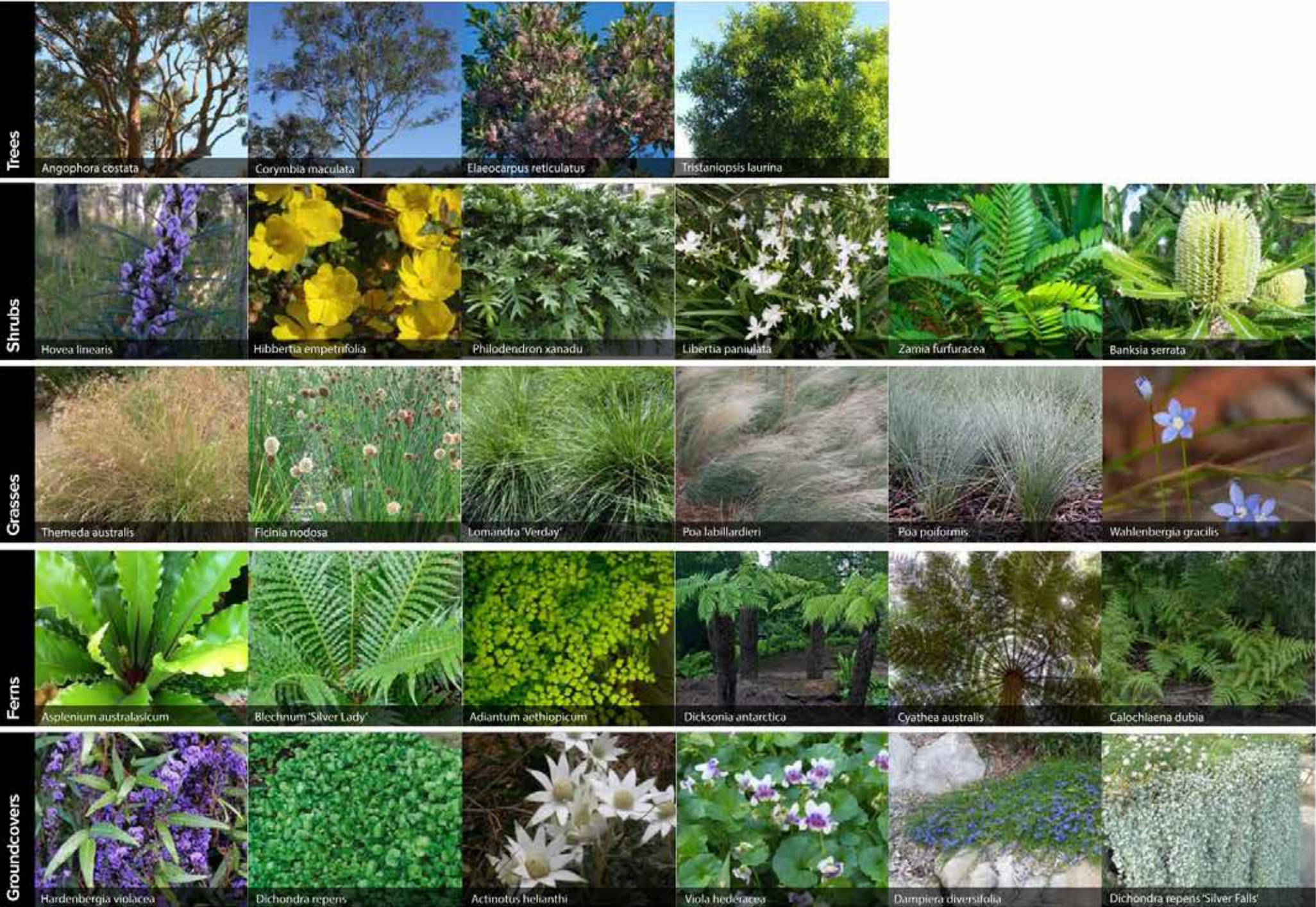
LANDSCAPE PLANTING AND SHADE CONSIDERATIONS

20-693 SUTHERLAND HOSPITAL PLANT SCHEDULE					
CODE	BOTANIC NAME	COMMON NAME	MATURE SIZE (h x w) (m)	PROPOSED POT SIZE	QUANTITY
TREES & PALMS					
Ac	<i>Angophora costata</i>	Smooth-Barked Apple	20 x 10	100L	2
Eu	<i>Eucalyptus umbra</i>	Broad-leaved white mahogany	20 x 10	100L	2
Cm	<i>Corymbia maculata</i>	Spotted Gum	25 x 15	200L	8
Er	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	8 x 5	100L	7
SHRUBS & ACCENTS					
Bs	<i>Banksia serrata</i>	Saw Banksia	3 x 2	200mm	10
BGC	<i>Banksia spinulosa</i> 'Giant Candles'	Giant Candles Banksia	1.5 x 1	200mm	6
Bs	<i>Boronia serrulata</i>	Native Rose	1 x 0.6	200mm	10
Cc	<i>Callistemon citrinus</i>	Bottlebrush	6 x 3	200mm	6
Fe	<i>Ficus elastic</i>	Rubber Fig	2 x 2	300mm	8
Ab	<i>Alocasia brisbanensis</i>	Cunjevoi Lily/ Elephant Ears	2.5 x 1	300mm	186
CBM	<i>Colocasia 'Black Magic'</i>	Black Elephant Ears	1 x 1.5	300mm	42
Fi	<i>Ficus lyrata</i>	Fiddleleaf Fig	5 x 3	300mm	26
GROUNDCOVERS & CLIMBERS					
DSF	<i>Dichondra repens</i> 'Silver Falls'	Silver Falls	0.2 x spreading	150mm	155
Hv	<i>Hardenbergia violacea</i>	False Sarsaparilla	0.25 x spreading	150mm	212
Vh	<i>Viola hederacea</i>	Native Violet	0.2 x 0.5	150mm	384
Ca	<i>Cissus antarctica</i>	Kangaroo Vine	0.5 x spreading	150mm	18
CAR PARK MATRIX					
Dr	<i>Dianella revoluta</i>	Spreading Flax Lily	1 x 1.5	150mm	228
Li	<i>Lomandra longifolia</i>	Spiny Headed Mat Rush	1 x 1	150mm	180
Te	<i>Themeda australis</i>	Kangaroo Grass	1 x 1	150mm	361
Wg	<i>Wahlenbergia gracilis</i>	Blue Bells	0.2 x 0.2	200mm	120
Sc	<i>Scaevola calendulacea</i>	Dune Fan Flower	0.5 x 0.5	200mm	120
Gr	<i>Scaevola ramosissima</i>	Hairy Fan Flower	0.4 x 0.1	200mm	120
Smc	<i>Scaevola aemula</i>	Fan Flower	0.25 x 1	200mm	120
Sa	<i>Scaevola alba</i>	White fan flower	0.2 x 2	200mm	120
GG	<i>Grevillea 'Gaudichaudii'</i>	Grevillea	0.2 x 1.5	150mm	120
GRASS MATRIX 01					
Dr	<i>Dianella revoluta</i>	Spreading Flax Lily	1 x 1.5	150mm	94
Li	<i>Lomandra longifolia</i>	Spiny Headed Mat Rush	1 x 1	150mm	78
Lm	<i>Lomandra multiflora</i>	Mat Rush	1 x 1	150mm	62
Te	<i>Themeda australis</i>	Kangaroo Grass	1 x 1	150mm	94
Cg	<i>Carpobrotus glaucescens</i>	Pig Face	0.25 x spreading	150mm	83
BRC	<i>Banksia integrifolia</i> 'Roller Coaster'	Banksia	0.5 x 4	150mm	83
ENTRANCE MATRIX					
Sa	<i>Scaevola alba</i>	White fan flower	0.2 x 2	200mm	102
Dd	<i>Dampiera diversifolia</i>	Dampiera	0.4 x 1	150mm	45
Dc	<i>Dianella caerulea</i>	Flax Lily	0.5 x 0.5	150mm	68
Te	<i>Themeda australis</i>	Kangaroo Grass	1 x 1	150mm	102

SHADE MATRIX 01					
Dr	<i>Dianella revoluta</i>	Spreading Flax Lily	1 x 1.5	150mm	51
Hv	<i>Hardenbergia violacea</i>	False Sarsaparilla	0.25 x spreading	150mm	183
Dc	<i>Dianella caerulea</i>	Flax Lily	0.5 x 0.5	150mm	86
Wc	<i>Wahlenbergia communis</i>	Blue Bells	0.15 x 0.15	200mm	114
Lm	<i>Liriope muscari</i>	Liriope	0.4 x 0.5	150mm	114
SHADE MATRIX 02					
Ad	<i>Adiantum aethiopicum</i>	Maidenhair Fern	0.5 x 0.5	200mm	75
DSF	<i>Dichondra repens</i> 'Silver Falls'	Silver Falls	0.2 x spreading	150mm	168
As	<i>Asplenium australasicum</i>	Birds Nest Fern	1.5 x 1.5	200mm	37
Hm	<i>Hypolepis muelleri</i>	Harsh Ground Fern	0.3 x 1	200mm	70
Cc	<i>Cyathea cooperi</i>	Tree Fern	5 x 2	200mm	14
Cco	<i>Calamagrostis complanatum</i>	Calamagrostis Moss	0.1 x spreading	200mm	56
SHADE MATRIX 03					
Ca	<i>Cyathea australis</i>	Rough Tree Fern	5 x 2	200mm	8
Bc	<i>Barbula calycina</i>	Barbula Moss	0.1 x Spreading	200mm	80
Bn	<i>Blechnum nudum</i>	Fishbone water fern	1 x 1	200mm	96
Ad	<i>Adiantum formosum</i>	Giant Maidenhair	1.2 x 0.8	200mm	60
Da	<i>Dicksonia antarctica</i>	Scaly Tree Fern	9 x 4	200mm	12
Vh	<i>Viola hederacea</i>	Native Violet	0.2 x 0.5	150mm	64
DSF	<i>Dichondra repens</i> 'Silver Falls'	Silver Falls	0.2 x spreading	150mm	12
Lm	<i>Liriope muscari</i>	Liriope	0.4 x 0.5	150mm	64

12 Landscape Response

PLANTING PALETTE



12 Landscape Response

LANDSCAPE CHARACTER



ARCADIA Sutherland Hospital, Operating Theatre Upgrade
SDRP

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MATERIAL PALETTE

