

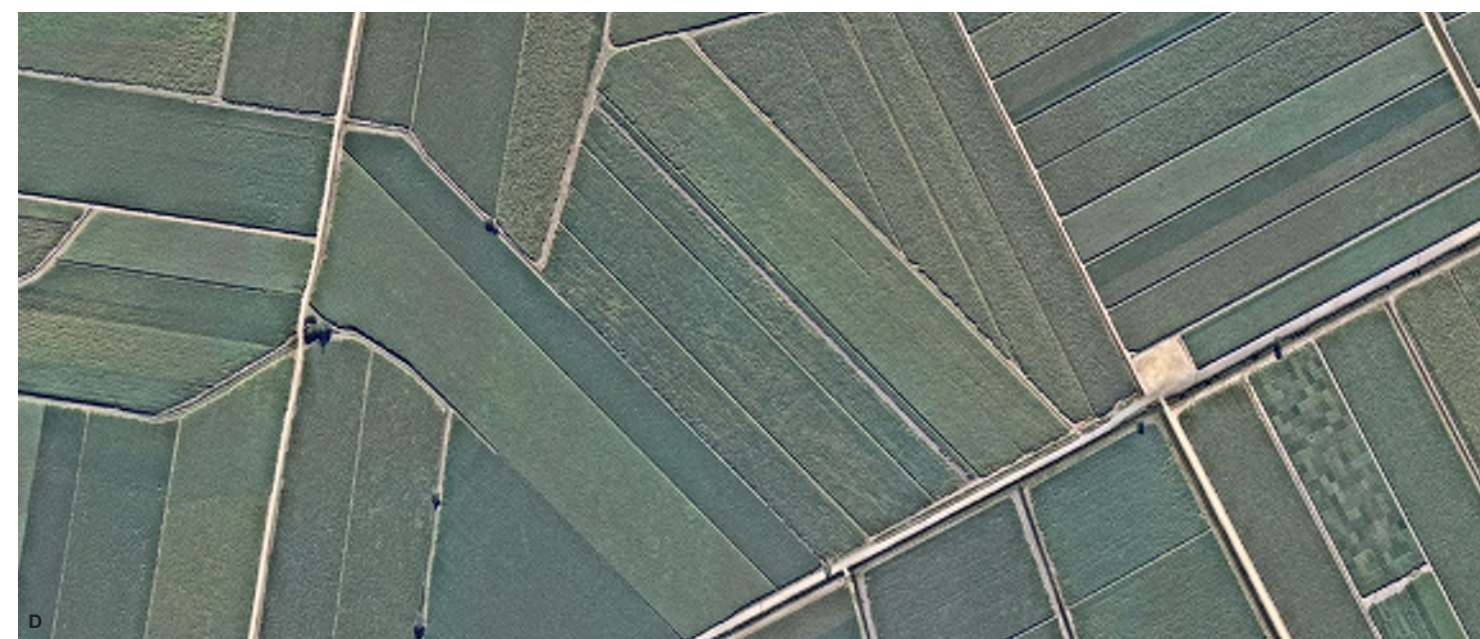
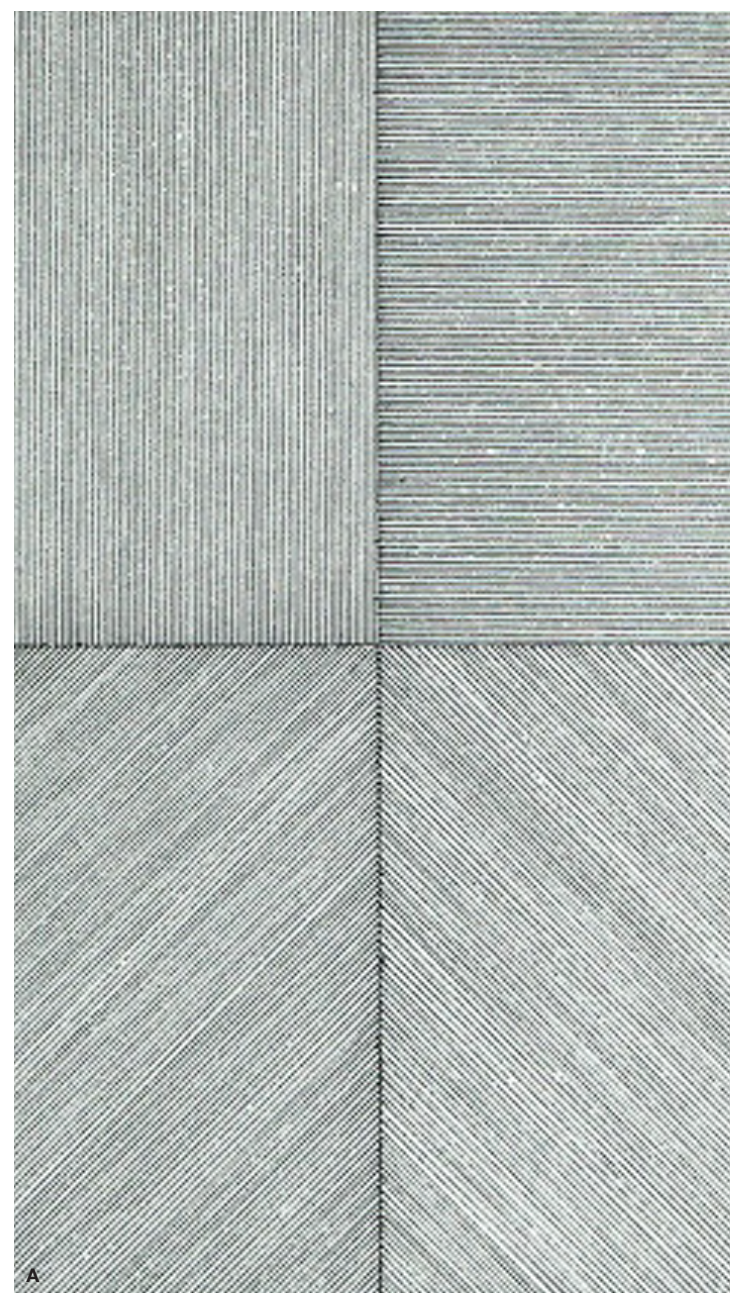
4.3 DESIGN RESPONSE

Our design vision for the Tweed Valley Hospital has been shaped by an aspiration which extends beyond clinical functionality, to create a unique place of healing, providing a natural therapeutic experience immersed in the site's landscape and natural context. We have also drawn inspiration from the region's rich agrarian tradition through which the local community is inextricably connected to the land

HOSPITAL BELONGING TO PLACE

This vision informs our design approach which seeks to integrate landscape with the built form materially through references to the vernacular, nature and agrarian land form textures.

The campus layout provides coherently networked series of community spaces which support social interaction and encourage local community interaction and ownership. The development will enrich the local area, introducing healthcare to complement the established neighbouring residential and educational land uses in a manner that's environmentally and culturally considered.



PICTURED

Figure 24a. Agrarian Pattern Sketch (Sol Lewitt)

Figure 24b. Site - Design Sketch (Turf Design)

Figure 24c. Site - Aerial Photograph

Figure 24d. Aerial Photograph (Nearmap)

The hospital organising principles work together to host the complex co-located relationship of nursing, support and clinical functions

BUILDING FORM

The proposed Tweed Valley Hospital is a 9-storey total building form perceived as 6 storeys with recessive rooftop plant. Ground level (main entry) is set at +27.75 AHD, with two storeys below main entry level which take advantage of the site's ridge line topography. The building form can be characterised by its 4-quadrant arrangement, supported by central connective core. The quadrants frame axial corridors which are experienced at all levels of the hospital, used as a key public realm spatial ordering and orientation device.

At the base of each quadrant an expanded floor-plate area is required to support the medical services functions. The additional floor-plate where practical is expressed as a cluster of diverse smaller scaled forms, which having regard for site topography terrace to the north along the site's ridge-line.

HOSPITAL ORGANISING PRINCIPLES

The hospital design framework is structured around the following key organising principles;

1. Principal Ordering Axis
2. Hospital Chassis
3. Functional Neighbourhoods
4. Courtyards and landscape

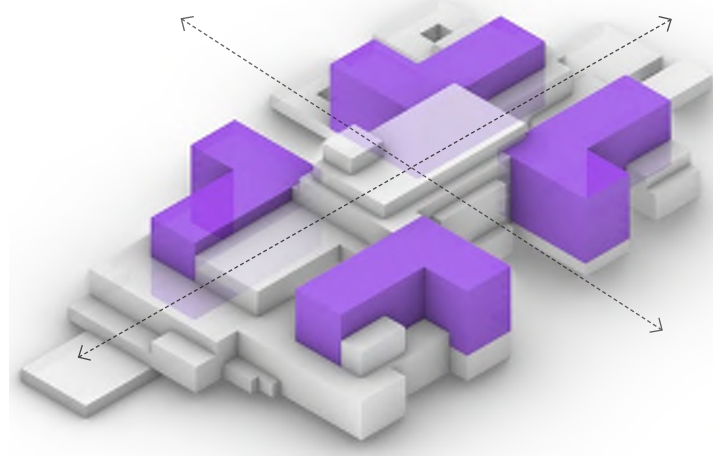


Figure 25a. Diagram - Principle Form, IPU

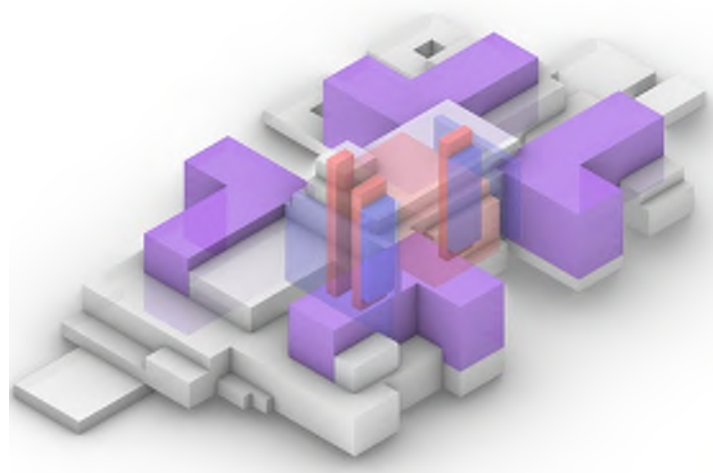


Figure 25b. Diagram - Central Support Core

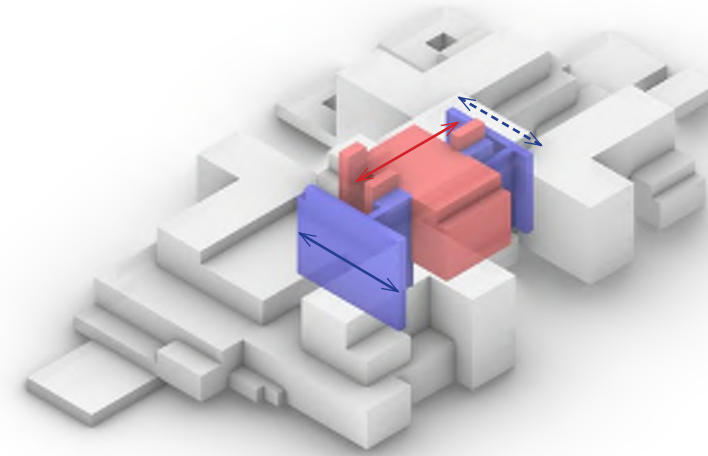


Figure 25c. Diagram - Public / Staff Segregation

DEDICATED EMERGENCY LIFT CORE, CONNECTING KEY EMERGENCY SERVICES, SUPPORTED BY AMBULANCE ACCESS AT LOWER GROUND AND HELIPAD AT ROOF LEVEL

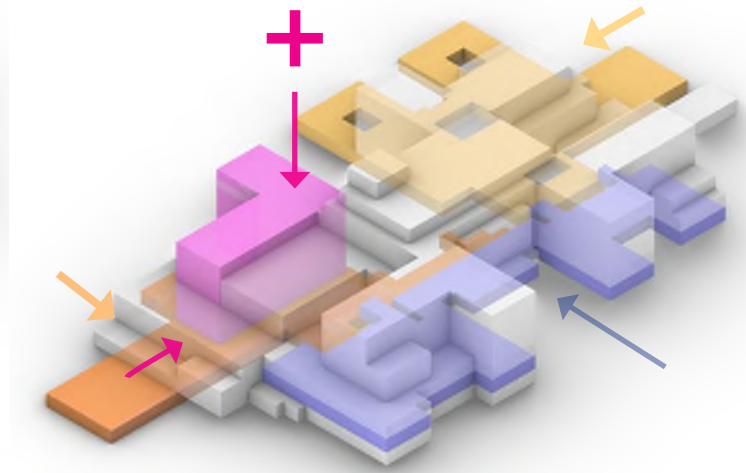


Figure 25c. Diagram - Functional Neighbourhoods

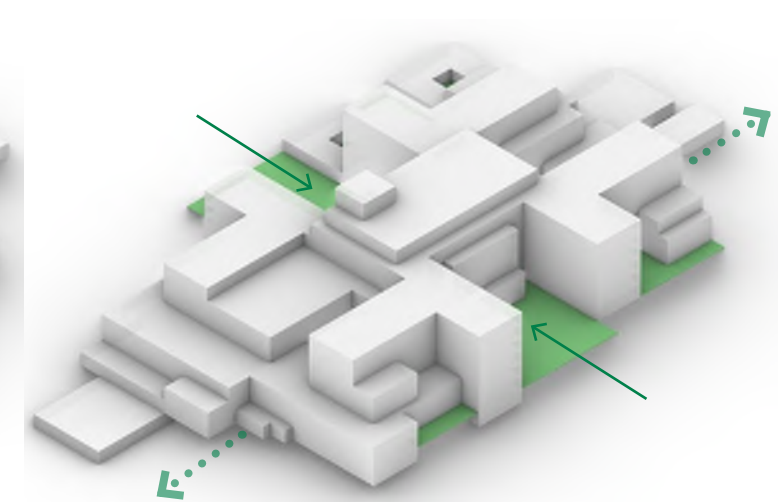


Figure 25f. Diagram - Landscape Integration

PRINCIPAL SPATIAL ORDERING AXIS

An ordering axis a commonly utilized architectural principle, has been adopted to organise the building spatially. The axis in this case gives direction, induces movement and promotes views along its path, linking a sequence of spaces and terminating at each end with an important public realm space.

The building can be described in plan as a 4-quadrant arrangement, which at ground level frames and reinforces the spatial cross axes. The two significant design axes include the main entrance civic spine axis, and the Green Spine axis.

The main entrance sequence including; site entrance, entrance plaza, hospital reception, café and public north terrace terminating with view to the north environmental area beyond collectively form the principal civic spine of the building. This civic axis is expressed within the hospital as a double height space which connects the entrance plaza to the north terrace lawn, an important public place amenity.

The east to west orientated axis, reinterprets the sites natural ridge-line and is conceptually developed as a landscaped pedestrian route (Green Spine). This axis links through the hospital street and is supported by a large courtyard to the east. The axis continues along the ridge line to the east and west flanks of the hospital, as a tree-lined footpath offering view and sheltered seating amenity to the east. To the west of the hospital the route includes a cycle pathway which terminates on Cudgen Road. The pathway also provides pedestrian access to the Multi-Deck Carpark and future development zone located further to the west of the campus.

The two axes are retained and expressed at the hospital's upper levels. The hospital forms frame view corridors that assist user orientation and provide views to the surrounding landscape and distant vistas beyond.

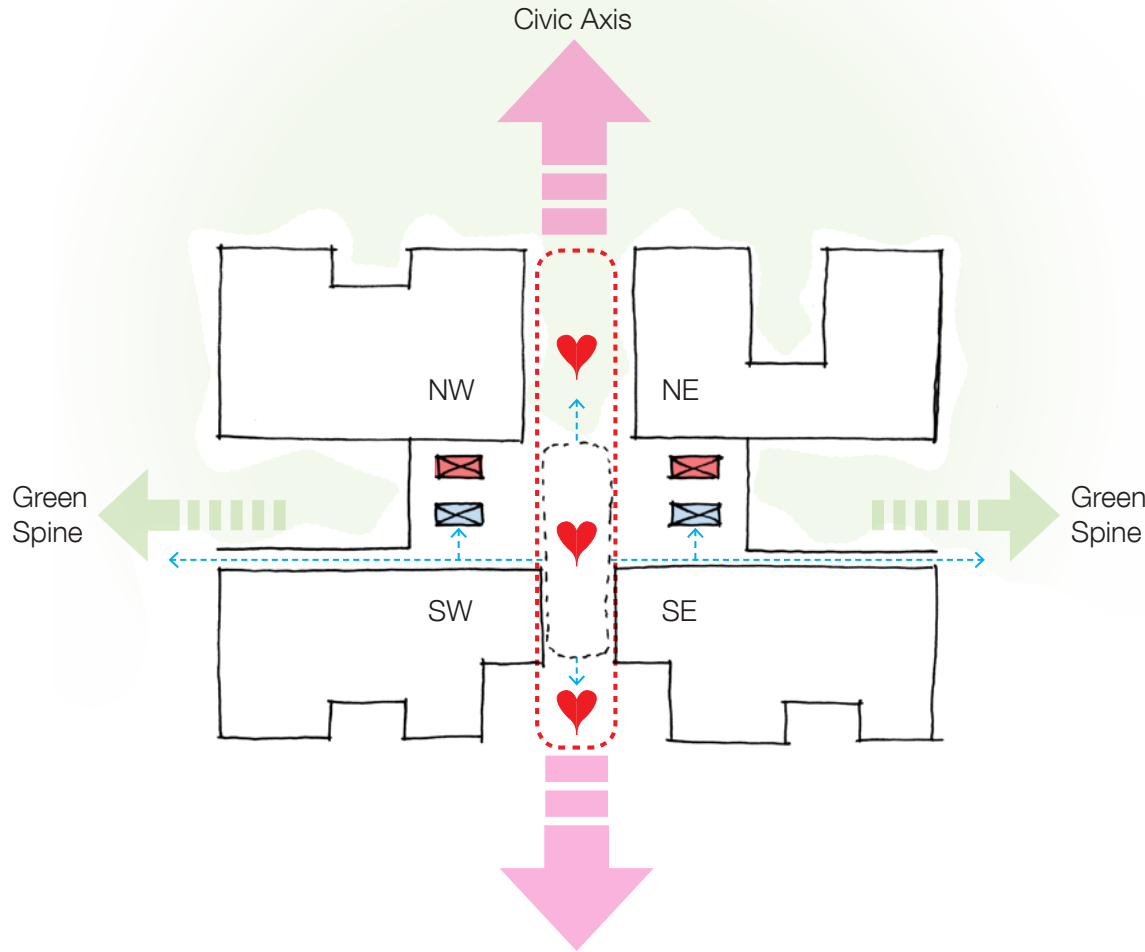
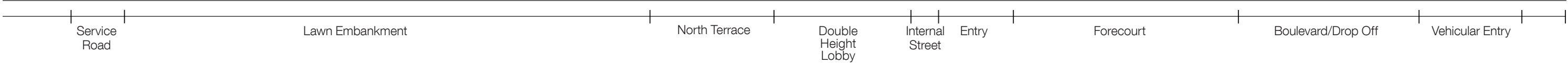


Figure 26a. Design Principle Diagram - Four Quadrant IPU & Views - Spatial Axis
Figure 26b. Design Section - Civic Axis
Figure 26c. Access To Landscape (design reference image)



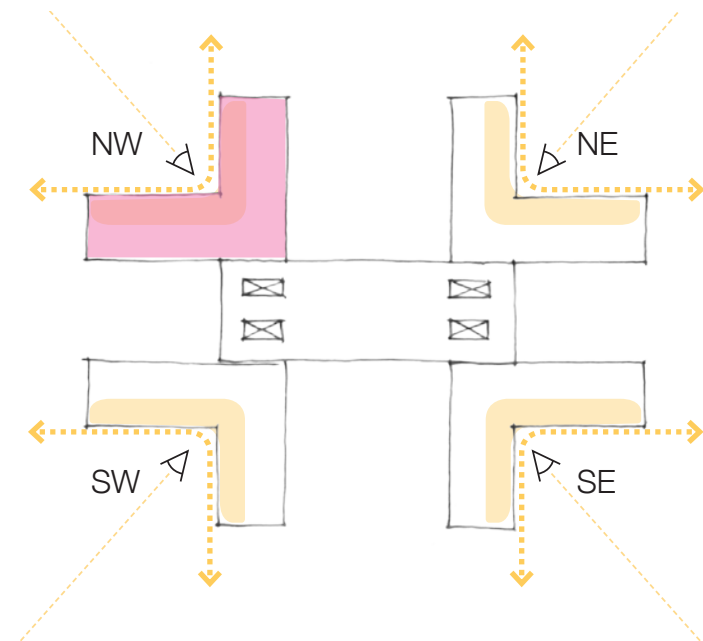


Figure 27a. Design Principle Diagram - Four Quadrant IPU & Views

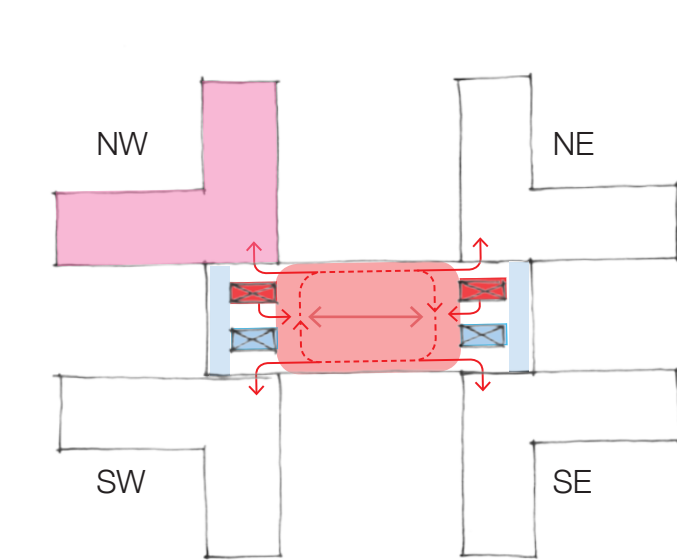


Figure 27b. Design Principle Diagram - Central Support Zone (Core)

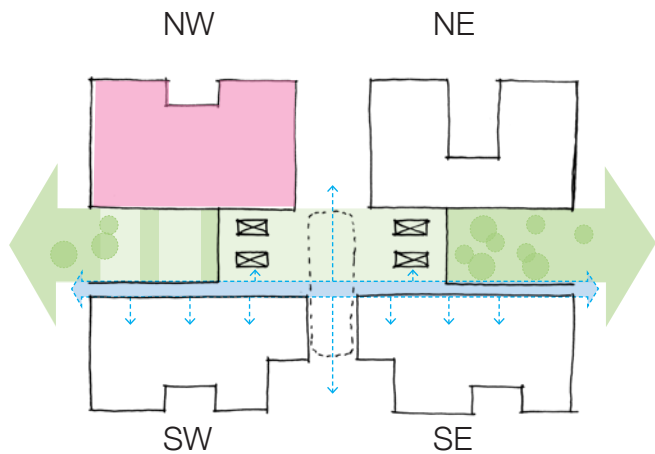


Figure 27c. Design Principle Diagram - Green Spine, Axis

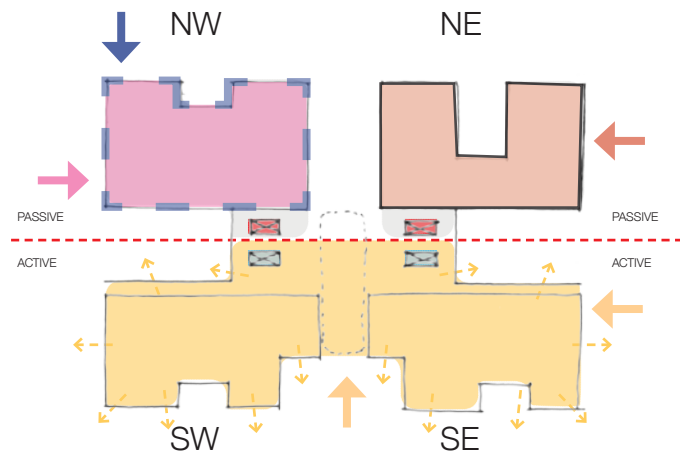
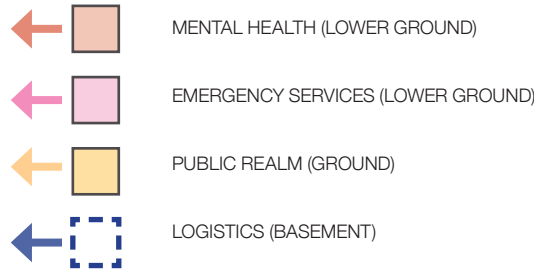
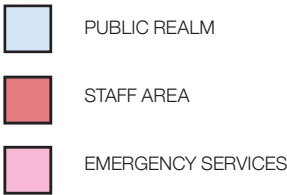


Figure 27d. Design Principle Diagram - Functional Neighbourhoods



HOSPITAL CHASSIS

The hospital chassis provides the principal spatial and circulation framework that marries the building typology with the clinical functional brief. The spatial arrangement is supported by primary circulation route infrastructure, including main linking corridors, lift and stair core arrangement essential for providing public and segregated inter-departmental access.

The chassis has been designed based the following principles;

- / 4-quarter IPU with shared services support core
- / Twin linked back-to-back lift cores, responding to public realm in the south and clinical realm in the north. The clinical lift landings are horizontally connected at all levels above and below ground level, providing discrete east to west clinical transfer without the need to cross public accessible corridors.
- / North west emergency services Stack

- / The central shared Administration and Support zone provides optimum staffing efficiencies as well inter-departmental collaboration providing even distribution of support to all quadrant departments
- / The central shared zone harmoniously integrates CPTED principles to the functionality of the IPU's at level 2 and above;
- 1. **Territorial Reinforcement;** coherent patient/public and staff separation
- 2. **Surveillance;** The primary clinical corridor link between the east and west clinical lift cores is a vital conduit, linking all acute and logistic support services across all levels. This link passes through the central staff controlled zone, improving safety and reliability
- 3. **Access Control;** As a staff only zone, access to the central staff zone will be via the flanking clinical lift lobbies, which in turn are access control restricted. Public on exiting the lifts (blue) ,
- 4. **Space / Activity Management.** The Hospital chassis is designed with inherent space and activity management qualities. The arrangement limits contiguous public access between IPU's.

FUNCTIONAL NEIGHBOURHOODS

Hospitals are complex buildings, composed of a myriad of clinical, logistic and public realm functions. The various functions demand separate roadway, functional outdoor zones and entrances. These needs also need to be located in manner that permits internal integration without the need for crossing through incompatible areas.

The key functional neighbourhood zones are;

- / Public realm and main entrance
- / Emergency Services
- / Mental Health Services
- / Logistics

The planning of the hospital assigns the two south quadrant zones at ground level, to support main entrance and general public realm functionality, with the two northern quadrants accommodating specialist clinical departments.

The hospitals north west quadrant accommodates the hospitals critical services functions, including from basement level; Logistics, Emergency Department (ED), Imaging, Perioperative, CSSD, ICU, Surgical IPU and roof top helipad, all vertically connected by a twin hot-lift core.

The position of the hospital on the ridge line allows exploitation of the topography to achieve two lower ground levels with road access and external support space

Mental Health is accommodated at lower ground level in the north eastern quadrant. The mental health function needs to be discrete and afford dignity and amenity to the resident patient cohort. Located at lower ground floor the Unit can be independently accessed and managed discrete from the main public realm entrances. The Mental Health unit is located at this level to afford an enhanced relationship with the ground plane facilitating provision of supporting external courtyard spaces.

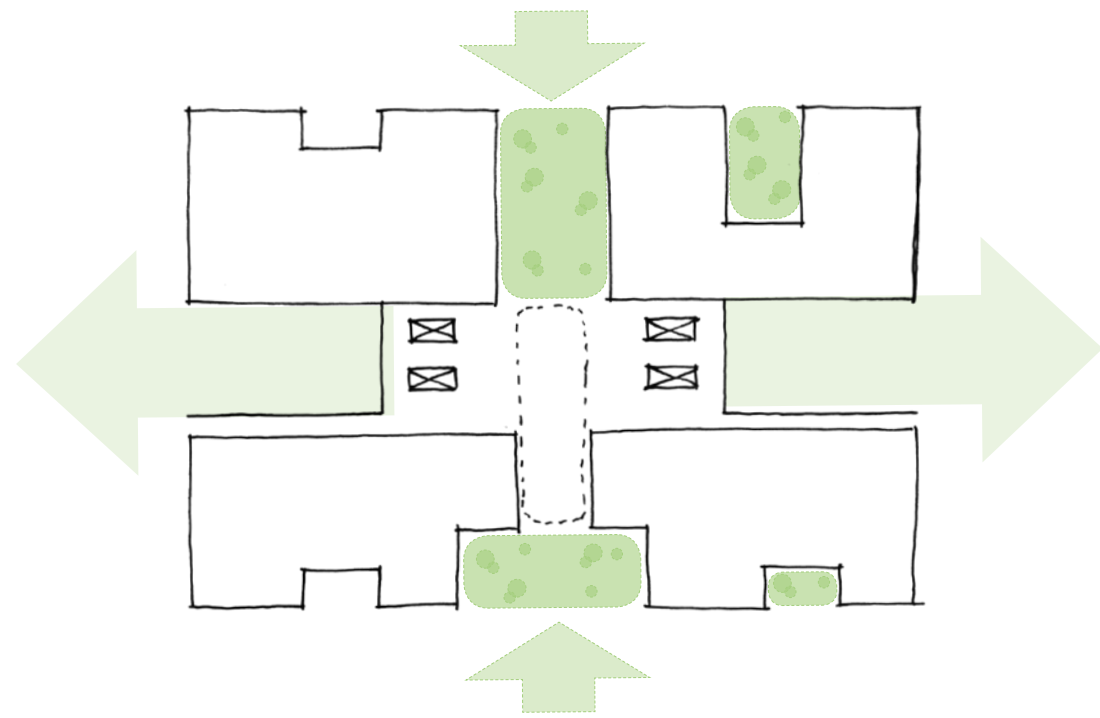


Figure 28a. Design Principle Diagram - Landscaped Indents and Corridors

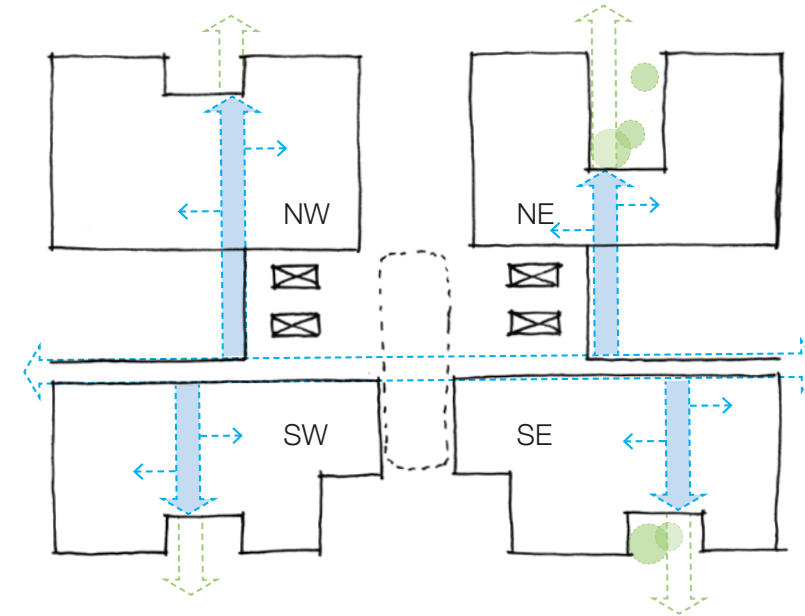


Figure 28b. Design Principle Diagram - Courtyards as a circulation ordering device

COURTYARDS AND LANDSCAPE

The built form arrangement has developed, originally based on an early concept that contemplated the IPU and supporting podium levels as a series of linear north-south orientated bars, integrating landscape between “built-fingers”. This arrangement provided view porosity from the south public realm to the environmental area to the north.

The north-south orientated bar-form arrangement has influenced the final design form and remains present in the lower levels in the east quadrants with recesses and axially aligned courtyards. Courtyards remain within the east quadrant clusters of the podium level, providing daylight and landscape relief to the deeper floor plates.

A key conceptual principle underpinning the two main axes, is the establishment of landscape corridors (physical and visual) through the building. These provide the public and staff with landscape contact deep within the building. Courtyards serve a spatial ordering device, with views of landscape and into courtyards terminating or activating circulation routes.



Figure 29. Site Photograph

PLANNING ENVELOPE

MAIN HOSPITAL

The early EIS/SSD Stage 1 submission includes a concept master-plan layout including provision for a Maximum Planning Envelope (MPE) strategy which establishes the outer scale and height limitation of each the proposed Hospital, Health Hub and Multi-Deck Carpark buildings, to be design developed for SSD 2 submission. Each of the three buildings have been carefully located, orientated and scaled having regard for the design brief and concept master-plan considerations. The MPE or each element include a maximum height and building entry level and has been planned having regard for the respective site setback conditions. The endorsed EIS/SSD Stage 1 gross floor area for the combined hospital and Health Hub buildings within the site are to be approximately 65,000m².

In addition, the hospital MPE has been planned over four vertical zones, with increasing density reduction with height, as follows;

- / Roof Plant & Helipad, 5-20% density
- / Zone 2, 25-45% density
- / Zone 1, 50-70% density
- / Basement 10-30% density

Fig 30a, 30b illustrates the proposed Hospital building Maximum Planning Envelope fit.

The overall height of the building is informed by the adoption of best practice floor to floor heights, suited to the clinical services and services infrastructure requirements. Floor to floor heights within the podium and lower ground levels is 4.5m, and the floor to floor heights of the upper levels reduced to 4.2m.

The building highest parapet is at RL +65.05 AHD. This is the parapet level of the lift-overrun that serves the Helipad at level 7.

Table 3 - Main Hospital – Maximum Planning Envelope

SFL	Australian Height Datum (AHD)	MPE Target Density Range	Actual Density	Planning Envelope GFA (m²)	Building GFA (m²)
Roof Level	65.05 (parapet)	N/A	0.0%	2,437	0
Helipad (L7)	58.85	5-20%	0.5%	8,629	42
Level 6 (plant)	55.85 (parapet)	5-20%	0.1%	15,492	15
Level 5	49.65	25-45%	33.3%	17,988	5,991
Level 4	45.45	25-45%	28.3%	20,278	5,748
Level 3	41.25	25-45%	31.9%	21,983	7,005
Level 2	36.75	50-70%	31.9%	22,901	7,305
Level 1	32.25	50-70%	38.4%	24,079	9,253
Ground	27.75	50-70%	46.7%	25,007	11,681
Lower Ground	23.25	50-70%	46.9%	25,007	11,723
B1	18.75	10-30%	14.7%	22,723	3,333
Total				206,524 m²	62,096 m²

Note: CEP Planning Envelope Excluded in Hopsital GFA (m2) Calculation

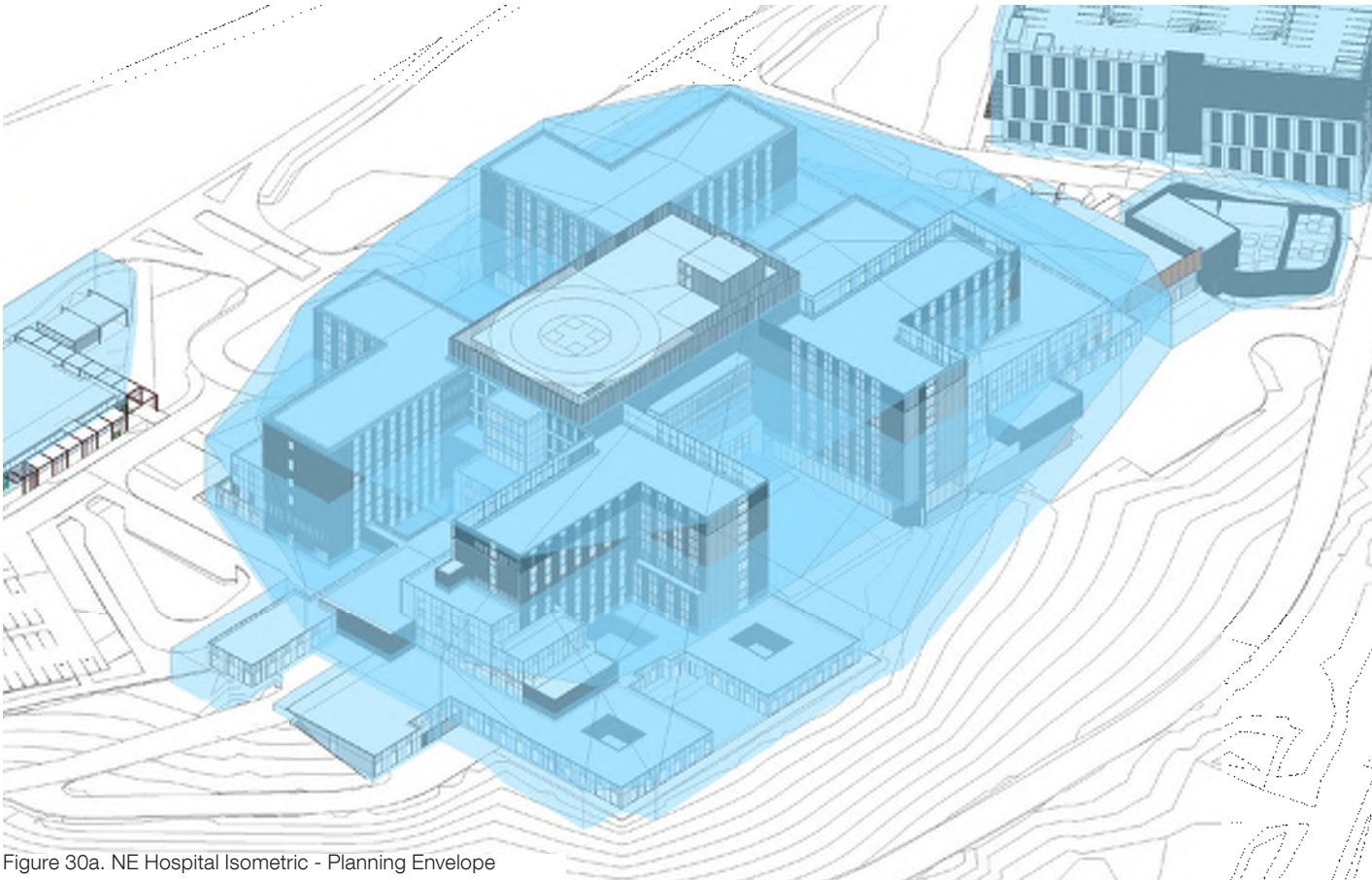


Figure 30a. NE Hospital Isometric - Planning Envelope

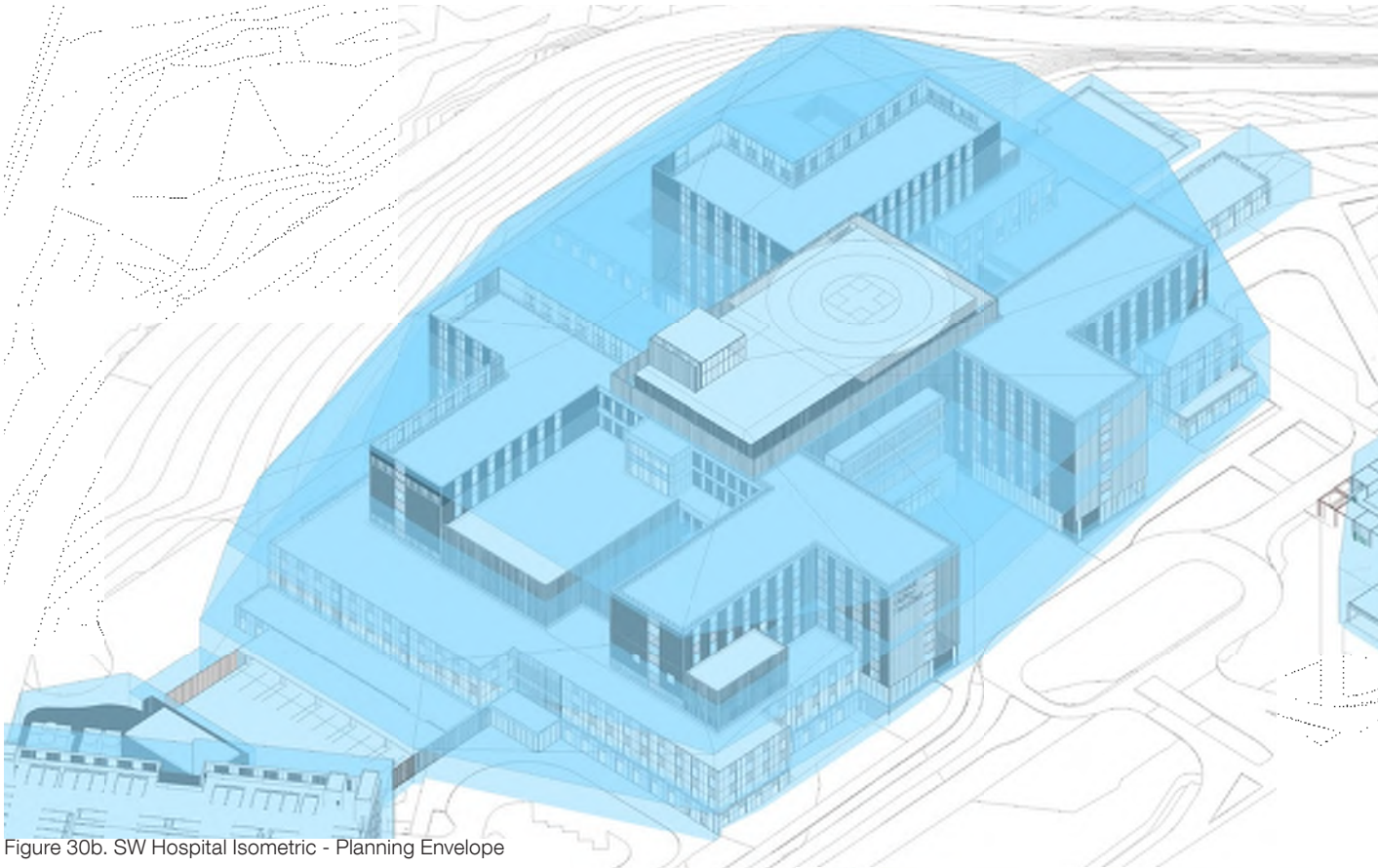


Figure 30b. SW Hospital Isometric - Planning Envelope

HEALTH HUB

Fig 31a, 31b illustrates the proposed Health Hub Maximum Planning Envelope fit

The EIS Concept plan submission provides for an entrance level floor height for the Health Hub building of RL +27.75 AHD, prescribed under B4(a) of the Stage 1 SSD Consent Conditions. This submission proposes lowering the entrance level to RL +26.60 AHD, being more closely aligned with the local natural ground level. This ensures a more sympathetic relationship of the buildings ground level with the existing topography, accommodating level access entrances to buildings.

Table 4 – Health Hub – Maximum Planning Envelope

SFL	Australian Height Datum (AHD)	Planning Envelope GFA (m²)	Building GFA (m²)
Roof Level	34.6	2844	0
Level 1	30.6	2844	1,523
Ground	26.6	2844	1,428
Total		8,532 m²	2,951 m²

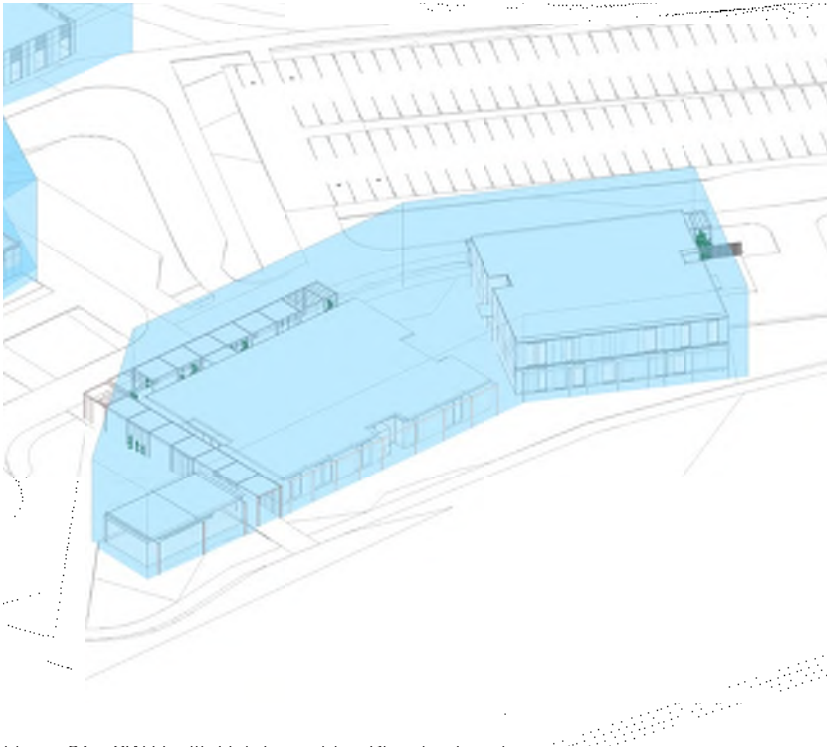


Figure 31a. SW Health Hub Isometric - Planning Envelope

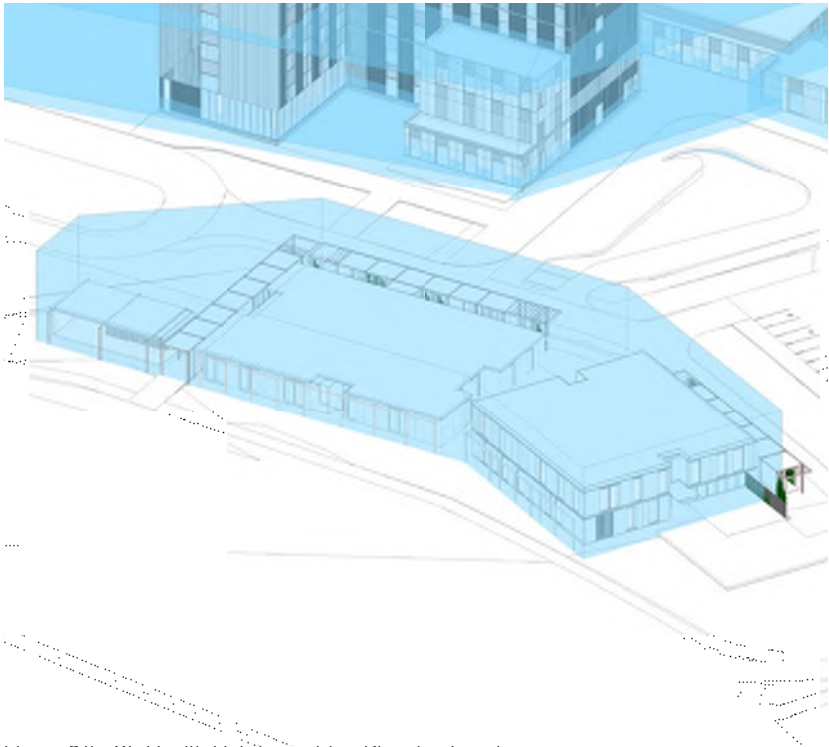


Figure 31b. SE Health Hub Isometric - Planning Envelope

MULTI-DECK CARPARK

Fig 32a, 32b illustrates the proposed Multi-Deck Carpark Maximum Planning Envelope fit

As illustrated in the diagram figure 32a and 32b the proposed building forms have been designed in conformance with the established Planning Envelope constraints.

Table 5 Multi-Deck Carpark – Maximum Planning Envelope

SFL	Australian Height Datum (AHD)	Planning Envelope Area (m²)	Building Area (m²)
Roof Level	41.25_42.25	N/A	3,665.00
Level 6	38.55_39.55	5,057.00	4,366.00
Level 5	35.85_36.85	5,057.00	4,366.00
Level 4	33.15_34.15	5,057.00	4,366.00
Level 3	30.45_31.45	5,057.00	4,366.00
Level 2	27.75_28.75	5,057.00	4,366.00
Level 1	25.05_26.05	5,057.00	4,366.00
Ground	22.35_23.35	5,057.00	4,366.00
B1	19.65_20.65	5,057.00	4,465.00
B2	16.95_17.95	5,057.00	1,490.00
Total			40,182.00

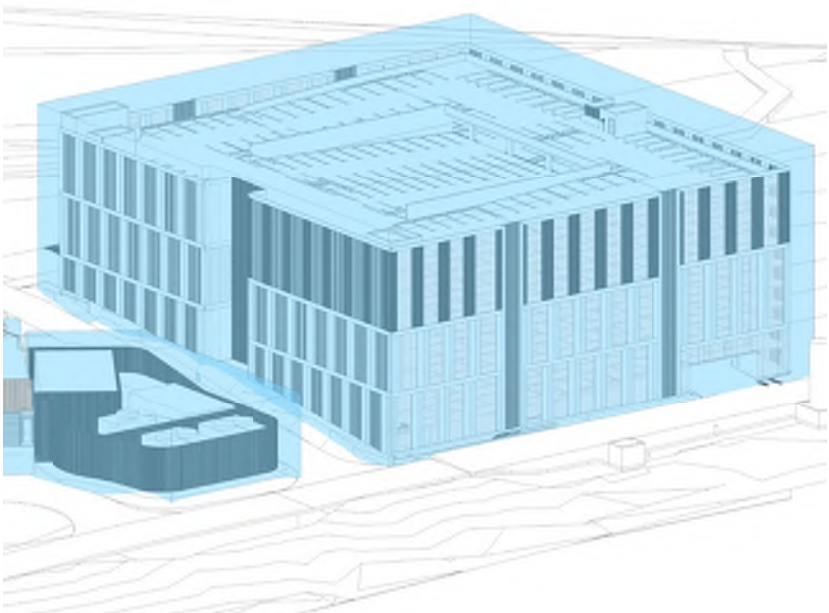


Figure 32a. NE Multi-Deck Carpark Isometric - Planning Envelope

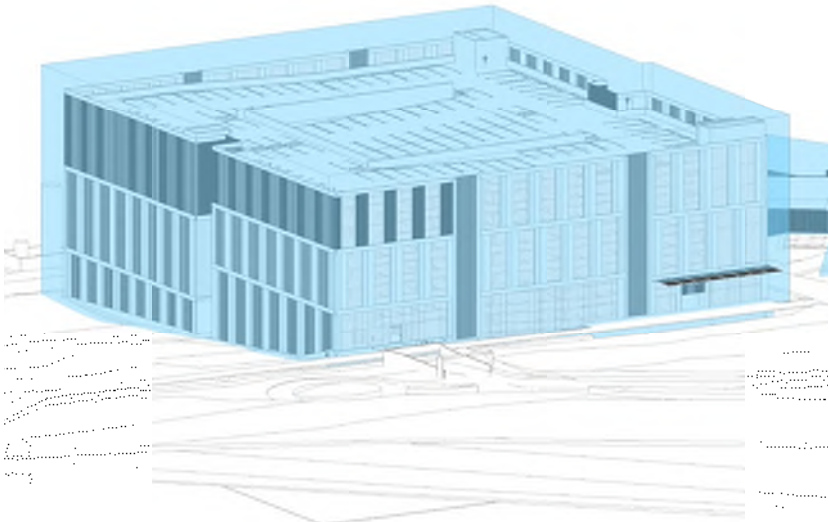


Figure 32b. SE Multi-Deck Carpark Isometric - Planning Envelope

4.4 BUILT FORM

BUILDING FORM ELEMENTS

The Tweed Valley Hospital will be a prominent form, built on the Kingscliff ridge line within a regional setting, acting as a beacon of healing that has been designed to be experienced in the round as a clustered collection of forms moving with the landscape.

Our design proposal has a simple underlying organisational rationale, established by the functional relationship of the four quadrant L-shape IPU forms/anchors, connected to a shared central support space. The forms land on a four-quadrant podium that supports the hospitals many key medical functions. The quadrant anchor forms come to ground in part, informing the placement of grounded granular forms which generate courtyards that provide daylight and landscape amenity within the podium levels.

The hospital form is articulated as a cluster of objects moving with the landscape.

The hospital ensemble can be simplified into three distinctive elements;

1. Quadrant Anchors
2. Recessive Core (connective tissue)
3. Granular Forms

*A collection of objects
in the landscape*

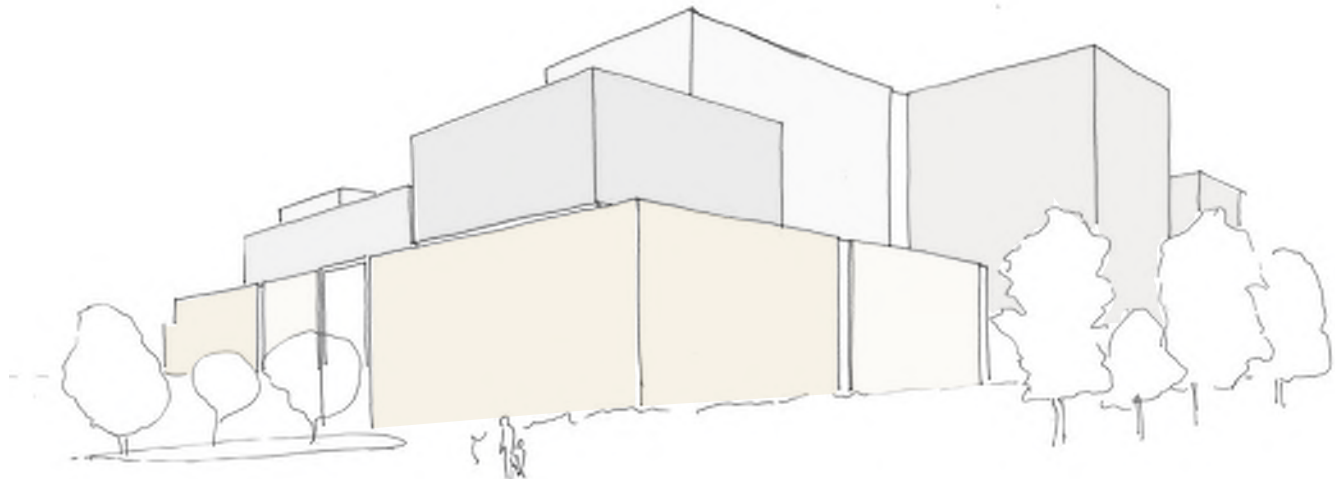


Figure 33a. Design Sketch, Emergency Entrance

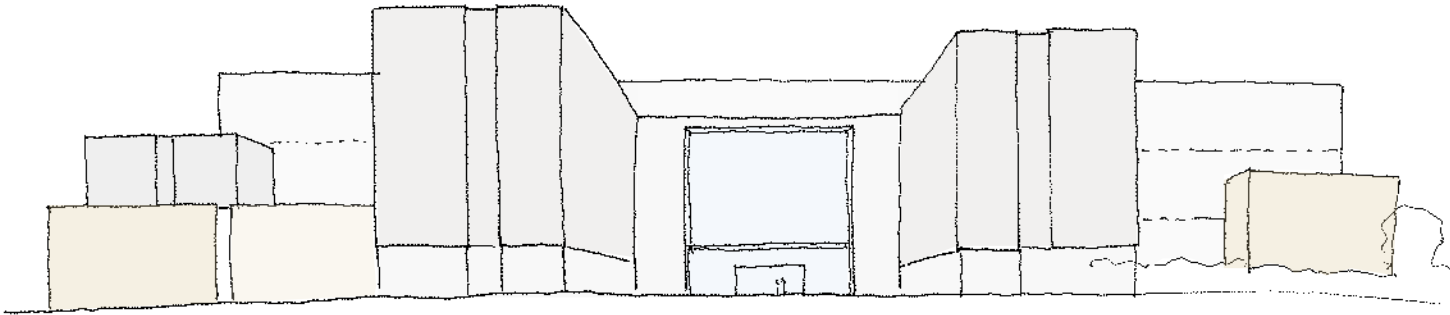


Figure 33b. Design Sketch, South Entrance



Figure 34. Project Render - Approach View (Main Entrance)

ANCHOR FORMS

/ Anchoring and clearly defining the hospital's most distinct forms

/ Most visible architectural forms from distant views

/ Clearly defining the main civic axis of the hospital

/ Enforcing the directionality of the quadrant forms

/ Diverse and distinct formal expressions

Quadrant Anchor forms define the hospital's principal arrangement which holds the building ensemble together.

These forms are the hospital's most distinct elements which are defined by the typical IPU floor plates. The L-shape plan forms are expressed with vertical gable end conditions, which characterise the building's formal expression as viewed from a distance.

Within the building composition these forms come to ground, framing the main entrance forecourt and civic cafe/viewing terrace on the north end of the foyer axis.

The forms frame the key view and circulation corridors through the building and work together with the landscape design to express the agrarian textural patchwork concept.

A key consideration of these elements are their articulated grain and scale. These datum lines redefine the reading of floor levels. This is further reinforced by adopting double level fenestration expressions.

A regular panel to fenestration module that works within the 8.4m structural grid has been designed, providing optimal internal planning flexibility construction modularity and rhythm.

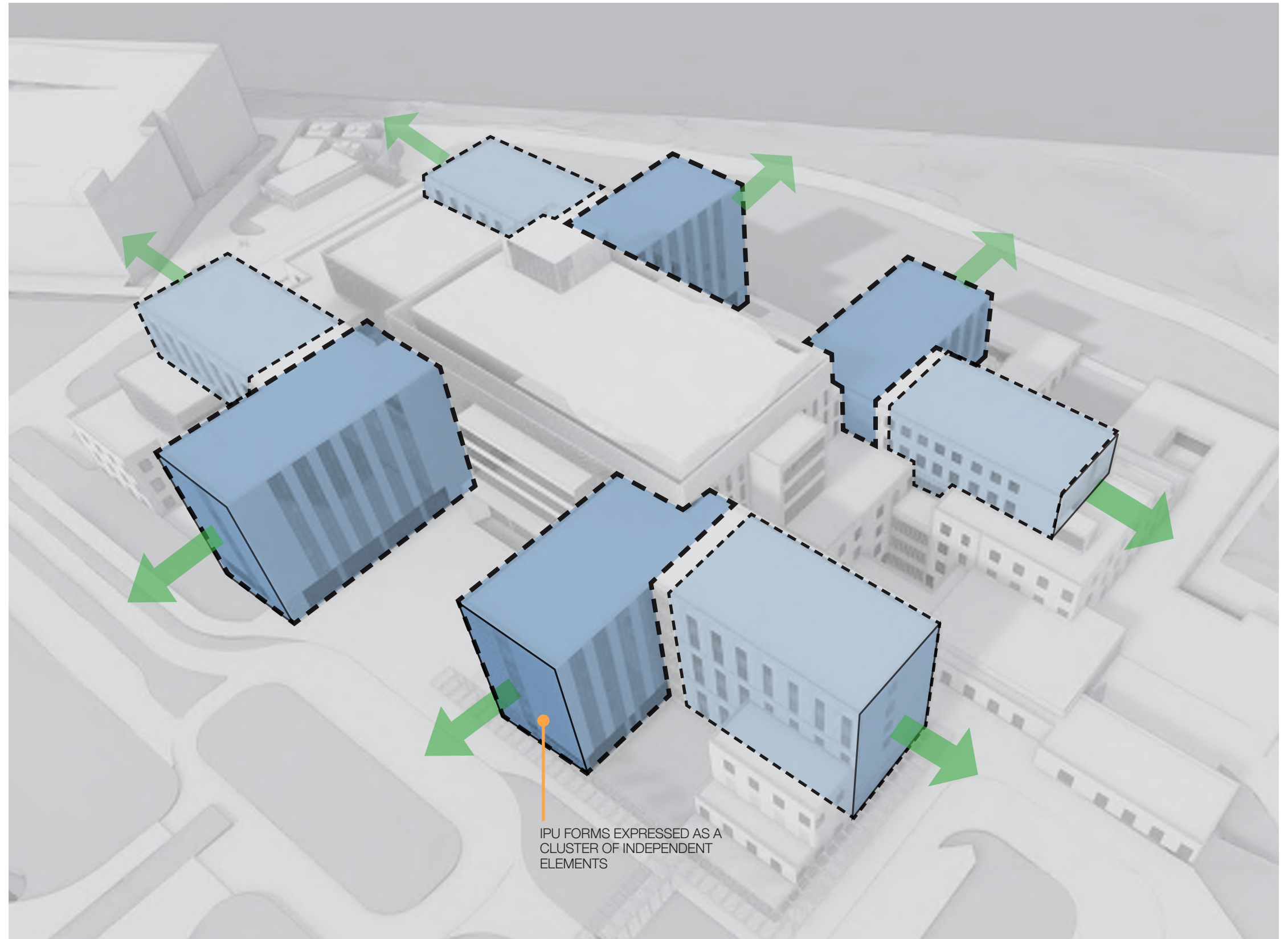


Figure 35. Design Isometric - Anchor Quadrants



QUADRANT ANCHOR FORMS (SHEET METAL CLADDING)

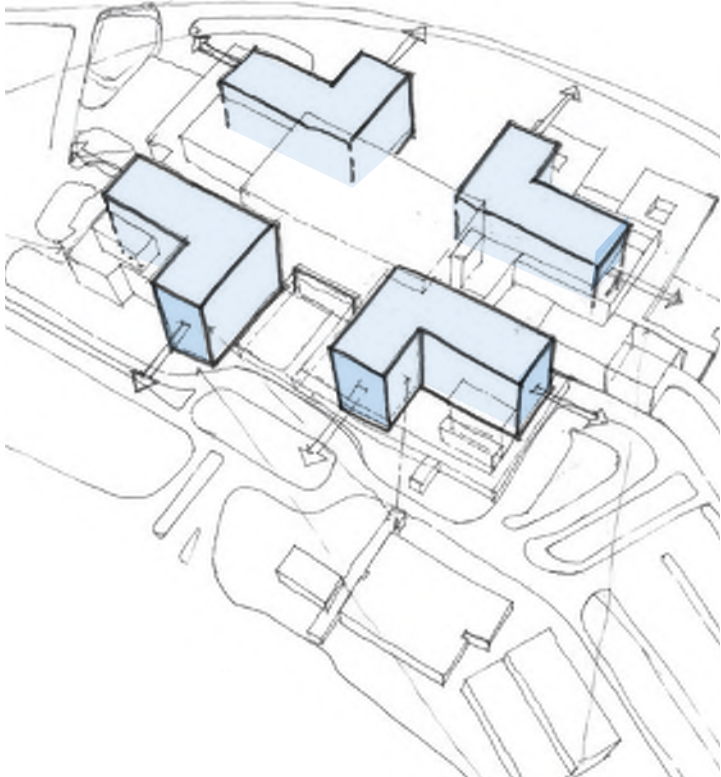
ANCHOR FORMS MATERIALITY

A functional, robust and lightweight material evoking a memory of the Australian landscape

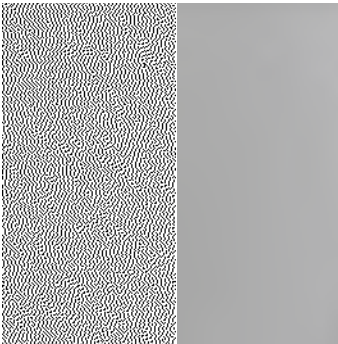
MATERIAL EXPRESSION

The quadrant anchors are to be clad in a lightweight metal façade evoking an agrarian reference to the Australian Landscape. The rich directional texture of the material is utilized exploiting subtle light and shadow changes to create surface variation and interest. Profile depth variation will be utilized to express architectural hierarchies. Natural warm hue colouration will be adopted in subtle changes in shading applied to support the architectural language. Applied with varying shades. Refer to the external finishes schedule Appendix B.

Off-site prefabrication construction methodologies will be investigated at detailed design stage, with the intent of improving finish quality and accelerate construction.



GL-01
GLAZING



AL-01
POWDERCOAT ALUMINIUM LIGHT



LP-01
LOW PROFILE METAL CLADDING - LIGHT



HP-01
DEEP PROFILE METAL CLADDING - LIGHT



Figure 36a, b, d & e. Design Reference Image, Metal Cladding
Figure 36c. Design Model Image

ANCHOR FORMS

DISTINCTION BETWEEN ELEMENTS

Differentiating forms through the use of finish and colour, material profile and facade articulation and composition

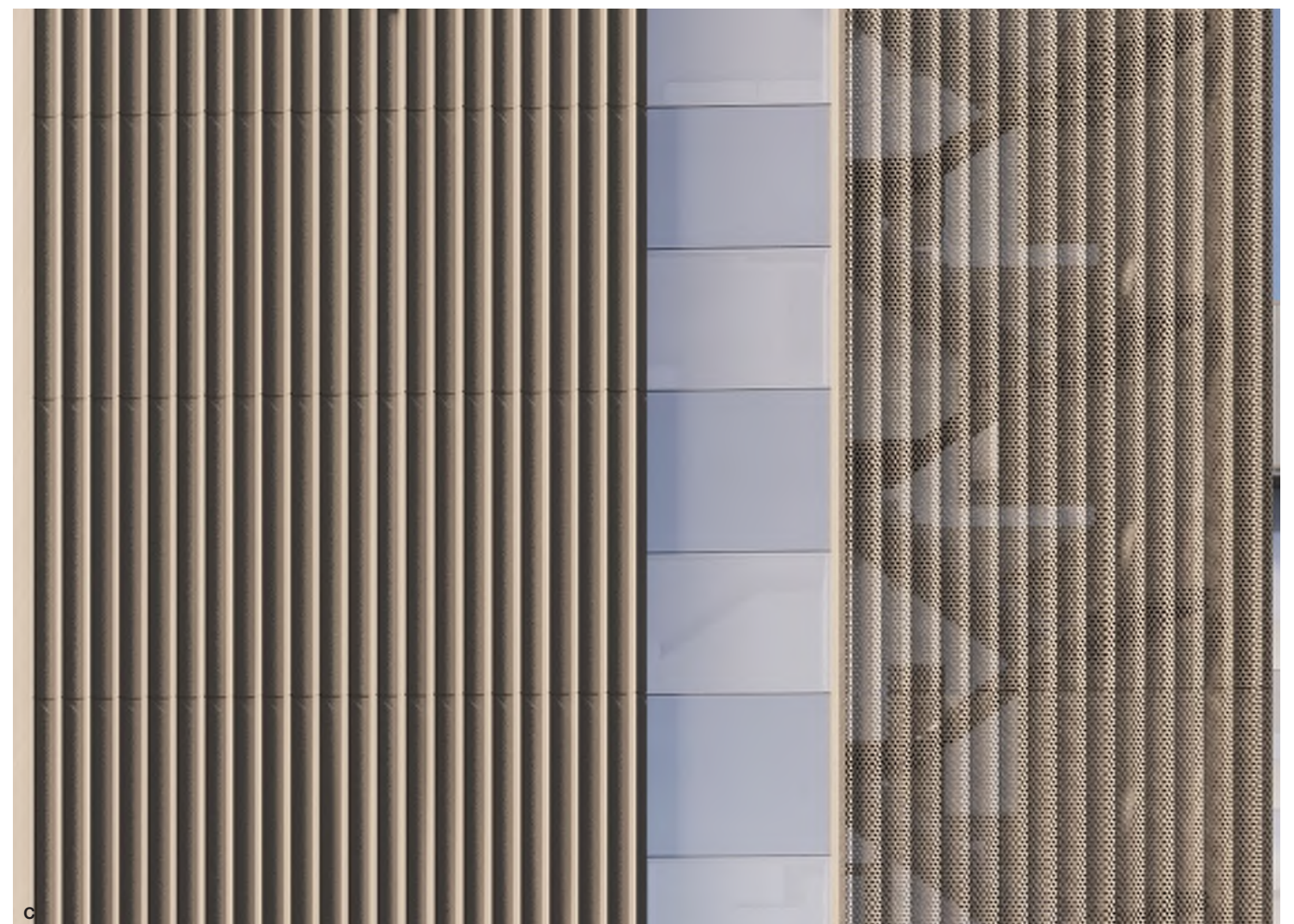
Figure 37a, b & c. Design Render Extracts, Anchor Forms



/ Patchwork facade - responds to clinical planning
/ Changes in material direction
/ Low profile metal



/ Principal facade - allows for variation in clinical planning
/ Linear expression
/ Low profile metal



/ Principal anchor facade bookend
/ Strong linear expression
/ Deep profile metal

/ Principal anchor facade bookend
/ Naturally ventilated
/ Perforated deep profile metal

ANCHOR FORMS



Figure 27. Design Isometric - Anchor Forms, Gable Ends

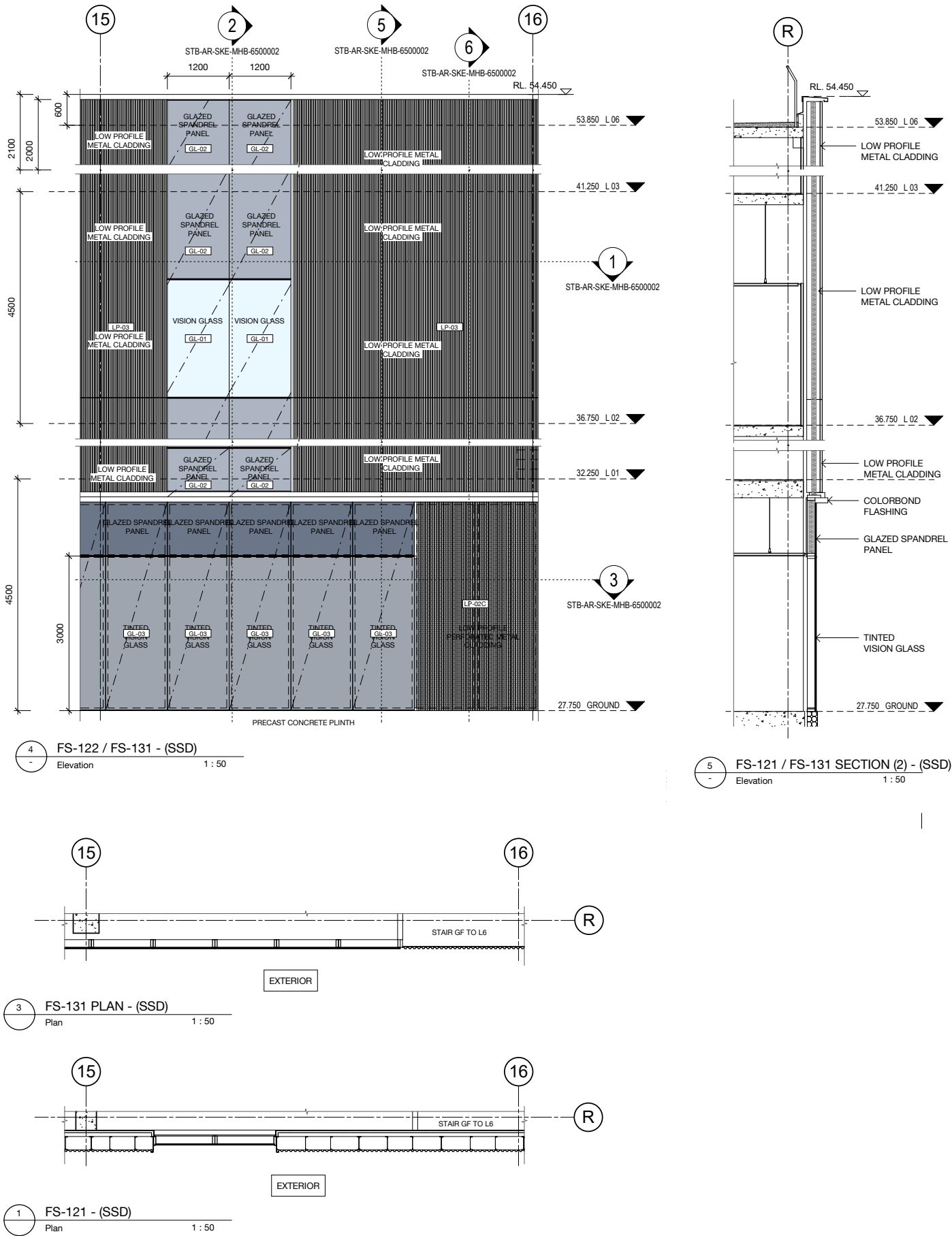


Figure 27b. Facade Design, FS121 Drawing Extracts

ANCHOR FORMS



Figure 39a. Design Isometric - Anchor Forms

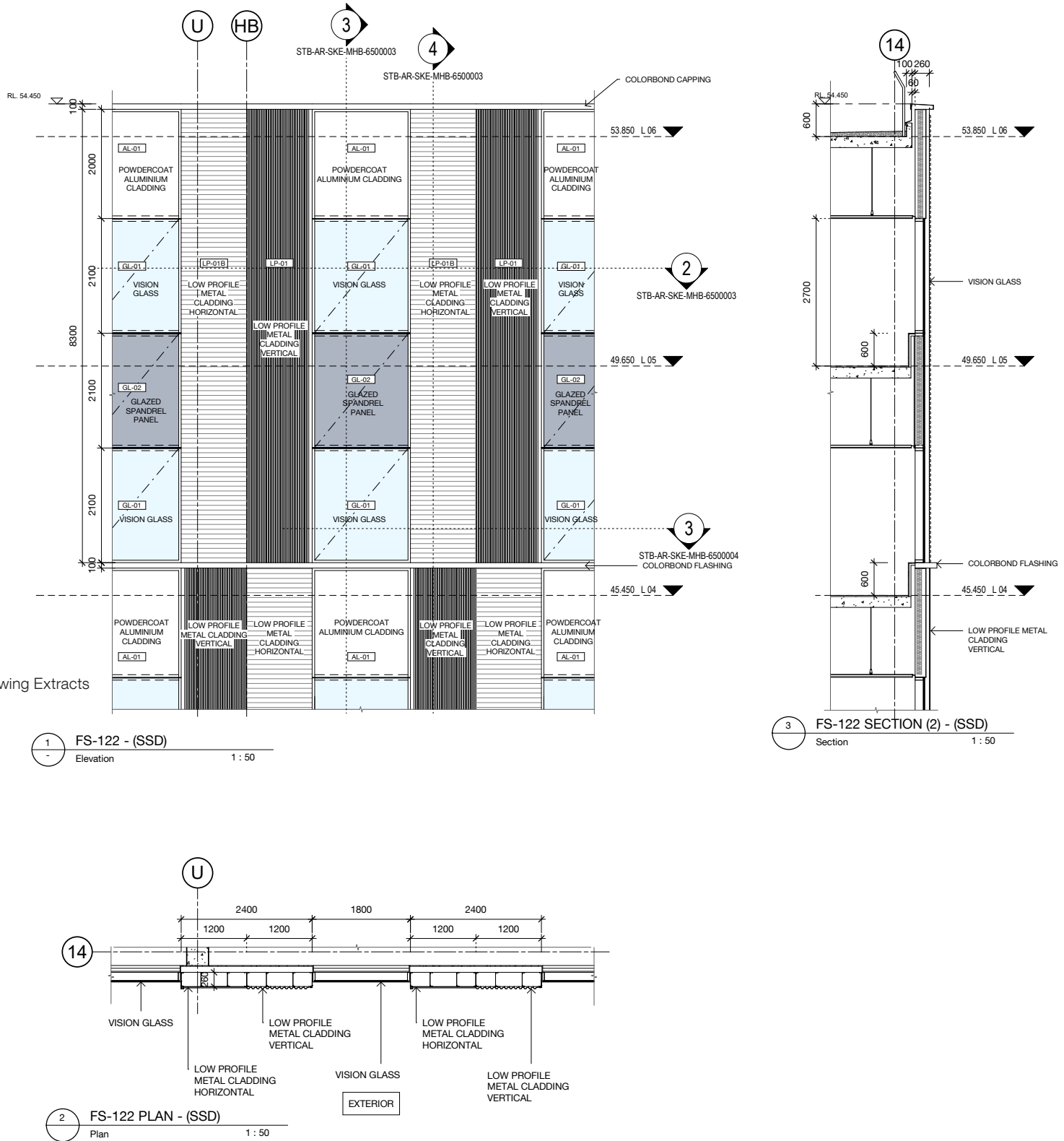


Figure 39b. Facade Design, FS122 Drawing Extracts

RECESSIVE & GRANULAR FORMS

/ A grounded earthy and textured material

/ Granular lower scale forms that are clustered around the base of the hospitals primary form

/ Grounded heavier materiality

/ Establishing a sense of rhythm and scale

/ Diversity of material expression

/ Recessive forms create diversity and break up clustered forms

RECESSIVE SUPPORT CORE

The quadrant anchor forms are connected to a central support core form, which is to be expressed as a recessive backdrop to the Quadrant Anchors. Located at the centre of the hospital, this form accommodates the hospital chassis and provides a central co-shared administration and clinical support function to the IPU extremities.

The glazed double height main entrance portal (north-south civic spine) is framed within this element. The design intent of this form is to be expressed as recessive to elevate the expression of the quadrant anchor forms.

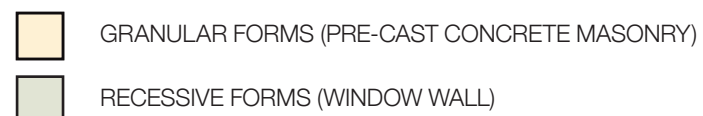
GRANULAR FORMS

The lower podium and plinth forms of the building are expressed as a cluster of more finely articulated smaller forms that ground the building and terrace with the site topography connected to stepping adjacent ground planes. These forms are intended to be textured and earthy, creating a more human scaled interface against the building.

The granular forms anchor the west and east flanking ground planes, supporting the quadrant anchor forms that land to define the central civic spine zone.



Figure 40. Design Isometric - Granular & Recessive Forms



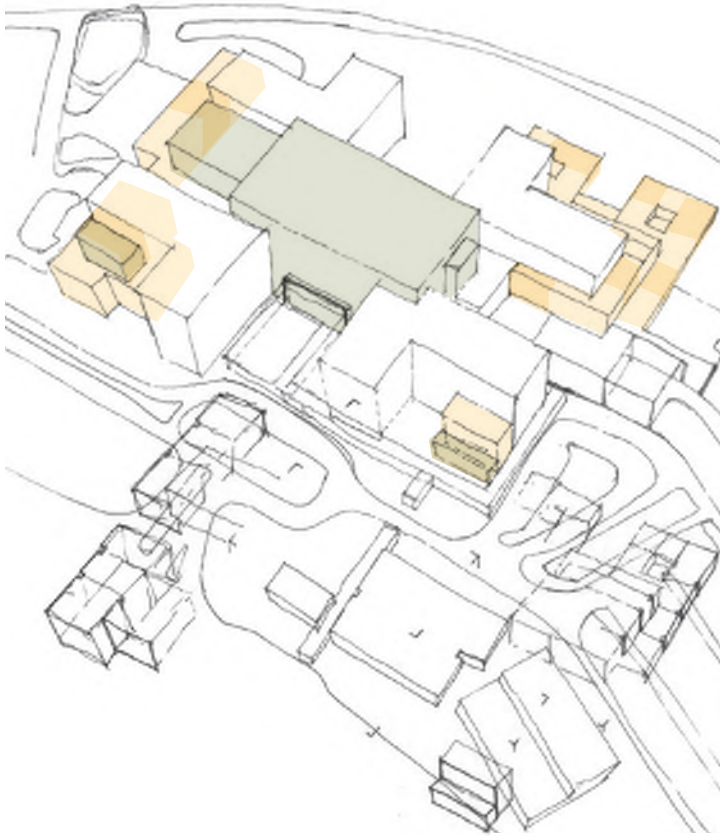
RECESSIVE & GRANULAR FORMS MATERIALITY

GRANULAR FORMS - MATERIAL EXPRESSION

The Granular Forms are to be built of precast concrete panel construction. Precast concrete is a resilient low maintenance material, that embodies a sense of mass and natural surface variation. The addition of oxide pigments will introduce a range of warmer hues to establish closer dialogue with the sites earth tones.

RECESSIVE FORMS - MATERIAL EXPRESSION

The recessive core form accommodates mixed functions including open plan administrative space, plant rooms and clinical functions. We have principally adopted a window wall arrangement with combination metal panel and glazed façade to provide good daylight penetration to the co-shared administration workspace from levels 2 to 5. The finishes will be expressed in darker hues to support their recessive intent.



GL-01
GLAZING



AL-02
POWDERCOAT ALUMINIUM MEDIUM



PC-01B
BEIGE PIGMENTED PRECAST



LP-01
LOW PROFILE METAL CLADDING - LIGHT



Figure 41a. Project Design Concept Visualisation (extract)
Figure 41b. Design Reference Image, Metal Cladding
Figure 41c. Design Reference Image, Metal Cladding
Figure 41d. Design Precedent Image, Pre-cast Concrete Panel



RECESSIVE & GRANULAR FORMS



Differentiating forms through the use of finish/colour, facade articulation and composition

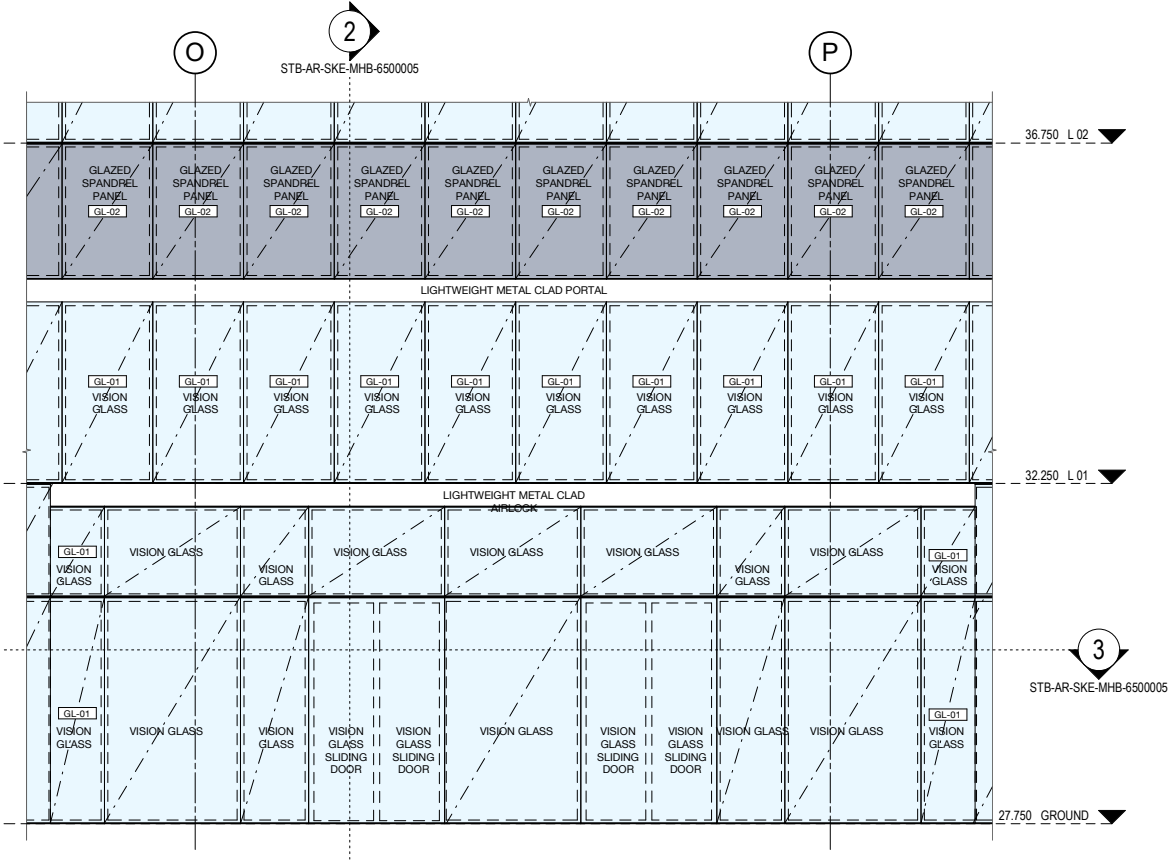


Figure 42a, b & c. Design Model, Render Extracts, Masonry Articulation

RECESSIVE FORMS



Figure 43a. Design Isometric - Anchor Quadrants



FS-131 MAIN ENTRY ELEVATION - (SSD)
Elevation 1 : 50

FS-131 MAIN ENTRY PLAN - (SSD)
Plan 1 : 50

Figure 43b. Facade Design, FS131 Drawing Extracts

GRANULAR FORMS



Figure 44a. Design Isometric - Anchor Quadrants

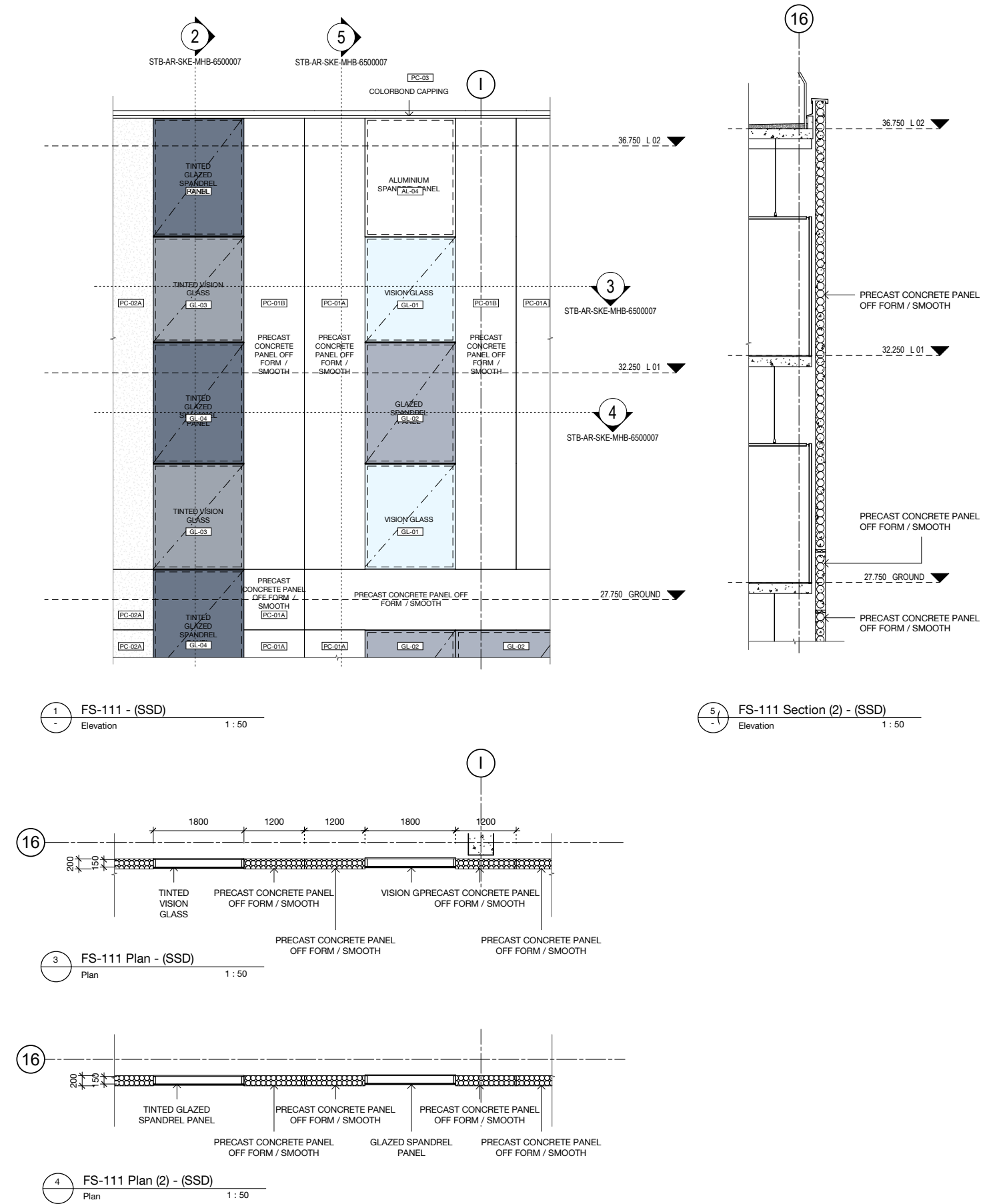
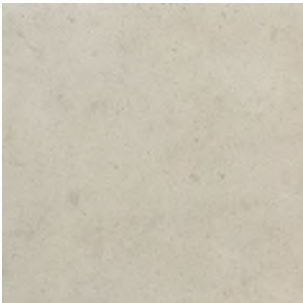


Figure 44b. Facade Design, FS111 Drawing Extracts

HOSPITAL FINISHES SCHEDULE

*An earthy and durable
material palette referencing
the site*



PC-01A
Light Beige Pigmented Precast



PC-01B
Beige Pigmented Precast



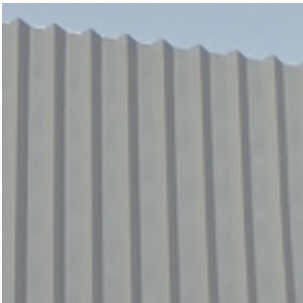
AL-01
Powdercoat Aluminium Light



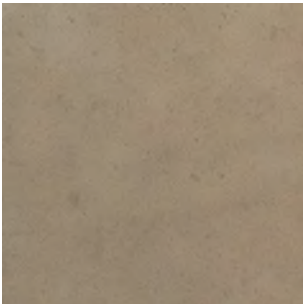
LP-01
Spandek Metal Cladding - Light



LP-11
Enseam Metal Cladding - Light



HP-01
'Forest Hill' Metal Cladding -
Light. Solid / 60% perforated



PC-02A
Light Ochre Pigmented Precast



PC-02B
Ochre Pigmented Precast



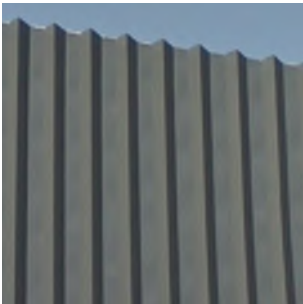
AL-02
Powdercoat Aluminium Medium



LP-02
Spandek Metal Cladding -
Medium



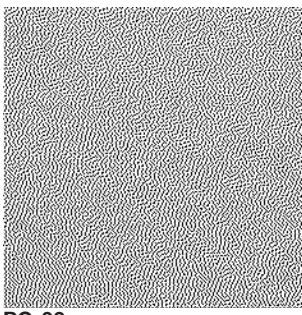
LP-12
Enseam Metal Cladding -
Medium



HP-02
'Forest Hill' Metal Cladding -
Medium. Solid / 60% perforated



GL-01
Glazing



PC-03
Non Pigmented Precast



AL-03
Powdercoat Aluminium Warm



LP-03
Spandek Metal Cladding -
Warm



LP-13
Enseam Metal Cladding - Warm



HP-03
'Forest Hill' Metal Cladding -
Warm. Solid / 60% perforated

VISUAL IMPACT MITIGATION

VISUAL IMPACT MITIGATION

The hospital design and site masterplan strategy has been developed in response to the functional design brief and requirement to sustain a long-term resilient, community serving health service for the local community and wider Tweed-Byron region. The comprehensive concept design process explored various building typology options and site configurations, with the final proposed arrangement adopted. The process sought to balance the hospital design functional requirements with an appropriate site and urban response, which included a framework for future expansion and development of future complementary program.

The masterplan and concept design process established the initial site response, setting the building location, defining clinical inter-departmental arrangement, form and building height. Clinical design and functionality and associated inter-department circulation efficiencies play the primary role in the formative stages of the building design. Clinical functionality demands efficient compact building arrangements, achieved through vertical co-location supported by lift and stair access.

Notwithstanding the significant influence clinical planning and functionality has had on the building form, composition and height - a number of design strategies have been developed which working together help to mitigate the visual impact of the hospital and Multi-Deck Carpark within the local Kingscliff and Cudgen setting,- as follows;

REDUCED MASS DENSITY WITH HEIGHT

The Concept Stage EIS submission provided a Maximum Planning Envelope form within which the building was to be designed. The Planning Envelope was contemplated as a series of vertical zones (clusters of floor levels) of progressive density reduction with height increase. Additionally the Planning Envelope mandated a maximum height restriction for the main building mass of RL +54.85, being 12.25m below the tallest level of the endorsed Planning Envelope. The EIS submission lodged in October 2018 included a visual Impact Assessment of the Planning Envelope form, constituting the worst case scenario visual impact outcome for the area. Schematic design of the hospital building reflects a more successful visual impact outcome to the area.

USE OF NATURAL SITE TOPOGRAPHY

The Hospital is designed as a 9-storey structure. The building has been deliberately located on the sites natural ridge line, locating two lower ground levels below the main entrance level off Cudgen Road, at RL +27.75. In combination, Level 6 of the building comprises a plant room, which limited to the central zone is visually recessive. Combined, these qualities result in the appearance of a 6-storey building, seen from the Cudgen Road approach.

BUILDING POSITION AND PERIPHERAL FEATURES

The Main Hospital building has been located on the ridge line at the centre of the site, setback nominally 65m from Cudgen Road. The foreground of the hospital includes the Health Hub, a series of smaller

1-2 storey pavilion structures. Tree landscaping along Cudgen Road to the south and west boundary will be landscape intensified (new tree planting) to provide a vegetated buffer mitigating land use conflict with the adjacent agricultural lands. There is an established treed window located on Cudgen Road to the east of the hospital. Additionally, an expansive environmental area adjoins and spans the sites north and partial west title boundary.

Collectively, locating the building at the centre of the site, and together with existing and new landscape and low scaled structures located in the viewing foreground of the hospital reduce the visual impact of the hospital on its receiving context.

IPU PLAN AND RESULTING BUILDING FORM

The building is conceptualised as an ensemble of 3 primary elements each with distinguishing scale and materiality, namely;

Anchor Forms; The plan form defining the IPU levels of the hospital are based on an efficient twin grid L-shape arrangement, which connects to a central support zone with expressed gable ends. The gable ends are distinctive vertical forms, experienced in the round. These forms have been enhanced, with the selected cladding finish.

Granular and Recessive Forms; The grounded Granular masonry forms in scale and joint articulation enhance the hospital's public spaces and gardens. The recessive building elements unify the forms and having a finer grain recede visually to emphasise the pronounced forms of the ensemble.

Articulation of double-height fenestration/spandrels arrangements visually link levels in vertical clusters, reducing the initial perceived number of storeys, to an apparent 3-storey form, see from distant views.

ENTRANCE TREATMENT

The approach routes and building entry arrangements have been curated as journey experiences along which a series landscaped public spaces are linked and experienced, under cover of protective walkway canopies. Entrances are building and portal-surround framed , providing for intuitive building approach and entry.

Entrances have been detailed as inviting human scale experiences with the main hospital entrance celebrated with a double height civic space gesture leading to a viewing terrace over the north environmental area.

MULTI-DECK CARPARK

The Multi-Deck Carpark accommodates the primary site Carpark yield demand. The demand is most efficiently met by adopting a simple building form, being visually least obtrusive. To mitigate the visual impact of this structure various design strategies have been adopted, including;

- **Ramped internal parking deck.** The Multi-deck Carpark floor

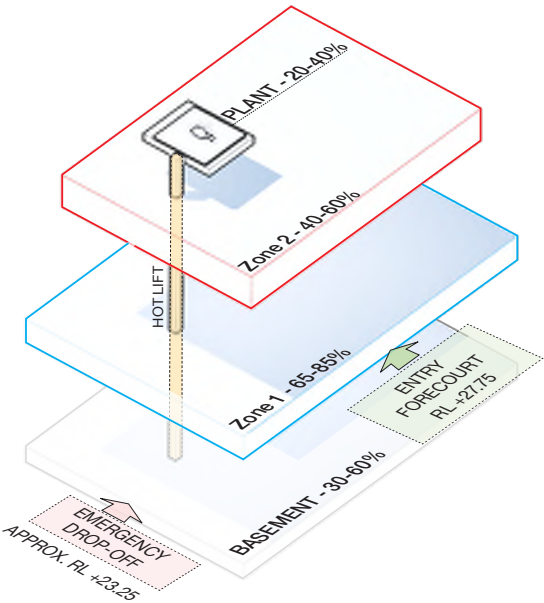
structure provides vertical circulation between levels. Designed to meet BCA standards, the building adopts a conventional form, having no unsightly external ramping system visible from surrounding view locations

- **Building located on the site ridge-edge.** Locating the building on the ridge edge , similar to the hospital strategy, allows development of visually discrete lower levels. The carpark is designed with below ground levels which take advantage of the natural sloping topography.
- **Height Limitation.** The Multi-deck Carpark is designed adhering to a minimum floor to floor levels constraints, and is limited to 10 storeys in total. These achieves the required parking yield with least visual impact on the surrounds.
- **Mass Articulation.** The interface between public and staff parking structures provides a facade in-set opportunity. This accommodates expression of a split mass. The building thus appears as two smaller buildings when viewed from southern vantage points.
- **Material Selection.** The material selection, rhythm and scale has deliberately been selected to emulate and harmonise with the aesthetic and design concepts of the adjacent hospital building. The episodic application of materials expresses the building mass as a cluster of assembled forms.
- **Material Distribution.** The Multi-Deck Carpark is expressed as a dominant masonry structure at the lower levels, with increased proportions of metal finishes at the upper levels. This this serves as a scaling device, with the lower level finishes grounding the building.
- **Treatment of parts of the facade at lower levels with landscape climbers and planting.** The landscaped wall strategy is visually sympathetic, blending the building form and mass into the landscape setting.

SUMMARY

- The building forms respond functionally the respective design brief, and have been scaled and placed on site accommodate sustained long-term health and future complementary development uses on site.
- The hospital building typology response is based on a complex tower on podium form, which diminishes in density and bulk as the building increases in height. Further the main building mass of the hospital is designed approximately 12m lower than the endorsed EIS Planning Envelope mass.
- The building designs take advantage of the sites natural ridge line topography, with lower ground levels stepping down the slope. This strategy reduces the perceived mass of the facility program.
- Positioning the hospital building at the centre of the site, supported by tree planting along the west, south and east title boundary's assist to mitigate the visible mass of the hospital building from nearby and surrounding vantage points.
- The hospital building elemental composition of clustered smaller forms, including their textured articulation resolve to provide a refined human scaled built form arrangement.

All strategies together deliver a considered visual impact outcome on the community and local significant vantage points. Refer to Visual Impact Assessment for further detail.



- / Plant Density: 5-20%
- / Zone 2 Density: 25-45%
- / Zone 1 Density: 50-70%
- / Basement Density: 10-30%

Figure 44c. Design Isometric - Zone Density (Planning Envelope)



Figure 45. Project Render - Approach View (ED drop off)



Figure 46. Project Render - Main Entrance View (Entrance B)

4.5 OTHER BUILDINGS, HEALTH HUB

HEALTH HUB

The Health Hub is a series of 1-2 storey pavilions. Positioned as part of the public realm, these pavilion structures are at the foreground of the hospital and are adjacent to the main public vehicle entrance off Cudgen Road. The ensemble of structures provides for a locally recognisable scale of building that addresses Cudgen Road. The buildings will house a combination of Learning, Development and Research functions, Aboriginal Health services, Oral Health and Health Assessment and Recovery program services (HARP).

The western most pavilion demarcates an important 'Town Centre' for the campus. It has provision for a food and beverage retail kiosk, which is further supported by seating and grassed areas to encourage informal gathering.

The buildings are ordered along an east-west spine, which is reinforced internally with ground level corridors to connect the two structures and organise the functional program. The location of the Learning, Development and Research (LDR) building is optimally located in close proximity to the Kingscliff TAFE (which is on opposite side of Cudgen Road). The location of the Tweed Valley Hospital main entry-way is also well placed to accommodate a potential future access road into Kingscliff TAFE.

Human scale pavilion buildings provide for enhanced integration of the landscape and further enrich the surrounding building typologies including, Aboriginal Health Services and its screened outdoor ceremonial courtyard.

The Health Hub buildings are set back approximately 9m from Cudgen Road, behind a retained established treed windrow to be further complemented with additional tree planting.

Materially, the buildings are proposed as fine-grain steel-infill structures with a facade massing and articulation that borrows from the grounded, earthy and textured material palette of the main hospital.

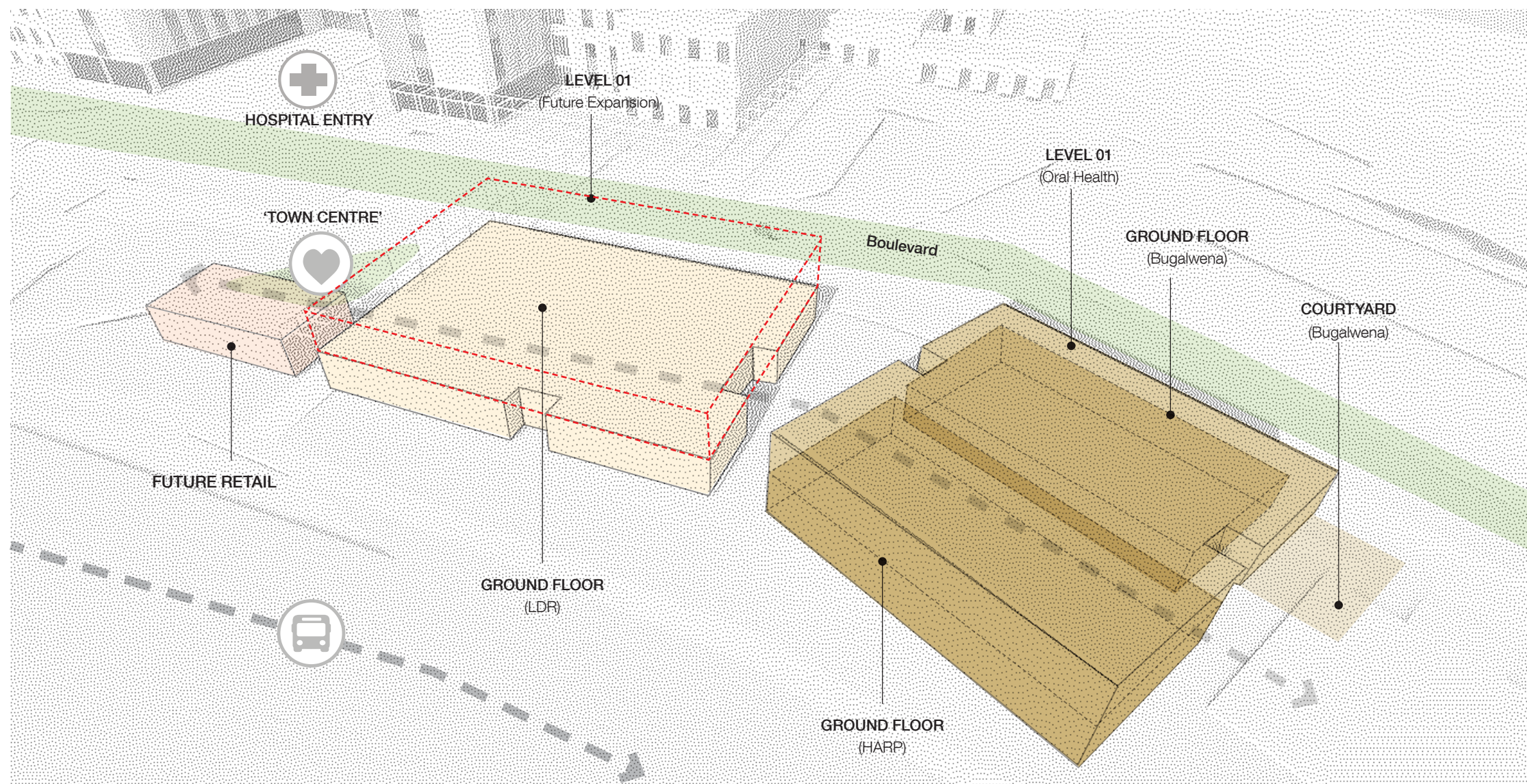


Figure 48. Design Isometric Health Hub



47a. Pavilion (design reference image)
47b. Pavilion (design reference image)
47c. Pavilion (design reference image)



ARTICULATED FORMS AND PERGOLA STRUCTURES

- *Single level datum established to link pavilion buildings formally and reinforce human scale*
- *Vertical rhythm established to respond to internal planning and provide for diversity of facade expression*
- *Horizontal language, engaging with the natural landscape of the site.*

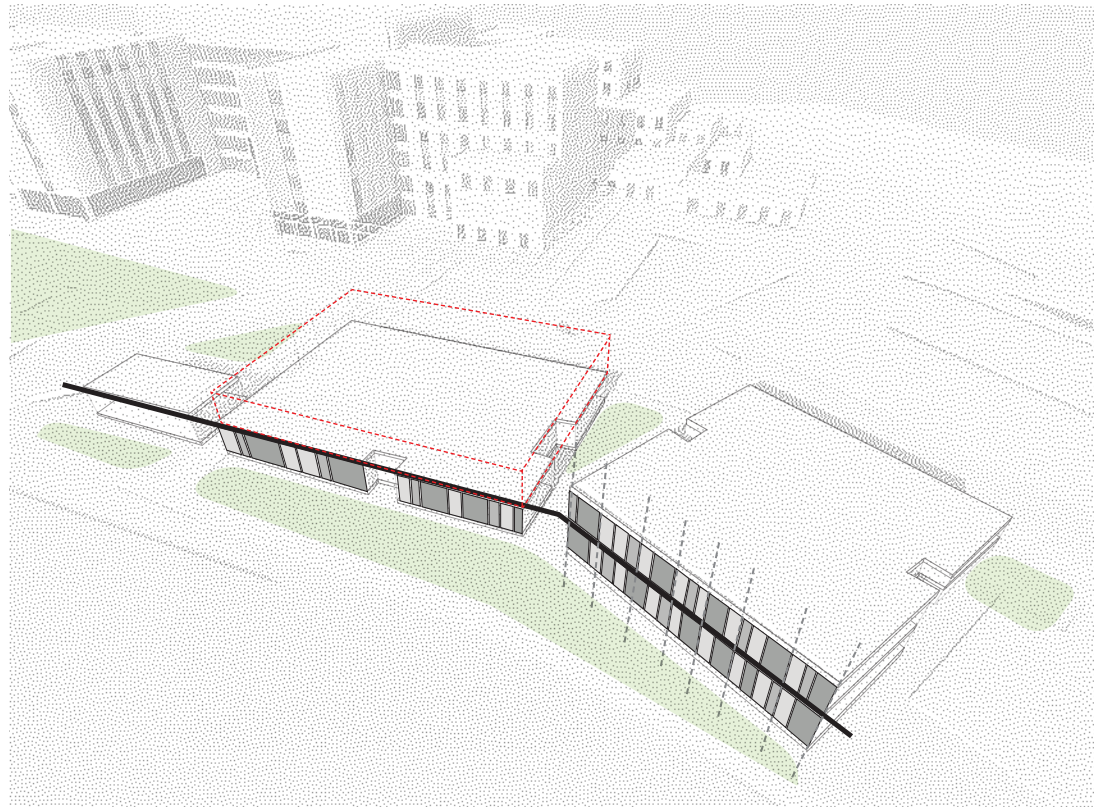


Figure 48. Datum and Articulation, Design Diagram

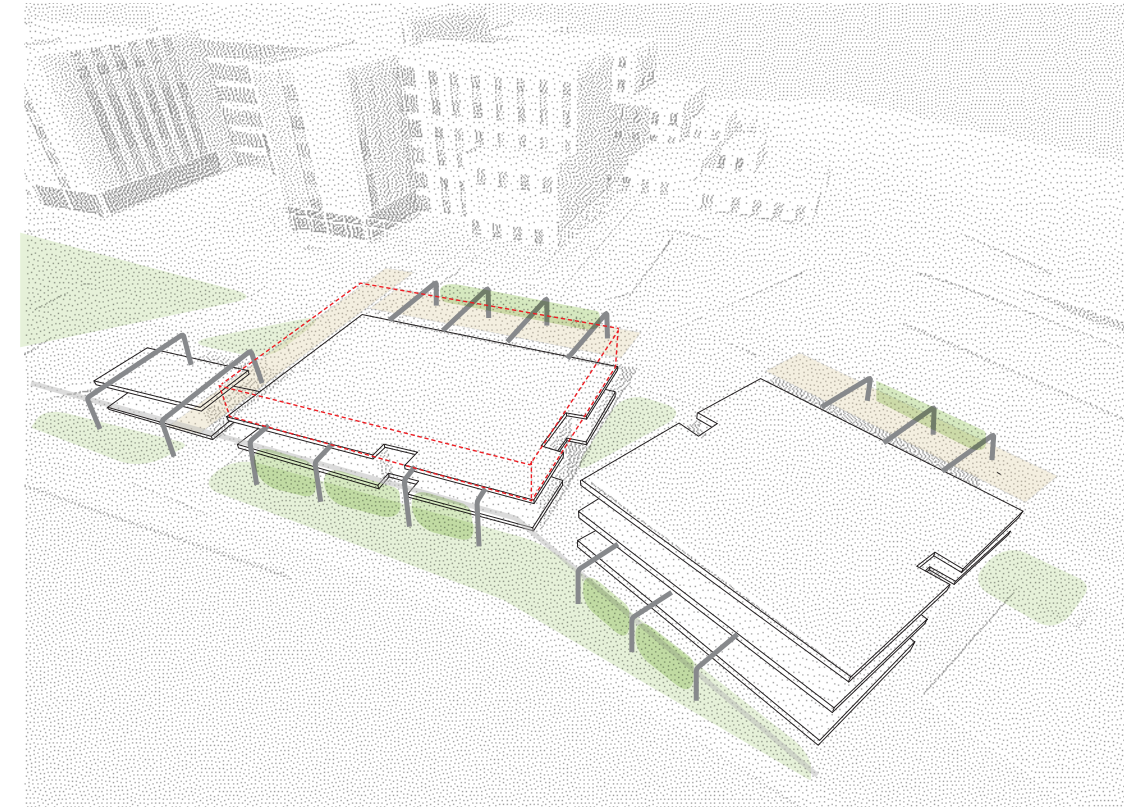


Figure 49. Pergolas, Design Diagram

DATUM

The Health Hub presents as an ensemble of human scale pavilions. The primary structural facade members are proposed to run horizontally creating a strong datum to line that connects all three structures and reduces the apparent height of the two-storey pavilion building. The decoupling of the ground and level one facade also allows for flexibility in space planning between the different floors.

ARTICULATION

The façade is further articulated via a finer vertical rhythm, established to respond to internal planning and provide for diversity of facade expression. The more finely articulated forms respond to the granular podium forms of the main hospital. These forms are intended to be a mix of earthy masonry forms and glazing evoking a reference to the residential townscape.

PERGOLAS

A climatic response which creates a sense of layering, shadow play and engagement with the landscape response. The proposed pergola structures provide for privacy, screening and shelter where required. They also reinforce a human scaled pavilion expression and soften the edges of the building.



Figure 50. Project Render (Bugalwena Entry)



Figure 51. Project Render (LDR Main Entry Sequence)

PAVILIONS IN THE LANDSCAPE

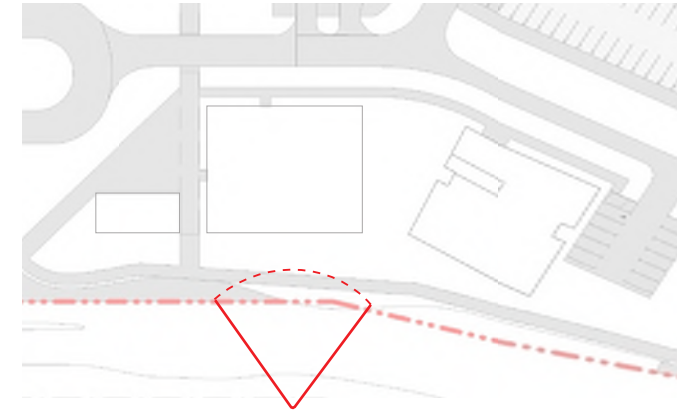


Figure 52. Project Render Extract- Health Hub (includes Future Retail and LDR Expansion)

ARRIVAL EXPERIENCE

The entry ensemble of pavilions provides for a locally recognizable scale of building and connects those arriving by public transport to the Civic Spine.

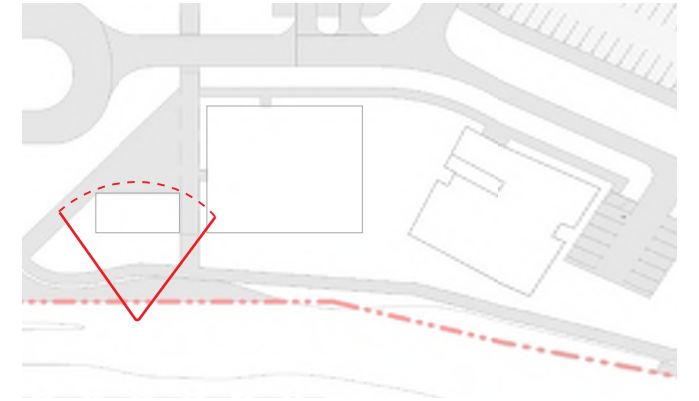


Figure 53. Project Render Extract- Health Hub (Future Retail), Bus Stop Approach

ARTICULATED FORMS AND PERGOLA STRUCTURES



Figure 54a. Project Render Extract- Health Hub (Bugalwena Entry)

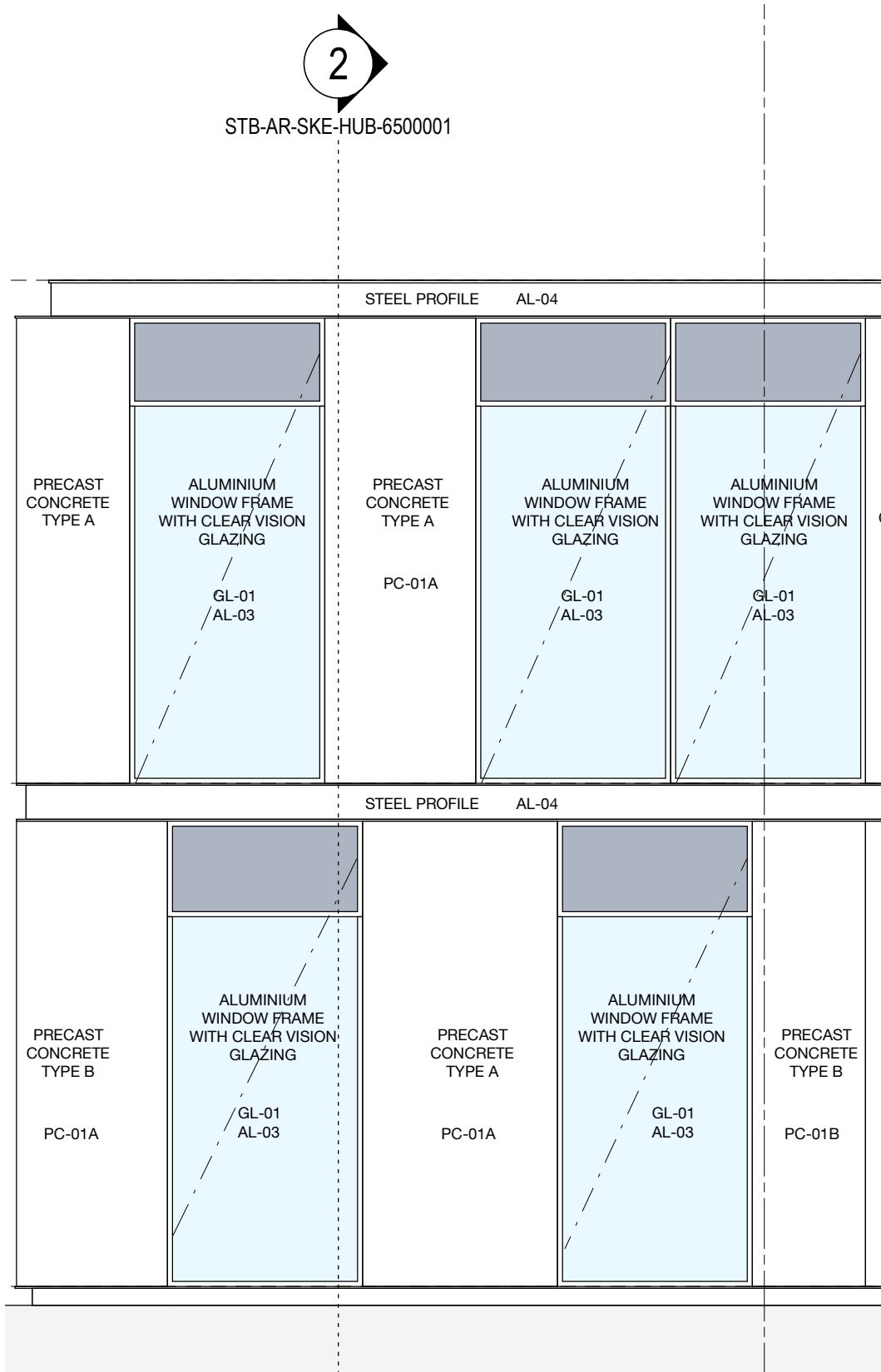


Figure 54b. Project Drawing Extract (Part Elevation)

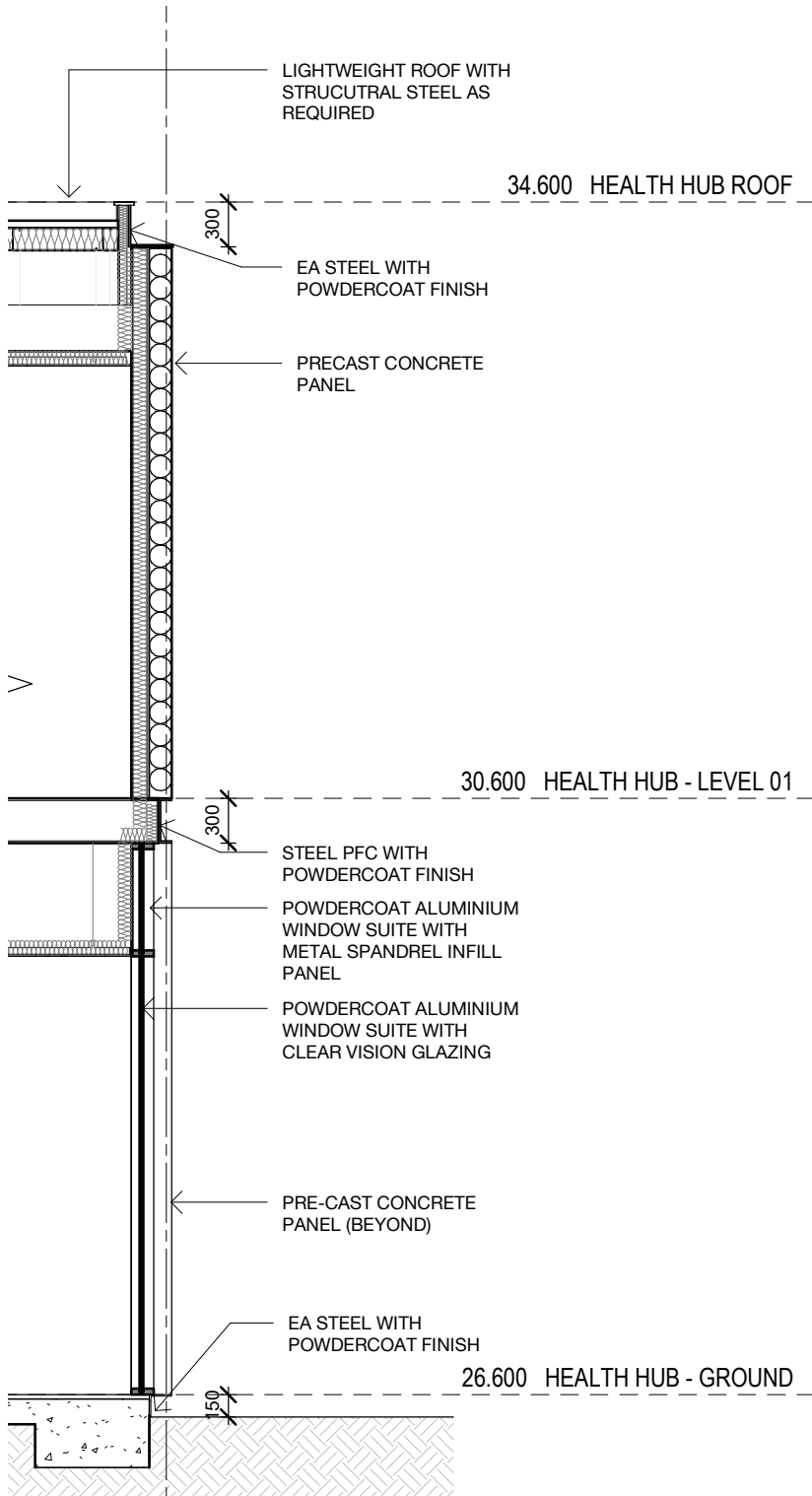


Figure 54c. Project Drawing Extract (Section Detail)

HEALTH HUB

MATERIALITY

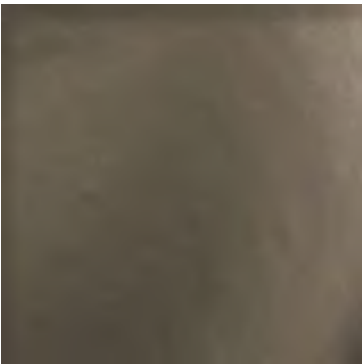
- *The pavilion forms are to be built of steel framing with precast concrete panel infill construction.*
- *Precast concrete is a resilient low maintenance material, that embodies a sense of mass and natural surface variation.*
- *The addition of pigments will introduce a range of warmer hues to establish closer dialogue with the sites earth tones.*



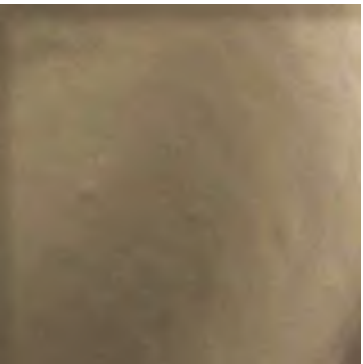
PC-01A
Light Beige Pigmented Precast



PC-01B
Beige Pigmented Precast



AL-03
Powdercoat Aluminium Warm



AL-04
Powdercoat Aluminium Beige



GL-01
Glazing



Figure 55a. Design Reference Image, Precast Concrete Assemblage



Figure 55b. Design Reference Image, Panelled Masonry Construction



Figure 55c. Design Reference Image, Tactile Masonry



Figure 56. Project Render - Approach View (Health Hub)

4.6 OTHER BUILDINGS, MULTI-DECK CARPARK

The building is positioned to the west of the hospital and interfaces the public realm, addressing the Green Spine pedestrian route along the length of the east facade elevation.

The building is read as a simple vertical patterned episodic concrete, metal and mesh form, articulated by depth of elements and interface of staff and public carpark zones. The façade treatment varies in response to the program. The lower level form is predominantly masonry which, transitions to a lightweight metal cladding at the upper levels. This solid materiality is teamed with a combination of louvres and mesh to provide for natural ventilation. From the west, the low level masonry treatment addresses views from the approach on Cudgen road towards to hospital. From the east the masonry façade treatment serves to address overlooking view amenity by the hospital users and contains light and noise spill from vehicle movements on the ramps between levels.

The building provides level access along the interfacing length of the Green Spine. Directly accessible from the Green Spine, the carpark accommodates an end-of-trip facility, carpark management and provision for future retail space which collectively, will serve to activate the Green Spine and adjacent garden space. The adjacent garden space provides outdoor amenity to the Emergency Department entrance and west lower ground clinical program.

Public vehicle access to the carpark is from the east, off the Boulevard via a ramp to basement level. The Green Spine consequently continues On-Grade uninterrupted over the entrance providing cycle access from the west and pedestrian access to a possible future development, proposed to the west of the Multi-Deck Carpark.

Staff vehicle access to the carpark is from the north service link road, with an On-Grade entrance direct to basement 2 level. The carpark is designed to accommodate both staff and public carparking, back-to-back, with soft division to allow efficient management of peak staff and public demand periods.

The carpark structure is designed as an internal graded ramp system with 4 carpark bays per structural grid. The grid spacing and column sizes are to be reviewed as part of the next project phase, with the view to integrate a sway frame construction methodology. Furthermore, the design allows for provision to accommodate a future level 2 link bridge, over the ambulance ramp linking to ground level of the hospital. Teamed with a sustainable transport plan, the size of the carpark is designed to suit future demand requirements.

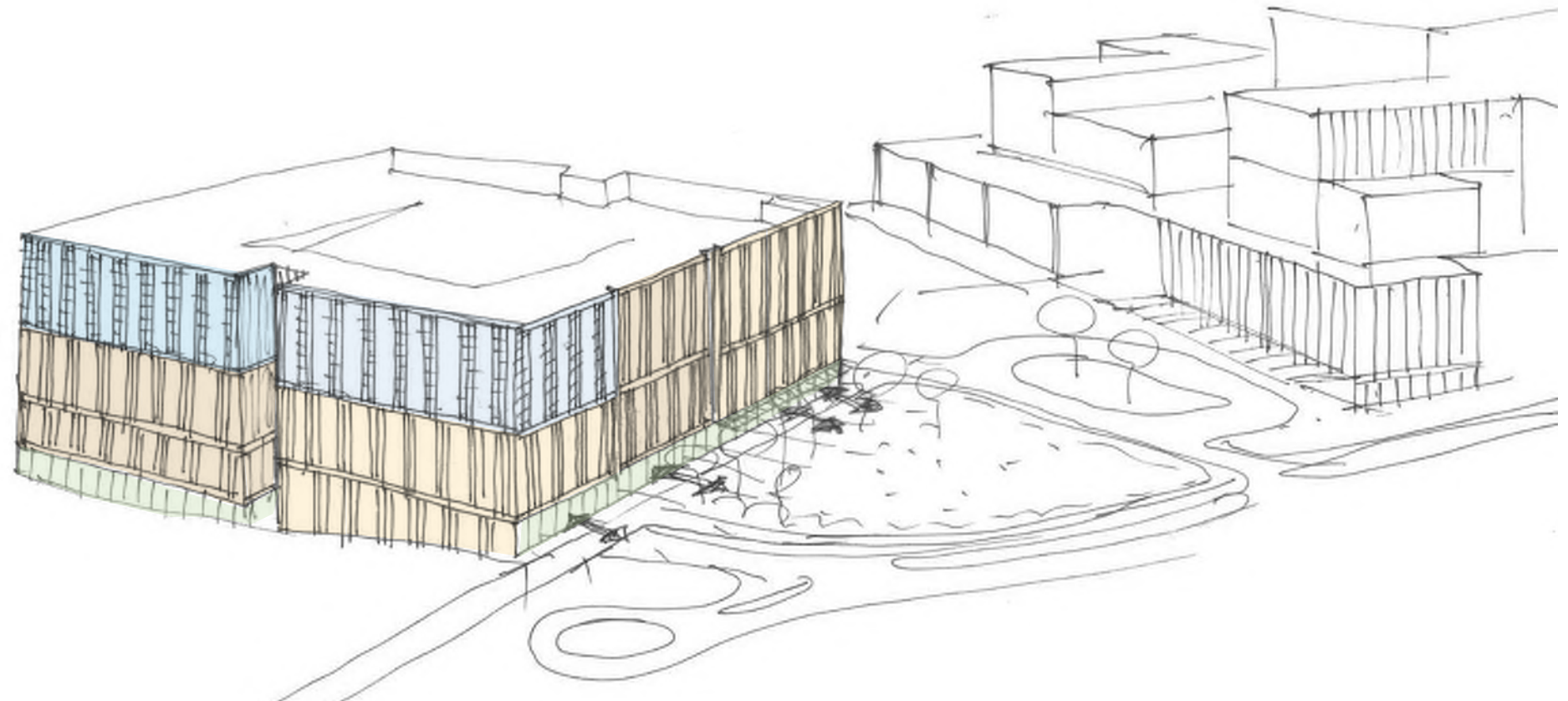


Figure 57a. Design Sketch, Multi-Deck Carpark



57b. Facade Materiality, planted grill-mesh



57c. Facade Materiality, Aluminium Louvres

ARTICULATED MASS

- *A series of clustered objects, an extension of the hospital across the site*
- *A close relationship to the main hospital podium*
- *Activation against the 'Green Spine'*

ARCHITECTURAL LANGUAGE

Borrowing from the architectural language of the main hospital building the carpark forms are to be built of pre-cast concrete panels and metal cladding construction. The introduction of metal louvres and mesh, not only ensures the carpark has sufficient natural ventilation but reinforces the vertical granularity reminiscent of the hospital forms. The numerous carpark levels and ramps are disguised by a multi level facade expression and defines a scale commensurate to the main hospital building.

GROUND PLANTING AND GREEN SPINE

The use of planting at ground level serves to enhance the connection between the carpark structure and the surrounding landscape. It is proposed that this planting will grow up the carpark mesh panels to create green facade screens and enhance the naturally ventilated façades whilst reducing the legibility of levels. The ground level design offers a strong pedestrian connection to the hospital along the 'Green Spine.' End of Trip facilities are located within the Carpark at ground level off the Green Spine. The Green Spine continues west beyond the Multi-Deck Carpark serving as the main cycle route off Cudgen Road.

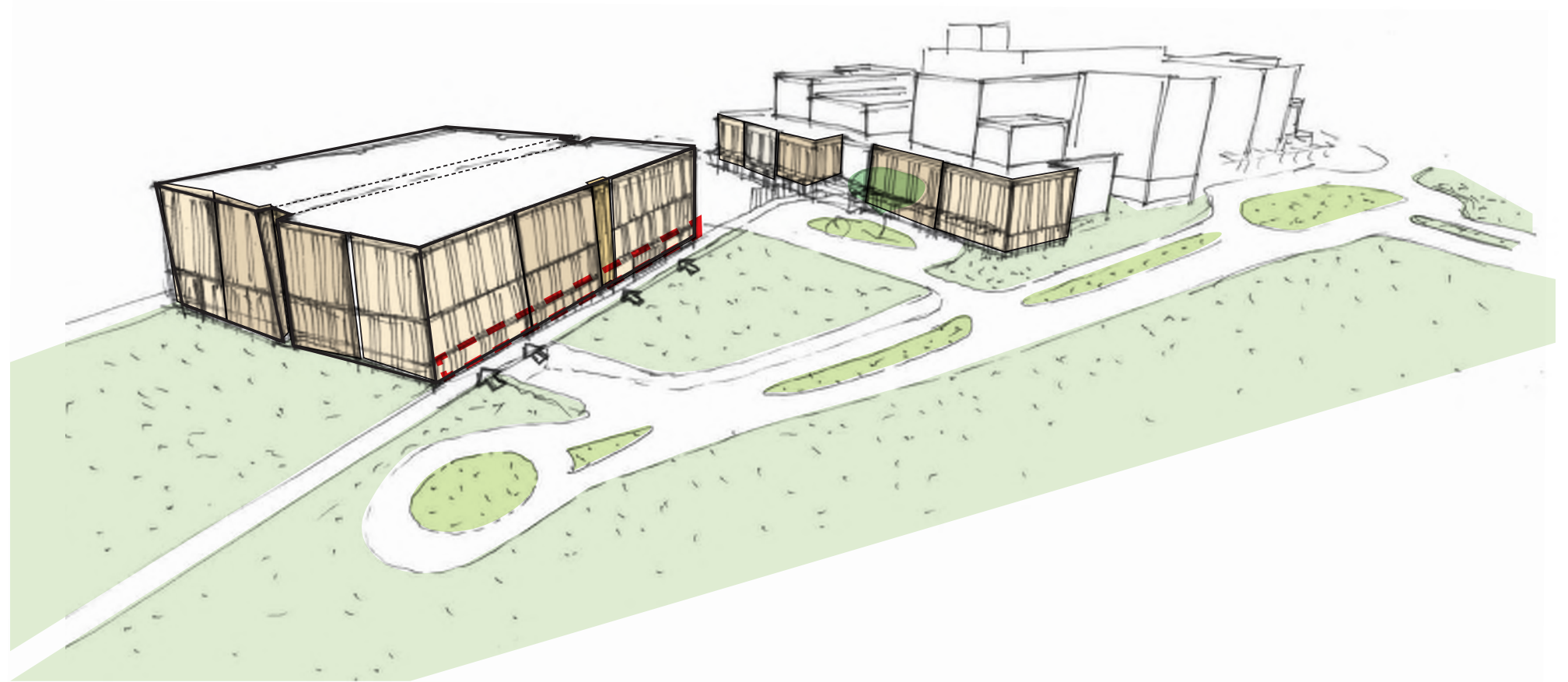


Figure 58a. Design Isometric Multi-Deck Carpark



Figure 58b. Project Render Multi-Deck Carpark View from Green Spine

ARTICULATED MASS



Figure 58a. Project Render Extract- Approach View from Main Hospital

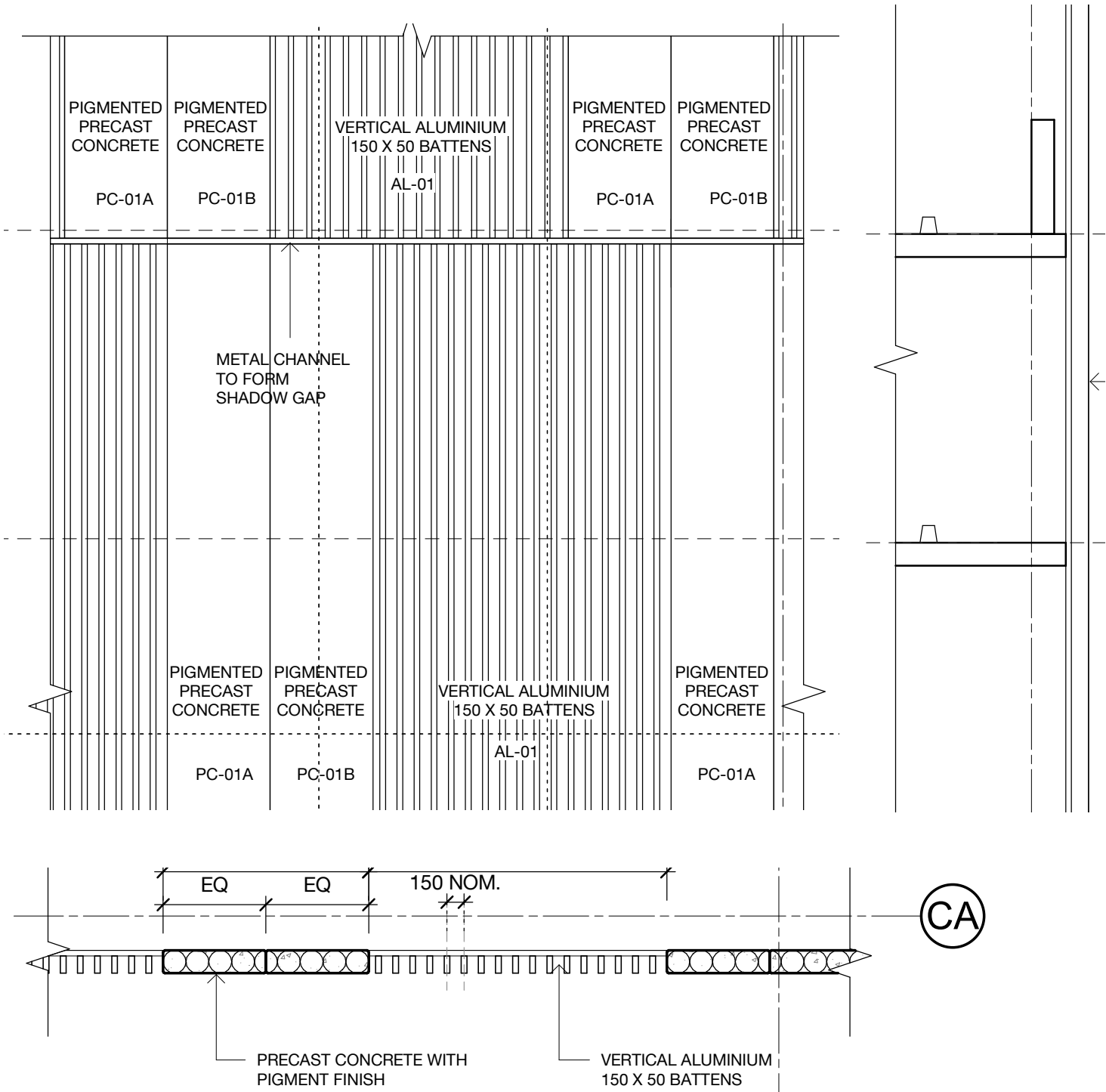


Figure 58b. Facade Design Drawing - Extracts

MULTI-DECK CARPARK MATERIALITY

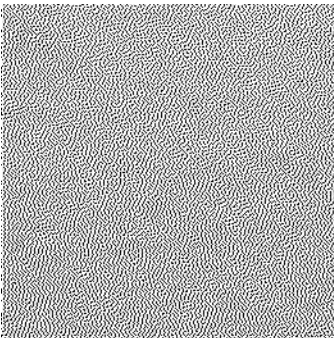
- *The Multi-Deck Carpark is proposed to have a concrete and metal materiality*
- *This borrows material references from the adjacent hospital podium*



PC-01A
Light Beige Pigmented Precast



PC-01B
Beige Pigmented Precast



PC-03
Non Pigmented Precast



AL-01
Powdercoat Aluminium Light



LP-01
Spandek Metal Cladding - Light



AL-02
Powdercoat Aluminium Medium



LP-02
Spandek Metal Cladding - Medium



AL-03
Powdercoat Aluminium Warm



LP-03
Spandek Metal Cladding - Warm



AL-04
Powdercoat Aluminium Beige



Figure 59. Project Render - Approach View (Multi-Deck Carpark)

4.7 LANDSCAPE DESIGN STATEMENT

LANDSCAPE DESIGN STATEMENT

Tweed Valley Hospital is an opportunity to create a significant new community facility that supports the health and well-being needs of the region well into the future. The site, surrounding landscape, and architectural design calls for a landscape response that is connected with its context and seamlessly integrated into the life of the hospital

At a strategic level, the guidelines of GANSW 'Better Placed' and 'Greener Places' documents have informed the guiding principles for this project.

Key principles for the landscape design include:

- Uniquely of the place
- Legible and accessible
- Diversity of experiences
- Assist with recovery; and
- Low maintenance

Fundamental existing site considerations in the landscape design include neighbouring land uses, existing vegetation and landscape character, existing topography, views and heritage. Conceptual development of the landscape language is directly connected with the architectural narrative – 'patchwork' – inspired by the dynamic matrix of farming plots when viewed from above.

Existing fields on the site inspire delineation of contrasting lawn species for visual diversity in the broader landscape, whilst a finer grain patchwork of new elements connects this language to and through the building.

Visual diversity in the patchwork narrative is created in the landscape using a range of techniques, including strong edge definition, hierarchy and repetition of line, and planting contrast.



PICTURED
60a. Landscape Consultant, Reference Image
60b. Landscape Consultant, Reference Image
60c. Landscape Consultant, Reference Image
60d. Landscape Consultant, Reference Image

Proposed landscape materials reference existing site materials and the history of the site

A series of places are designed appropriate to scale and program, whilst broadly reading as a cohesive and legible patchwork of related elements.

The key places are:

- Health Hub
- Entry Plaza
- Northern Terrace
- Green Spine
- Courtyards (including opportunities for engagement with food growing, in particular in Mental Health courtyards)
- Open lawns with clusters of trees within the APZ
- Bioretention Areas
- Community Gardens

Proposed landscape materials reference existing site materials and the history of the site; including the use of natural materials where appropriate, and materials that are durable, cost effective and low maintenance.

The site-wide planting palette and design has been developed to reference the many layers of site history; from the naturally occurring species that once covered the site and were important to Indigenous culture, to the more recent agricultural uses and character. Plantings are both in linear 'paddock lines', and informal to reference the natural landscape. The contrast of these planting characters creates the desired patchwork in the landscape at a range of scales. Large solitary feature trees are strategically placed to assist with way-finding and reference the 'tree in a paddock' narrative. The species selected are typical of the farm homestead feature trees and paddock trees in the local area. There are also the 'new' layers of planting that respond to the new hospital context. This planting incorporates species with sensory values, and culinary (edible plants) uses to encourage meaningful engagement with the landscape. Particular consideration is given to species that do not attract pests and cause allergies.

Key to the health and well-being of the Hospital users is a considered approach to CPTED. Key issues considered include legibility of key movement paths, active building edges to maximise passive surveillance of external areas, and consideration of the experience both day and night.

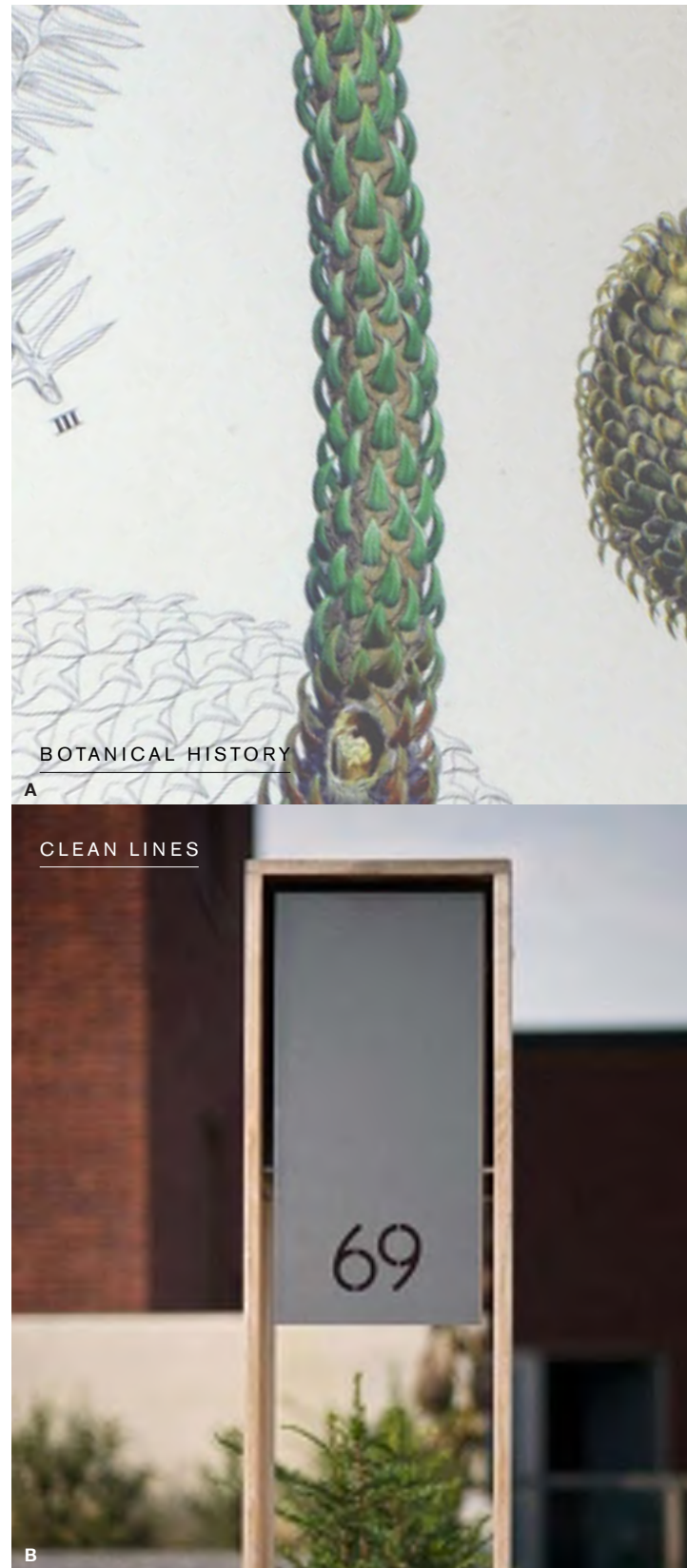
For further detail refer to the Landscape Design Report



4.8 WAY-FINDING AND SIGNAGE DESIGN

The building identification signage scheme for the Tweed Valley Hospital has been developed to serve the practical function of directing and reassuring visitors as they journey to, and into, the hospital precinct.

This requirement has led to the strategic consideration and selection of effective and appropriate signage size, proportions, placement and messaging.



PICTURED

61a. Way-finding Consultant, Reference Image
61b. Way-finding Consultant, Reference Image
61c. Way-finding Consultant, Reference Image
61d. Way-finding Consultant, Reference Image

Alongside this practical function, aesthetically the building identification signage scheme has been developed to be responsive to the architectural and landscape design schemes, celebrate the local site context and positively contribute to the visual character of the project.

This focus has resulted in the considered selection of materials, graphic patterns, fonts, textures and colours and the overall form for the signs.

All signs have been specified to be constructed from high quality, durable materials suitable for external application in a site of significant prominence and public-usage, and to ensure longevity and minimal maintenance requirements.

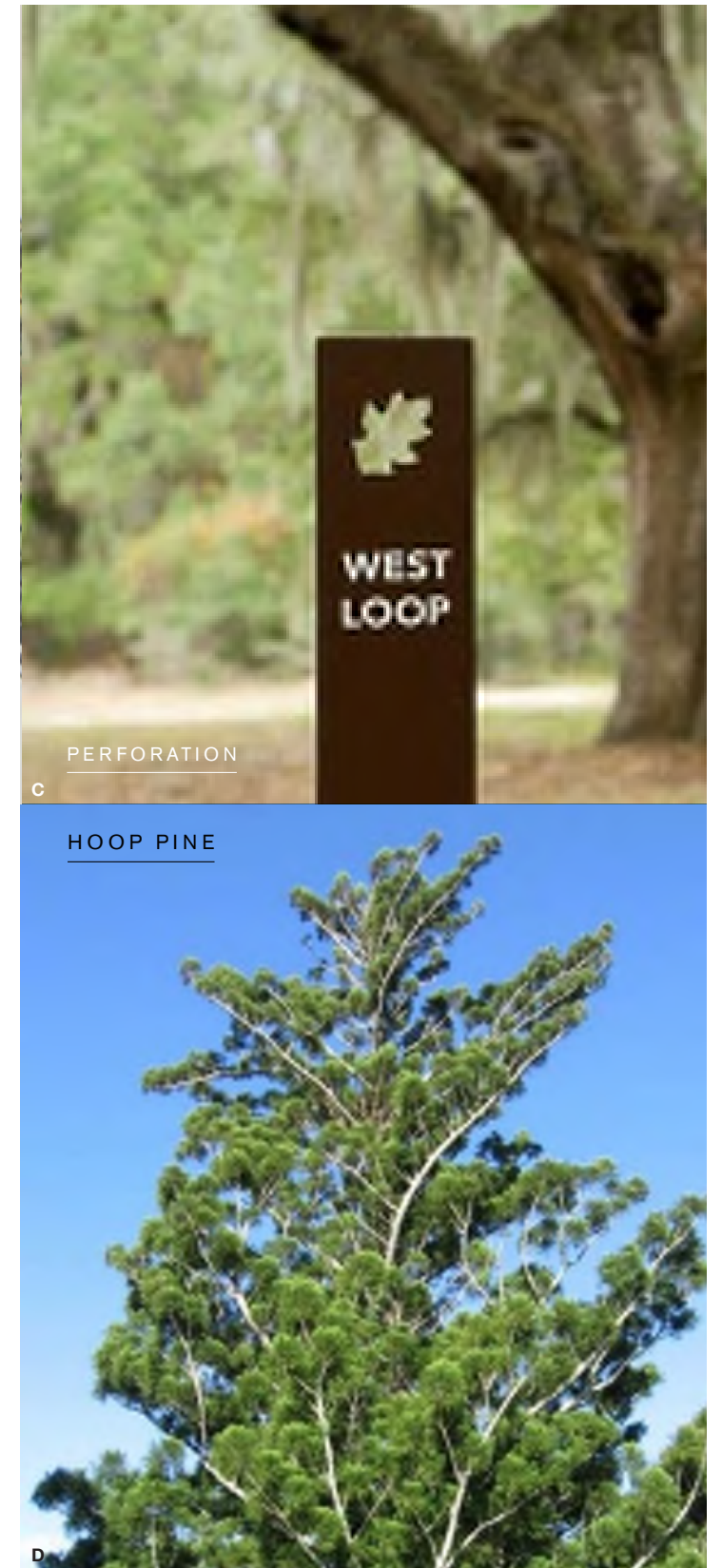
Signs that form part of the building identification signage scheme fall into three sub-categories - S1: Building IDs, S2: Building Entry ID and S3: Precinct IDs.

The sign types that form the S1 sub- category (S1.A Sky Sign ID and the S1.B Emergency ID), are both building mounted illuminated signs that will be visible as visitors journey down Cudgen Road, with a focus on the primary entry route from Tweed Coast Road. Strategic positioned to minimise any light infiltration into the interior of the hospital, the S1.A sign form will act as a key identifier for visitors travelling towards, and at, the key intersection in hospital precinct. The S1.B sign form has been developed as a visual indicator on approach from the south-west along Cudgen Road that the Emergency Department is located on the south-west side of the hospital building. This building ID sign will then be supported by vehicular signage directing to the Emergency Department once visitors enter the Hospital precinct.

The S2 sign is located at the main entry as a key identifier that will assist users whilst travelling towards the hospital via car and also in a pedestrian context.

The S3 signs are precinct identification signs that are key to the building identification signage scheme, given the scale of the hospital site and the multiple entry journeys visitors may undertake. These signs serve both an identification and way-finding function, supporting visitors as they progress down Cudgen Road and to the key intersection at the main entry.

The S3 signs also represent the most significant opportunity within the scheme for the signage to add to the visual character of the site. As such, in line with architectural direction of using natural materials and a tonal palette reflective of the of the site, a powdercoat finish to reflect the red earth has been nominated as a highlight finish for these signs. Dually, a pattern is incorporated onto the S3 signs and is an abstraction of the individual leaves of the hoop pine, a local plant species that will also feature predominately throughout the landscaping design for the Tweed Valley Hospital.



4.9 HERITAGE SIGNIFICANCE AND IMPACT

The area of the Tweed Coast is known to have been the ancestral lands of the Yugambeh, the Bunjalung and the Minyangbal People.

A detailed investigation to assess the potential for Aboriginal archaeological resources and consultation with the Registered Aboriginal Parties (RAPs) did not identify sites of Aboriginal cultural heritage on the surface and noted the subject area has extremely low potential to contain intact archaeological deposits.

As identified during the site inspection there are no known Aboriginal cultural heritage objects, places or features situated within the Project Site. The proposed development will not impact on any Aboriginal cultural heritage values.

The detailed investigation identified five existing dry-stone retaining wall structures having South Sea Islander historic and cultural significance. The detailed heritage findings and assessment are included in the Niche (Heritage Consultant) SSD2 Report.

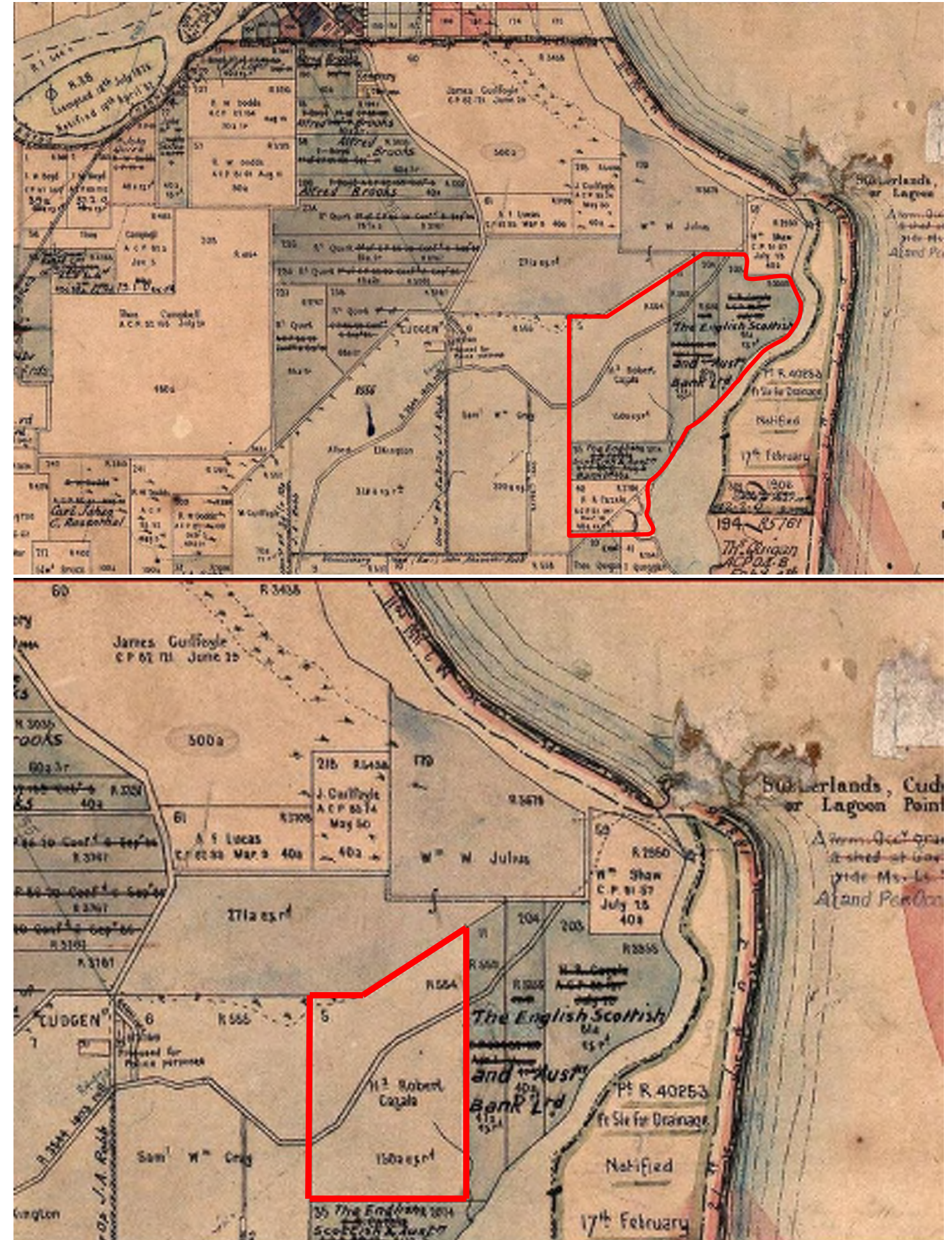


Figure 62. Extract- Refer Niche Report (Heritage Consultant)

HERITAGE

Five historical dry-stone walls were identified during a heritage survey of the site.

The walls were likely constructed by South Sea Islander workers, principally from the Solomon Islands and Vanuatu, and may represent a significant connection of South Sea Islanders to the Tweed district.

These walls, together with some mature native trees on the site and a rubbish dump that may contain relics, may be of local heritage significance.

Three of the five dry-stone walls are located to the perimeter of the site, and two are located within the central zone along the sites ridge line, refer Site Plan - Existing Conditions.



Figure 64. Site Photograph - Fig Tree

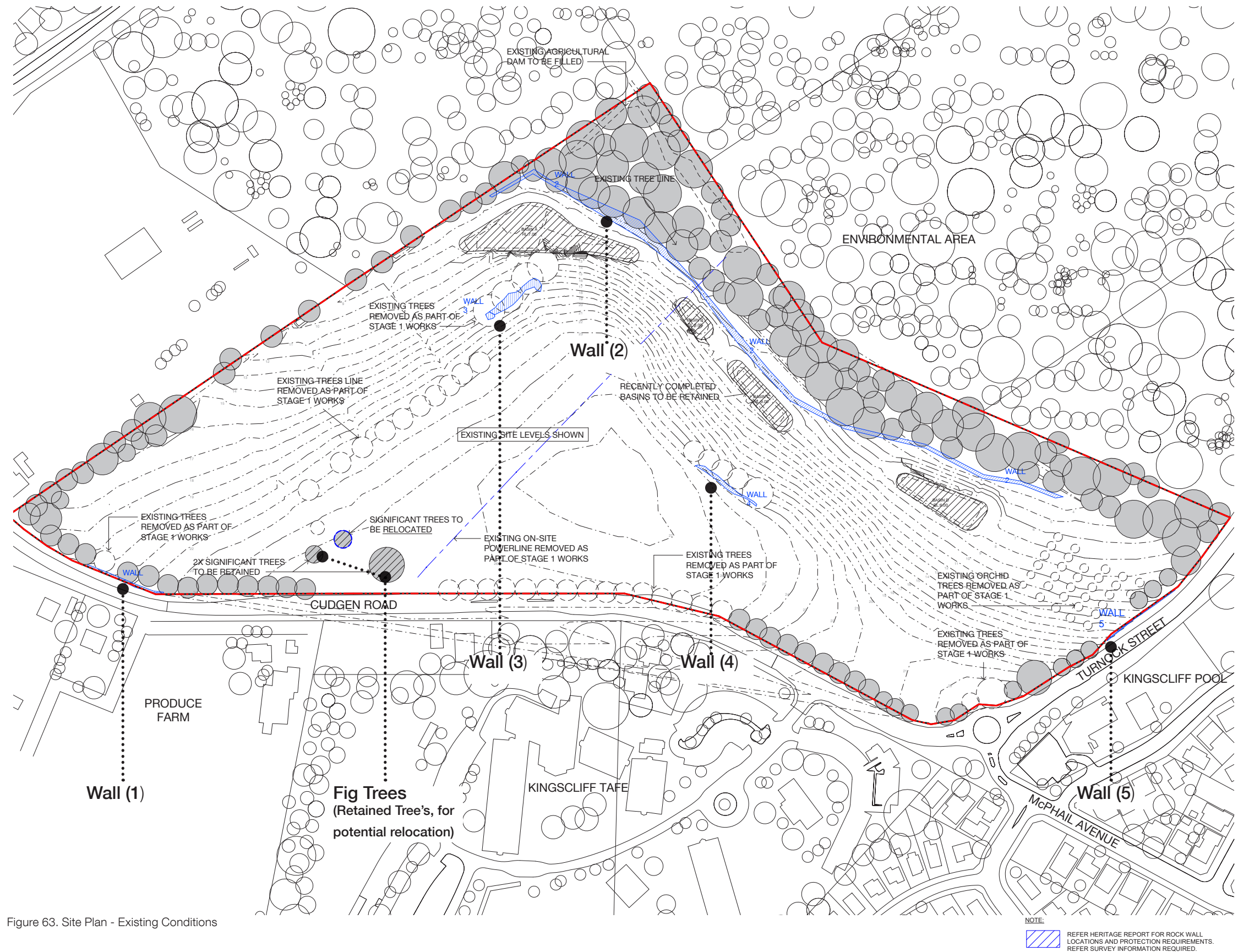


Figure 63. Site Plan - Existing Conditions