An architectural rendering of a modern, multi-story building with a dark, cantilevered roof and a facade of light-colored rectangular panels and large glass windows. The building is surrounded by trees and landscaping. Silhouettes of people are shown walking on a path in the foreground. The sky is blue with light clouds.

TAFE NSW Meadowbank Multi-Trades and Digital Technology Hub

ARCHITECTURAL DESIGN STATEMENT
OCTOBER 2019

GRAY PUKSAND



ISSUE STATUS

PROJECT

Phase 2.1 Combined Multi-Trades and Digital Technology Hub

CLIENT

TAFE NSW

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1.0 Executive Summary

EXECUTIVE SUMMARY

INTRODUCTION

In June 2018, the Premier and Member for Ryde unveiled plans for the Meadowbank Education Precinct, comprising new education facilities including a new primary school, high school and revitalised Meadowbank TAFE.

The NSW Government’s commitment to the Meadowbank Education Precinct provides a unique opportunity to:

- Create a flagship model for students to experience seamless pathways between school, VET, University and jobs
- Enable community engagement and access to world class facilities
- Support the local economy through business partnerships and investment

The most North Western corner of the original campus has now been divested to School Infrastructure New South Wales and the site cleared in preparation for construction works. TAFE NSW are proposing to undertake modernisation works across their campus, with the focus of this State Significant Development Application being a new Multi Trades and Digital Technology Hub.

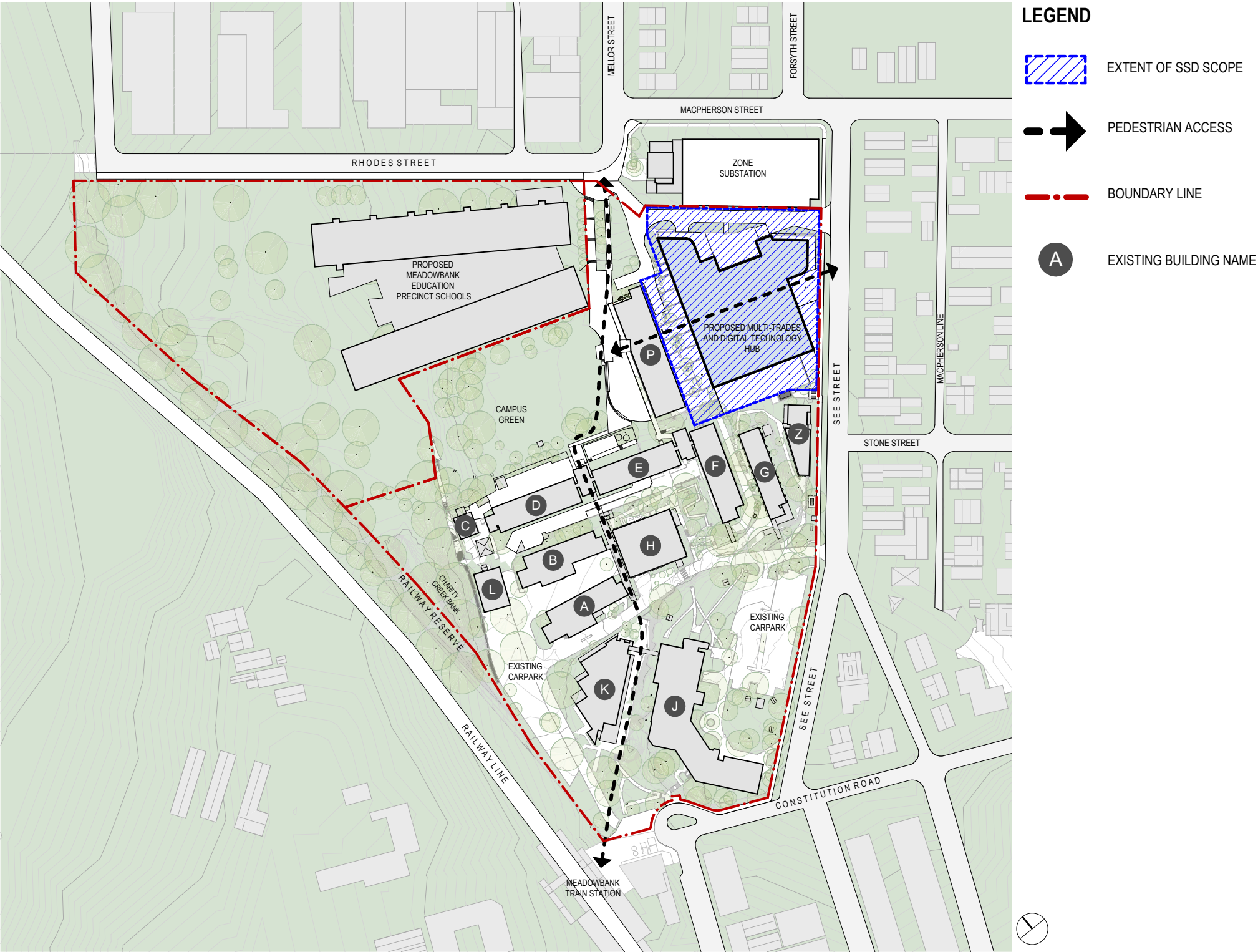
PURPOSE OF THIS REPORT

This report has been prepared by Gray Puksand to form part of the State Significant Development Application submission for the proposed Multi Trades and Digital Hub Building. Its purpose is to inform the reader of the journey undertaken in the development of the proposal.

Analysis of the site and its context facilitated the design team in understanding the locality and urban relationships and how these can be utilised to fulfill the potential of the site.

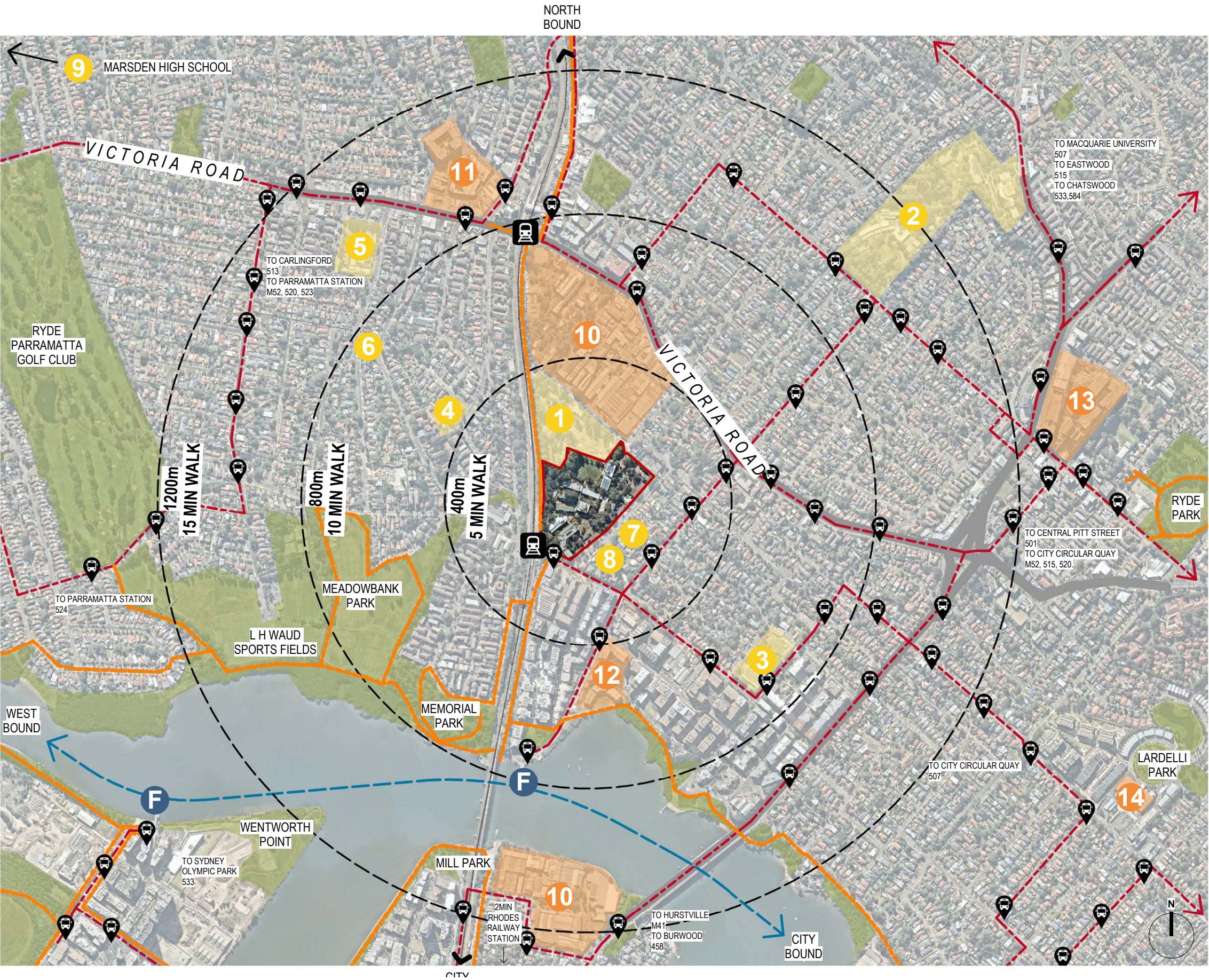
Detailed stakeholder consultation has been undertaken and feedback utilised to facilitate the development of the project brief. This is explored in more detail within this report and culminates in the design that has been developed.

This report should be read in conjunction with all other supporting documentation as it reflects the work undertaken within a multidisciplinary design team.



2.0 Site Context

SITE CONTEXT



LEGEND



- TRANSPORT - TRAIN
- GREEN SPACES
- CYCLE LINK
- SITE BOUNDARY
- BUS LINK
- FERRY ROUTE
- PRIMARY TRANSIT ROAD
- F FERRY WHARF
- 1 MEADOWBANK SCHOOL
- 2 RYDE TAFE CAMPUS
- 3 MEADOWBANK PUBLIC S
- 4 ST MICHAEL'S CATHOLIC PRIMARY SCHOOL
- 5 WEST RYDE PUBLIC SCH
- 6 WEST RYDE LONG DAY CARE CENTRE
- 7 ITALIAN BILINGUAL SCHC
- 8 LITTLE STARS KINDERG
- 9 MARSDEN HIGH SCHOOL
- 10 LIGHT INDUSTRIAL ZONE
- 11 WEST RYDE LIBRARY
- 12 CATHOLIC COMMUNITY S
- 13 TOP RYDE SHOPPING CE
- 14 ROYAL REHAB PRIVATE I

PUBLIC TRANSPORT LINKS


The Meadowbank campus has several links to public transport in its immediate vicinity.

The Meadowbank Train Station is located on the southern boundary of the site, with bus stops within a 5-minute walk and access to the Parramatta river services within a 10 minute walk.


LEGEND




TRANSPORT - TRAIN




SITE BOUNDARY




BUS LINK



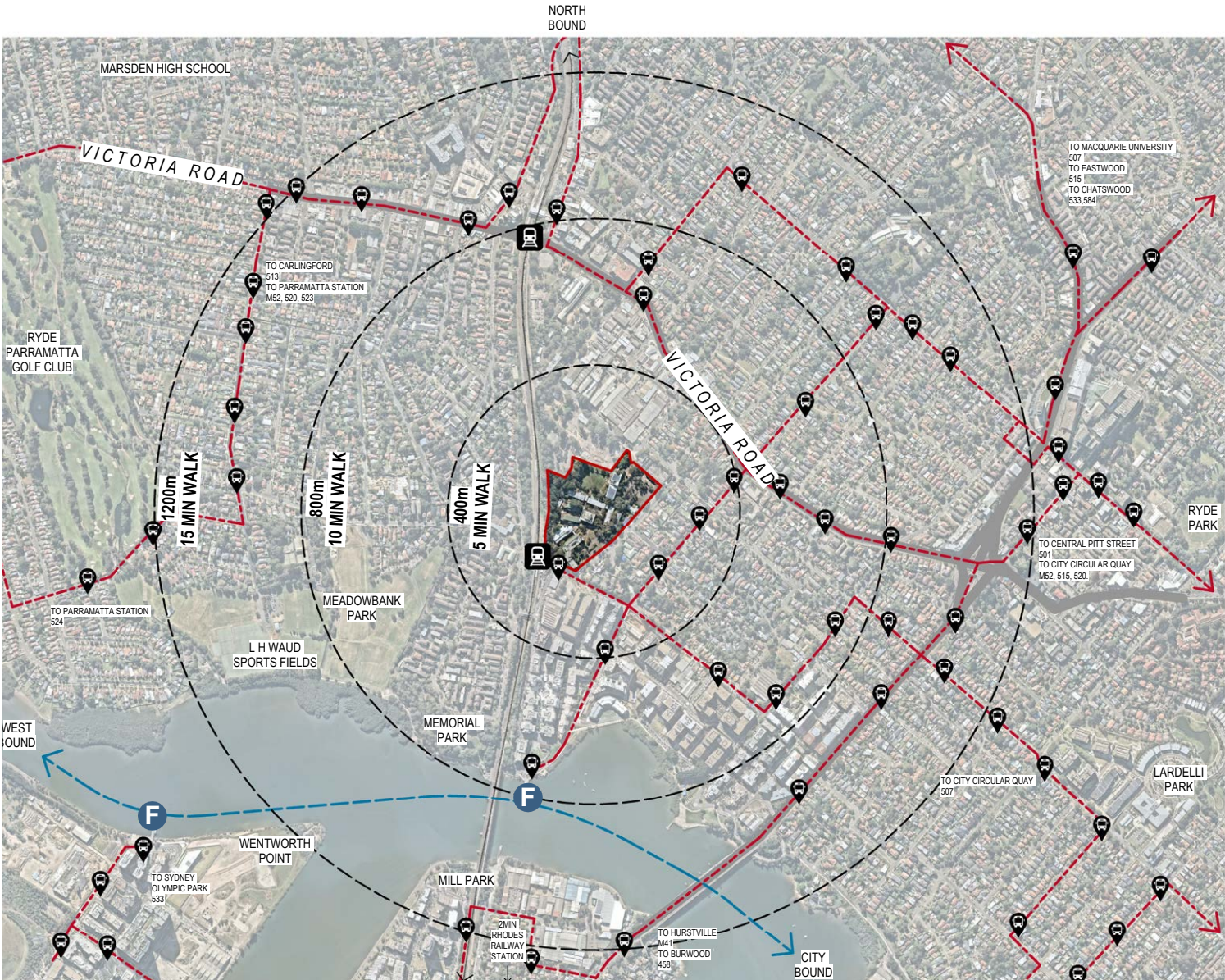
FERRY ROUTE



PRIMARY TRANSIT ROAD





FERRY WHARF




CYCLE LINKS

There are various cycle links and future proposed cycle ways are shown on the context plan adjacent providing safe routes following the river bank from East to West and linking railway stations North to South.


LEGEND




TRANSPORT - TRAIN



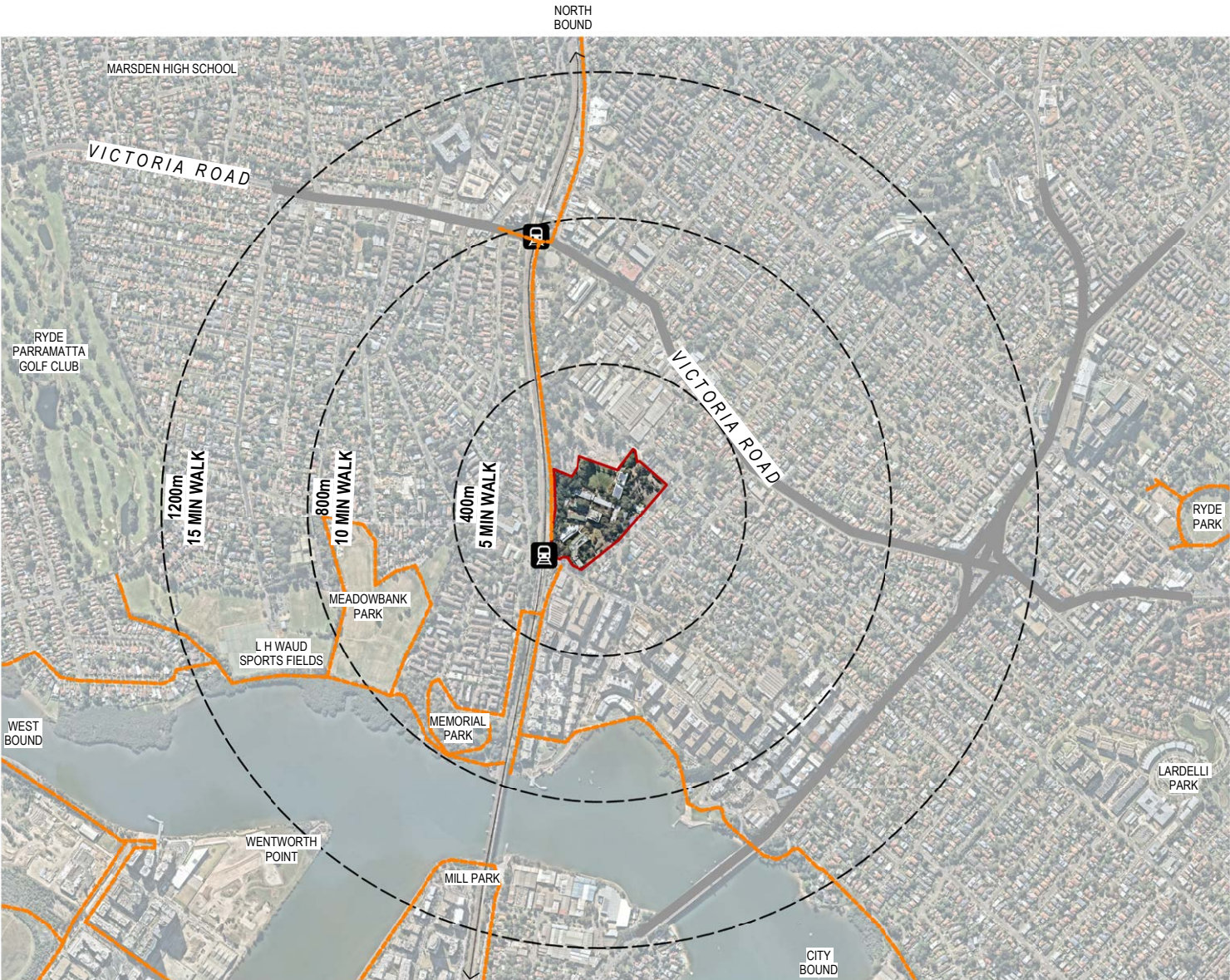
CYCLE LINK



SITE BOUNDARY



PRIMARY TRANSIT ROAD



Site Locality and Planning Information

The local area immediately surrounding the TAFE site has a mix of uses varying from residential, light industrial, educational and local scale retail.

A large zone substation shares the northern boundary of the site with associated easements to the TAFE property as discussed in more detail below.

A large light industrial area is located to the north of the campus and a minor holding to the south behind the local retail outlets.

There are several heritage listed items in the immediate vicinity. These have been identified below.

Ryde Local Environmental Plan (LEP) 2014 is a comprehensive Plan for the City of Ryde and together with the Ryde Development Control Plan (DCP) 2014 provides the necessary framework or development within the City of Ryde. It aims to balance the needs of residents, businesses and investors both today and for future generations.

Some of the key planning controls for the site are summarised below which help provide a design context for height, density, bulk and scale for the development.

The Local Environmental Plan (2014) document can be viewed on the following hyperlink: <https://www.legislation.nsw.gov.au/#/view/EPL/2014/608>. The version referenced for the purposes of this report became current on 28 February 2019.

The Council’s Development Control Plan (2014) document can be viewed on the following hyperlink: <https://www.ryde.nsw.gov.au/Business-and-Development/Planning-Controls/Development-Control-Plan>.

LAND ZONING

The Campus has been zoned as SP2 – Educational Establishment on Ryde LEP 2014 Map LZN_003. This is a Special Infrastructure zoning

ACID SULPHATE SOILS

The Site is identified as Class 5 Acid Sulphate Soil Zone on Ryde LEP 2014 Map ASS_003.

FLOOR SPACE RATIO

The site has no maximum floor space ratio designated on Ryde LEP 2014 Map FSR_003

ENVIRONMENTAL HERITAGE

The item noted adjacent to Hermitage Road, to the north of the campus is recorded as a state significant heritage item and is the historical Ryde Pumping Station and Site. The former Engineer’s residence also features as locally significant building on the site.

At Forsyth Street, several historical residences are noted as being of local heritage significance.

A church of local heritage significance is recorded at the corner of Bowden and Squire Street with a locally significant house and garden opposite. Further south on Bowden Street is another house of local heritage significance.

FLOOD

The site has been identified as being located in an active flood zone. This is explored further in the accompanying flood impact analysis report by TTW Consulting Engineers.

A group of dwellings in the triangular plot between See Street, Angus Street and Constitution Road are also recorded with local heritage significance.

The Shops facing the public plaza at Meadowbank Station are recorded with local heritage significance.

There are no items on the TAFE Campus recorded on the Environmental Heritage Register.

MAXIMUM BUILDING HEIGHT

The site has no maximum building height designated on Ryde LEP 2014 Map HOB_003.

COMMUNITY FACILITIES

There are currently limited community facilities within the Meadowbank Suburb. Some of the facilities that are available close by include:

- West Ryde Library
- Shepherds Bay Community Centre

The ‘Libraries for Ryde 2014 – 2024’ strategy identifies the potential to provide a library for the Meadowbank suburb with the potential for partnership with a commercial developer. Given the current proximity of the TAFE Campus to West Ryde Library, it is unlikely that the strategic positioning of any new facility would be of significant benefit to TAFE.

RESIDENTIAL DEVELOPMENT

A large area to the south of the Meadowbank Campus is currently being developed as residential apartments boasting view over the Parramatta river.

Precinct Plan



LEGEND

- TRANSPORT - TRAIN
- TRANSPORT - BUS
- BUS LINK
- EXISTING BUILDING BLOCK
- EXISTING TAFE CARPARK
- EXISTING TAFE GREEN SPACES
- HERITAGE ITEM
- LOCAL SHOPS
- PUBLIC PLAZA
- ELECTRICITY ZONE SUBSTATION
- PUBLIC OPEN SPACES
- LIGHT INDUSTRIAL
- EDUCATION FACILITIES
- SITE BOUNDARY
- PEDESTRAIN ACCESS POINT
- VEHICULAR ACCESS POINT

The Site

The Meadowbank Campus has significant changes in level across the site, sloping down from See Street and the railway line, forming a North – South orientated gully to the central portion of the site.

The nature of the existing topography will require careful consideration with respect to providing access for all with a height difference in the region of 20 metres between the highest point on campus and the lowest.



A simplistic breakdown of the original site shows the 3.33 Hectares of land divested to School Infrastructure and the 6.17 hectares remaining for TAFE NSW use. The shared boundary running North Easterly toward Rhodes Street will form an important interface between the school site and TAFE as the main pedestrian access point for the high school.



The TAFE site now has 12 main buildings remaining following the divestment previously discussed. These are supported with a few smaller out houses housing site infrastructure and providing some minor storage areas.

There are three main carparking areas on site, one to the north east corner fronting See Street, one to the South East corner, also fronting See Street and one final area to the south western corner of the site, accessed via See Street and travel along a private roadway from East to West across the campus.

Site Analysis



AERIAL PHOTO

This recent Ortho Photographic view provides a succinct overview of the current site arrangements. The northern element of the original site that has been divested to School Infrastructure New South Wales has been cleared and is ready for the commencement of the construction of the new schools.



SITE ANALYSIS OPEN SPACE

The Meadowbank Campus boasts some significant green spaces and several mature trees across the site.

The heart of the campus features a generous communal green that stretches to the northern boundary with the proposed school site.

Smaller pockets of green space are scattered across the campus, creating instances of amenity and breakout space for TAFE patrons.

A corridor of greenery and mature trees acts as a buffer along the Western boundary, separating the populated spaces from the railway line.

- TRANSPORT - TRAIN
- BUILDING BLOCK
- EXISTING TAFE GREEN SPACES
- EXISTING PAVED AREAS
- SITE BOUNDARY



SITE PEDESTRIAN ACCESS

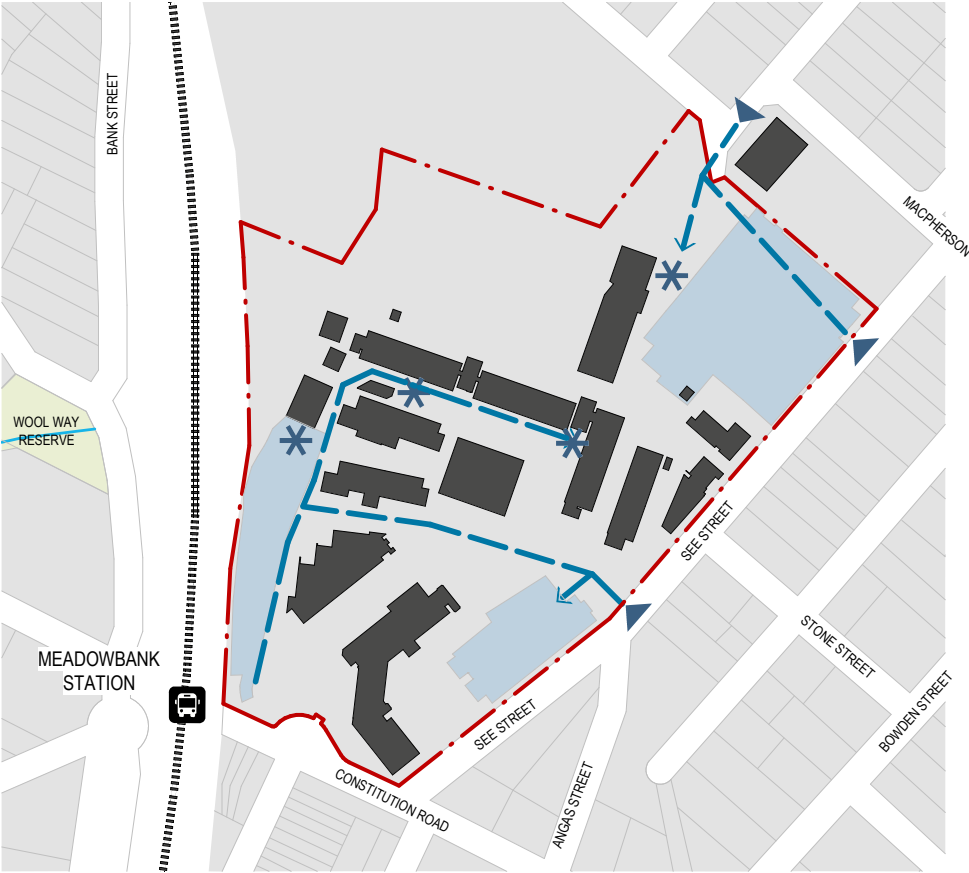
The Meadowbank Campus has five main pedestrian access points around the boundary of the site.

The Northern most aspect from Rhodes Street has pedestrian access ways at two levels, directly to the campus green and at First Floor of Building P to the Student Service Centre.

Access points from See Street are spread along the Eastern boundary with three main points, the most northerly to the main carpark area, a central point via the main campus roadway and the third to Building J.

Pedestrian access from the Meadowbank Station is provided at the most southerly point of the site. Currently the access routes throughout the site running north to south are fragmented and wayfinding is an issue.

- TRANSPORT - TRAIN
- TRANSPORT - BUS
- PEDESTRIAN ENTRY POINT
- PEDESTRIAN CIRCULATION / MOVEMENT
- BUILDING BLOCK
- EXISTING TAFE GREEN SPACES
- SITE BOUNDARY

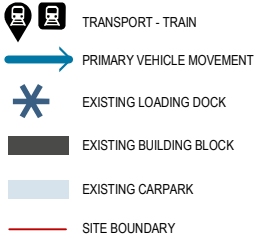


VEHICULAR ACCESS

The Meadowbank Campus currently has three vehicular access points. Rhodes Street provides an exit point from the main car park that has its entry from See Street.

The main East – West campus roadway provides strategic access from See Street through the campus linking several loading points, car parks and site infrastructure and also providing emergency access into the heart of the site.

There are various rights of carriage across the site that are explored in more detail below.



SITE EASEMENTS

The Meadowbank Campus deposit plans identify various easements that must either be retained or abolished.

Along the Northern boundary with the zone substation, the site is encumbered with an easement for electricity purposes 11.095m wide at the west, narrowing to 6.045m at the east, dating from 2008 and an easement to drain water 2.44m wide dating from 1994.

A right of carriage from the main See Street entrance is recorded to provide access to the site substation and state-owned electrical infrastructure.

Other encumbrances on the site include a right of carriage over the roadway running east to west from See Street, commonly known as ‘Gate 4’ with an electricity easement running alongside.



SITE FLOOD ZONE

The Meadowbank Campus is located within the Charity Creek catchment area that is a tributary to the Parramatta river. The site has a large flood zone with varying risk factors as identified in the diagram above.

The Charity Creek is now culverted for most of its journey towards the Parramatta river, becoming visible in open air to the West of the railway line.

Due to the topography of the site falling from East to West as discussed above, careful consideration to overland flow must be given to any new constructions on the site.

Refer to the site Flood Impact Analysis that forms part of this development application.

3.0 Meadowbank Education Precinct – An Overview

MEADOWBANK EDUCATION PRECINCT

The Campus Vision

In June 2018, the Premier and Member for Ryde unveiled plans for the Meadowbank Education Precinct, comprising new education facilities including a new primary school, high school and revitalised Meadowbank TAFE.

The NSW Government’s commitment to the Meadowbank Education Precinct provides a unique opportunity to:

- Create a flagship model for students to experience seamless pathways between school, VET, University and jobs
- Enable community engagement and access to world class facilities
- Support the local economy through business partnerships and investment

Upon completion, the precinct will cater for students from as early as Kindergarten, through to year 12 and into vocational or tertiary education pathways.

Meadowbank Public School will relocate to the precinct increasing its enrollment capacity to 1000 places, with Marsden High School increasing to an enrollment of 1500 students. The Schools complex will also cater for 120 students studying intensive English classes.

One of TAFE NSW largest existing sites, Meadowbank TAFE will undergo various modernisation programs as part of the plan.

The site is home to one of only tow Cisco Academy Training Centres in the Australasia Pacific regions.

This SSDA application for the development of a new Multi Trades and Digital Technology Hub will realise the changing face of trade training delivery in New South Wales, reinforced with the state of the art facilities, inextricably linked with emerging Digital technologies and industry.

TAFE NSW and the NSW Department of Education are working together to create the Meadowbank Education Precinct.



Source: Nearmaps

4.0 Project Brief

Project Description

TAFE NSW is undertaking further investment to ensure its contribution to the Meadowbank Education Precinct is physically established by late 2021, to coincide with the opening of the new schools facility.

TAFE NSW will deliver state-of-the art specialist education and training facilities at TAFE Meadowbank in the form of a:

- A combined Construction and Building Trades Facility (Multi Trades) and Information & Communications Technology/Cyber Security facility (Digital Technology Hub); and
- The existing through site link will be improved via minor upgrade works subject to a separate approvals process.

CAMPUS ASPIRATIONS

The campus aspirations are not site specific, but link to TAFE NSW visionary document, Building a TAFE NSW for the Future.

The briefing process has developed an outline of various key principles, as previously identified in the asset strategy document developed by TAFE NSW.

These principles describe how the campus can facilitate an improved service delivery model for TAFE.

MULTI TRADES AND DIGITAL TECHNOLOGY HUB

The Multi Trades Component of the Hub will be “an active learning environment co-locating disciplines under building, construction, engineering and manufacturing united by a focus on new digital technologies. Experienced students will have the opportunity to collaborate on a cross disciplinary project. Students will have access to state-of-the-art facilities, that can expand, contract and adapt to industry needs”

The Digital Technology Component of the Hub will be the “heart of the new technologically driven campus where facilities such as simulation rooms and dedicated technology workshops allow students to develop applicable software and hardware expertise to face an increasingly digital workforce. There will be a focus on industry and academic engagement from the opportunity to pilot a new EVET program in NSW.”

MARKET SOUNDING & INDUSTRY ENGAGEMENT

A Market Sounding Consultant has been engaged to conduct a market sounding which will allow TAFE NSW to identify possible collaboration opportunities with partners on:

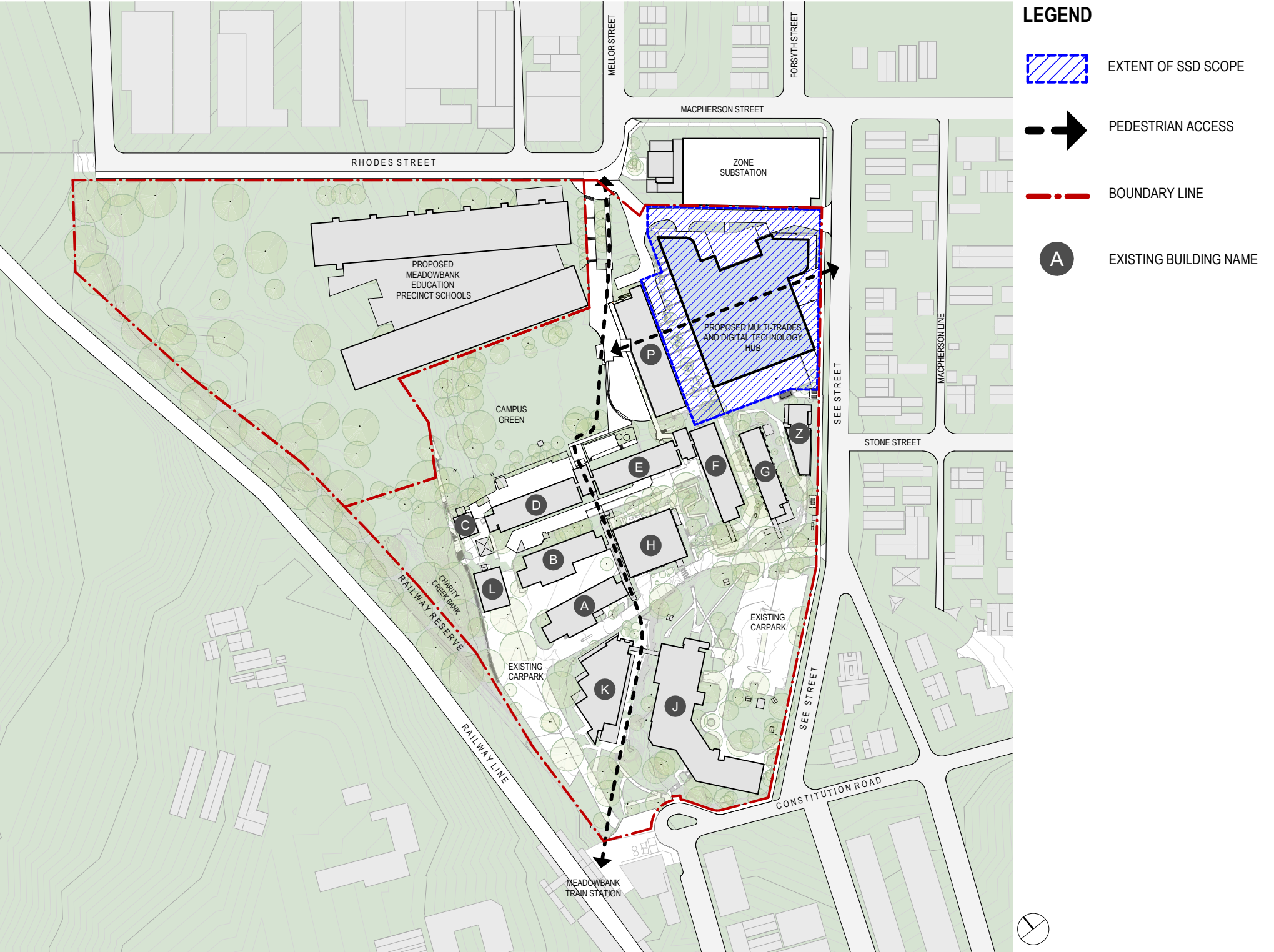
- Identifying and rapidly exploring the viability of future options for the Meadowbank Precinct;
- The types of functions the different training facilities could perform; and
- The business models that will be required to deliver this training.



Scope of Works

Various potential works culminating in the overall site master plan have been investigated by TAFE NSW as the brief and scope of the project has developed. The proposed Multi Trades & Digital Technology Hub development to the North East of the TAFE Campus forms the scope of work for this State Significant Development Application.

The six storey building combines various teaching spaces, workshops and amenity over a basement carpark, whilst presenting as two storeys to the main civil address at See Street.



5.0 Design Response

DESIGN RESPONSE

DESIGN PROCESS – AN OVERVIEW

Gray Puksand have embarked on a process of design and brief development during the concept design phase of the project. There are several levels of engagement with the key stakeholders for the project from Ministerial Level, to the project steering committee through to the Project team. The main point of contact to date has been with the Technical Reference Groups that have been established for each element of the project.

The Project team and Stakeholders primary role is to inform the Head Design Consultant and provide feedback and information that will help shape the project as the design progresses.

DESIGNING FOR PLACE

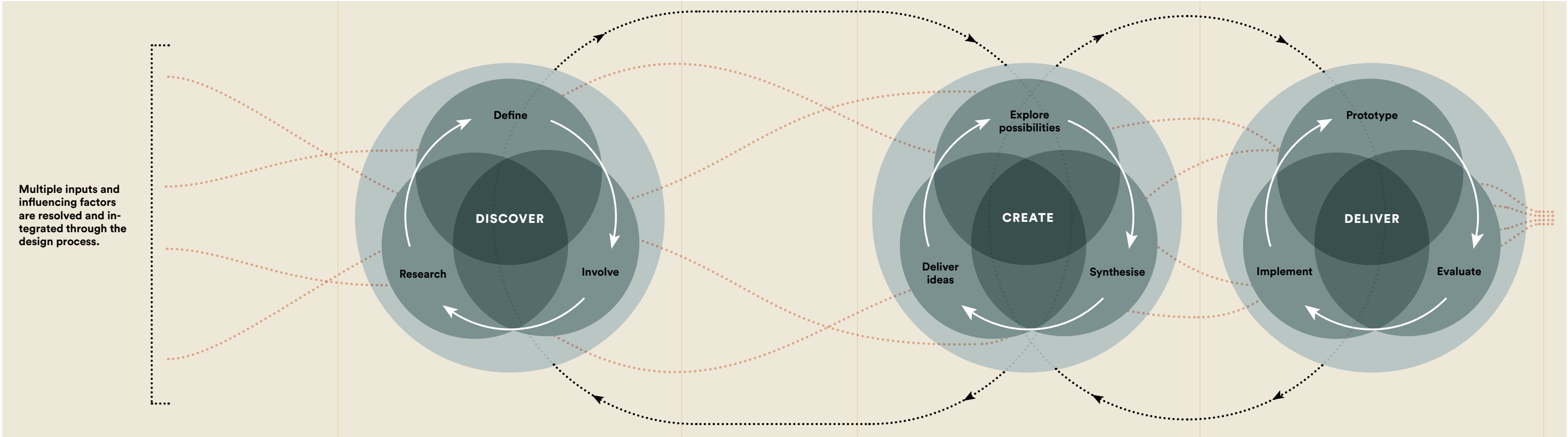
Utilisation of the Government Architects Document ‘Better Placed, an integrated design policy for the built environment of New South Wales’ has been an important part of progressing the design development for the project.

Reflection upon each of the key principles outlined in the document have provided an effective framework in the critical analysis of the design development. The five principles describing a well-designed built environment have proved fundamental to the success and vital in the development of the base brief for the new TAFE development.

THE DESIGN PROCESS

The over arching design process has been succinctly described in the ‘Better Placed’ document. The process undertaken in this journey to date has been no different.

The stages of discovery and creativity are ongoing throughout the documentation of the development application and will continue to evolve into the schematic and detailed design phases.



Source: Government Architect's Office, Better Placed– Designing Better Places

Better Placed – Design Objectives

The design is grounded in evidence based research, informed by international exemplars and developed through contemporary andragogy. An advisory group consisting of independent educationalist and on the ground educational professionals has informed a brief that anticipates the future. It is grounded in a deep knowledge of place, people and purpose. It provides an enduring asset facilitating a framework for buy-in from students, educators, community and industry, a prototype for skills training. The project is a direct result of a collaborative engagement with client, industry and the wider community.

1. BETTER FIT – CONTEXTUAL, LOCAL AND OF ITS PLACE

The siting for this new building has numerous environmental and contextual qualities that have influenced the design. The building concept responds to the following key challenges:

- Bounded on three sides by existing buildings
- A cross fall of over the site of three stories
- A street address bounding a single story residential context
- Significant vegetation that supports native flora and fauna
- Massive sandstone foundation geology
- Existing power and services infrastructure
- Right of way movement and site access.

The design of the building relates to place as a true ‘building in the round’. Each of the four facades actively responds to the adjacent contextual conditions. The main See Street address and main public entry to the building presents as a highly articulated yet low level development. It sensitively responds to the single story houses on the opposite side of the road by incorporating the following design initiatives:

- Limited to two stories (as viewed from the immediate street scape)
- Deep angled setbacks to reduce mass and to emulate the ‘front yard’
- Carefully considered materiality and proportions of solid verses transparent
- Highly articulated facade treatment providing a fine grain and human scale
- Angled facades sit beneath a unifying roof which shade large glazed areas and eliminating sun angle reflections
- Materials colour selection that relates to the vegetation and geology of the site
- Civic forecourt landscaping that is inviting open and inclusive.

The design presents unashamedly as a public building adding to the streetscape in an harmonious juxtaposition to the residential neighbours.

The building is ‘of its place’ relating to specific adjacencies:

- Existing ground floor connections through Building P
- Axial connection through building P to the campus green.
- Campus entry and education precinct entry.
- Activated external workshop courtyard for advanced skills training and digital design.
- North facade adjacent power substation.
- Main loading and car park entry.
- External workshop courtyard and elevated workshop spaces facing the education precinct courtyard provides an invitation to the educational courtyard and neighbouring P-12 School.
- The Southfaçade and secondary external logistics workshop courtyard are connected to the multidisciplinary trades workshop.

The design of this building resonates with its surroundings and provides relevant activation to all external spaces. From welcoming arrival points, outdoor workshops that are screened from view and positioned to reduce noise, to off street parking and loading bay entry points that limit disruption to traffic flow.

Due to the distinctive qualities and characteristics of the design this new facility will evolve with the inevitable changes in it’s surrounding as the campus and neighbourhood continues to grow. The design provides a significant contribution within it’s context. It presents a considered rich and diverse aesthetic. This building will become an inherent part of its surroundings that the entire community will value for generations to come.

2. BETTER PERFORMANCE – SUSTAINABLE, ADAPTABLE AND DURABLE

A number of fundamentalism passive design elements have been incorporated into the design to reflect and demonstrate environmental sustainability. The building's robust exterior is predominantly clad in glass, metal and timber like materials. It will therefore be an enduring addition to the built environment requiring minimal maintenance and an enduring aesthetic.

The planning of the building has been driven by organising a grid arrangement that is inherently adaptable, essentially future proofing the facility over it's life span. The building incorporates systems to create positive environmental benefits, such as energy generation through a roof top photovoltaic array and water recycling and reuse through integrated hydraulic systems.

The design of the building importantly acts as a teaching exemplar to the trades industry through all its built elements. As an example the main roof provides strategic overhang areas allowing for extensive glass. Where the sun reaches the facade directly solid elements have been carefully configured to provide larger openings as the wall recedes under the roof. Internally the main spine of the build creates an atrium effect allowing controlled natural daylight through the roof while simultaneously providing a natural chimney effect for passive cooling and ventilation.

3. BETTER FOR COMMUNALITY – INCLUSIVE, CONNECTED AND DIVERSE

The design of this building is grounded in a deep knowledge of place, people and purpose. It provides an enduring asset facilitating a framework for engagement from students, educators, community and industry, a prototype for skills training.

It is more than just a building. In response to a wider masterplan, the design provides edges and adjacencies by establishing links with its surrounds, allowing students and visitors to move freely around and through the building. It adds diversity to the surrounding community infrastructure, importantly providing opportunities and access to employment, education, social interaction and cultural experiences.

The facility provides diverse opportunities in multi trades and digital training, and is a valuable contribution to the social and cultural development of Meadowbank and trades training for the future. The public realm benefits from this facility through is visibility, transparency of educational activities and permeability. The civic forecourt in particular provides a shared domain for social engagement, events, interaction and invitation to further education.

4. BETTER FOR PEOPLE – SAFE, COMFORTABLE AND LIVEABLE

The building is designed with people at the centre it by connecting and creating great social spaces, both inside and across the adjacent landscaped spaces. A variety of student, educator and industry spaces will be devoted to promote social interactions. Food and beverage offers and incidental workspace environments in combination with extensive natural daylight and views all work together to create a comfortable environment to promote health and wellbeing.

This approach acknowledges a built environment that supports and responds to contemporary learning and the notion of a 'sticky campus'. This new educational facilities is designed to promote cross disciplinary interactions and ubiquitous access to educational opportunities. An enjoyable environment for all. It is a design that encourages lifelong learning in digitally enabled contemporary settlements.

All external edges have been considered to be aesthetically pleasing through integrated landscaping but also providing a community interface that is safe. Clear view lines, open social and well lit external spaces with generous street setbacks all combine to provide an urban response that protect people from harm and protection from inclement weather conditions.



5. BETTER WORKING — FUNCTIONAL, EFFICIENT AND FIT FOR PURPOSE

The interior architecture is driven by a desire to create a legible building that adds value to a campus environment where curiosity is encouraged. Central to the success of a future proofed building is to establish the hard systems and built form with an inherent senses of transparency and permeability. The architecture exposes the opportunities housed within and is an invitation to explore new skills and knowledge. The building demonstrates multidisciplinary collaboration, and enables teaching and learning skills training and digital technologies.

Core to the design is its rational layout it is designed to be practical, purposeful and adaptable. The efficient grid arrangement allows the spaces to be reconfigurable and the services integration support this.

Fundamental design moves include;

Axial movement through a central three level atrium.

- Rectilinear grid at a variety of scales providing unlimited reconfigurability.
- Pod extensions to three sides of the organising grid to activate external spaces and be a show case to the educational precinct, industry and community
- A single plane trapezium roof acting as organisational horizon. A shelter that allows for ongoing change and effortless adaptation.
- These rules establish the architectural form and functional reconfigurability of the Hub. Importantly the organising plane of the roof provides large overhangs, allowing for expansive areas of glass. These sheltered facades support a high level transparency putting the internal activities on show.

6. BETTER VALUE — CREATING AND ADDING VALUE

Built over an existing on grade car park, this facility adds extensive value to the built environment. Basement car parking allows for a multi-level building to address numerous ground plane entry points. As an educational institution, the function of this building in part reaches out to industry and community.

Sited on an established educational campus the new facility leverages the existing characteristics and qualities of the adjacent TAFE buildings and recreational spaces to increase social, economic and environmental benefits.

Furthermore, with the construction of a new primary school and secondary college in close proximity, the urban design contribution will be to establish a lifelong learning precinct.

The building responds to this notion of educational precinct through extensive landscaping and the creation of new public spaces. Combined the social benefits of these new and enhanced public space result in an enduring and valuable contribution to the entire community

7. BETTER LOOK AND FEEL — ENGAGING, INVITING AND ATTRACTIVE

Our design responds in an informed way within an emerging campus masterplan and educational precinct context. The building’s design is sympathetic to its location. Rather than imposing an eye catching aesthetic the building responds to and unifies the built environment of its context. The building design draws people in and creates a welcoming and attractive arrival point for visitors.

The design adds to the vibrancy of the campus by activating the resultant interstitial spaces. A variety of external settings are created that respond to the functional program. The internal plan informs external spaces by adding value and meaning to their function.

Due to the sheltered transparency of the See Street facade the building engages with the community. As a public building it has the effect of being a gallery for educational opportunity. Industry engagement spaces have been created for exhibitions and events further enlivening and activating street scape and campus adjacencies.

The design is visually engaging, with a series of well established design moves that are followed through from macro to micro. Materiality is confident and well-proportioned providing a multi-layered and diverse composition. Light and shade combined with the unified roof plane provide a high level of sculptural modelling, resulting in subtle yet diverse form and mass interplays. This highly considered approach has been considered through all stages of the design. The design of this building is both ‘edgy’ and robust.

SPACE PLANNING AND ANDROGOGY

“Behaviour, not space, is enclosed by architecture”

(BECHTEL, 1977, P.VII).

To support delivery of the pedagogical vision outlined above, members of the Combined Multi-Trades and Digital Technology Hub TRG highlighted the following as important when designing facilities for a ‘great student experience’.

WELCOMING & ENCOURAGING ENVIRONMENT

- Easy access to the campus
- Effective wayfinding
- Making learning visible (i.e. open/glazed façades and internal separations that foster curiosity and engagement in what is happening across all trade-training and digital technology programmes)
- Soft landing spaces — including a variety of informal settings that enable people to inhabit the building when not attending formal classes, such as team and individual spaces that supporting friendship networks and a cohort experience
- Customer service portals — staffed to answer questions from students and visitors, directing them to further support (e.g. student services)
- Have-a-go spaces — offering a range of ‘new experiences’ to students and visitors
- Spaces for digital/virtual communication and belonging — quiet spaces/booths for video calls and other digital/virtual experiences
- ‘Wow factor’ — contemporary spaces that make people feel excited to be there!



WELLBEING, COMFORT & SUSTAINABILITY

- Comfortable ‘in-between spaces’ — supporting comradery, shared endeavour, opportunity to work with others, and a sense of belonging beyond formal classes. Such spaces may include:
 - Café and food service spaces
 - Gallery and exhibition spaces
 - Distributed informal spaces (e.g. study and lounge spaces)
 - Outdoor gathering spaces — formal and informal (e.g. ‘tables in the sun’)
 - Lunchroom (for staff)
- Events and hospitality support spaces, including catering facilities
- Good indoor environment quality (i.e. light, temperature, air quality, acoustics)
- Energy efficient/sustainable design



MULTI-FUNCTIONAL & ADAPTABLE SPACES (SUPPORTING MOBILITY, FLEXIBILITY AND COLLABORATION)

- Spaces that encourage collaborative activities, facilitate communication and ‘feel open’
- Multi-purpose, adaptable spaces that may be used for theory and practical activities and allow different courses to utilize the same space
- Agile resources (mobile trolley systems and proximal storage areas that combine to deliver hands-on resources when needed)
- Spaces that can be easily reconfigured in both the short and long term without having to be re-fit, facilitating the ongoing adoption of new technologies and course offerings
- A dynamic mix of spaces for interaction and collaboration with industry, helping transition students into industry roles
- Spaces for large semi-formal gatherings, which may also support informal ‘breakout’ activities
- Tools and systems that facilitate high space utilization rates, including an effective booking system that communicates when spaces are/are not available



Source: Meadowbank Phase 2.0 Report

INNOVATION & TECHNOLOGY

- Virtual access to teaching and learning, including regular opportunities to experience VR technologies and simulated learning experiences
- Technologies that facilitate ‘virtual belonging’ i.e. video connections, remote lesson delivery, online courses, blended courses — all of which need to be accommodated effectively to generate participation and engagement
- Virtual work spaces that ‘work’ in parallel to physical work spaces
- Consideration of being amongst the physical learning environment (sense of belonging) whilst delivering learning virtually e.g. tech-assisted learning experiences in VR
- Capacity to showcase virtual reality learning — including public access to viewing how people interact in the virtual world
- Spaces that enable vertical integration with industry — e.g. concept design working with industry to deliver a prototype / co-creating lab

NB. The TRG acknowledged that technology-assisted learning is quite different to online learning. These should be considered separately. Interactions through technology or with technology require consideration about how best to use technology to collaborate. Collaboration is often better if all participants are using virtual reality or all participants are physically present, rather than a mix of both).



COLLEGIATE STAFF WORK AREAS

- Staff work areas that are centrally located (i.e. amidst the learning spaces) — to encourage collaboration and comradery / shared purpose / belonging
- Three key functional areas that offer a balance between opportunities for a) privacy, b) surveillance of surrounding learning spaces, and c) student access to teachers:
 - ‘head down’ work station
 - ‘side by side’ collaborative meeting areas (including consultation with third parties)
 - ‘protected’ private meeting spaces (also for informal video call/Skype sessions)
- A staff kitchen / lunch room to promote a sense of shared purpose and community



FUNCTIONAL USES

WORKSPACE

Staff are located together to encourage collaboration and comradery and foster a collegiate atmosphere. The modern, open plan workspace fit out, will include areas for small and large meetings, quiet spaces for private conversations, communal kitchen and lunch room and an outdoor deck for staff gatherings.

LEARNING SPACES

A variety of flexible and adaptable learning space typologies have been provided to facilitate different teaching delivery and learner experiences. These include spaces for individual study and self-directed learning, collaboration and small group work, general learning spaces for direct instruction to 15 – 20 students, lab spaces for practical activities, simulation rooms and dedicated technology workshops and large group delivery for cohorts of up to 100 people. All spaces are digital enabled with digitally enhanced spaces provision for specific purposes. Flexibility of these future focused spaces is facilitated via operable wall types, mobile and adaptable furniture, power and data provision and the ability to reconfigure the space and equipment.

WORKSHOP

Practical workshop spaces service the main trades of carpentry and building construction, plumbing and electrotechnology. Real-life hands-on activities and opportunities to learn via technology and virtual reality headsets, will occur in these spaces. Shared workshops provide active learning environments where students from different disciplines can come together. This ‘multi-trades’ approach facilitates opportunities to collaborate on cross disciplinary projects. The high visibility of these workshop spaces, with glazed facades, puts the trades on show, fostering curiosity and engagement in what is happening across all trade training programs.

INDUSTRY ENGAGEMENT

Spaces are provided to enable industry collaboration onsite at Meadowbank. These spaces offer industries, in both the trades and digital areas such as information technology, and cyber and network security, opportunities for co-location, engagement and exhibition. Fostering these direct relationships will enhance employment pathways for students and improve the quality and industry relevance of course delivery.

APPLIED RESEARCH

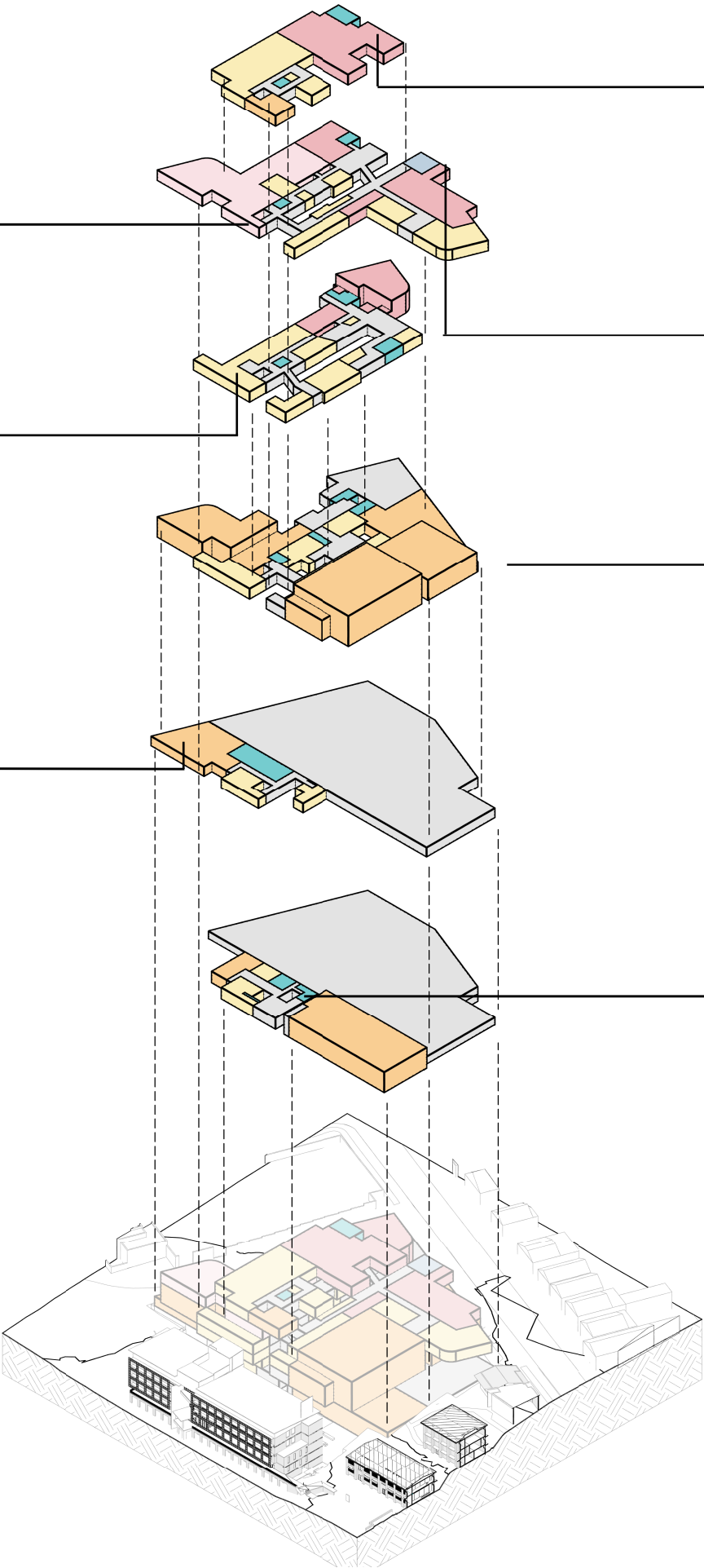
The applied research space is a highly configurable room that allows students to experience conditions and scenarios which reflect real issues in areas such as robotics, virtual reality and artificial intelligence.

CIRCULATION

The generous circulation spaces offer a range of settings, outside of formal classes, that encourage collaborative activities and accommodate team and individual study, waiting, socialising, and improve the collegiate experience. These comfortable ‘in between’ spaces, include tea points for student access, and a café, to provide a sense of belonging outside of the formal classes.

AMENITIES

A variety of amenities are provided for students, staff, visitors and industry partners. These include end of trip facilities, male, female and accessible bathrooms, a café, several kitchenettes located in common areas with tea, coffee and microwave provision. These amenities contribute to a warm and welcoming social and communal hub that encourages activity and enables 24-hour access.



SIGNAGE AND WAYFINDING



The building will include new external building identification signage at the main See Street entry, as well as the northern plaza entry (NW corner of building) — as shown in the Architectural plans and elevations. Signage will comprise:

1. A large sculptural sign in the See Street entry plaza based on the TAFE NSW Logo, mounted over a podium formed by the word “Meadowbank”. This sign will be less than 3.0m in height, with a width to suit the logo proportions. The sign will compliment the building materiality and be of a neutral tone — not colour, and will include subtle local illumination.
2. Totem signage will be located in the See Street entry plaza and the northern plaza entry. The totem signs are designed in the form of stacked cubes that include signage on the faces relevant to the Multi Trade and Digital Technology Hub building functions, with a finish that compliments the building materiality. These signs will include subtle illumination.



STATE ENVIRONMENTAL PLANNING POLICY NO. 64 — ADVERTISING AND SIGNAGE
State Environmental Planning Policy No. 64 — Advertising and Signage (SEPP 64) aims to ensure that advertising and signage is compatible with the desired amenity and visual character of an area and provides effective communication in suitable locations and is of high quality design and finish. It does not regulate the content of signs and advertisements. The proposed development includes the installation of under awning business identification signage. SEPP 64 requires all signage to be assessed against and satisfies the criteria outlined in Schedule 1 of the SEPP.

Character of the Area
The proposed signage will be compatible with the existing and future character of the surrounding area. The signage will allow for the easy identification of the location of the TAFE facility. The signage scale will not dominate the surrounding area.

Special Areas
The subject site is not located in any special area and will not impact upon the heritage items within the locality.

Views and Vistas
The proposed signage will not disrupt or obscure any views or vistas as it is located within the immediate vicinity of the building form – under the roof canopy to the East entrance and close to the wall structure to the west

Streetscape, Setting or Landscaping
The proposed signage will complement the existing streetscape of the surrounding area. Scale, colour palette and placing have been carefully considered.

Site and Building
The scale of the proposed signage is minimal in the context of the existing building and will complement its architectural design.

Associated devices and logos with advertisements and advertising structures
Considered lighting has been proposed to the signage, more commentary below. No safety devices are proposed. The signage will feature the TAFE NSW logo.

Illumination
Low impact local illumination is proposed. Selection will be carefully considered to avoid unacceptable glare and remove risks of affecting the amenity of the near by residences. The proposed signage is sufficiently illuminated to ensure pedestrian safety. No curfew is proposed to the illumination.

Safety
The proposed signage will not impact on the safety of pedestrians, motorists or cyclists as it will not disrupt any sightlines or be interpreted as a traffic control device.

EXTERNAL LIGHTING STRATEGY

Street Entrance

The street entrance may include subtle illumination of Welcome signage. The driveway may consist of pole lighting or low level bollard lighting leading to the carpark to facilitate safe pedestrian and vehicular movement. For any use of light poles, the placement shall be facing away from residential properties to provide the required illumination to the road set out in AS/NZS 1158(2010) Lighting for Roads and Public Spaces, with minimum light spill to adjacent properties. As such, subsequent assessment shall be undertaken to ensure that lighting in this area is not providing a nuisance to neighbouring properties, and is compliant with AS4282.

Landscaped Areas

For landscape lighting will include low level intimate lighting concealed into the planting and urban fabric.

Building Facade

For facade lighting, should up-lighting be required- it will be rationalised and focused onto architectural surfaces thereby minimising spill unto the night skies. The use of luminaire accessories will be used to reduce and manage spill light and contain the effect within the building fabric.

Refer to the external lighting strategy report prepared by JHA Consulting Engineers forming part of this application.

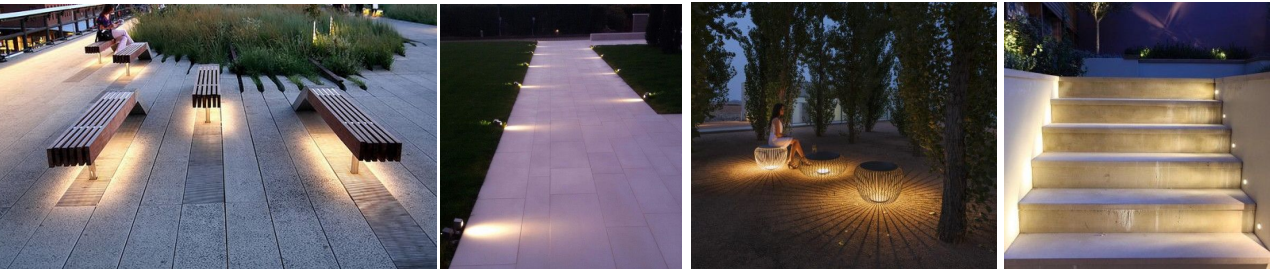
POST TOP LUMINAIRES



BOLLARDS



ACCENT LIGHTING



6.0 Conceptual Development

CONCEPTUAL DEVELOPMENT

PROJECT VISION

The design of the new Hub will provide a venue for learning that points to the future of skills training in the building and construction industry. The fabric of the built form will both passively and actively contribute to the teaching and learning experience.

Functional programming at the Hub will evolve over time. This will require a structure and service configuration that allows for seamless reconfigurability. Driven by the need to re imagine jobs of the future, the design will ensure relevant training programs can facilitate continual advancements in digital innovation shaped skills.

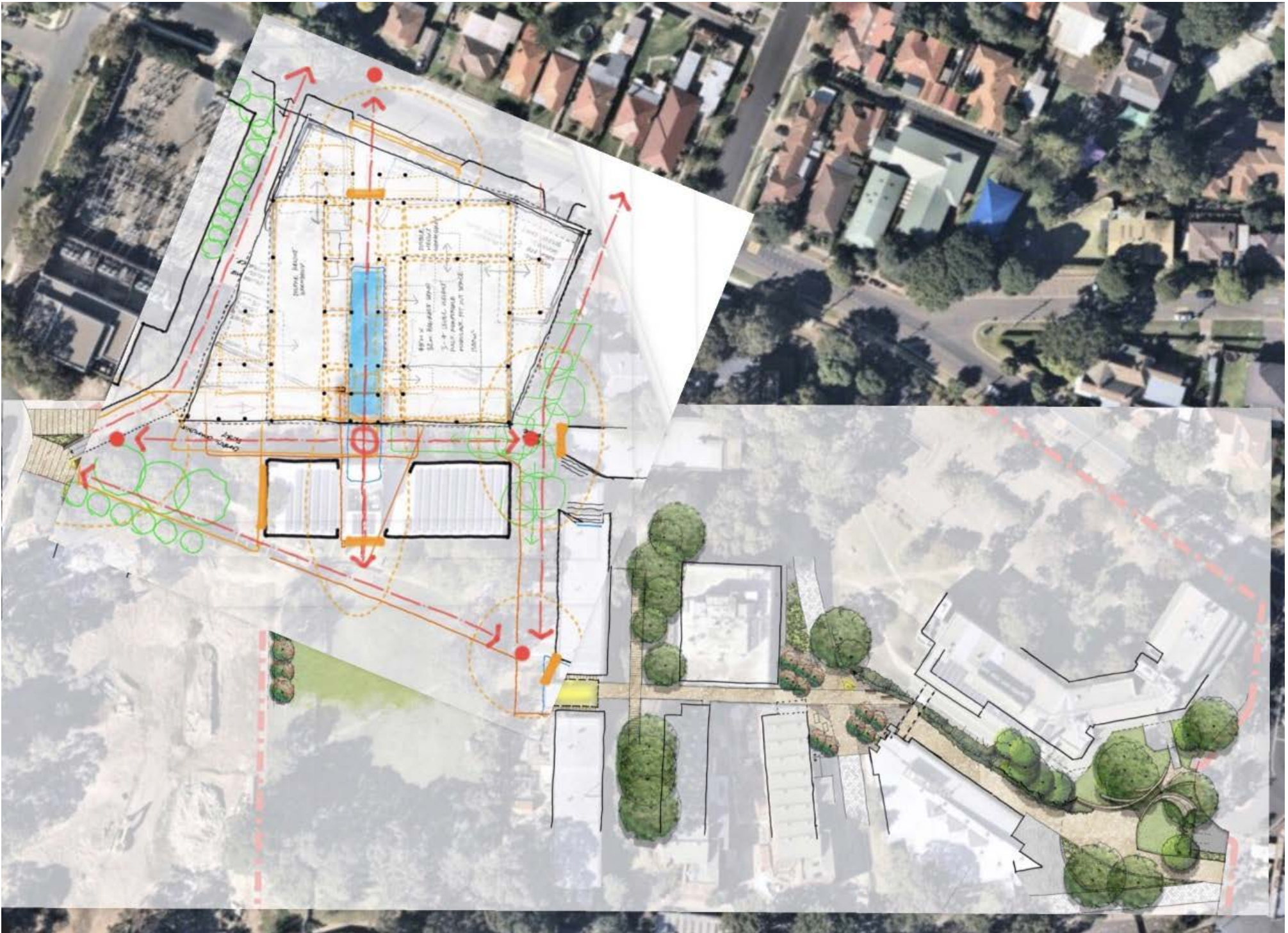
This facility will allow for the emergence of computer aided construction and modular assembly training. Functionally it will be organised around a series of exhibition spaces, combined with the logistics required for multi-disciplinary operations. The building will showcase the future of skills training, being a prototype for tertiary education, and a demonstration to industry and the community.

To achieve this the design will display a refined technology based aesthetic in form and materiality. It will have the civic presence of a gallery combined with the logistics of an airport. The poetic manifestation of the design will complement its operational complexity with education and learning at the core.

CAMPUS RESTRAINTS

The siting for the new Hub building has numerous environmental and contextual qualities that have influenced the design. The building concept responds to the following key challenges:

- Bounded on three sides by existing buildings
- A cross fall of over three stories
- A street address bounding a single story residential context
- Significant vegetation that supports native flora and fauna
- Massive sandstone foundation geology
- Existing power and services infrastructure
- Right of way movement and site access.



CAMPUS OPPORTUNITIES

The design of the Hub adds to the vibrancy of the campus by activating the resultant interstitial spaces. A variety of external settings are created that respond to the functional program. The internal plan informs external spaces by adding value and meaning to their function. These adjacencies provide potential, that although may not form part of the current scope of works, can be considered for the future:

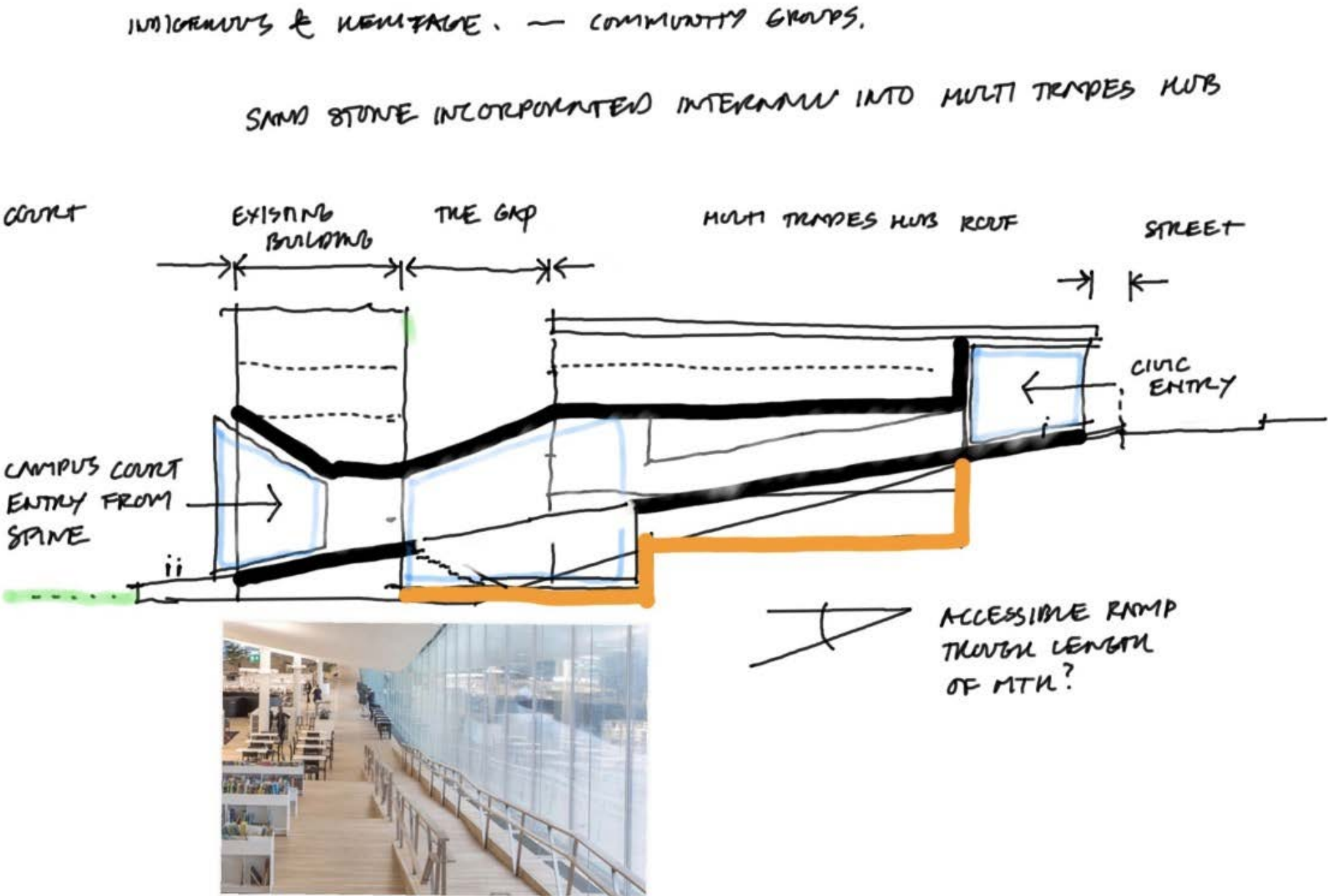
- See Street frontage. Main public address and civic forecourt.
Curated Industry exhibition pod and flexible learning.
- Building P Connection – Utilisation of the existing axial connection through Building P to the campus Green. Campus entry and education precinct entry. Activated external workshop courtyard for advanced skills training and digital design.
- North facade adjacent power substation. Main loading and car park entry. External workshop courtyard and elevated Co workshop space facing the education precinct courtyard. In invitation to the educational courtyard and neighbouring P-12 School.

South facade, secondary external logistics workshop courtyard connected to multidisciplinary trades workshop.

Sited by a previous masterplan and business case the project analyses these contextual influences. Furthermore, the site for the proposed Hub takes into consideration the following educational precinct planning initiatives. Although these do not form part of the scope for this development application, they will help provide some context to the masterplan vision:

- Potential Campus Pedestrian Walk
- Potential Educational court yard developed in association with The Department of Education for the New School.
- Potential demolition Buildings D and E
- Potential adaptive reuse of Building F
- Potential design interventions to Building P to allow the new hub to be intimately connected to the campus green.

The site offers a backdrop in built form and landscape that contributes to the campus and the surrounding community. Our design responds in an informed way within an emerging campus masterplan and educational precinct urban design. The building’s design is sympathetic to its location, rather than imposing an eye catching aesthetic.



VIEW OF DEVELOPMENT FROM NORTHERN PLAZA



ARCHITECTURAL DESIGN

The internal planning has been carefully arranged to provide maximum and appropriate activation to external spaces. Car and loading movements are kept at a maximum distance from main entries. External workshops are set well back from See Street to minimise noise and to screen messy activities from the street frontage.

Most importantly student, teacher, industry and public access is honoured with a high level of public realm, civic design. The design incorporates Aboriginal culture and heritage by referencing the sandstone that defines the geology of place. Linking in with the campus walk, opportunities for interstitial space for ceremony remembrance and reflection will be created with built elements, art installations and landscape design.

MULTI TRADES AND DIGITAL TECHNOLOGY HUB DESIGN

The Hub has the potential to be intimately connected to the campus heart/campus green through a holistic approach to the campus master plan. This initiative could be further reinforced in a future intervention to Building P courtyard green facade to create an entry portal through to the main axis of the Hub. This axis could complete a campus connection through to See Street.

This strategy corrects the exiting tangled maze of pathways. A series of dramatic interventions are required to establish a legible circulation network of generous proportions and clear entry points.

The design of the Hub is driven by a desire to create a legible building that adds value to a campus environment where curiosity is inspired. Central to the success of a future proofed building is to establish the hard systems and built form with an inherent senses of transparency and permeability. The architecture will expose the opportunities housed within and be an invitation to explore new skills and knowledge. The building will demonstrate multidisciplinary collaboration, and enable teaching and learning skills training and digital technologies.

The Hub will connect and create great social spaces, both inside and across the adjacent landscaped spaces. A variety of student, educator and industry spaces will be devoted to social interactions, food and beverage offers and incidental workspace environments.

We have devised a set of design rules to guide the design aesthetic and to build in an ultimately flexible and adaptable facility.

Fundamental design moves include;

- Axial movement through a central three level atrium.
- Rectilinear grid at a variety of scales providing unlimited reconfigurability.
- Pod extensions to three sides of the organising grid to activate external spaces and be a show case to the educational precinct, industry and community
- A single plane trapezium roof acting as organisational horizon. A shelter that allows for ongoing change and effortless adaptation.

These rules establish the architectural form and functional reconfigurability of the development. Importantly the organising plane of the roof provides large overhangs, allowing for expansive areas of glass. These sheltered facades support a high level transparency by putting the internal activities on show.

Compositionally the building mass, in combination with these large areas of glass, will reference the sandstone foundation material and the campus pallet in the tones of face brickwork. A consistent and cohesive approach to standardising details and modular proportions will establish a refined aesthetic.

The form of the Hub is informed through an understanding of the social, political and physical elements of the campus and wider community context. It is a significant contribution to the built environment aligning itself with the ambition and capacity of Meadowbank TAFE.

Our design is grounded in evidence based research, informed by international exemplars and developed through contemporary andragogy. An advisory group consisting of independent educationalist and on the ground educational professionals has informed a brief that anticipates the future.

The Hub Building is grounded in a deep knowledge of place, people and purpose. It will provide an enduring asset facilitating a framework for buy-in from students, educators, community and industry, a prototype for skills training.

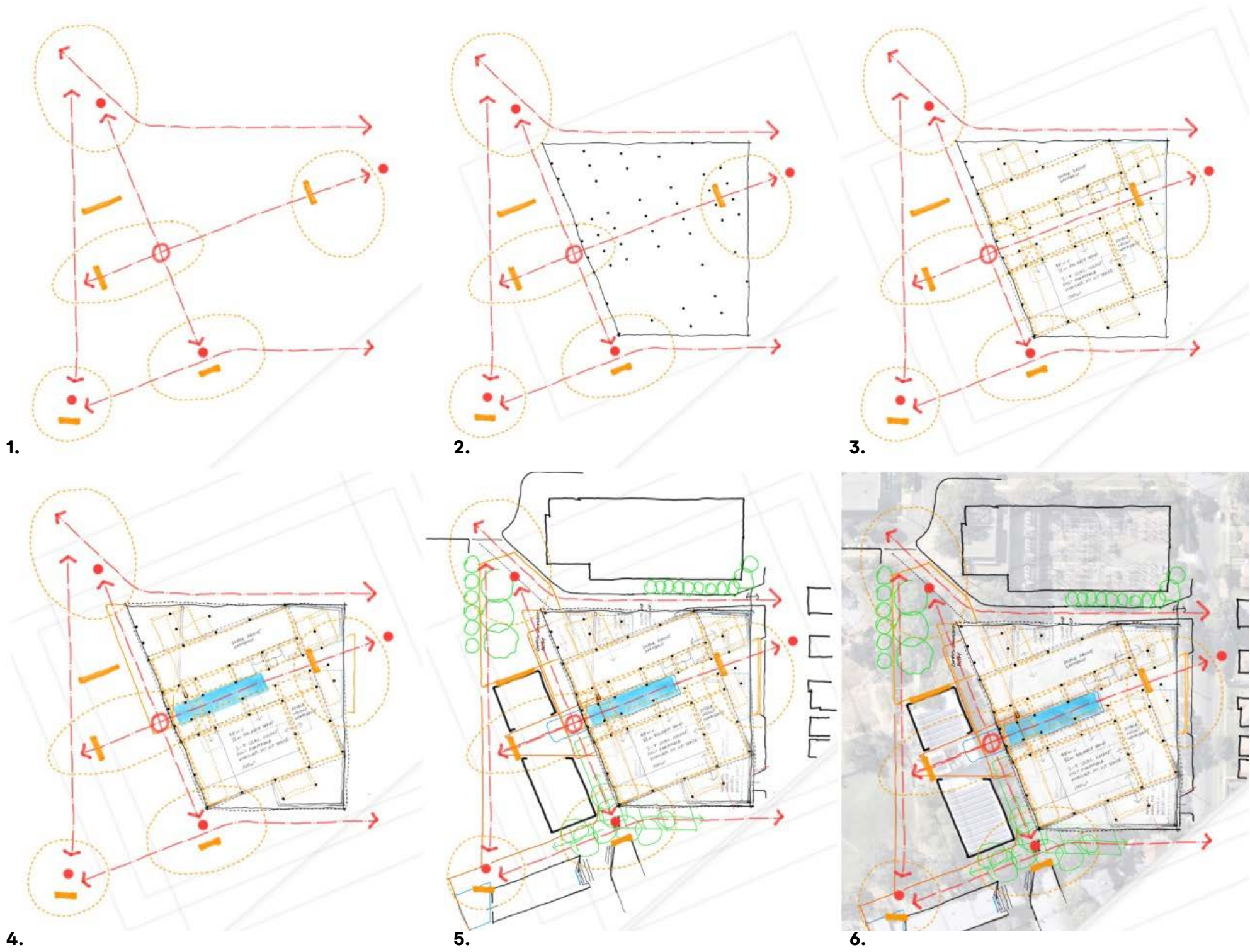
CONCEPTUAL PLANNING

Studies of axis and connection have been key in the development of the planing principles for the building.

Linking of key focal points on the campus helped to establish the building axis, around which a structural grid has been laid.

East West axis link the main entrance of the new development at See Street through an existing link in Building P, to the main campus green.

North South axis creates a new activated laneway between the Hub and Building P, linking a potential shared plaza with the school development at the North Rhodes Street Entrance, to the campus green, but also linking to the South East aspect of the campus.



VIEW OF DEVELOPMENT LOOKING SOUTH WEST ON SEE STREET



RESPONSE TO STATE DESIGN REVIEW PANEL

INTERACTION WITH STATE DESIGN REVIEW PANEL

The New South Wales State Design Review Panel (SDRP) was established as a pilot program to reflect changes in the NSW Environmental Planning and Assessment Act to include a policy objective "to promote good design and the amenity of the built environment."

The panel is convened by the Government Architect's Office and consists of over 40 independent and expert members who are called upon to form review panels to provide independent and impartial advice on the design quality of the development proposals.

DESIGN REVIEW 1

Gray Puksand presented the concept design to the State Design Review Panel on 31st July 2019.

The panel was generally supportive of the overarching conceptual design approach for the campus and how the building interacted with both the street scape and the campus.

Feedback from session one is summarised as follows:

The panel generally supports the aspirations and direction of the project and the following aspects of the design proposal in particular:

- 1. Open campus concept
- 2. Landscaped pedestrian link from Meadowbank station to Rhodes St
- 3. Removal of buildings D&E to enable the creation of the civic village green
- 4. 4–star Greenstar target

DESIGN REVEIW 2

The second session with the State Design Review Panel was held on 11th September 2019.

The session discussed many of the items raised at the initial sessions and how the design had developed to embrace this feedback.

Once again, the feedback received was that the panel generally supports the aspirations and direction of the project and the following aspects of the design proposal in particular:

- 1. Open campus concept
- 2. Landscaped pedestrian link from Meadowbank station to Rhodes St
- 3. Removal of buildings D&E to enable the creation of the civic village green
- 4. 4–star Greenstar target and sustainability strategies

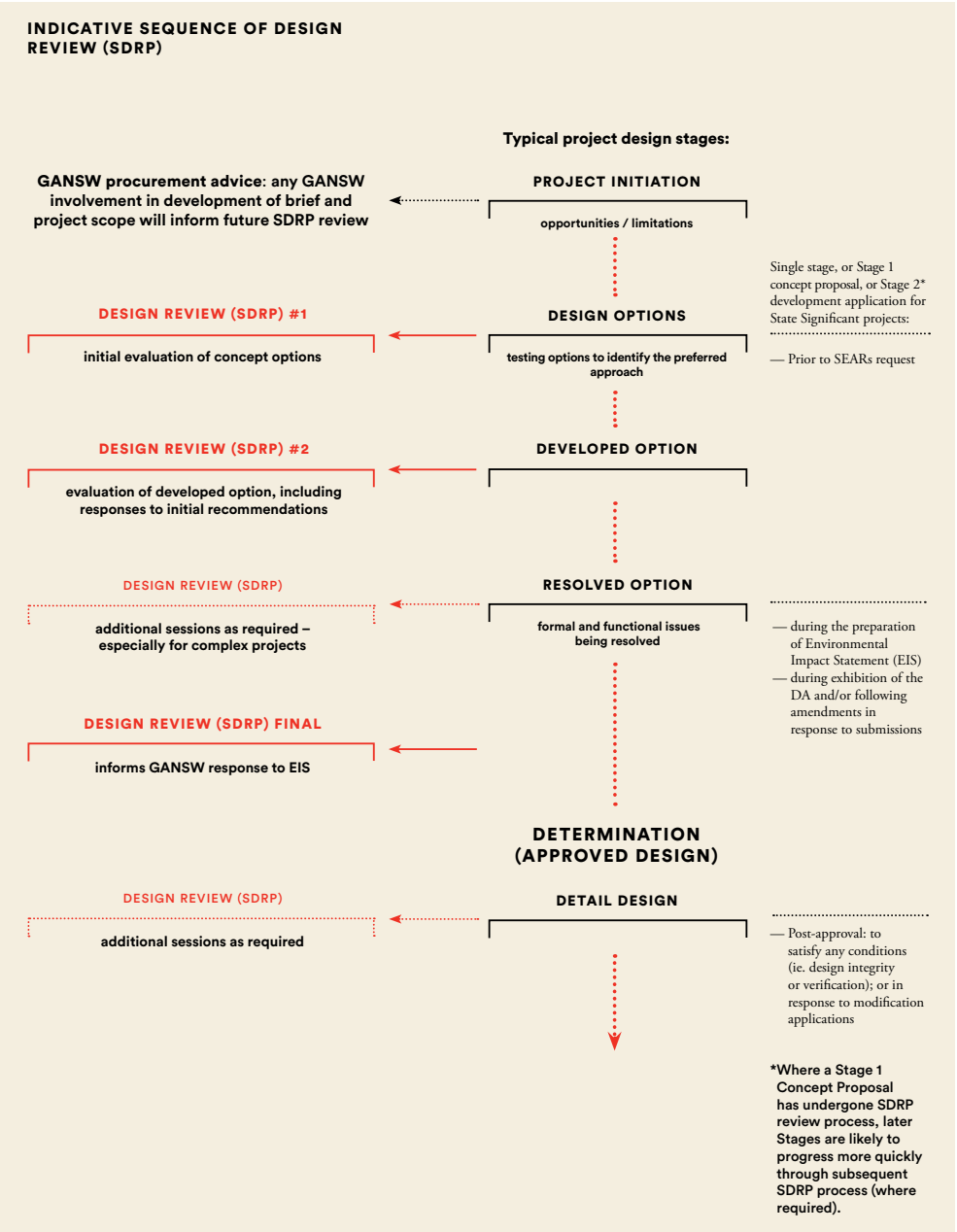
SUMMARY OF SDRP COMMENTARY & DESIGN TEAM RESPONSE

A summary of the feedback received in both sessions is found on the following pages.

Design, in its essence, is subjective, attracting various views and opinions on any given subject matter – such is the nature of creative industry.

Whilst peer review is welcomed and respected, the integrity of the project objectives, developed over months with the client and its stakeholders, must out weight any subjectivity, to ensure the design principles and primary functionality of the Objectives of the building are maintained, enabling the best possible outcome for TAFE New South Wales.

Where reasonably possible, Gray Puksand have endeavoured to reflect the SDRP advice within the development of the design.



Indicative Sequence of Design Review – Source – NSW Government Architect – NSW State Design Review Panel – Overview

Session One:

1.1 CONTEXT AND SITE STRATEGY		
	Comment	Response
1.1.1	Illustrate all elements of the 2022 plan in a single drawing indicating proposed planning approvals pathway for each component.	The design team has now incorporated a single drawing showing the overall masterplan for the campus. This diagram is important to illustrate both the overarching vision for the campus and its connectivity, but importantly, the scope proposed under this State Significant Development Application.
1.1.2	Include a presentation from the landscape architect at the next SDRP illustrating joint site planning principles between TAFE and Meadowbank public school.	It is noted that this area does not currently form part of the SSDA application scope, however, consideration will be given to incorporating the landscape masterplan in the package for Session Two – for information only.
1.1.3	Illustrate how building P is an integral part of the Hub, and provide additional information on building P including activities and uses. Provide floor plans jointly illustrating Building P and the Hub.	An updated landscape design will be incorporated in the package for Design Review 2. Building P interventions, due to scope and budget restrictions, will not form an integral part of this project. However, the proposed intervention still form part of the master plan vision for the campus and are under consideration for future projects.
1.2 PUBLIC DOMAIN AND LANDSCAPE		
1.2.1	The success of the MTH is contingent on the concurrent delivery of upgrades to building P, demolition of buildings D&E, and landscape works from Rhodes St to Meadowbank station.	The success of the proposed hub is not necessarily contingent on the concurrent delivery of interventions to building P. The existing ground plain connection facilitates free movement on the East – West Axis from the proposed Hub. The floor plans have been updated to reflect the existing layout of building P to help articulate this condition. Any future potential interventions in Building P may be realised as a separate project. The demolition of buildings D&E remains part of the projects overall scope, but will be dealt with under alternative planning pathways and does not form part of the scope for this SSDA.
1.3 BUILDING FORM, BULK AND HEIGHT		
1.3.1	The concept of the atrium within the MTH is supported however in its current iteration the atrium does not achieve the transparency envisioned. Develop the atrium to create a stronger cut through the building, providing fine grained spaces, vertical permeability and connection to the sky and surrounding landscape.	The atrium of the building maintains its integrity with maximum transparency between spaces linking on various levels across the central spine of the building and has been a key element of the concept from inception. Comments are noted and will be considered as the design develops.
1.3.2	Further develop the edges of the building to activate the laneway between Building P and the MTH, allowing activities to be visible and spill-out to the laneway, creating a clear arrival space and places to dwell at the interface of the MTH with the laneway.	Activation of the lane way space between Building P and the Hub has been further investigated and resulted in the introduction of student amenity space adjacent then entry, breaking from the interior out to an outdoor dining space, with the potential of a communal setting, reinforced with a direct proximity to the canteen in Building P, maximizing the vista as a sun trap around the lunch time period of the day. Further south on the lane way, the plumbing workshops open out onto the vista, now a wider corridor than original presented, allowing more trades based activity to flow out of the workshop spaces.
1.3.3	Develop the See St façade to present an engaging and welcoming frontage to the public domain incorporating appropriately scaled public spaces and illustrate the sectional relationship between the MTH and the existing residences across See St.	The See Street facade has undergone further development, engaging with the street scape and presenting as a two-story building at this level. Further sectional investigation is presented as part of the SSDA submission.

1.4 ARCHITECTURAL EXPRESSION		
1.4.1	The panel supports and commends the highly legible building diagram.	Noted
1.4.2	Explore options for the architectural expression of the building, including, as an example, approaches that communicate a more direct construction, engineering and architectural approach, reflecting its use as the Multi Trades Hub.	The expression of the building structure as a raw reflection of its own integrity remains a concept that we are pursuing to enable the building as a learning tool.
1.4.3	Explore opportunities for the architectural expression of the building to serve as a learning tool in itself.	As the design progresses beyond structural systems, integrating services and reticulation, this will become even more apparent.
1.5 SUSTAINABILITY AND ENVIRONMENTAL ASPECTS		
1.5.1	Detail ESD initiatives and performance targets, including passive and active energy modes, overshadowing, solar access, energy generation, water collection and reuse.	Further detail on the strategies and studies undertaken with respect to ESD principles are included in this SSDA report and will form part of the next SDRP presentation package

Session Two:

2.1 PUBLIC DOMAIN AND LANDSCAPE		
	Comment	Response
2.1.1	Illustrate all elements of the 2022 plan in a single drawing indicating proposed planning approvals pathway for each component. The success of the MTH is contingent on the concurrent delivery of upgrades to building P, demolition of buildings D&E, and landscape works from Rhodes St to Meadowbank station.	The proposed Combined Multi trades and Digital Technology Hub is a successful development in its own right whilst being a considered addition to the campus in the context of potential future phases.
2.1.2	Clarify the mechanism for concurrent delivery of the works if different approvals pathways will be pursued for the various elements.	Due to the client's desire for the TAFE campus to remain operational during the construction phase of the Combined Multi trades and Digital Technology Hub the landscaped spine and refurbishment of building F has been excluded from this submission.
2.1.3	Include a plan from the landscape architect illustrating joint site planning principles between TAFE and Meadowbank public school.	Any potential additional landscape works that might interface with the boundary of the proposed Meadowbank Schools remain subject to design development and do not form part of the scope of works for this SSDA.
2.1.4	Further develop the See St façade to better define and announce the main entry and to create interstitial spaces which serve as spaces of informal street-level interaction.	The See street façade design has developed to reinforce horizontality and lightness. The fascia has been thinned, the soffit has been flattened and a sense of translucency applied allowing the roof plane to hover above the building. Horizontal lines are reinforced through band of solid metal cladding to the façade. A skylight has been introduced at the See street entry to flood the entry in natural light and draw pedestrians to the entry.
2.2 ATRIUM		
	Comment	Response
2.2.1	Further develop the atrium space to incorporate sitting areas, vertical permeability and connection to the sky and surrounding landscape.	<p>Three skylights are proposed directly above the open atrium designed to flood the atrium and reinforce the connections with the sky.</p> <p>A fourth skylight is proposed to the main roof at the Level 4 see street entry which will flood light into the entry.</p> <p>The atrium breakout and gathering spaces are developing as the plans become more detailed, with elements of the fit out and furnishings becoming apparent at strategic locations.</p> <p>A generous civic plaza addressing the streetscape, links interior to exterior at See Street, with large areas of glazed connection to the landscaped peripheries. The Western entry bleeds onto a generously proportioned laneway set back from the existing Building P. The orientation lends itself to the laneway becoming a sun trap across the lunchtime period of the day.</p>
2.2.2	Review the position of bridges in the atrium to create vertical vantage points and volumetric differentiation.	Internal circulation bridge links have been rationalised to optimize vantage points and sense of volume in the atrium. Full height walls are set back from the atrium volume up to 8m. The open atrium and setback to smaller volumes reinforces the original concept of the street axis running through the building.
2.2.3	Review the position of the stair connecting street level to upper levels, currently tucked away from the atrium area. Consider positioning this stair within the atrium to emphasize vertical movement both up and down through this space.	The large major stairs connecting levels one, two, three and four forms the axis connecting the campus plaza and see street. The secondary stair is designed to be an inter-tenancy stair connecting to the mid-levels to upper levels.

2.2.4	Review the glazed enclosure at the ends of the atrium to create a more open and permeable experience, consider, for example, materials such as steel mesh or palisade gates.	A 4m x 4m sliding door had been introduced at the Level 1 Campus entry to the atrium. This door will be held open during operations hours and plays a crucial part in removing the boundary between outdoor and the atrium, bringing the outdoor in and indoor out. The design is still perusing augmented natural ventilations systems and this opening will play an important role in facilitating this. All workshops are provided with the opportunity of large openings onto outdoor workshops. This will better allow flow from workshop to outdoor to facilitate teaching and learning that is required to be undertaken outdoors.
2.2.5	Provide weather protection between the MTH and building P, and link exterior materiality to the atrium area, reinforcing its indoor/outdoor character.	It is not the intention to include a covered walkway to Building P in the project and would pose limitations to the project in terms of vehicular access to the lower level workshops. It is noted that at high level an 8m overhang is provided.

2.3 ARCHITECTURAL EXPRESSION

	Comment	Response
2.3.1	As presented the development of the façade and materiality is not yet as convincing as the development of the planning.	The color and finish of plugins and window shroud elements for the hub are influenced by the Sydney Sandstone present on site. Extrapolating the finish, grain and erosive elements within the solid mass and finish. Solid vs transparent elements to the façade are designed in a gradient to create a modular pattern and reflect this concept.
2.3.2	Clarify the structural intent of the building, whether it will be an expressed concrete or timber structure. Develop a simplified cladding system to fit the formal expression of the structure.	The concrete structure has been designed to be expressed to further celebrate the “grid” optimize adaptability of the building for the future. No cladding system has been selected at this stage – comments are duly noted.
2.3.3	The building as presented reads as a sealed structure, glazed and fully conditioned. Illustrate how the stated adaptability and flexibility of the façade will be realized in the resolved envelope.	Multiple large openings are proposed to the façade, including the Level 1 campus entry, Level 1 western outdoor workshop, Level 3 southern workshop, Level 3 Northern workshop, Level 6 southern outdoor workshop. This enables maximum permeability in the façade into the spaces and will also augment the natural ventilation strategy adopted to these workshop spaces.
2.3.4	Review the location of skylights and roof penetrations to illuminate entries into the building and to enliven the facades beneath the large overhanging roof.	4 large skylights 8.4m x 8.4m are including above the central atrium and Level 4 See street entry. A fourth skylight is proposed to the main roof at the Level 4 see street entry which will flood light into the entry.
2.3.5	Explore options for a unique and innovation focused architecture including, as an example, approaches that communicate the current and future technologies of trades (handcraft, machinery and robotics, permanence and impermanence).	Consultation remains underway with stakeholders and the design team to ensure innovation is on display at every opportunity in the building. Utilisation of the building as a teaching tool is a strategic objective to the development.

2.4 SUSTAINABILITY AND ENVIRONMENTAL ASPECTS

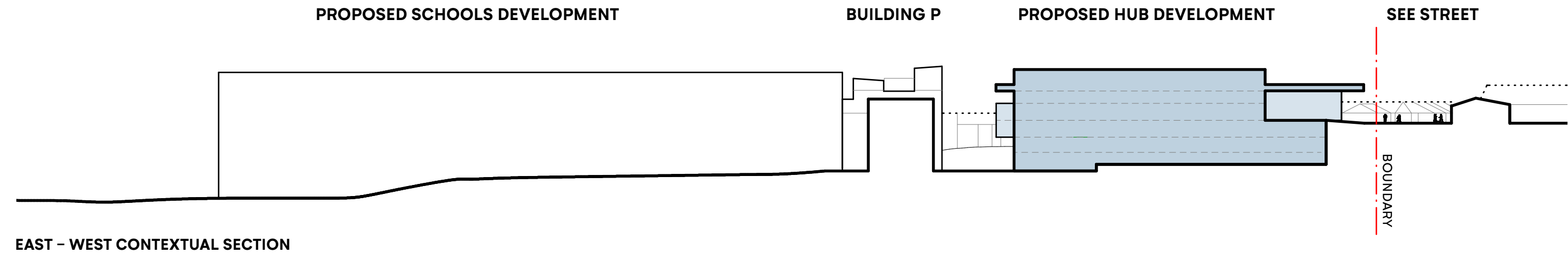
	Comment	Response
2.4.1	Future presentations must demonstrate holistic incorporation of proposed ESD initiatives into the project and include a Greenstar scorecard.	Noted – this design statement contains a section outlining the proposed ESD strategies and a full Green Star scorecard is included in the appendices.

VIEW OF DEVELOPMENT LOOKING NORTH WEST ON SEE STREET



7.0 Built Form and Urban Response

URBAN ANALYSIS

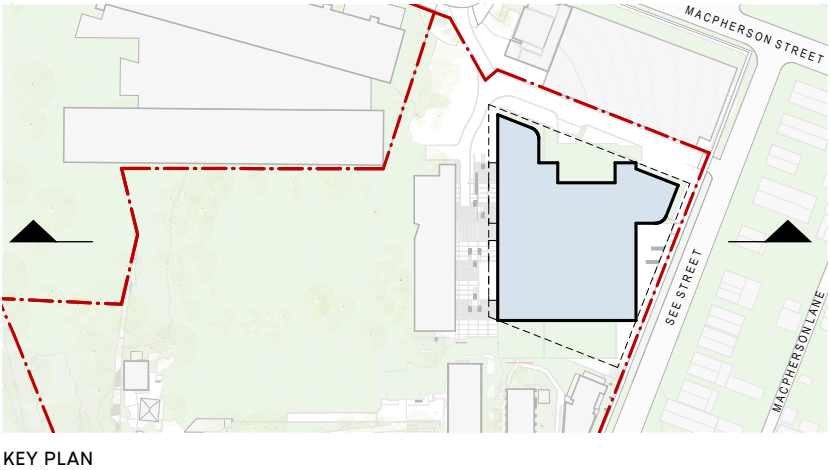


The development of the new Multi Trades and Digital Technology Hub has been carefully considered in how it relates to the adjoining residential area to the East of See Street. Utilising the existing topography has been key to the success of presenting a multi storey building in this context.

At See Street, the development presents to the adjoining residences on the East as a two storey building with its linear roof structure providing an all encapsulating arbor providing shade and covered areas to the peripheries of the building.

Graduation in scale as we move West, presents a relationship to the adjoining Building P, maintaining the existing multi storey scale whilst creating suitable separation of parts.

External edges have been considered to be aesthetically pleasing through integrated landscaping but also providing a community interface that is safe. Clear view lines, open social and well lit external spaces with generous street setbacks all combine to provide an urban response that protect people from harm and protection from inclement weather conditions.



VIEW ANALYSIS

OVERVIEW

Seven vantage points have been identified within the immediate urban context for the proposed Hub development at TAFE Meadowbank. The following pages assesses the proposed development’s visual impact within the immediate streetscape, public realm and vistas with historical/cultural significance.

The 5 public vantage points are as follows:

— View 01 Northern Entry Plaza

Positions our proposal within the existing TAFE context and proposed landscaping scope of works.

— View 02 Macpherson Street Perspective

Positions our building into the existing streetscape context and Northern approach from See Street.

— View 03 Stone & See Street Perspective

This view establishes the building’s civic entry, perceived mass and scale from the existing dwellings immediately adjacent to the proposed build.

— View 04 Thomas (Granville William) White Monument Perspective

Provides a visual assessment of the proposed development’s mass and scale within a context of heritage listed items (and dwellings) of importance.

— View 05 Campus Green & Bikeway Perspective

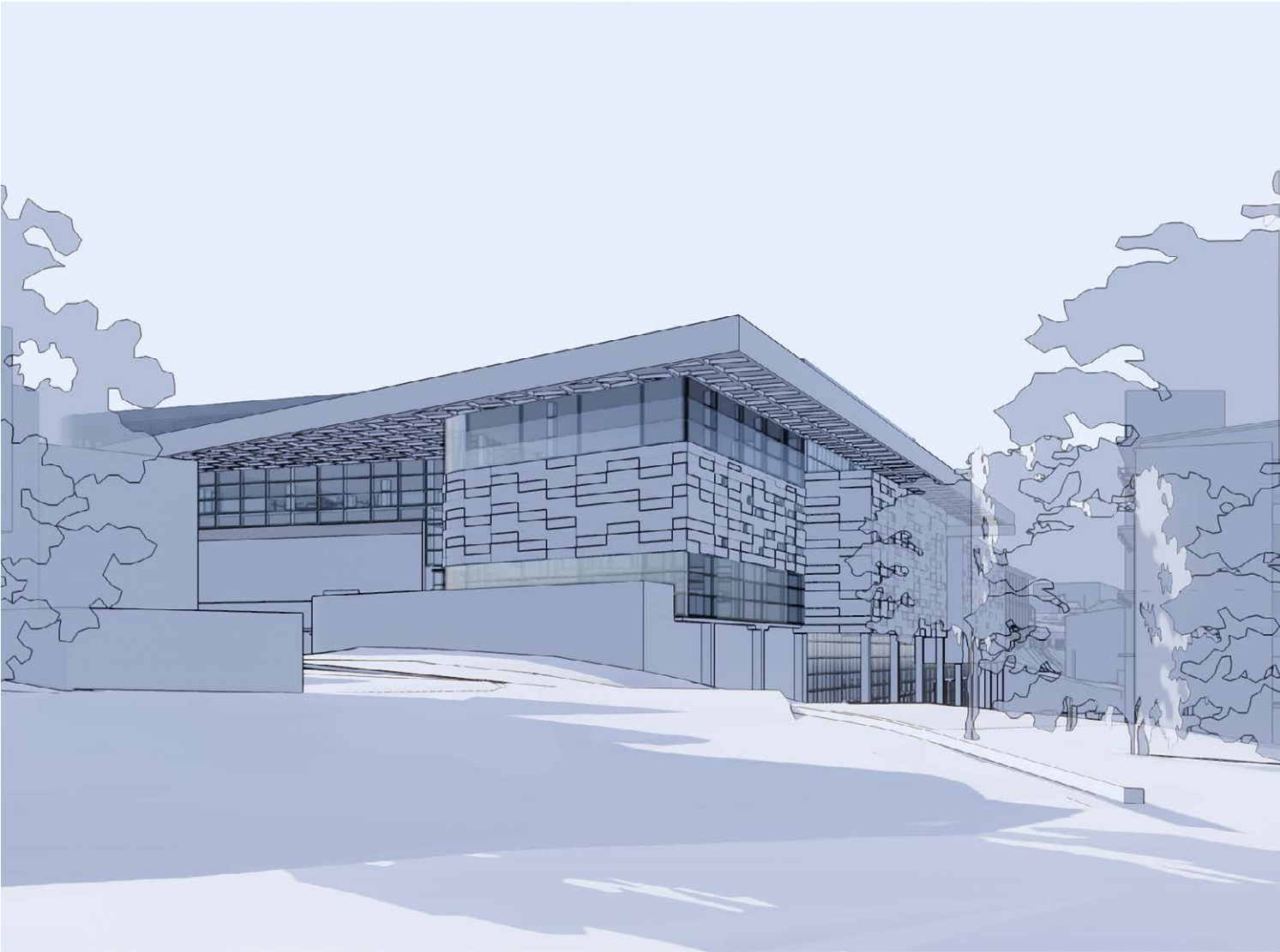
Looks East across the proposed campus green from the existing train line and bike path.



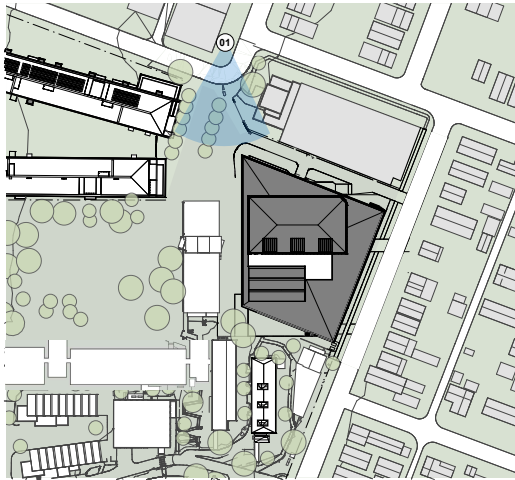
Key View 01_Northern Entry Plaza



BEFORE

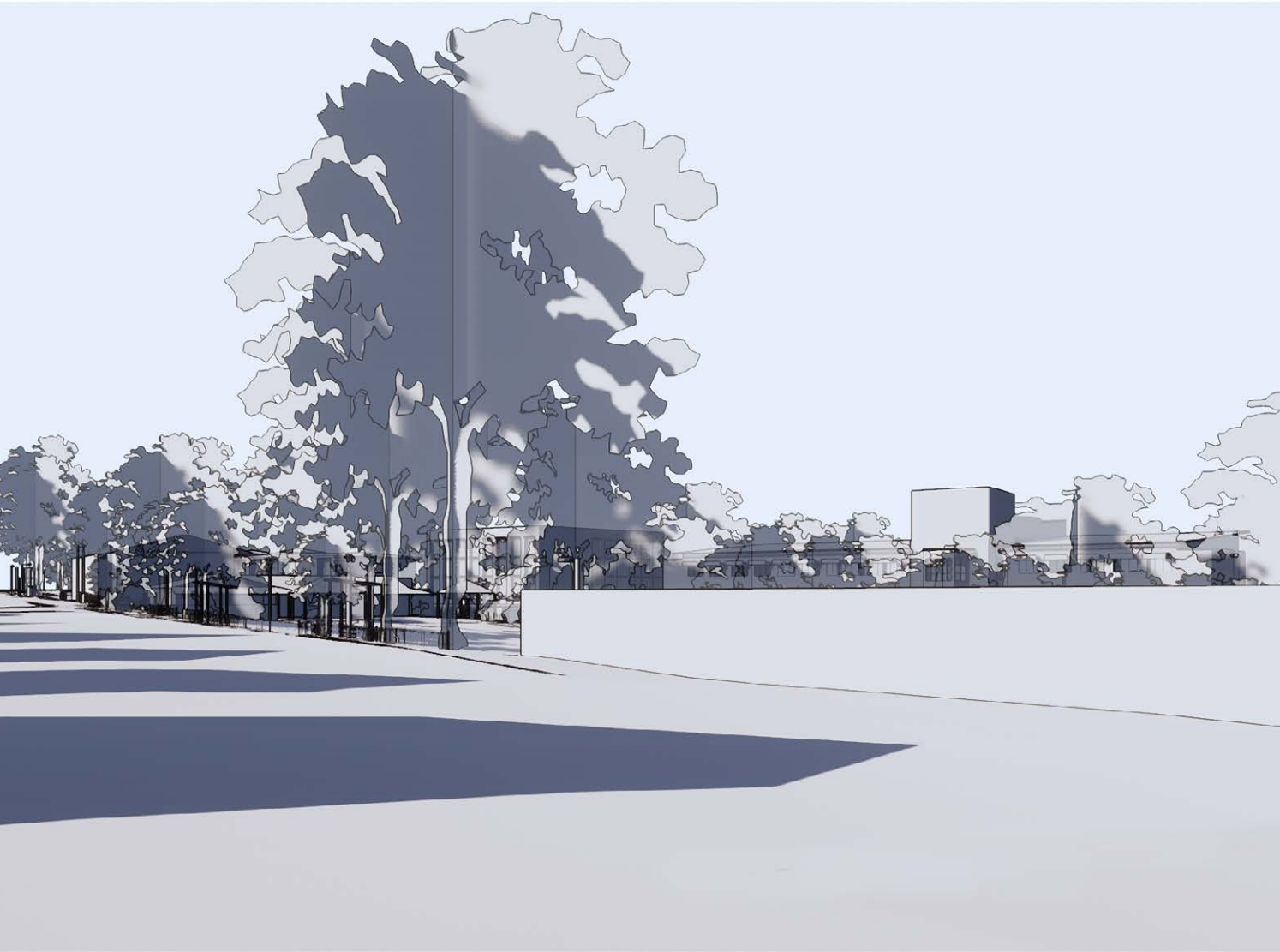


AFTER

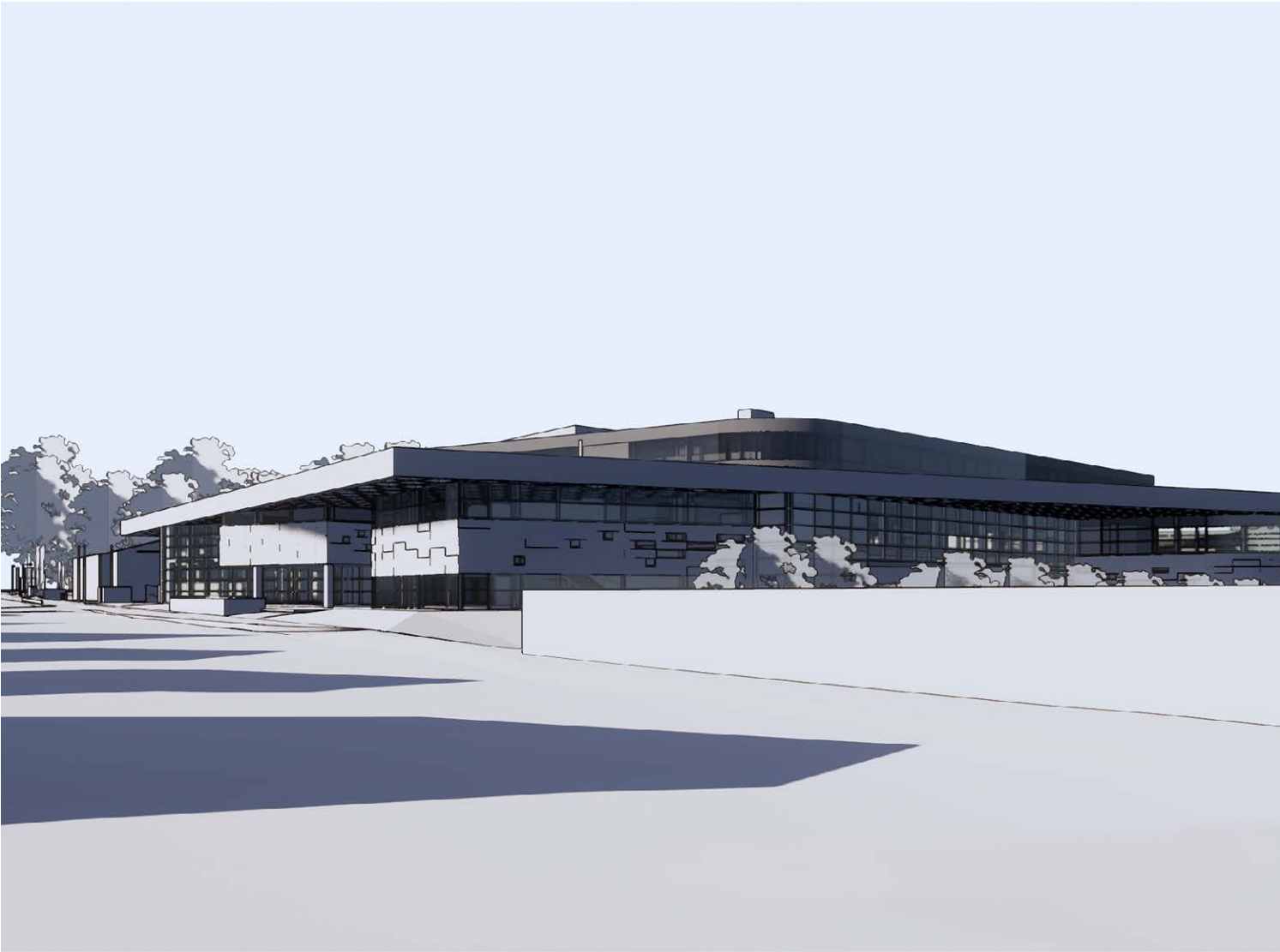


KEY PLAN

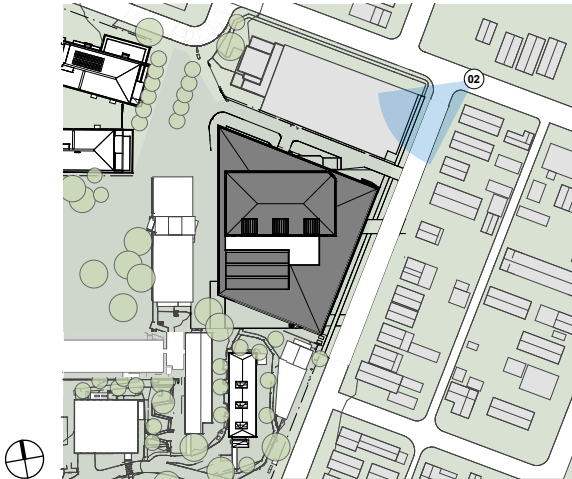
Key View 02_Macpherson Street Perspective



BEFORE

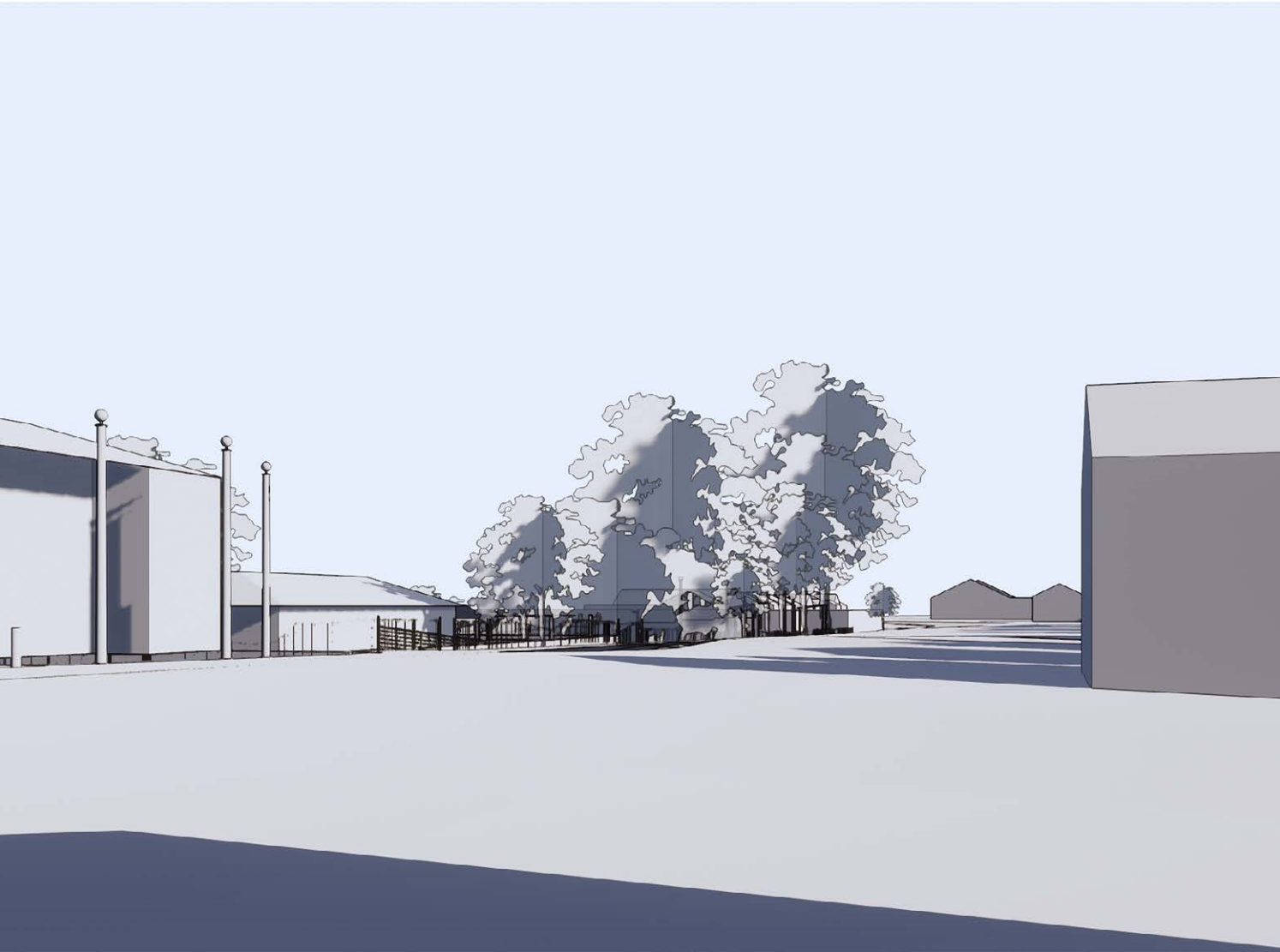


AFTER

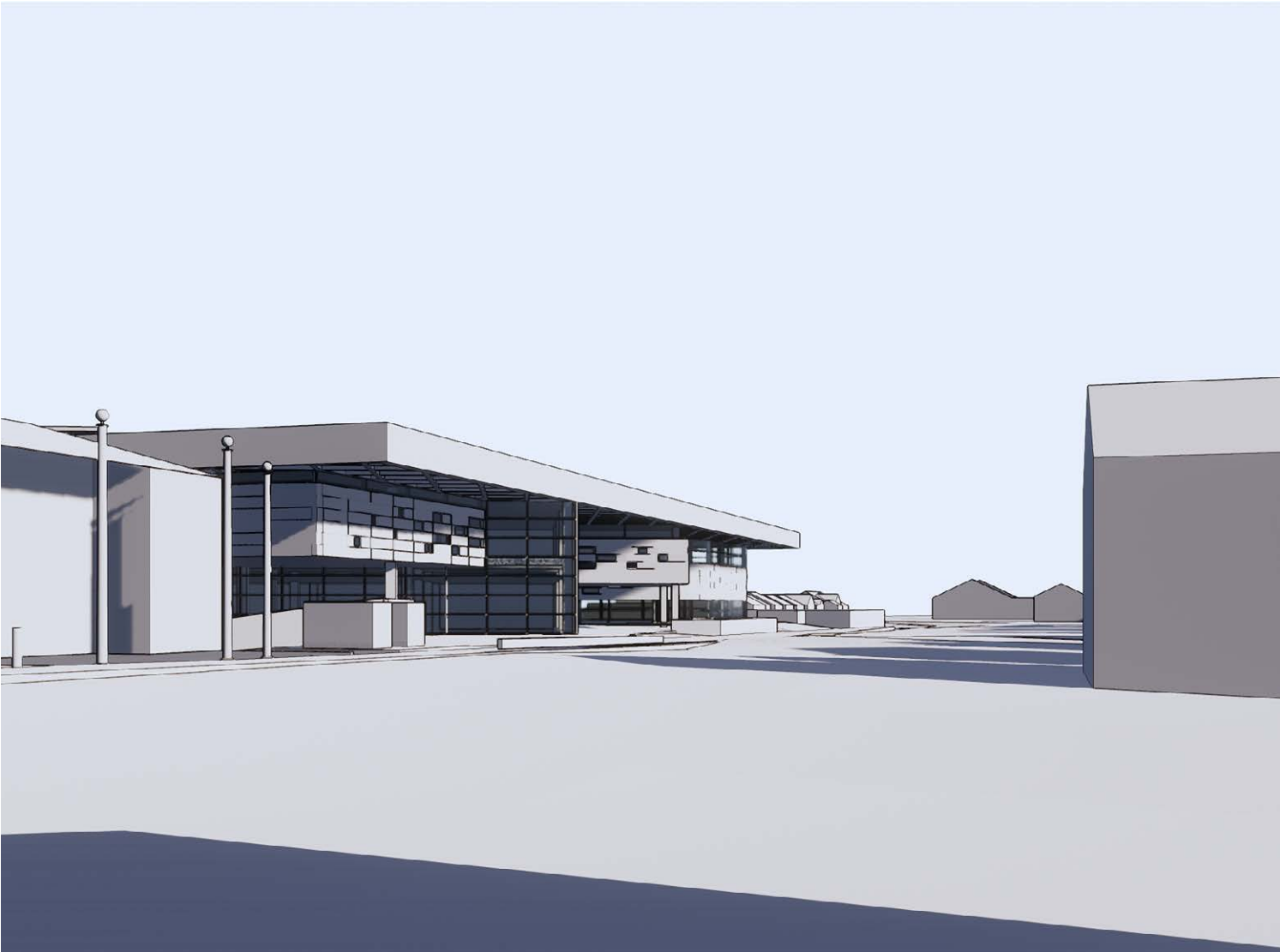


KEY PLAN

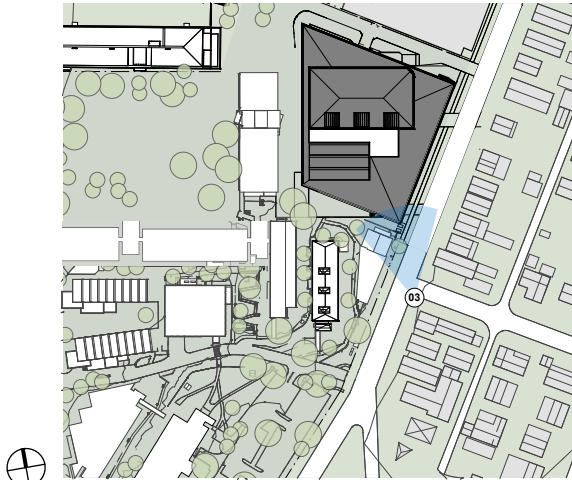
Key View 03_Stone & See Street Perspective



BEFORE



AFTER

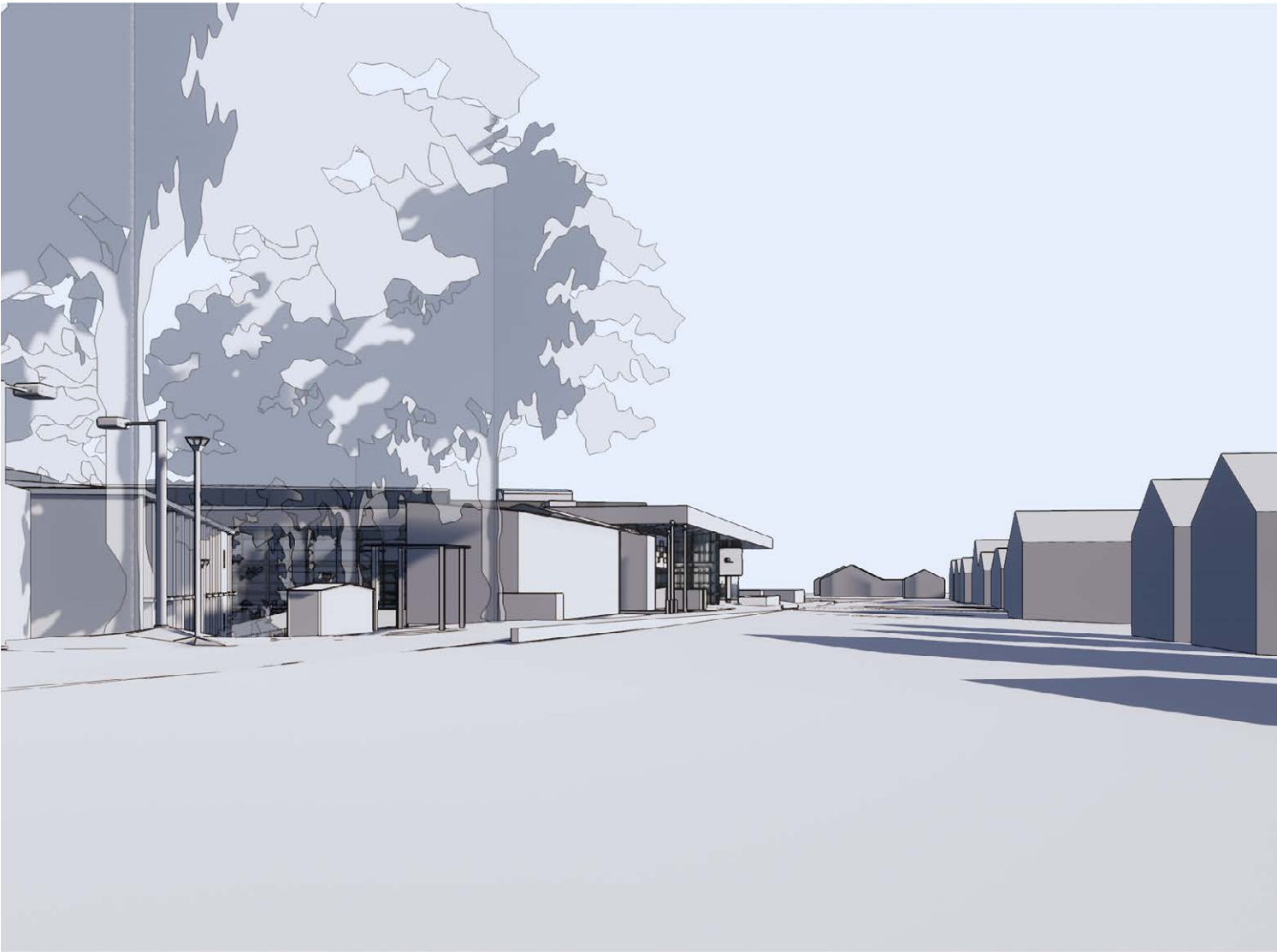


KEY PLAN

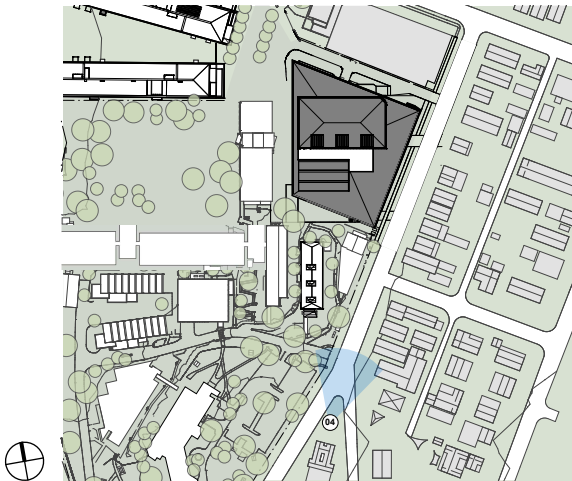
Key View 04_Thomas White Monument Perspective



BEFORE



AFTER



KEY PLAN

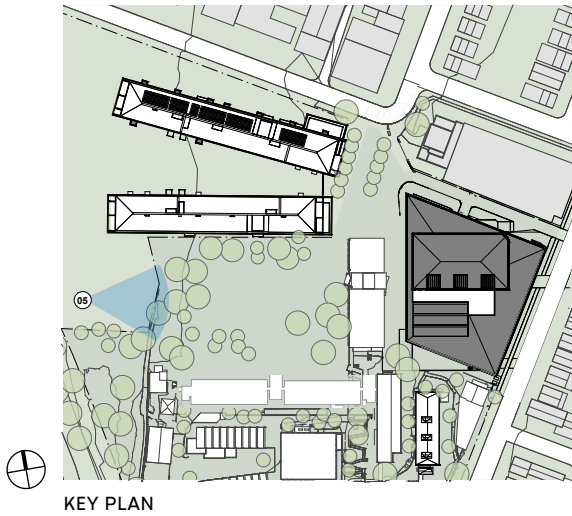
Key View 05_Campus Green And Bikeway Perspective



BEFORE



AFTER

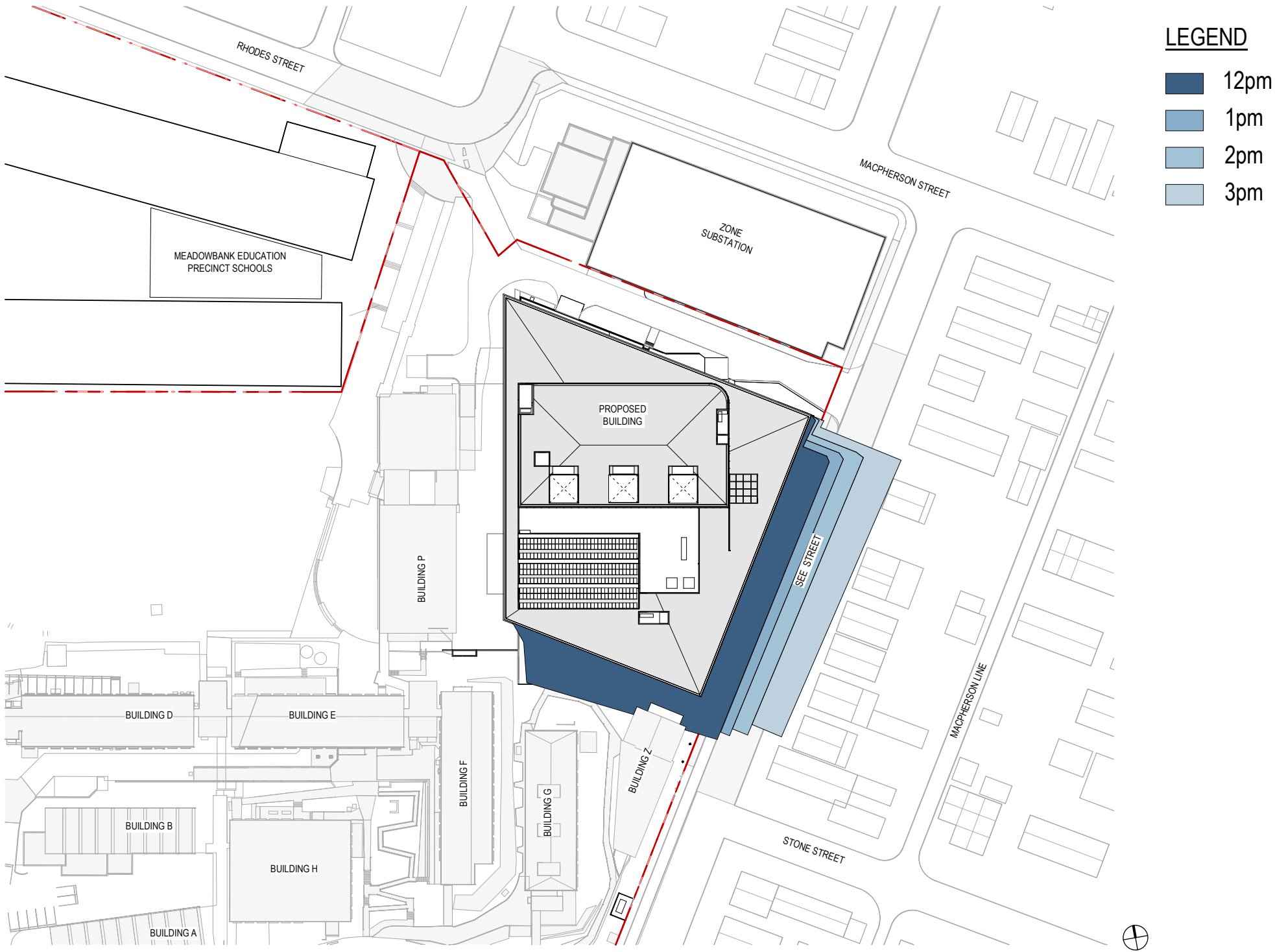


SHADOW ANALYSIS

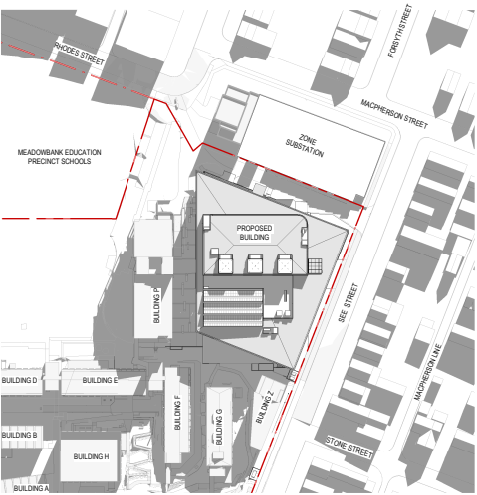
A study of the potential overshadowing impact of the development has confirmed minimal impact to the residential properties to the East. Some additional overshadowing will occur from approximately 3.30 in the afternoon as demonstrated on the diagram opposite on the Winter Solstice.

An hour by hour study shows the elongation of the shadows as the sun sets to the West, casting shadow predominantly onto See Street throughout the afternoon, with shadow only striking the residential boundary close to dark, with dusk averaging around 4.53pm.

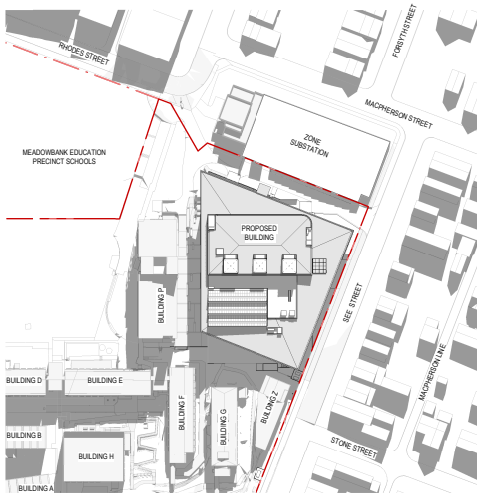
A favourable orientation ensures that all the residence maintain the minimum three hours direct solar access to all private open space required by Ryde Councils DCP.



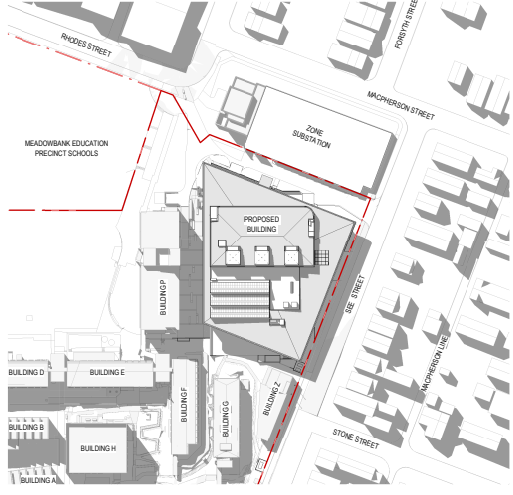
Shadow Analysis



1 SSDA - WINTER PROPOSED - 9AM
DA20 SCALE 1:1500



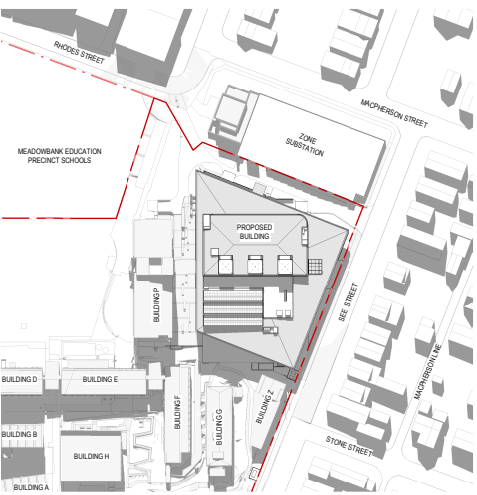
2 SSDA - WINTER PROPOSED - 10AM
DA20 SCALE 1:1500



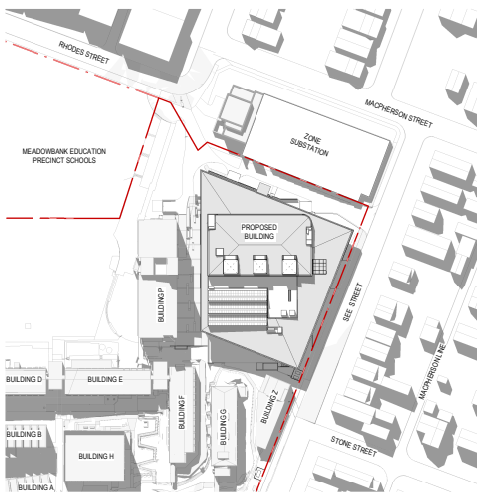
5 SSDA - WINTER PROPOSED - 1PM
DA20 SCALE 1:1500



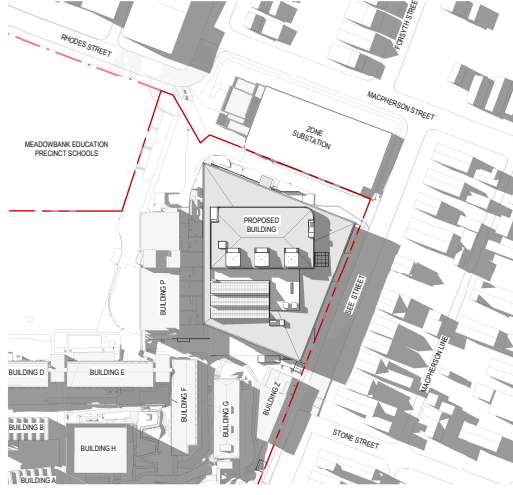
6 SSDA - WINTER PROPOSED - 2PM
DA20 SCALE 1:1500



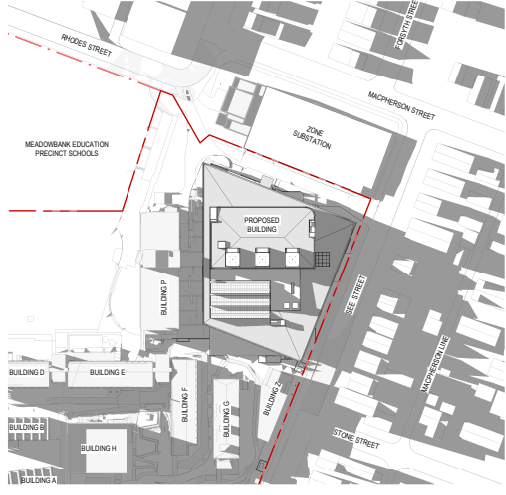
3 SSDA - WINTER PROPOSED - 11AM
DA20 SCALE 1:1500



4 SSDA - WINTER PROPOSED - 12PM
DA20 SCALE 1:1500



7 SSDA - WINTER PROPOSED - 3PM
DA20 SCALE 1:1500



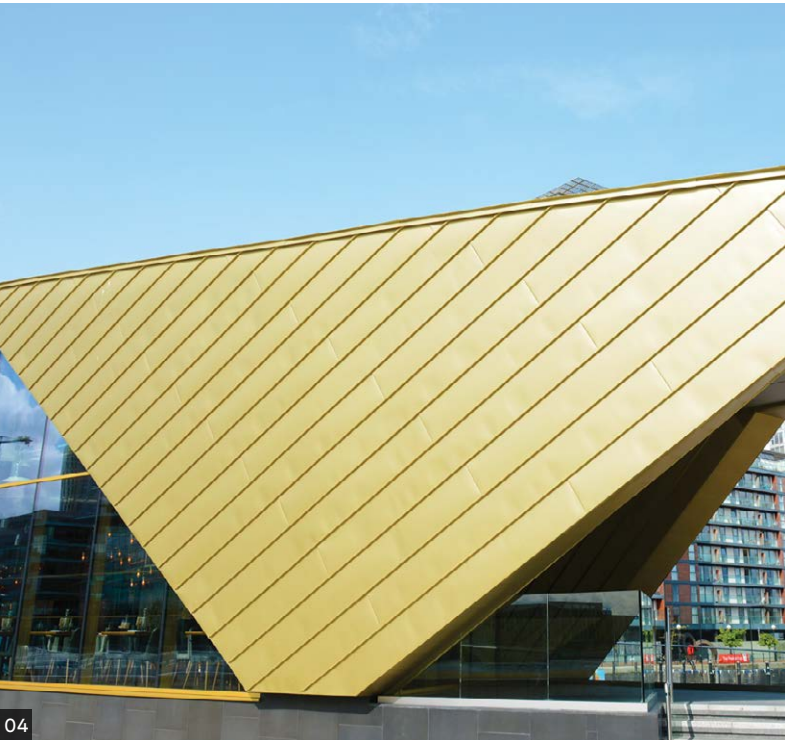
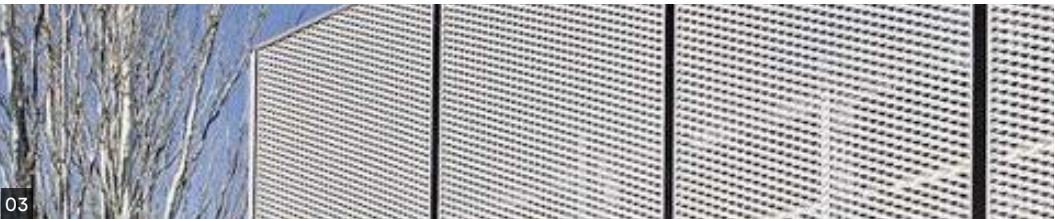
8 SSDA - WINTER PROPOSED - 4PM
DA20 SCALE 1:1500



8.0 Materiality and Facade

EXTERNAL MATERIAL PALETTE

Architectural Forms Exemplars



01_Cantilevered Roof Structure – Sean Godsell’s House on the Hill

02_Expressed Timber Look Ceiling – Architecture aux Quatre –Vents

03_Level 6 Screen – Roses IES Cap Norfeu Extension

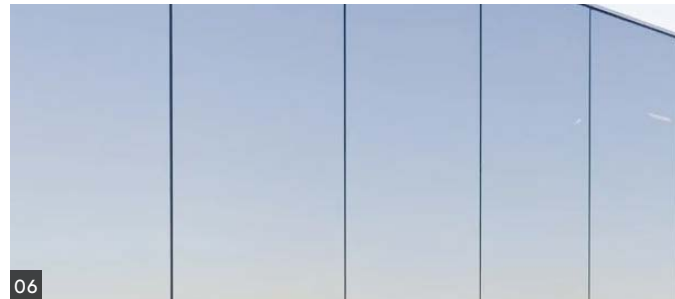
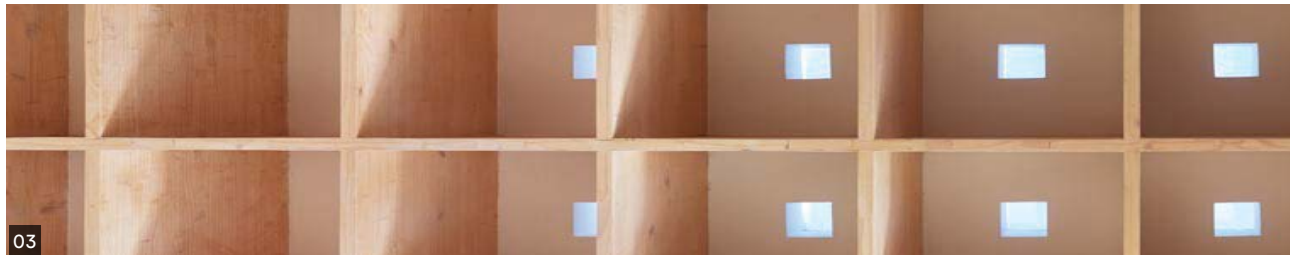
04_Plugin Solid Elements – The Alchemist, Salford Quays

05_Window Shroud Articulation – Klinker Cultural Centre – Atelier Pro Architekten

06_Proposed Mullion Systems and Tints – Tina Tzalla & Factor 6 Design; and Vakko Fashion and Power Media Centre: Rex Architecture

Proposed External Finishes

- 01_Lasercut Perforated Mesh Screen
- 02_Dark Powdercoated Captured Mullions & fascia
- 03_Expressed Timber Look Coffe/Ceiling System
- 04_Dark/Earthy Powdercoated Window Shrouds
- 05_Creme/Bronze Metal Finish
- 06_Double glazed captured mullion system – light tint
- 07_Structurally bonded/non captured mullion system – dark tint



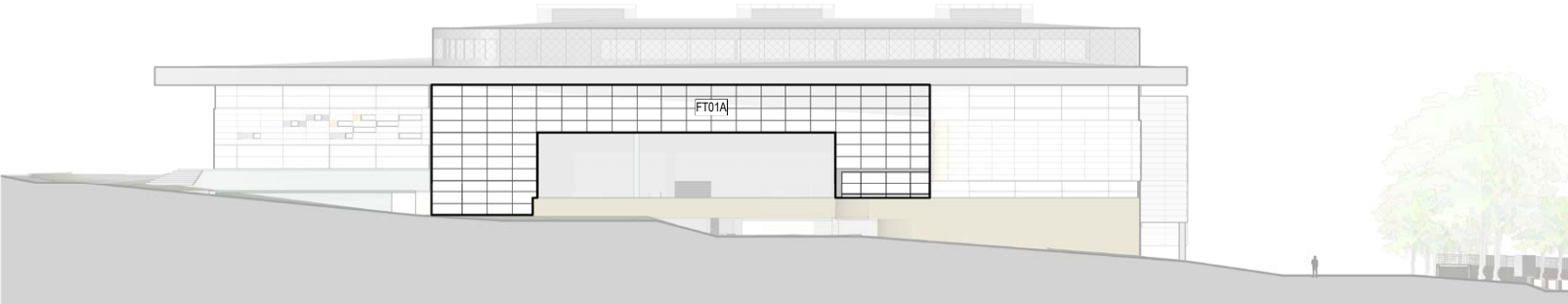
COLOUR AND METAL FINISH RATIONALE



Colour and finish of plugins and window shroud elements for the MTH/DTH are influenced by the Sydney/Hawkesbury stone present on site. Extrapolating the finish, grain and erosive elements within the solid mass and finish.



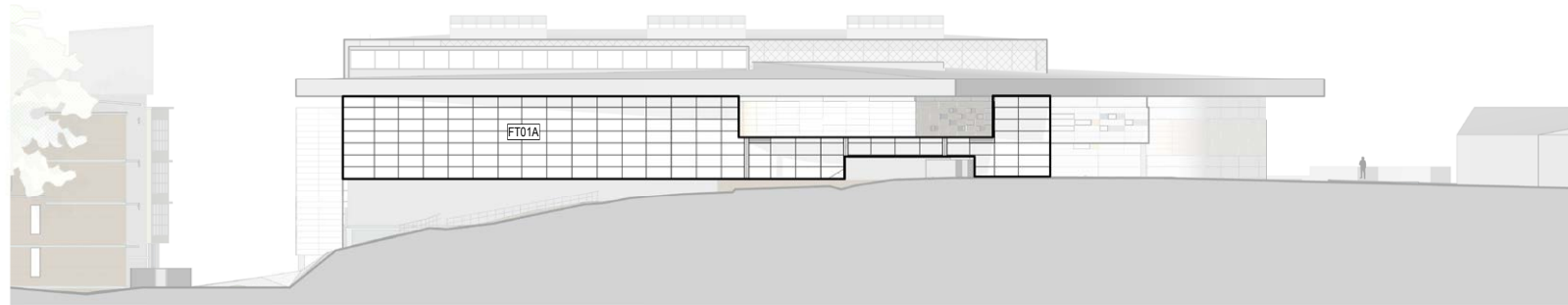
FACADE TYPE ANALYSIS – FT01A



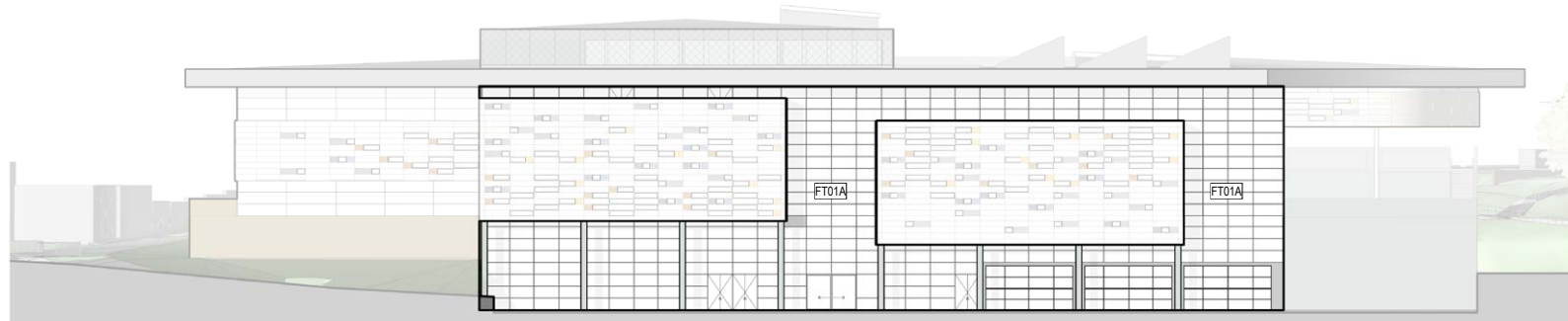
NORTH ELEVATION



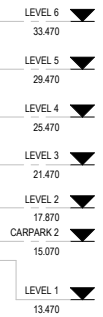
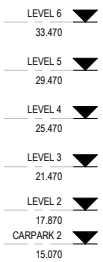
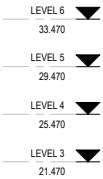
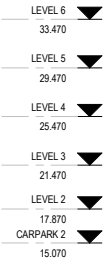
EAST ELEVATION



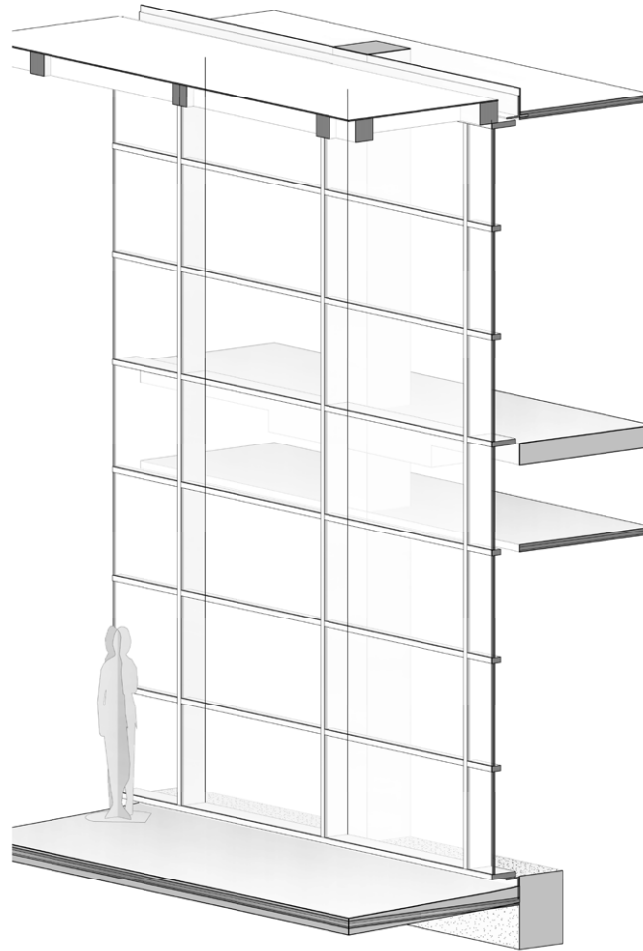
SOUTH ELEVATION



WEST ELEVATION



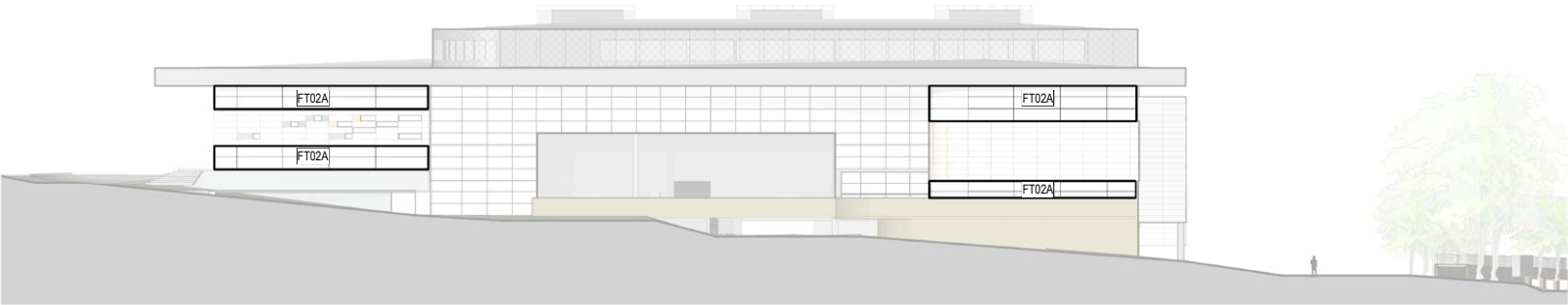
This unitised curtain wall façade system is located on all main elevations of the building and provides the majority of the glazing to the building envelope. This slab to slab unitised glazing system provides maximum daylighting and views to the main interior spaces of the workshops and atrium. Construction of the unitised system will be a powder coated aluminium frame, with expressed horizontal and vertical joints on the exterior. Performance double glazing will aid in interior comfort by reducing solar heat gain and providing insulation to the glazing assembly. The unitised construction will aid in reducing on site installation time, and providing better controls during fabrication.



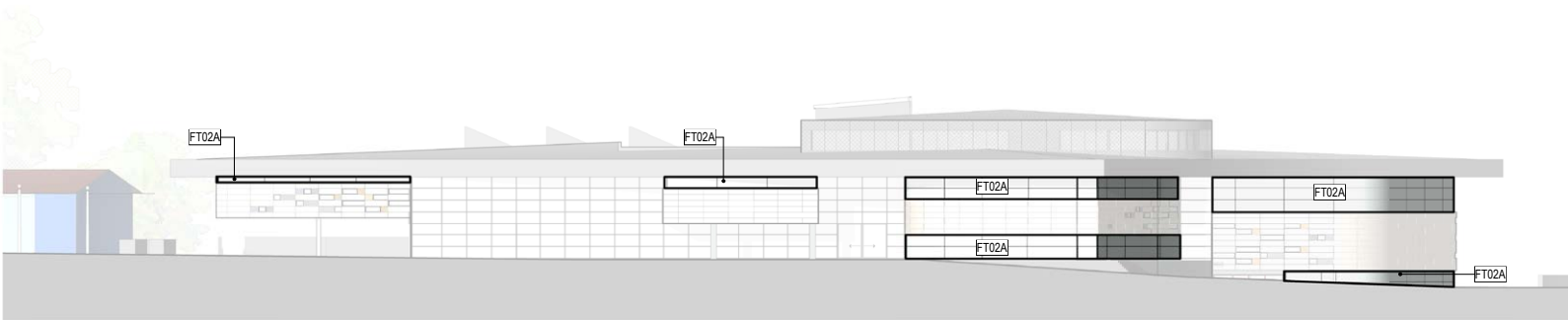
FT01 – 3D VIEW



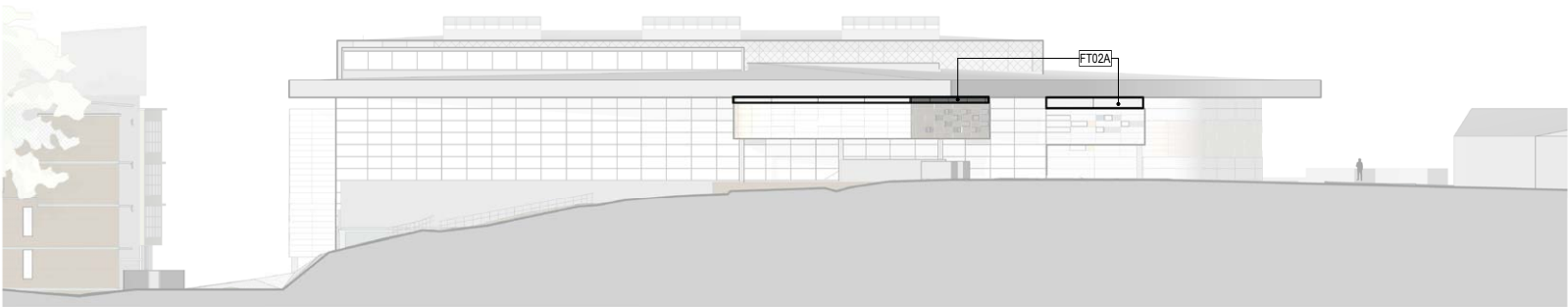
FACADE TYPE ANALYSIS – FT02A



NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION

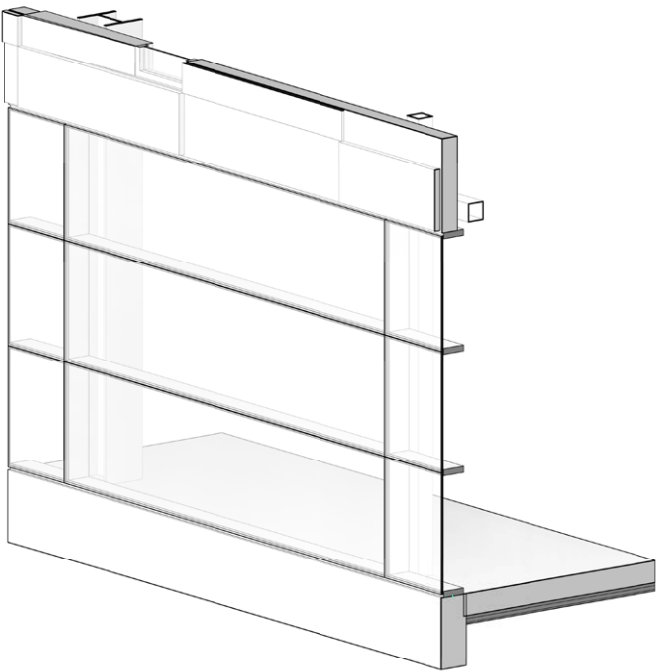
- LEVEL 6 ▼ 33.470
- LEVEL 5 ▼ 29.470
- LEVEL 4 ▼ 25.470
- LEVEL 3 ▼ 21.470
- LEVEL 2 ▼ 17.870
- CARPARK 2 ▼ 15.070

- LEVEL 6 ▼ 33.470
- LEVEL 5 ▼ 29.470
- LEVEL 4 ▼ 25.470
- LEVEL 3 ▼ 21.470

- LEVEL 6 ▼ 33.470
- LEVEL 5 ▼ 29.470
- LEVEL 4 ▼ 25.470
- LEVEL 3 ▼ 21.470
- LEVEL 2 ▼ 17.870
- CARPARK 2 ▼ 15.070

- LEVEL 6 ▼ 33.470
- LEVEL 5 ▼ 29.470
- LEVEL 4 ▼ 25.470
- LEVEL 3 ▼ 21.470
- LEVEL 2 ▼ 17.870
- CARPARK 2 ▼ 15.070
- LEVEL 1 ▼ 13.470

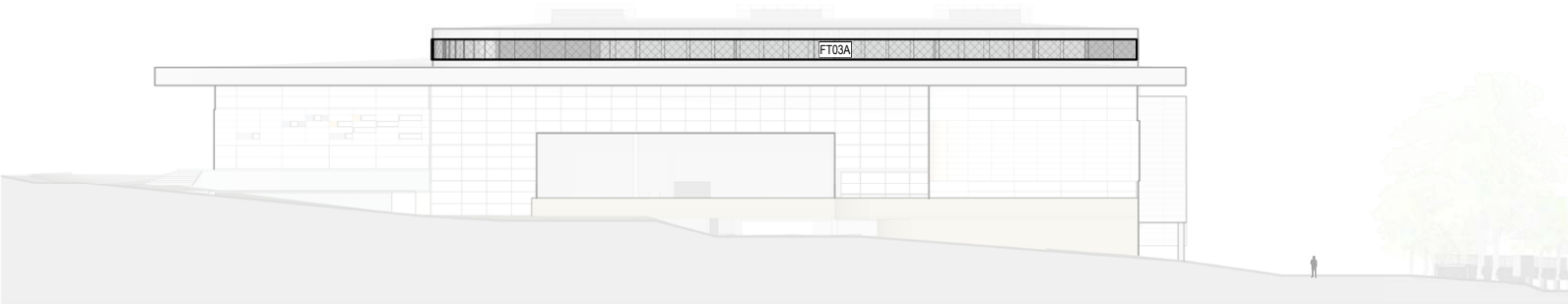
This fully glazed unitised façade system is located adjacent to the solid cladding elements on the building on all elevations. This horizontally oriented unitised glazing system provides maximum daylighting and views to the main interior assembly spaces. The horizontal orientation aids in the architectural aesthetic. Construction of the unitised system will be a powder coated aluminium frame with structurally bonded glazing. Performance double glazing will aid in interior comfort by reducing solar heat gain and providing insulation to the glazing assembly. The unitised construction which will aid in reducing on site installation time, and providing better controls during fabrication.



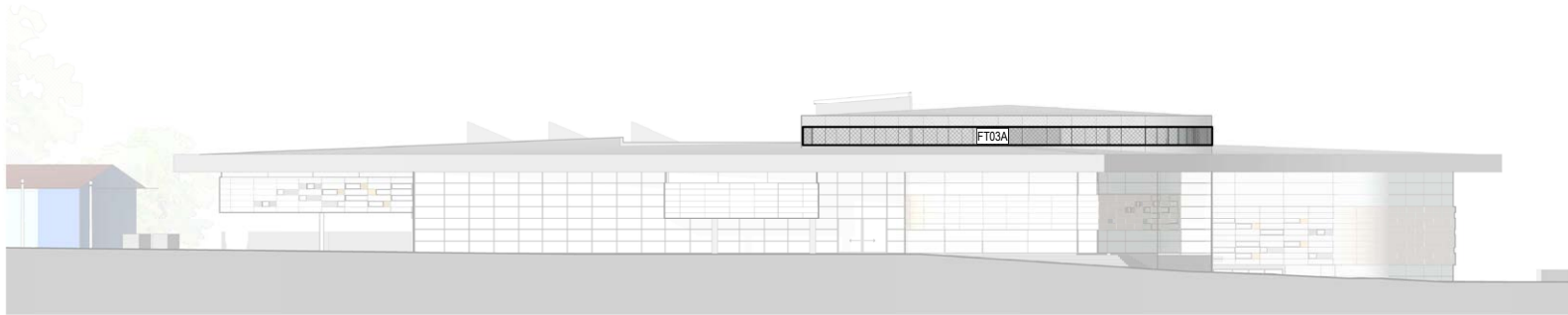
FT02- 3D VIEW



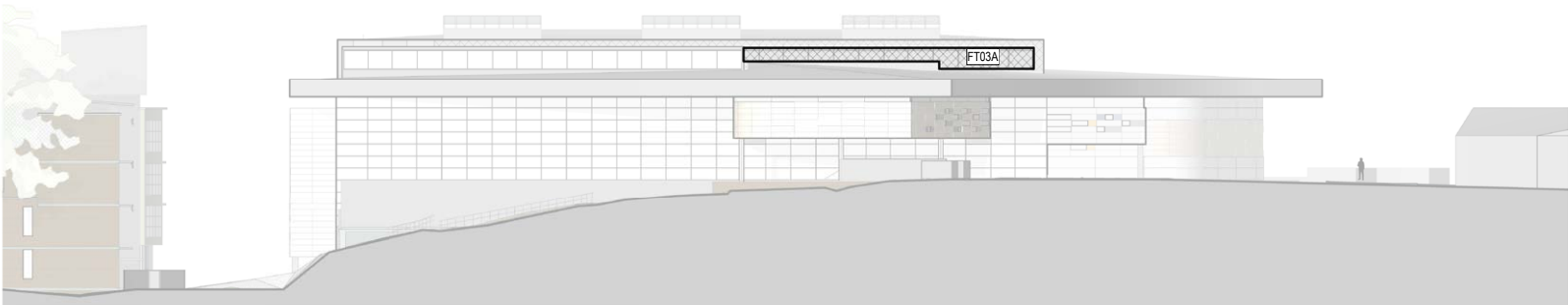
FACADE TYPE ANALYSIS – FT03A



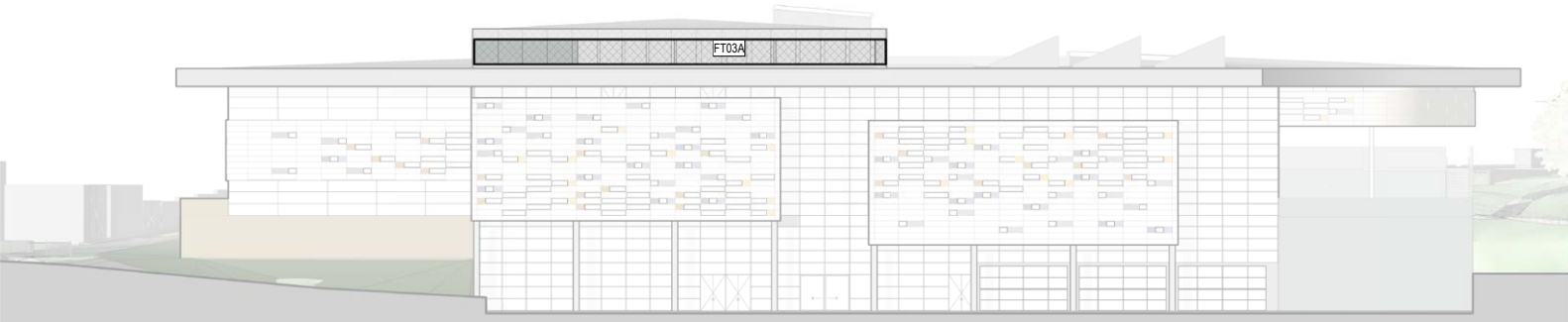
NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION

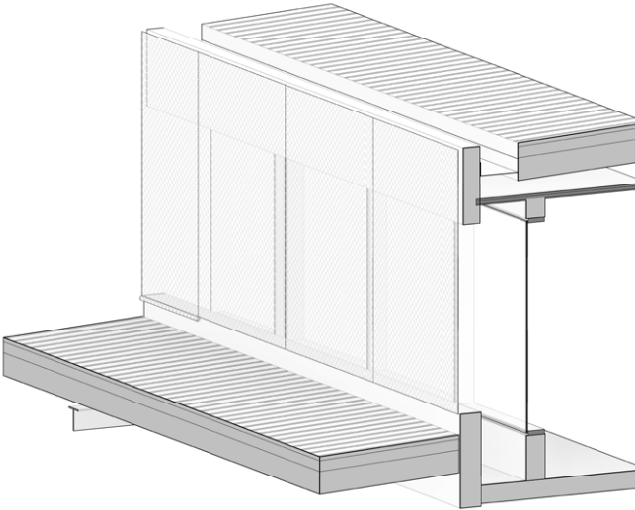
- LEVEL 6 33.470
- LEVEL 5 29.470
- LEVEL 4 25.470
- LEVEL 3 21.470
- LEVEL 2 17.870
- CARPARK 2 15.070

- LEVEL 6 33.470
- LEVEL 5 29.470
- LEVEL 4 25.470
- LEVEL 3 21.470

- LEVEL 6 33.470
- LEVEL 5 29.470
- LEVEL 4 25.470
- LEVEL 3 21.470
- LEVEL 2 17.870
- CARPARK 2 15.070

- LEVEL 6 33.470
- LEVEL 5 29.470
- LEVEL 4 25.470
- LEVEL 3 21.470
- LEVEL 2 17.870
- CARPARK 2 15.070
- LEVEL 1 13.470

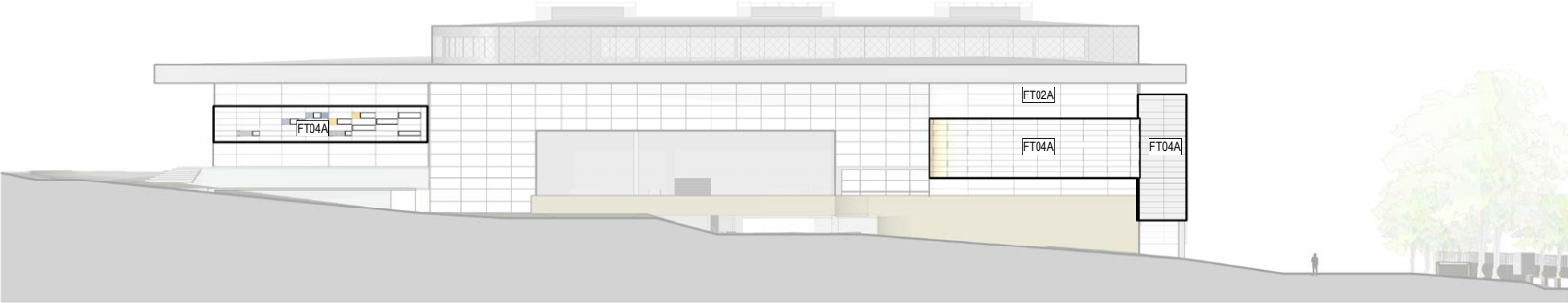
This unitised shopfront system is located exclusively at the level 6 technology hub. The system provides maximum daylighting and views over the surrounding campus. The addition of a perforated metal panel to the exterior of the glazing reduces solar heat gain to the level 6 interior spaces and provides. Construction of the system will be a powder coated aluminium frame with captured mullions. Performance double glazing will aid in interior comfort by reducing solar heat gain and providing insulation to the glazing assembly. The systems unitised construction which will aid in reducing on site installation time, and providing better controls during fabrication.



FT03 – 3D VIEW



FACADE TYPE ANALYSIS – FT04A



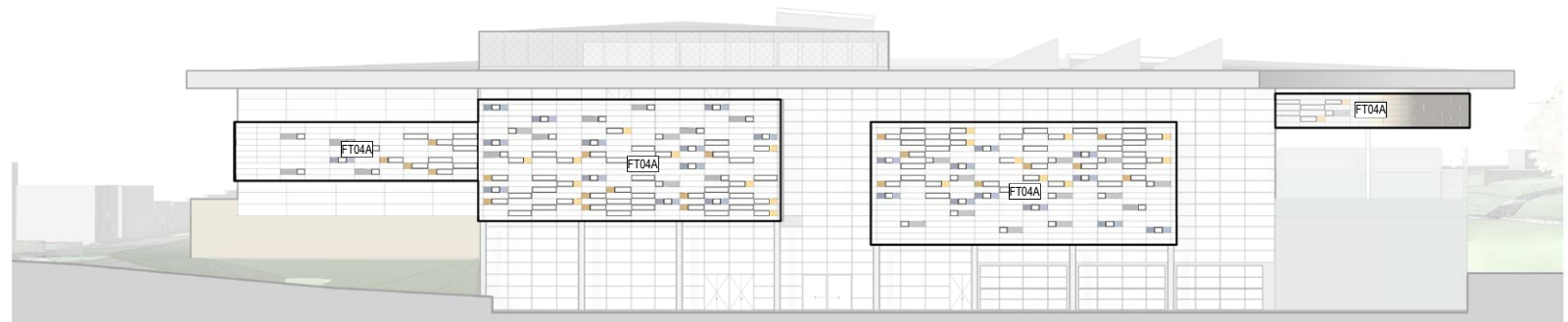
NORTH ELEVATION



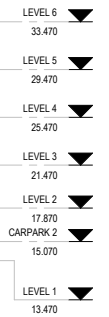
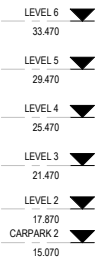
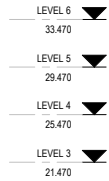
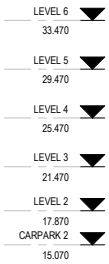
EAST ELEVATION



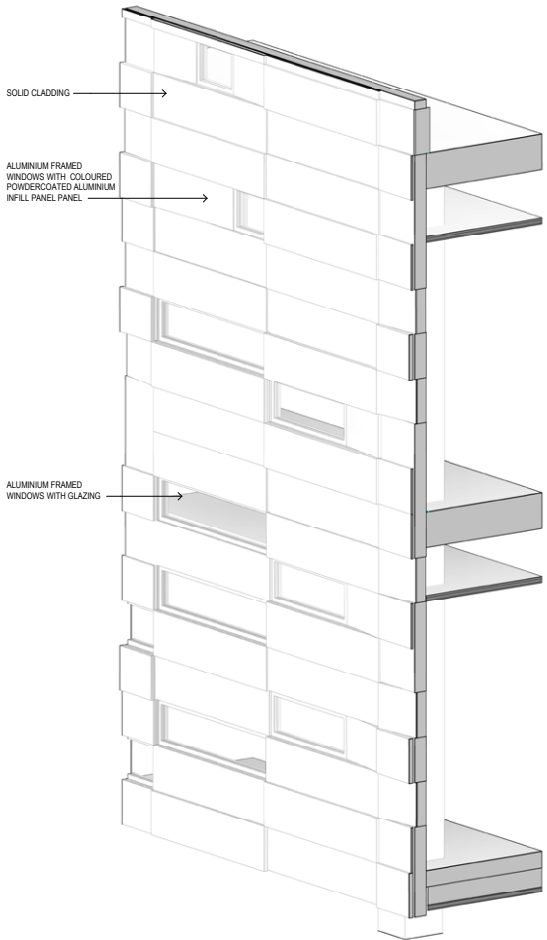
SOUTH ELEVATION



WEST ELEVATION



This insulated solid clad unitised wall system is located on all elevations and provides a solid textured aesthetic to the building envelope. The strategically placed glazed openings in the system panels, maximize views to the exterior and provide additional interior daylighting. Construction of the system will be a unitised cladding system with an external rainscreen. Performance glazing to the window will aid in solar control. The off site fabrication of the system will aid in reducing on site installation time, and providing better controls during fabrication.



FT04 – 3D VIEW



ESD PRINCIPLES

The aim of the ESD objectives is to encourage a balanced approach to the designing new facilities for the TAFE NSW project to be resource efficient, cost- effective in construction and operation; and to deliver enhanced sustainability benefits with respect to impacts on the environment and on the health and well-being of students, staff and visitors whilst providing the best possible facilities for a constructive student learning experience. The development will implement a holistic and integrated approach to Ecologically Sustainable Design(ESD), maximising passive opportunities with the selective application of modern technology where appropriate. Initiatives are chosen with due regard to innovation vs. cost effective benefits to TAFE NSW.

- The Multi trades Hub is targeting a 4 star Green Star Design & As Built Certification
- ESD Initiatives are based on best practice design principles.
- ESD initiatives are based on the National Construction Code (NCC) 2019 Section J – Energy Efficiency

Concentrator PV will direct light onto a small area of high efficiency solar cells

Air-conditioning systems with control strategy to reduce energy consumption

Wind turbine will harness wind energy to create electricity

Predictive energy optimization software interfaces with BMS and can devise optimum building operation strategy based on weather, energy rates, etc

Sufficient exposure to daylight to reduce energy consumption

Green wall within atrium will improve air quality within the space

Rainwater storage tanks at low level will collect rainwater runoff from the roof and reuse it in the building in grey water systems

Water efficient fixtures will reduce water consumption within the building

Large Scale Solar PV system will make use of the northern facing roof to generate power

Solar tracker will orient PV panel to follow the path of the sun to maximise performance.

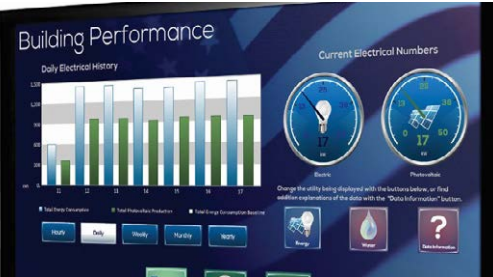
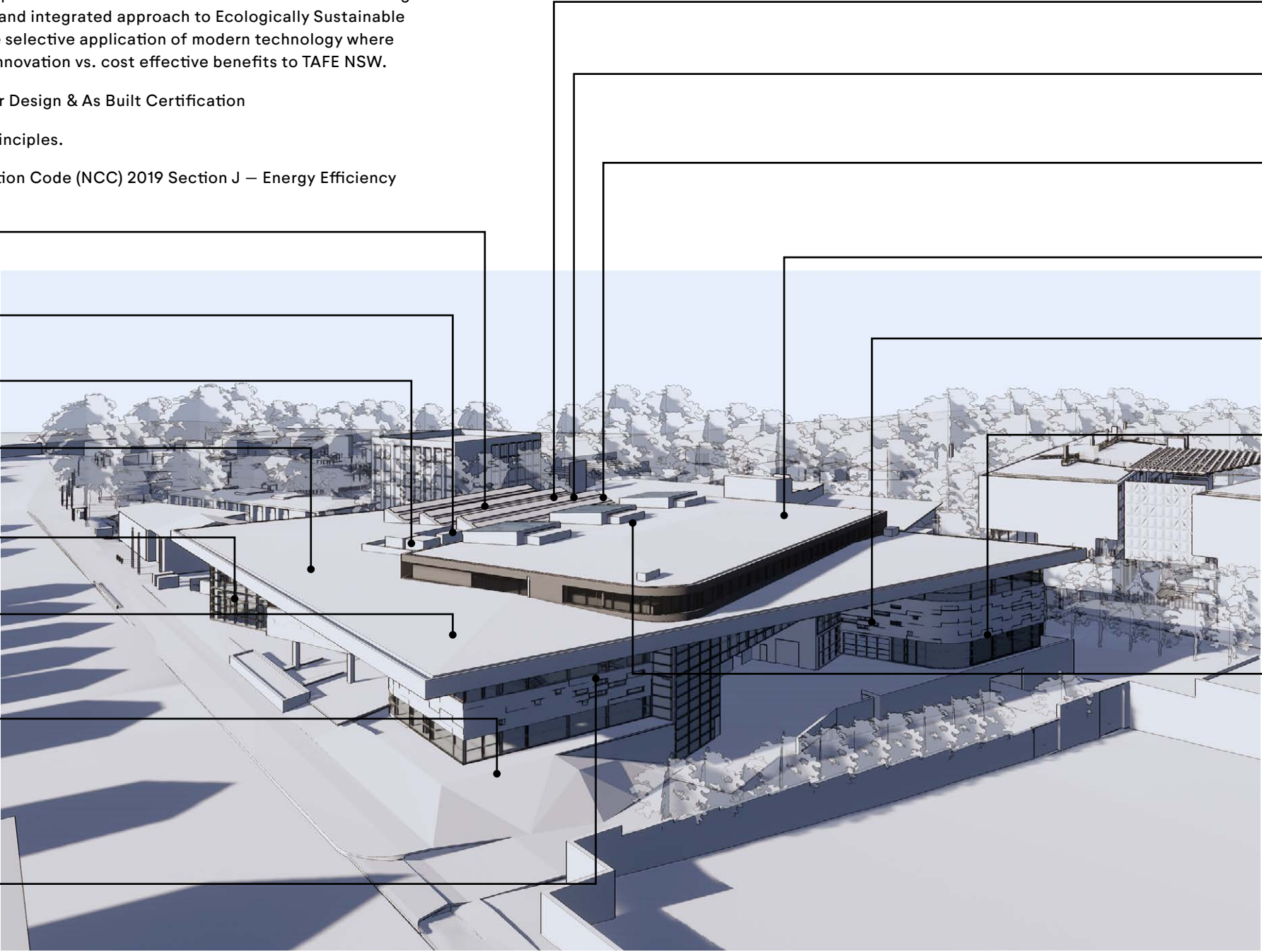
Thin Film Solar Panels are flexible PV panels that are thinner and lighter than conventional panels

The use of LED luminaires with control strategy to reduce energy consumption.

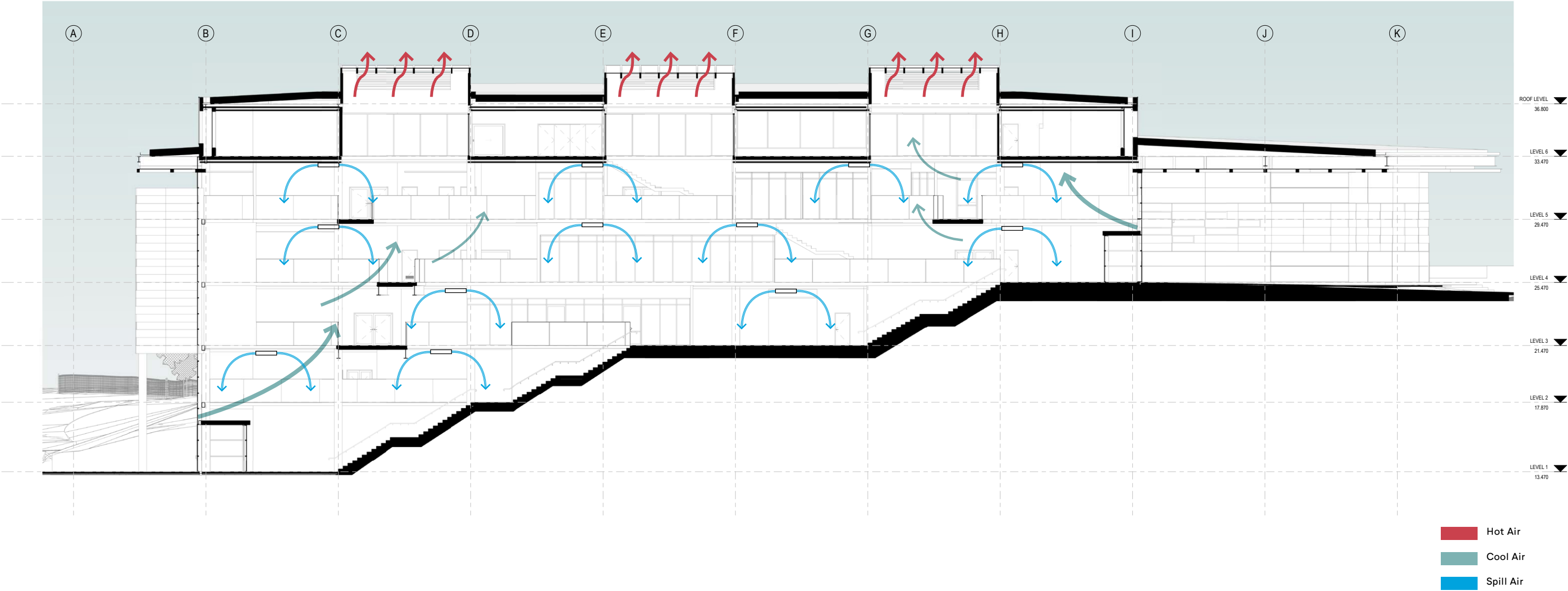
Real time building performance data will be shown on displays to occupants

Waste Management plan to efficiently control waste

Spill air within atrium will provide additional cooling to the main atrium space



ATRIUM AIR MOVEMENT PRINCIPLES



SPILL AIR

The use of spill air within the atrium would provide cooling to the atrium space during the warm summer months. The spill air system would use some of the cool air being provided to adjacent spaces, and spill some of this air into the atrium space as required. Spill air vents would be placed at varying floor levels along the entire length of the atrium to provide even cooling. The flow of cool air would be managed by mechanically automated systems within the adjacent ceiling spaces that would control the flow of air into the atrium. The efficiency of the system is that it uses mechanical systems already being used to cool adjacent spaces, and does not require separate cooling systems.

MECHANICALLY ASSISTED VENTILATION

Mechanically Assisted Ventilation to the atrium is an approach to maintain comfortable temperatures year round within the multi-level atrium space. The system is cost effective as it utilizes the required mechanical smoke extraction fans and fresh air intake louvres already needed for atrium smoke extraction.

Summer cooling within the atrium is achieved by engaging the roof mounted extraction fans at low speed to extract warm air from the top of the atrium, while opening the fresh air intakes at the low level. Cooling may take place during the evening hours to allow colder evening air into the atrium, purging warm air built up during the day.

9.0 Landscape Design

LANDSCAPE DESIGN CONCEPT – EXEMPLARS

ENTRY PRECINCTS



FORMAL AVENUE WITH TREE PLANTING



QUIET SPACES FOR GROUP STUDY



THE COLLEGE GREEN



THOROUGHFARE / NIGHT TIME ENVIRONMENT



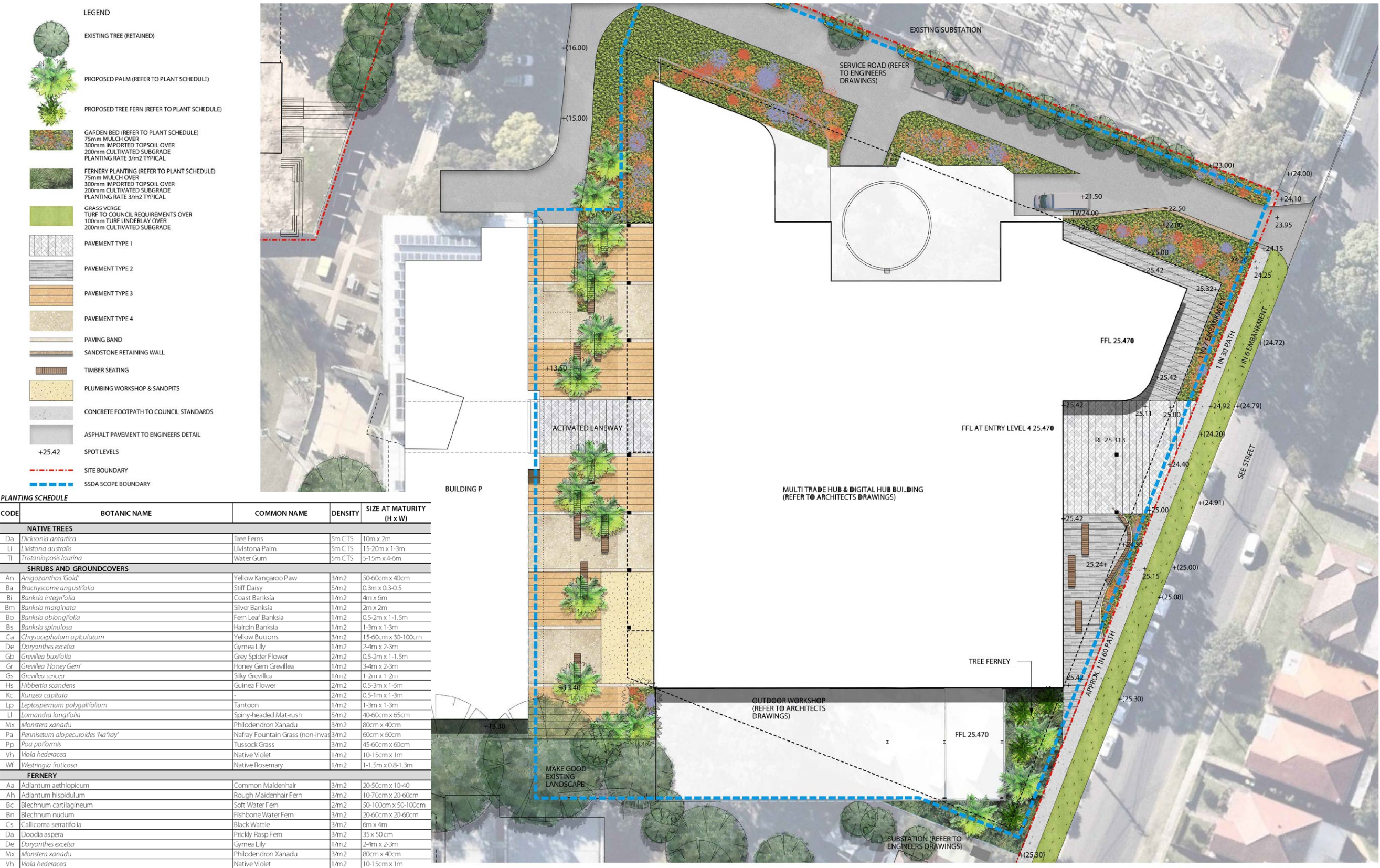
THE COLLEGE GREEN



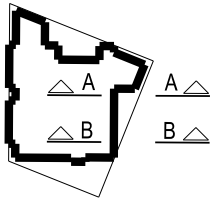
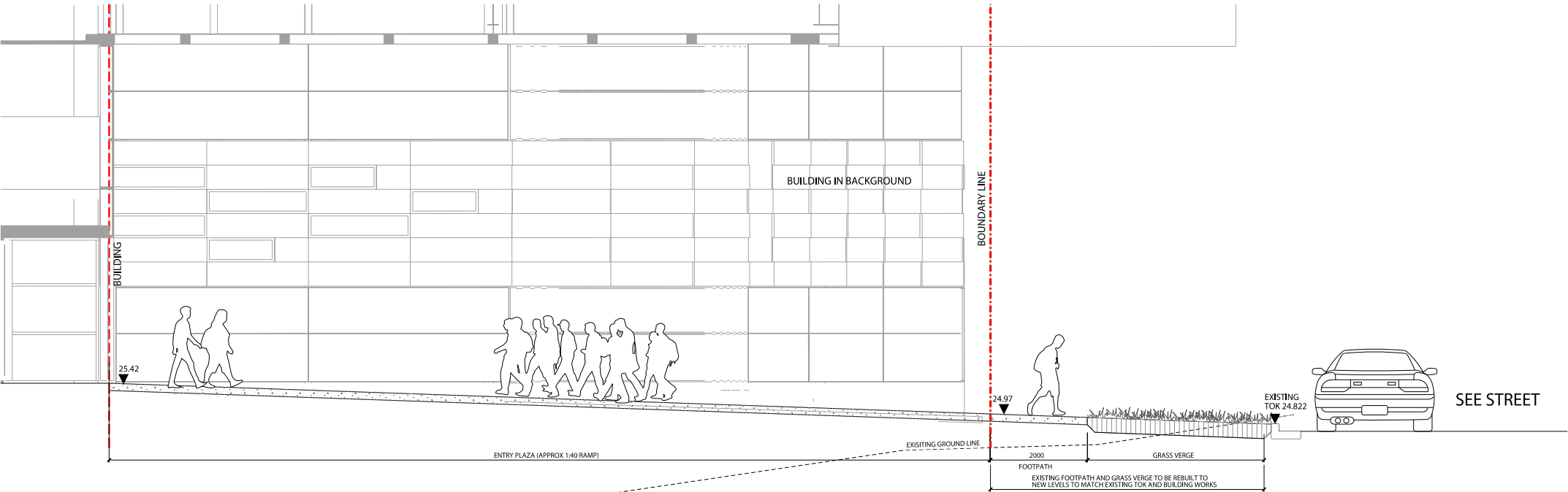
THE CAMPUS PALETTE



LANDSCAPE PLAN



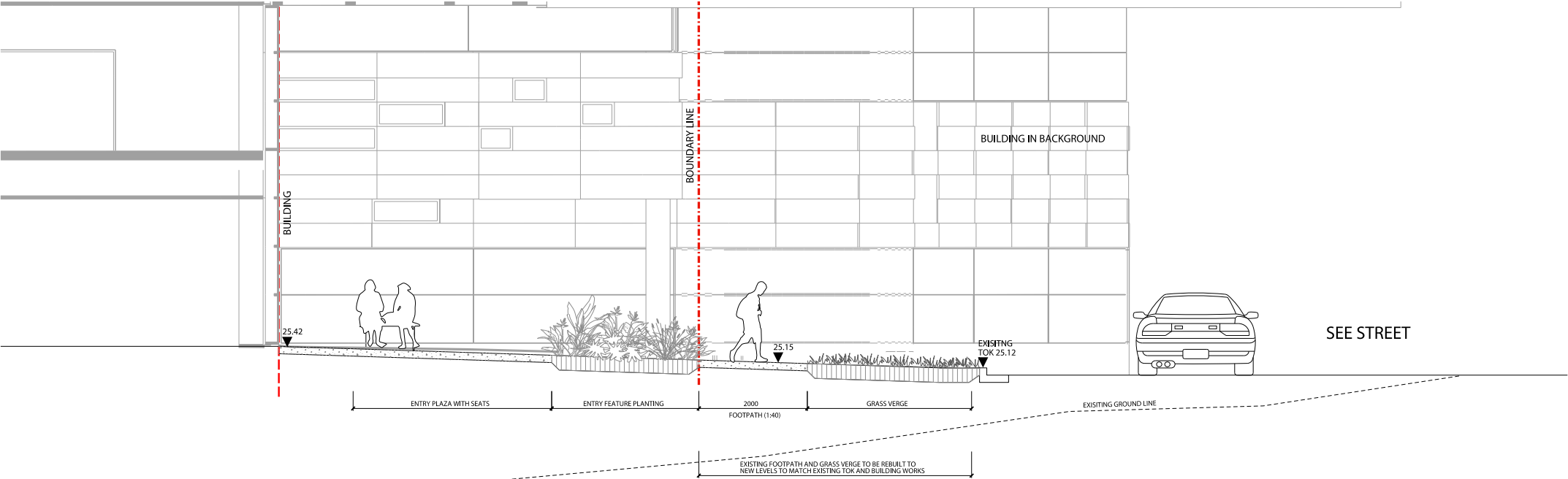
LANDSCAPE – SEE STREET CROSS SECTIONS



KEY PLAN

SECTION AA

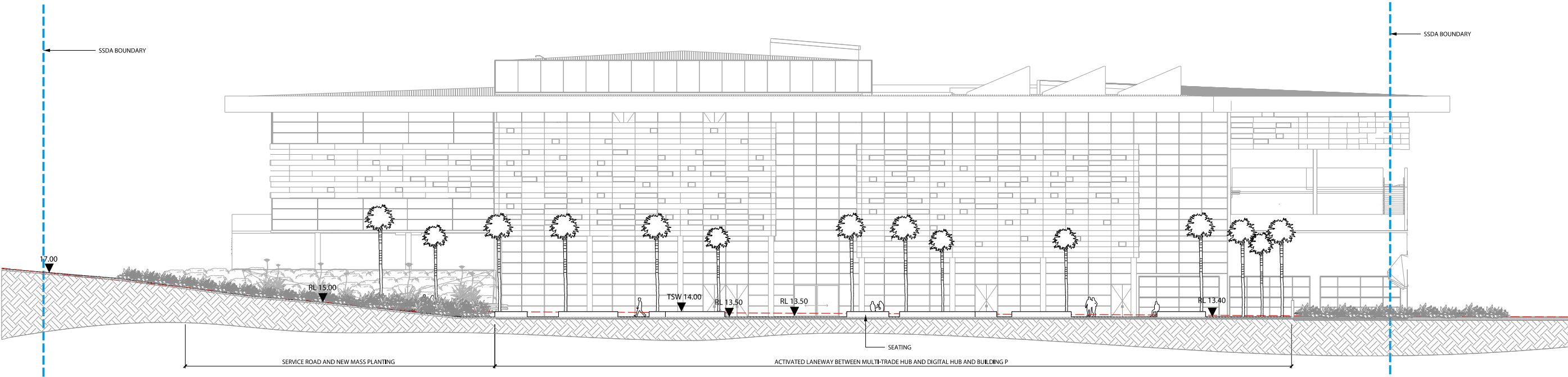
1:50



SECTION BB

1:50

LANDSCAPE – ELEVATION



WEST ELEVATION

10.0 Drawings

