UNSW

UNSW D14 BUILDING

DESIGN REPORT



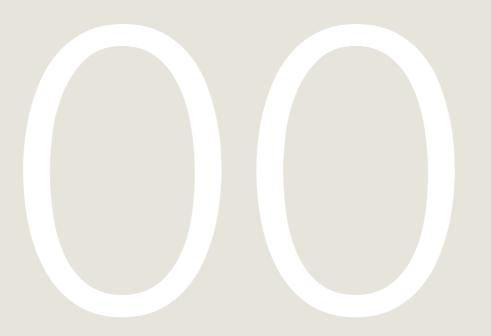


State Significant Development Application 09 November 2018



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00 Executive Summary



0.0 Executive Summary

UNSW Sydney (The University of New South Wales) has recently completed a Draft Masterplan Framework (in consultation phase) which sets out the vision for the redevelopment of the Kensington Campus from now and into the future. The redevelopment of the UNSW Hall site, this project, is identified as one of the initial development projects within the Draft Masterplan Framework that will enable the masterplan to be carried out.

The project, known as D14 Academic Building, proposes the demolition of the existing UNSW Hall Building (also known as D14) and the construction a new multi-purpose building. The near-term objective is to use the building as temporary accommodation while other buildings on the campus are under construction.

D14 will accommodate the following functions:

- Workplace
- Academic Faculty
- Student-led space (study spaces)
- Teaching rooms known as Centrally Allocated Teaching Spaces (CATS)
- Retail
- End of Trip Facilities and general amenities
- Outdoors spaces that link to Alumni Park, College Walk and the old Tote/Fig tree Precinct both on the ground plane and vertically throughout the whole building.

The development is anticipated to be approximately 14,283m2 Gross Floor Area (GFA).

In order to meet the drivers and objectives of the Draft Masterplan Framework, the development is envisaged to be constructed utilising mass timber construction technologies allowing the University to leverage off the construction programme savings that it delivers and to realise a building which embodies the vision of both the Draft Masterplan Framework and the project. A building which is an exemplar of design excellence for UNSW, setting the standard for future developments in design quality, function, environment that it creates within and beyond, its connections and address and its overall local context. This new visionary building will be measured by its success in catering for multipurpose uses and ability to be delivered in the proposed timeframe.

UNSW believes that the successful realisation of this project is embodied in a team approach. As such, an Early Contractor Involvement (ECI) procurement and Design and Construct (D&C) delivery methodology is proposed. This allows UNSW to deliver this project in an accelerated timeframe whilst leveraging off the Contractor's specialist knowledge in this unique construction technology.



ARTIST'S IMPRESSION OF WESTERN FACADE NOTE: IMAGE SHOWS POTENTIAL FUTURE UPGRADE TO COLLEGE WALK - NOT PART OF THIS APPLICATION

01 Introduction



Introduction

1.1 Background

The Draft Masterplan Framework identifies the existing UNSW Hall (D14) for demolition, unlocking the development potential of the site. UNSW Hall (D14) was built in 1959 and provides circa 200 beds for student accommodation. Due to its end of life and poor utilisation of land, the current use is not considered the highest and best use and has therefore been identified for demolition and redevelopment.

The new building, D14 will kick off the Masterplan Framework and provide a multi-purpose building which is envisaged as a flexible environment allowing functions to change over time. The development will initially accommodate relocated functions currently within UNSW, allowing the redevelopment of other key university sites. Once these developments are completed, the flexibility of D14 will allow for faculty functions and their associated faculty requirements including possible future growth.

This site has been selected as the preferred location for D14 redevelopment site due to:

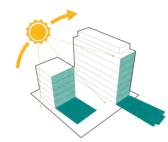
- Its strategic lower campus position that supports uses consistent with the UNSW Estate Management Development Pipeline.
- Its adjacencies with the future redeveloped Alumni Park and Old Tote/ Fig Tree Heritage Conservation Precinct providing student activation on the ground plane as well as positively adding to the numbers enjoying the Quadrangle, enhancing student amenity and social engagement.
- Outdated and end of life condition of the UNSW Hall (D14) that translates into higher operating and maintenance costs.

It is proposed that D14 is constructed in a single stage utilising an innovative, sustainable technology (Cross Laminated Timber CLT) due to it is environmentally sustainable building practices and is fast track construction time.

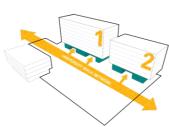
D14 holds key frontage on College Walk, which is projected to be a major east-west access route to the campus from the future light rail stop on Anzac Parade. The light rail is expected to open in 2020.

1.8.1 DESIGN PRINCIPLES

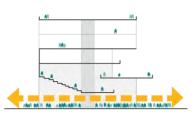
The following framework is to guide the development of proposed building and its relationship to adjacent spaces. (Extract from UNSW Brief)



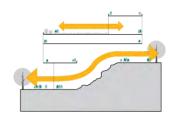
1.
Orient buildings north-south where possible to maximise the amenity of adjacent public spaces.



2.Promote clear wayfinding by ensuring that each building has a street address and front door.



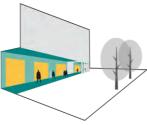
3.Create an active and permeable ground floor that showcases the university's activities.



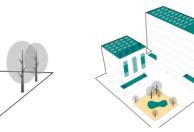
Integrate indoor and outdoor spaces to create learning landscapes which respect existing topography and provide accessibility.



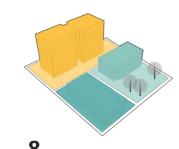
Ensure each building supports a variety of uses and floor to floor heights to allow for programmatic flexibility.



6. Incorporate loggias, undercrofts and awnings into built form for weather-protected waiting and walking.



Ensure all projects are world leaders in sustainable design.



Ensure that precincts are designed by a variety of authors and that public realm and buildings are completed at the same time.

02 Design Excellence



Introduction

2.1 Design Excellence

UNSWID14

'Design Excellence' has been the primary goal of the design team and has been achieved through an intensive and rigorous design and critique process.

The UNSW D14 design team comprises Tzannes, Lendlease, and a team of specialist consultants including structural, facade, ESD and services.

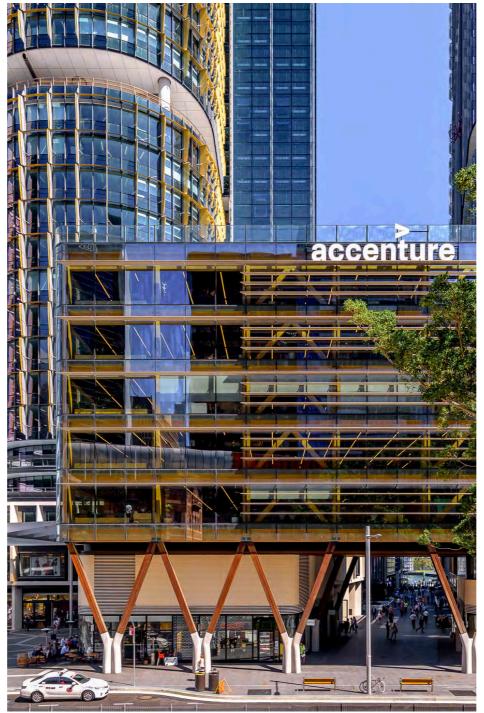
Tzannes is one of the most widely recognised and awarded architectural practices in Australia, combining a sophisticated understanding of urban design and architecture with a pragmatic, flexible and collaborative approach to the design process. Tzannes' 30 year track record of excellence in projects of all scales and typologies demonstrates a proven ability to design buildings of the highest quality. Tzannes are a respected advocate for the importance of good design in support of a 'better Sydney'.

Tzannes, UNSW and Lendlease participated in a State Design Review Panel process following which a number of comments were adopted.

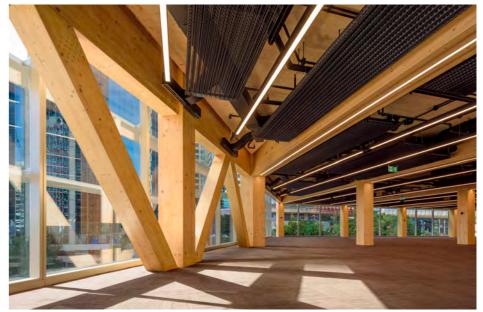
Tzannes' directors have been involved at every step of the process, to ensure that the variety and depth of the practice's expertise and experience is applied to the design.

This integrated approach is a holistic response to the design development and reinforces the integrity and philosophy of the project.

The proposal provides a distinctive, yet integrated built form which contributes positively to the UNSW environment. It develops a sustainable, high quality educational building that will create positive teaching and learning environments.







INTERNATIONAL HOUSE SYDNEY, BARANGAROO

03 Context

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Project Objectives	3.6



Context

3.1 Site in Context

The project site is situated within UNSW's primary campus adjacent to the suburb of Kensington, Kingsford and Randwick. The site is in the northern portion of the western area of the campus known as 'Lower Campus'. The campus slopes significantly from eastern Upper Campus to western Lower Campus, falling 28 metres from Botany Street to Anzac Parade. There is a pronounced fall of approximately 20 metres across a north-south escarpment to the east of the site.

The site currently accommodates a three-storey building known as UNSW Hall (D14), which provides student accommodation comprising 200 single rooms with shared facilities including bathrooms, kitchens and common areas.

The site lies in part within an identified heritage conservation area (HCA), the Old Tote / Fig Tree Theatre Conservation Area. The HCA includes three buildings that pre-date the foundation of the University, the Fig Tree Theatre, the White House and the Old Tote as well as significant surrounding fig trees.

The existing building, built in 1959, is a four-storey concrete structure with brick infill, externally characterised by exposed materials, staggered rectilinear forms, projecting timber roof fascia and timber framed vertical slit windows. It comprises three built forms centred around a courtyard and lawn.

This site has been selected as the preferred location for D14 Academic Building redevelopment site due to:

- Its strategic lower campus position that supports uses consistent with the UNSW Estate Management Development Pipeline.
- Its adjacencies with the future redeveloped Alumni Park and Old Tote/Fig Tree Precinct providing student activation on the ground plane as well as positively adding to the numbers enjoying the Quadrangle, enhancing student amenity and social engagement.
- Outdated and end of life condition of the UNSW Hall (D14) that translates into higher operating and maintenance costs.





Tzannes

Context

3.2 Photographic Survey







01. VIEW TO THE OLD TOTE

02. VIEW TOWARDS THE WHITE HOUSE

03. THE FIG TREE THEATRE









04. THE OLD TOTE FIG TREE THEATRE HERITAGE CONSERVATION AREA

05. SINGLE STOREY SECTION OF UNIVERSITY HALL (D14)

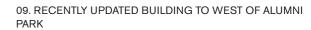
06. RELATIONSHIP OF WHITE HOUSE (LEFT) AND UNIVERSITY HALL (RIGHT) $\,$











KEY MAP PHOTOGRAPHIC SURVEY

THIRD AVENUE

COLLEGE WALK

ALUMNI PARK

UNSW VILLAGE

E12 UNSW BUSINESS SCHOOL

HIGH STREET

FIG TREE PRECINCT LANDSHAME

D16 GOLDS HAL

QUADRANGLE LAWN

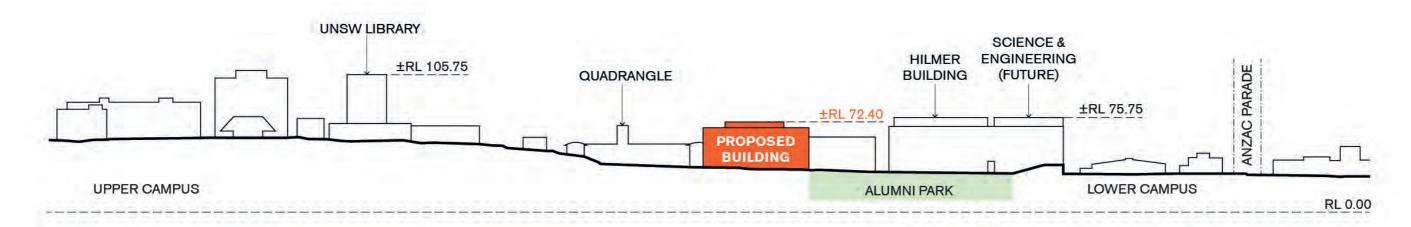
07. WESTERN WING OF UNIVERSITY HALL

08. SOUTHERN SECTION OF UNIVERSITY HALL

Context 3.3 Topography / Slope of Site

There is a fall of approximately 4.5 metres across the project site from the east to west.

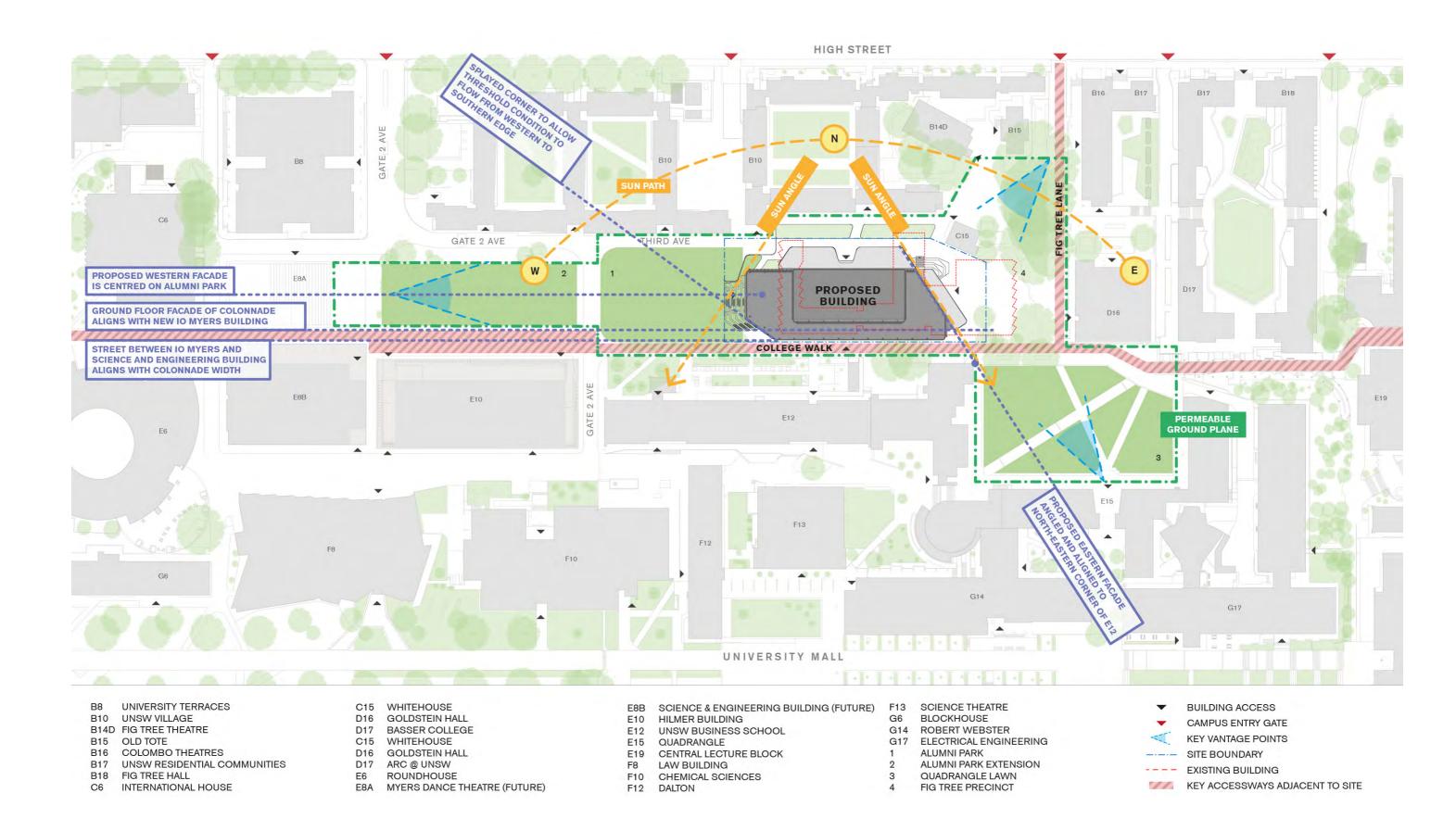
The ground plane of D14 absorbs this height difference across the site through a series of platforms gradually stepping and ramping up to the eastern entry. These level changes create diverse study spaces for the students.



STREETSCAPE ELEVATION

Context

3.4 Site Analysis



UNSW I D14

Context

Tzannes

3.5 Project Vision

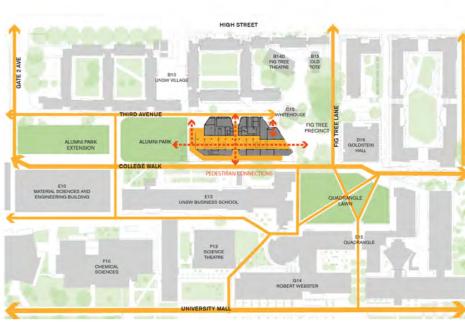
The overall placemaking for the project needs to reference the vision of the Draft Masterplan Framework: Grounding us in our location and creating limitless connections. The Draft Masterplan Framework aims to deliver a campus which will transform UNSW "into a University City, creating a distinctive, vibrant, mixed use destination, set within a learning landscape that connects to its surrounding communities and Partners.

The project needs to embody the Draft Masterplan Framework vision and be:

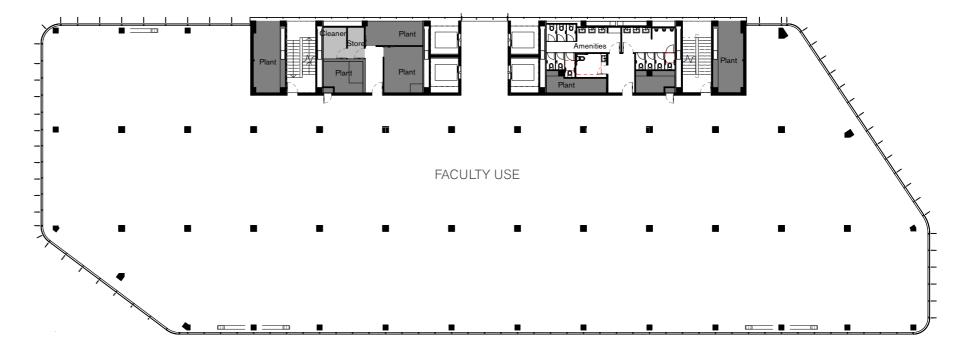
- Open and welcoming
- Connected to our public realm
- 'Limitless' in use



01. OPEN AND WELCOMING SPACES PERMEABLE, OPEN AND WELCOMING GROUND PLANE



02. CONNECTED TO PUBLIC REALM:
INTUITIVE CONNECTIONS TO AND THROUGH THE SITE



03. 'LIMITLESS' IN USE STRUCTURAL AND CORE ARRANGEMENT MAXIMISES FLEXIBILITY FOR FUTURE

UNSWID14

Tzannes

Context

3.6 Project Objectives

The following objectives have been set for the project.

Facilitate campus growth through a vertical environment

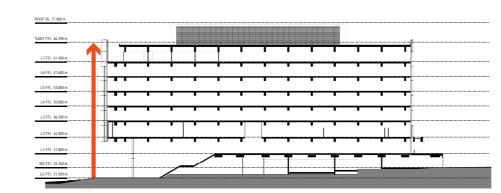
- Maximise the development potential of the site
- Provide an immediate response; Deliver the project within an accelerated programme to enable the continued realisation of the University expansion.

Create an open and connected public realm

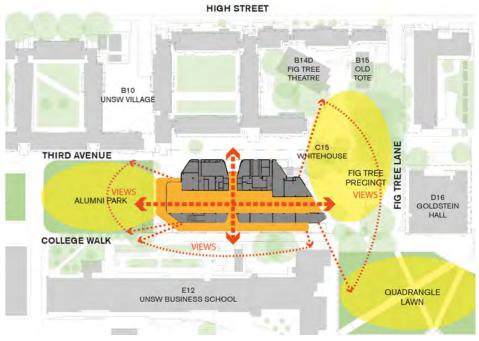
- Enhance the existing public realm. Develop its desirable attributes.
- Create a built form that responds to its surroundings with no obvious front or back both on the ground plane and throughout the whole building.
- Provide seamless physical and visual connections within the public realm. Deliver a boundary-less response which enhances views, vistas and connections.
- Create an activated, open and united ground plane.
- Leverage off the unique characteristics of the public realm adjacencies. Integrate with the aspirations of Alumni Park, College Walk and Old Tote/Fig Tree Precinct. Be the connector of Alumni Park's innovative discovery to Fig Tree's secret garden.
- Define the eastern extent of Alumni Park. Recognise the aspirations of the park in the design response.
- Provide secure and safe 24-hour pedestrian access within the public realm and community facilities.

Create vibrant and active hubs where the campus community can study, live, work and innovate

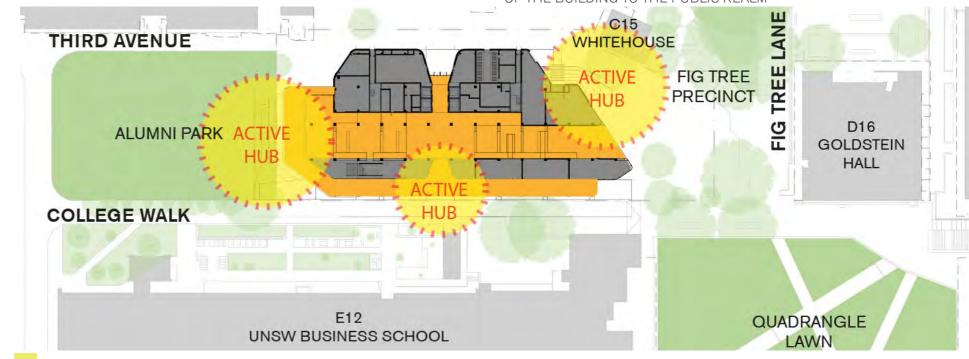
- Provide an open, welcoming and inviting response. Create an inclusive entry that cultivates interaction, collaboration and innovation.
- Provide facilities to foster an active and vibrant community: retail, end-of-trip facilities, student-led spaces, teaching spaces (CATS), an innovation precinct and library.
- Maximise flexibility in the key programme. Provide flexibility within the floor plate through careful services integration and realisation.



01. FACILITATE CAMPUS GROWTH THROUGH A VERTICAL ENVIRONMENT: SEVEN STORY BUILDING PROPOSED



02. CREATE AN OPEN AND CONNECTED PUBLIC REALM: CONNECTING 3 KEY OPEN SPACES AND ALL 9 SIDES OF THE BUILDING TO THE PUBLIC REALM



GROUND FLOOR STUDENT SPACE AND COLONNADE

03. CREATE VIBRANT AND ACTIVE HUBS WHERE THE CAMPUS COMMUNITY CAN STUDY, LIVE, WORK AND INNOVATE

04 Urban Design

Response to UNSW Draft Masterplan Framework Design Principles	4.1
Public Domain	4.2
Building Envelope Studies	4.3



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Trannes

Urban Design

4.1 Response to UNSW Draft Masterplan Framework Design Principles

Draft Masterplan Framework Design Principles

The following framework is to guide the development of proposed building and its relationship to adjacent spaces.

Λ1

Principle: "Orient buildings north-south where possible to maximise the amenity of adjacent public spaces."

Response: Due to the orientation of the site, the building is orientated east-west. However it is designed to maximise solar access to adjacent open public spaces. The north-east façade directly addresses the Fig Tree precinct to the northeast whilst retaining solar access to the Quadrangle to the south-east.

02.

Principle: "Promote clear wayfinding by ensuring that each building has a street address and front door."

Response: Entrance legibility from College Walk has been developed though the articulation of the entrance with a curved inset facade at ground level and level 1 expressing an obvious and generous entry point. Additional building entry points are provided east, west and north to deliver clear wayfinding from any approach direction.

03.

Principle: "Create an active and permeable ground floor that showcases the university's activities."

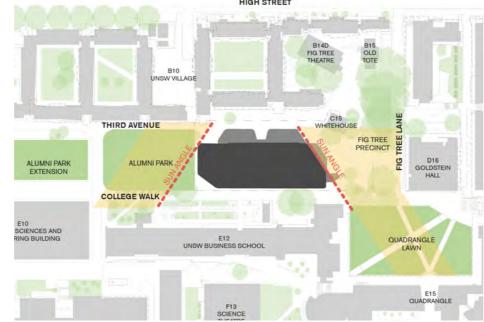
Response: D14 seeks to maximise visual and physical permeability between the public domain and the programs housed within. The façade line is defined primarily on the west by a permeable façade which encourages movement between inside and outside whilst on the east it is defined by active retail frontages which also afford patrons through access between the colonnade and the internal student led space.

04

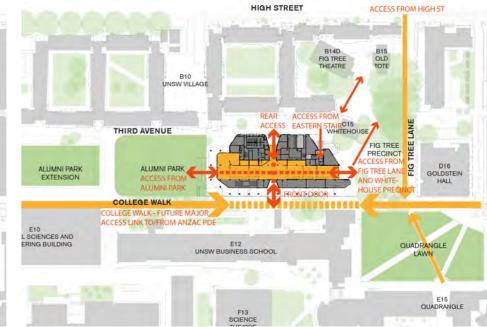
Principle: "Integrate indoor and outdoor spaces to create learning landscapes which respect existing topography and provide accessibility."

Response: Integrated outdoor terraces to the north and east of Level 1 allow for large gatherings with prospect over Fig Tree precinct and Whitehouse.

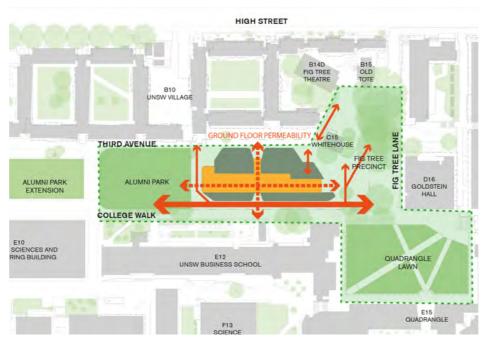
The western edge of the ground plane will be activated with eating lounges, retail tenancy and social spaces to engage with the outdoor space. Beyond the facade, loose furniture is proposed for the terrace and the landscaped steps furnished with integrated seating to populate these desirable student social spaces.

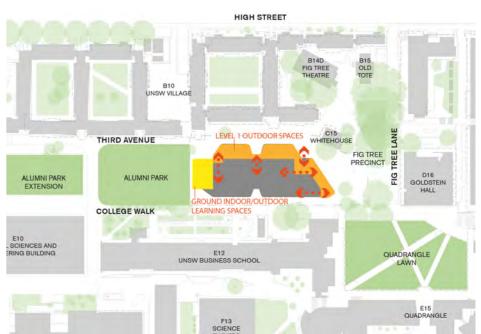


01



02.





03.

Unswild Urban Design

4.1 Response to UNSW Materplan Framework Design Principles

Draft Masterplan Framework Design Principles

The following framework is to guide the development of proposed building and its relationship to adjacent spaces.

05.

Principle: "Ensure each building supports a variety of uses and floor to floor heights to allow for programmatic flexibility."

Response: D14 has a variety of floor to floor heights to support programmatic flexibility for current and future learning environments.

06

Principle: "Incorporate loggias, undercrofts and awnings into built form for weather protected waiting and walking."

Response: A two storey colonnade wraps the western and southern edges of the building, providing an undercover loggia on the ground plane.

07

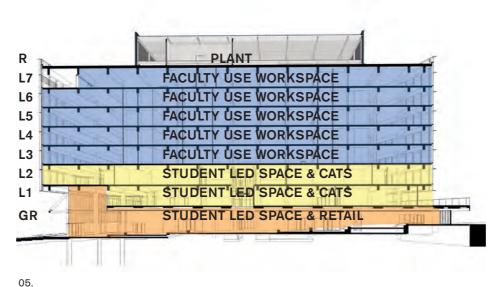
Principle: "Ensure all projects are world leaders in sustainable design."

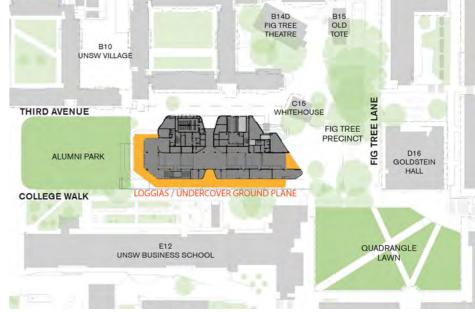
Response: D14 will target a 6 star Green Star rating.

08

Principle: "Ensure that precincts are designed by a variety of authors and that public realm and buildings are completed at the same time."

Response: A variety of Architects have developed the built environment at UNSW. The public realm within the boundary of the site will be completed at the same time.





06.

- TARGETING 6 STAR GREEN STAR EXEMPLAR ENVIRONMENTAL SUSTAINABILITY
- 30 KWP ROOFTOP SOLAR PHOTOVOLTAIC ARRAY
- SUSTAINABLE MATERIALS INCLUDING A RESPONSIBLY SOURCED, PREFABRICATED CROSS LAMINATED TIMBER (CLT)
- EXTERNAL SHADING, LOW ENERGY LED LIGHTING, LOW TEMP VAV AIR DISTRIBUTION SYSTEM AND HIGH EFFICIENCY COOLING AND HEATING PLANTS
- SOLAR CONTROL TO FACADES
- HIGH PERFORMANCE DOUBLE GLAZING
- USE OF BOREWATER FOR NON-POTABLE WATER
- END-OF-TRIP FACILITIES

07.

UNSW ARCHITECTS

TZANNES
ARCHITECTUS
BATES SMART ARCHITECTS
FJMT ARCHITECTS
GRIMSHAW ARCHITECTS
LAHZNIMMO ARCHITECTS
LYON ARCHITECTURE
+ OTHERS

08.

Urban Design

4.2 Public Domain

The D14 Academic Building design emerged from a first principles analysis of a number of key considerations: the urban and site context within the UNSW campus, the project brief, and maximising the efficiencies and potential of mass timber construction.

The site is defined on each side by four very distinct and vital campus gathering places. D14 has been designed to respond and positively contribute to each of these unique conditions.

The western frontage interfaces directly with Alumini Park (1)(2), an important open space with the ambition of becoming a destination, a place to meet, celebrate, enjoy art and host cultural events. D14 takes advantage of and complements this aspiration by offering a sequence of distinct yet connected outdoor and indoor spaces across the park and through the new timber building ground floors.

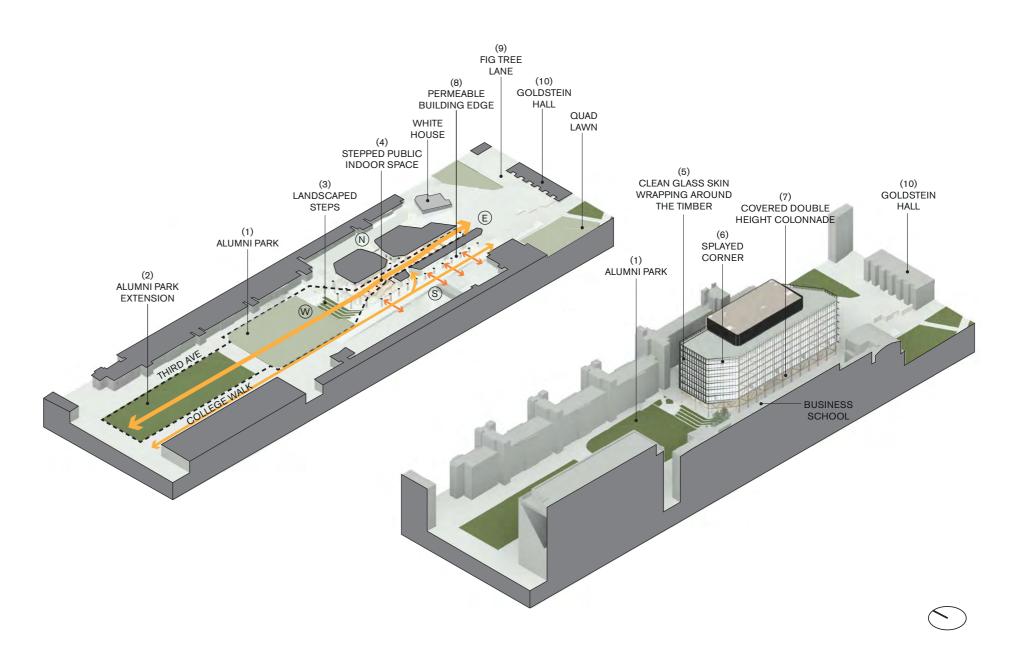
The sequence begins with the expansive open space of the park and continues to a series of landscaped steps/ramps (3) that rationalise the change in level on the site whilst providing a public place of diverse potential: a place to meet, sit, rest, watch, display and perform. On the highest platform level, the steps arrive at the new building beginning with a covered double height space.

This space forms the threshold to the first public indoor space (4) with the beautiful timber soffit fully revealed and celebrated. Its grand yet human scale is in dialogue with the scale of Alumini Park and the intrinsic visual and physical connectivity formed.

Above the ground plane, the western façade (5) presents as a fine, vertically proportioned form centred on the park with legible structural integrity including bracing and sun shades. The façade is kept simple, clean and transparent, allowing the beauty of the timber and the functions inside to be experienced from the public domain.

On the south, the site interfaces with College Walk, a major circulation route/promenade that is expected to cater for around 20% of visitors entering the campus. The combination of Alumini Park/College Walk frontages make the site a welcoming point to this new vibrant precinct within the campus masterplan. The building responds to this by transitioning from its dialogue with Alumini Park through a gentle turn of the corner (6) towards College Walk. This allows the outdoor/indoor threshold condition established on the west to flow and continue for the length of the southern edge of the building via a colonnade. (7) The colonnade further reinforces a boundaryless, permeable ground plane condition (8), with through connections to the north, to Fig Tree Lane (9) and the heritage precinct to the north-east.

The D14 southern façade generally aligns with Goldstein Dining Hall (10) to the east. This establishes a street wall on College Walk, defined by two important buildings, the existing, and the new D14 building reflecting a new era of thinking about design, sustainability, functionality, technology and human centred outcomes.



Urban Design

4.2 Public Domain

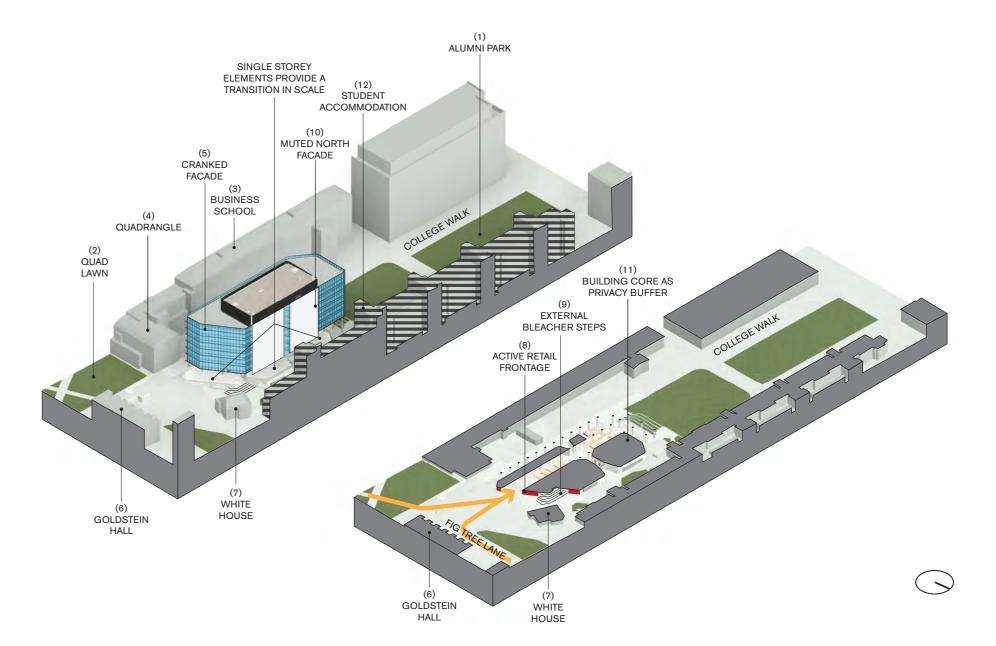
The design of the ground plane of D14 seeks to maximise visual and physical permeability between the public domain and the programs housed within. It also seeks to provide greater definition to the adjacent open spaces, most significantly College Walk, Alumni Park(1), the Quadrangle Lawn (2), Fig Tree Lane and to a lesser degree the rear court of the Business School. (3)

A two storey colonnade wraps the western and southern edges of the building, providing a sheltered, interstitial zone which mediates the surrounding open space with the vibrant internal environment. The façade line is defined primarily on the west by a permeable façade which encourages movement between inside and outside whilst on the east it is defined by active retail frontages which also afford patrons through access between the colonnade and the internal student led space.

The southern façade extends east to meet the western edge of the Quadrangle (4), reinforcing the definition of College Walk. The eastern end cranks slightly to the north (5) to provide relief at the end of the promenade and to gesture towards the newly created square to the east of D14, defined by Goldstein Hall (6) to the east, the Whitehouse (7) to the North, D14 to the west and the College Walk on the south.

The eastern edge of D14 is defined by a prominent entryway into the student led space which is flanked by active retail frontages (8) and book ended on the north east by a series of external bleacher steps. (9) These steps provide a dynamic edge condition which facilitates public gathering and creates opportunity for rest in a position with high surrounding amenity, visibility and precinct wide significance. They also provide a direct physical connection and access to a landscaped terrace at level 1 which creates an elevated platform where students and visitors are encouraged to engage more closely with the timber structure as well as the surrounding public domain.

The northern façade (10) is more muted in character and is predominantly defined by service doors and a singular access point into the student led space at its center. This creates a privacy buffer (11) to the student accommodation (12) immediately to the north. The articulation of the landscaping also provides additional visual and physical screening to further soften this relationship.



Context

4.3 Building Envelope Studies

The key building alignments determining the building form are derived from its position at the confluence of and its relationship to 4 key public domain and masterplan elements:

- Alumni Park
- College Walk
- Fig Tree Lane
- The Quadrangle

The items below are some of the notable design improvements.

West

- Improving the proportion of this key address to Alumni Park through the cranking of the south west façade line whilst mitigating the appearance of bulk which would otherwise result from the full expression of the floor plate depth
- The 2 storey colonnade provides an appropriately scaled public room that acts as an extension of Alumni park as well as an interstitial zone between the external and internal environments

South

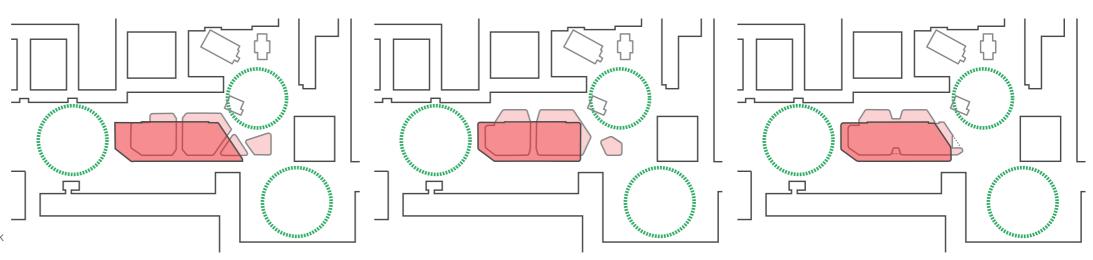
- Reinforcing the definition of College Walk on its northern edge in line with the termination of the Quadrangle building
- The south west crank also creates a softer transition to the length of College Walk along the southern edge of D14
- The colonnade provides relief to the width of College Walk and creates an interstitial zone between the external and internal environments

Fast

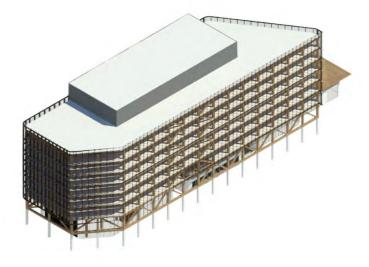
- Improving the proportion of this key address to Fig
 Tree Lane and The Quadrangle through the cranking
 of the north east façade line whilst mitigating the
 appearance of bulk which would otherwise result
 from the full expression of the floor plate depth
- Maintaining sufficient curtilage to the White House
- Creating generosity to the southern end of Fig
 Tree Lane at the threshold to The Quadrangle thus
 providing relief to the western façade of Goldstein
 hall and the White House from the south
- Maintaining solar access to the quadrangle
- The single storey volume seeks to mitigate the bulk of D14 towards the modest scale of the Whitehouse, the adjacent conservation precinct, the rich existing character and definition of Fig Tree Lane and the more moderate scale of the Quad Building and Goldstein Hall

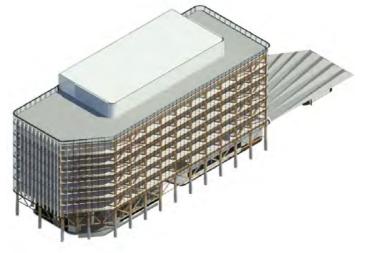
North

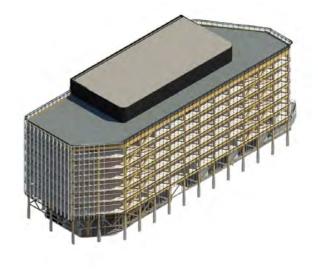
- Maintaining a generous setback to the student housing
- The single storey volume seeks to mitigate the bulk of D14 towards the more private and sensitive public domain to the north.



ORIGINAL DESIGN OUTLINE DRP DESIGN OUTLINE DA SCHEME OUTLINE







ORIGINAL DESIGN AXONOMETRIC

DRP DESIGN AXONOMETRIC

DA SCHEME AXONOMETRIC

05 Architecture

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