

360d

INSTITUTE OF APPLIED TECHNOLOGY FOR CONSTRUCTION

SSDA REPORT
REVISION G



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1.0 SITE ANALYSIS

1.1 Local Climate - Penrith & Surrounds

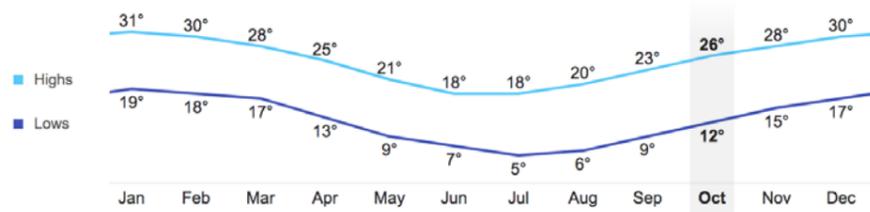
TEMPERATURE EXTREMES & AVERAGES

- Summer Maximum Extreme: 48.9 °C (Jan 2020)
- Summer Average Maximum Temperature = 31 Degrees
- Winter Minimum Extreme: -1.8 °C (July 2018)
- Winter Average Minimum Temperature = 5 Degrees

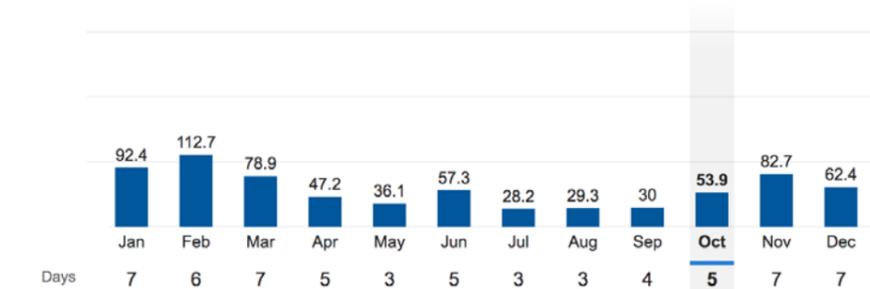
WINDS

- Summer = Primarily Southerly Winds
- Autumn = Some Southerly Winds
- Winter = Primarily Westerly & South Westerly Winds
- Spring = Primarily Southerly Winds & Westerly Winds

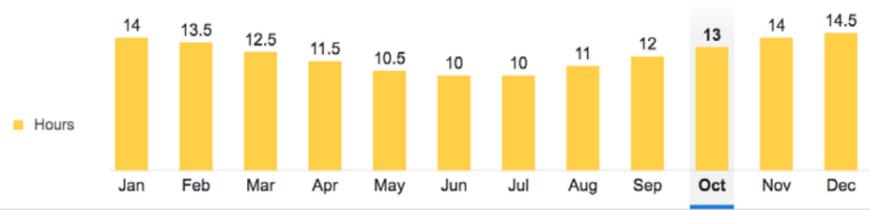
Temperatures (°C)



Rainfall (millimetres)

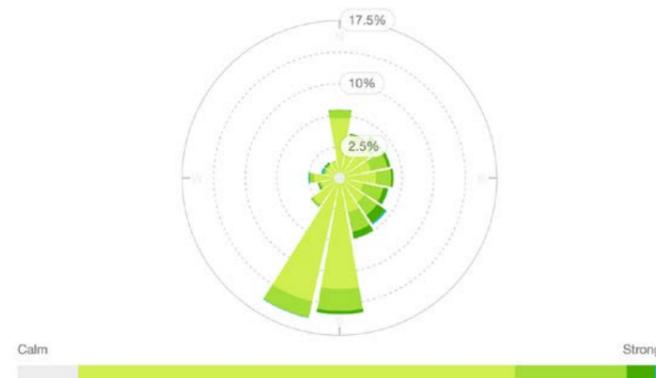


Daylight



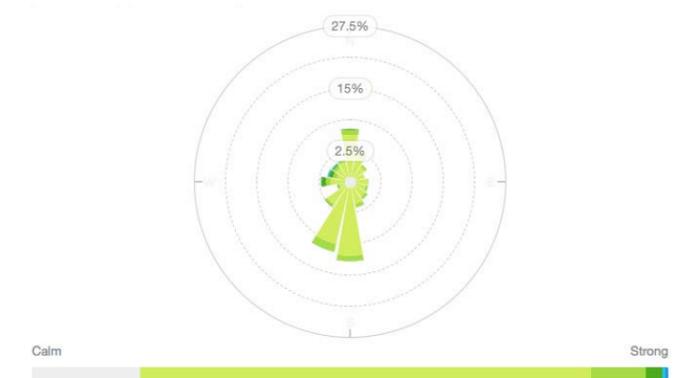
SUMMER

FEBRUARY (5 YEAR WIND ROSE)



AUTUMN

APRIL (5 YEAR WIND ROSE)



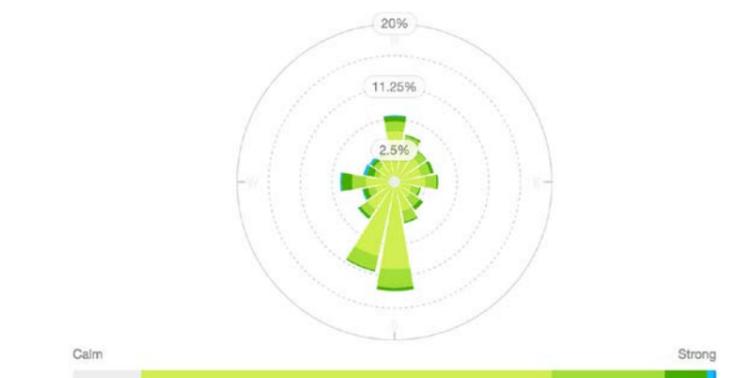
WINTER

AUGUST (5 YEAR WIND ROSE)



SPRING

OCTOBER (5 YEAR WIND ROSE)



SOURCE : Bureau of Meteorology via Willy weather (<https://www.willyweather.com.au/climate/weather-stations/nsw/greater-western-sydney/penrith-lakes>)

1.0 SITE ANALYSIS

1.2 Tafe Campus - Existing



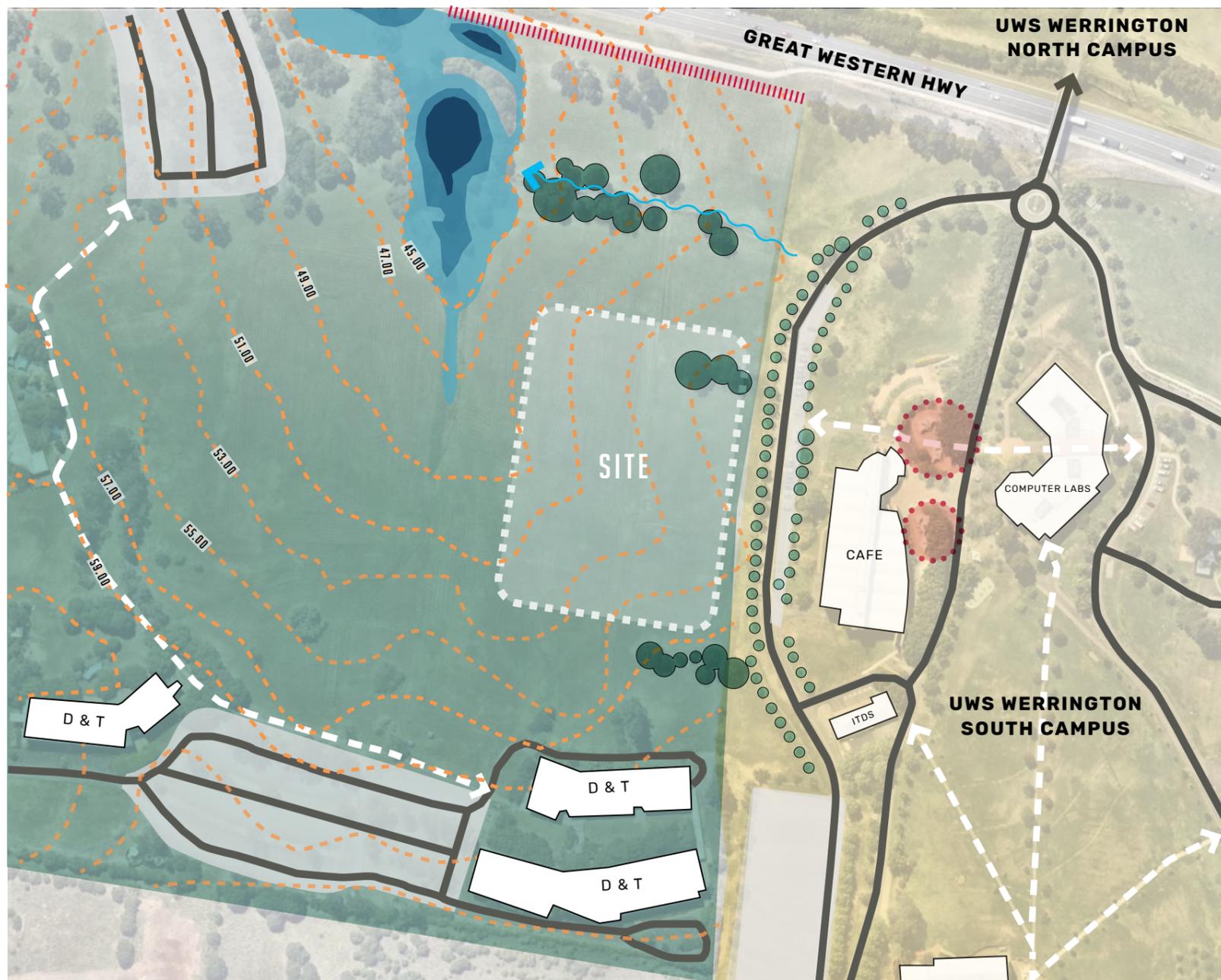
- - - Site Boundary
- 1 General / Mixed
- 2 Administration / Mixed
- 3 Sport / Gym
- 4 Design and Technology
- 5 Community Services
- 6 Hospitality
- 7 Unused
- ▲ Vehicular Entry & Exit Point
- Vehicular Circulation
- ▲ Pedestrian Access
- Pedestrian Primary Circulation
- Pedestrian Secondary Circulation
- ▲ Bus Stop
- Carparks



1.0 SITE ANALYSIS

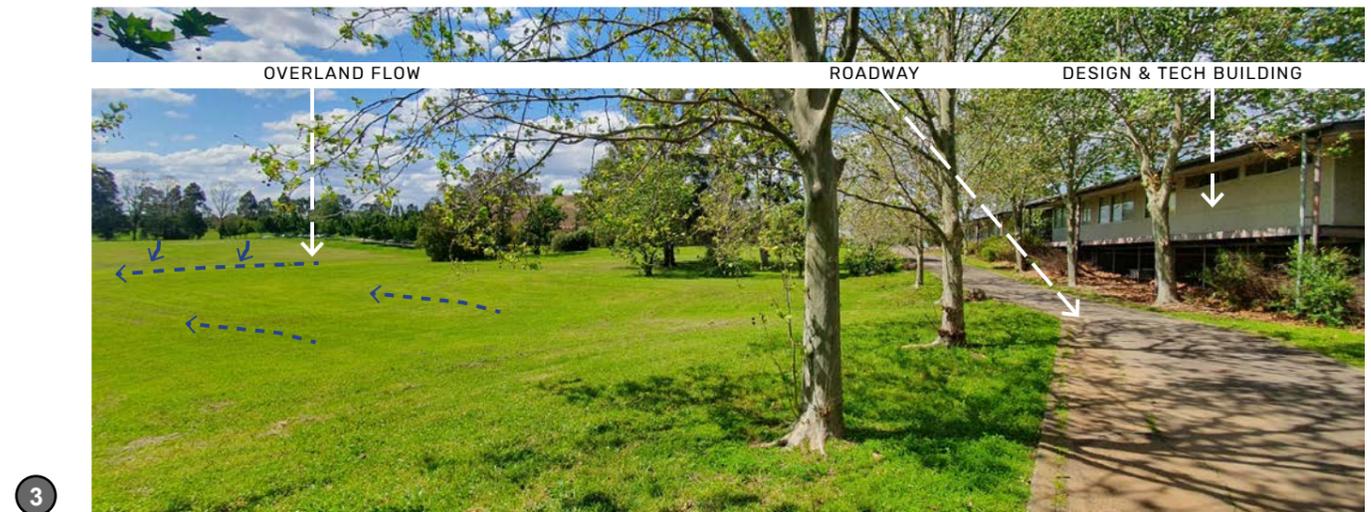
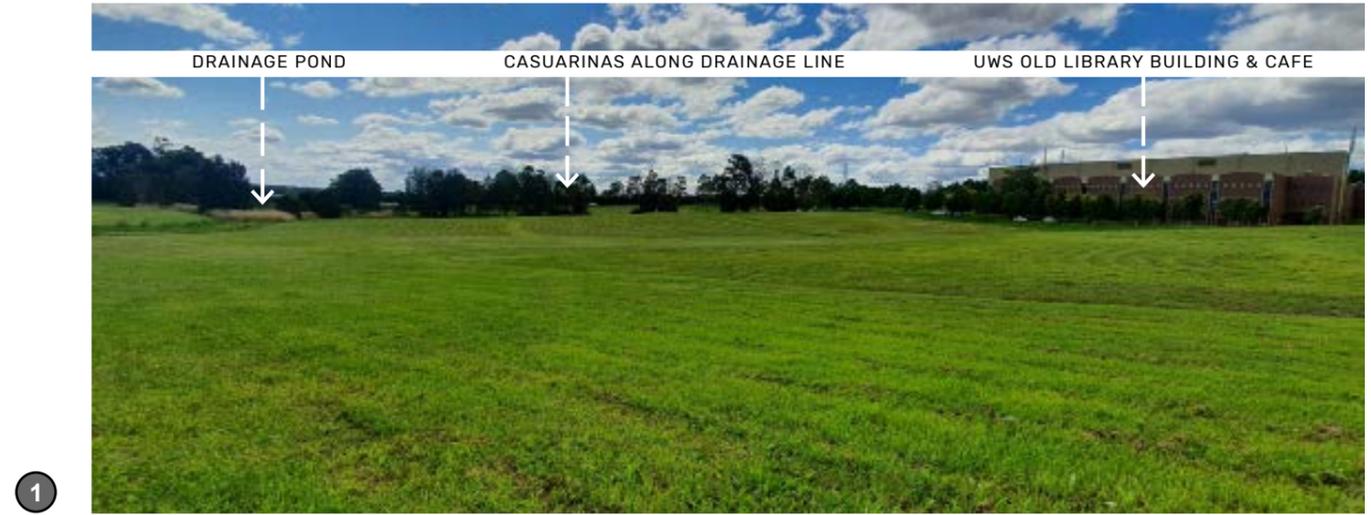
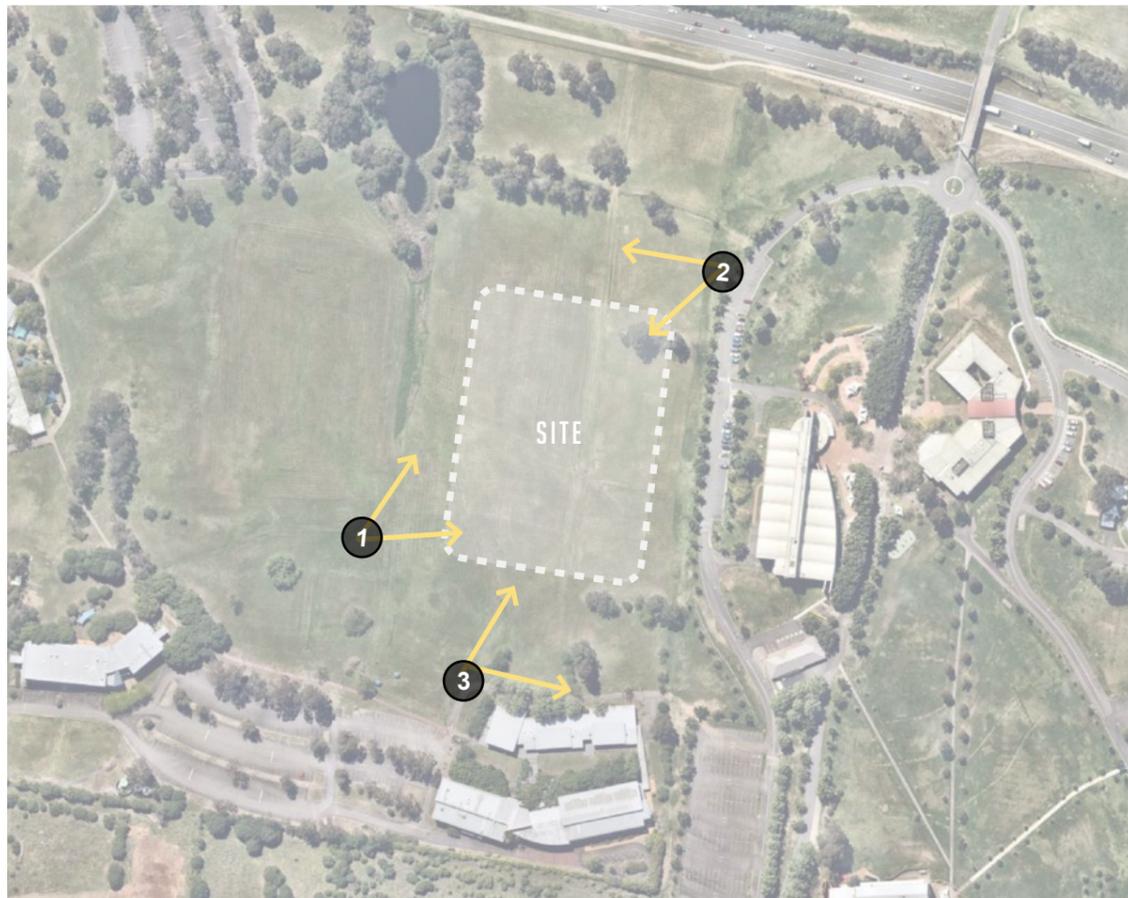
1.2 Construction Hub - Existing Site

- TAFE Campus
- UWS Site
- Fence line
- Pedestrian Circulation
- Vehicular Circulation
- Car Parking
- Outdoor gathering spaces
- 2m Contours
- Overland Flow Path
- 100 years Flood Plain
- Casuarina Trees
- Fig Tree Avenue Planting



1.0 SITE ANALYSIS

1.3 Construction Hub - Existing Site Photos



2.0 SITE PLANNING

2.1 Opportunities & Constraints

OPPORTUNITIES

- 1 Connection to UWS Werrington Campus with potential for shared use infrastructure and cross campus movement
- 2 No existing fenceline between TAFE & UWS sites allows for adaptive and flexible connection points
- 3 Sloping site topography provides opportunities for varied building/landscape interfaces to create diverse landscape spaces
- 4 Connection to Blue Mountains with framed views
- 5 Detention ponds & swale provide opportunity for enhanced biodiversity & water reuse
- 6 New connection to Great Western Hwy & future public transport infrastructure links
- 7 Pleasant vista over field and ample solar access provides opportunities for high quality landscape spaces

CONSTRAINTS

- 8 Sloping site topography with a 14m (approx) level difference from Eastern boundary to low point (Swale & Drainage Ponds)
- 9 Isolated site - located on Eastern side of campus away from existing Tafe Campus infrastructure to the West.
- 10 Flooding potential needs to be considered with access points
- 11 Site is exposed to strong Westerly & Northerly winds that could impact the functionality of landscape spaces during certain times of the year



2.0 SITE PLANNING - MASTERPLAN

2.2 Tafe Campus - Stage 1 Construction Hub



EXISTING

- Buildings
- Carparks
- Roads
- Pedestrian Circulation
- Vehicle Entry / Exits
- Pedestrian Entries/Exits

PROPOSED

- Construction Hub Proposed Building & Capark
- Reconfigured Carparks
- New Roads
- New Driveway / Loading Dock
- New Pedestrian Circulation



3.0 DESIGN PRINCIPLES

3.1 Landscape Design Principles

1

Establish adaptive future focused learning environments to support construction trades

- + Establish a strong identity as a Centre of Excellence with high quality outdoor learning environments for construction trades which support building function & curriculum
- + Landscape spaces to support real world learning & simulated work environments
- + Adaptive outdoor learning spaces cross learning stream collaboration
- + Flexible outdoor learning & gathering areas for students & staff
- + Allowance for future expansion and connectivity to future Masterplan stages

2

Create a vibrant new precinct to foster connections with UWS, Industry & local communities

- + Create a student & community centric Eastern precinct that provides spaces for education & learning, social gathering and campus & community events.
- + Improve connections with UWS, Great Western Hwy & Future N/W growth corridor to activate the Eastern Tafe Precinct and encourage collaboration with the wider community
- + Provide adaptive & flexible outdoor spaces that allow for large group events including industry training & demonstration
- + Establish a unique identity for the Construction Trade Hub with a strong civic presence
- + Connection to Country driven through First Nations consultation and engagement

3

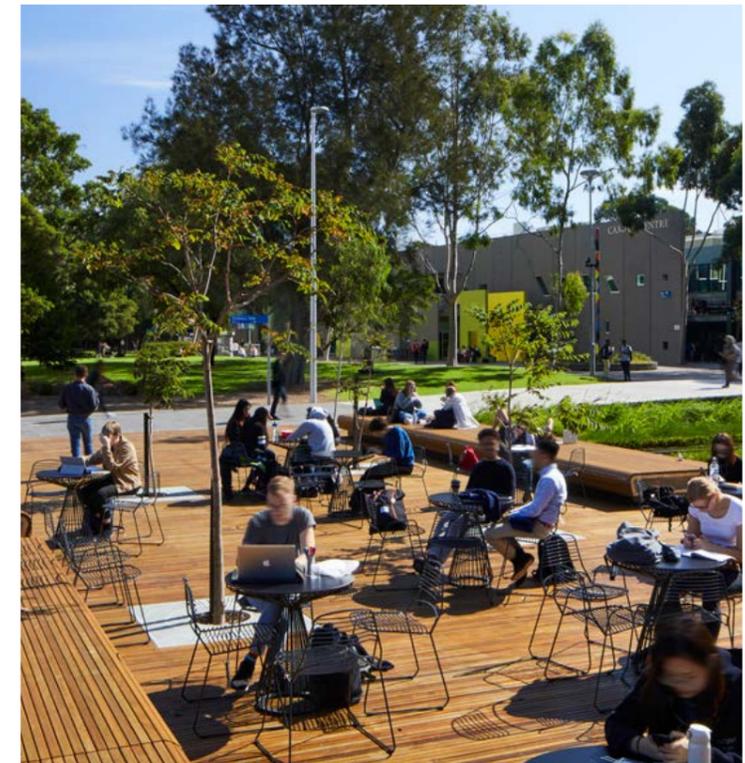
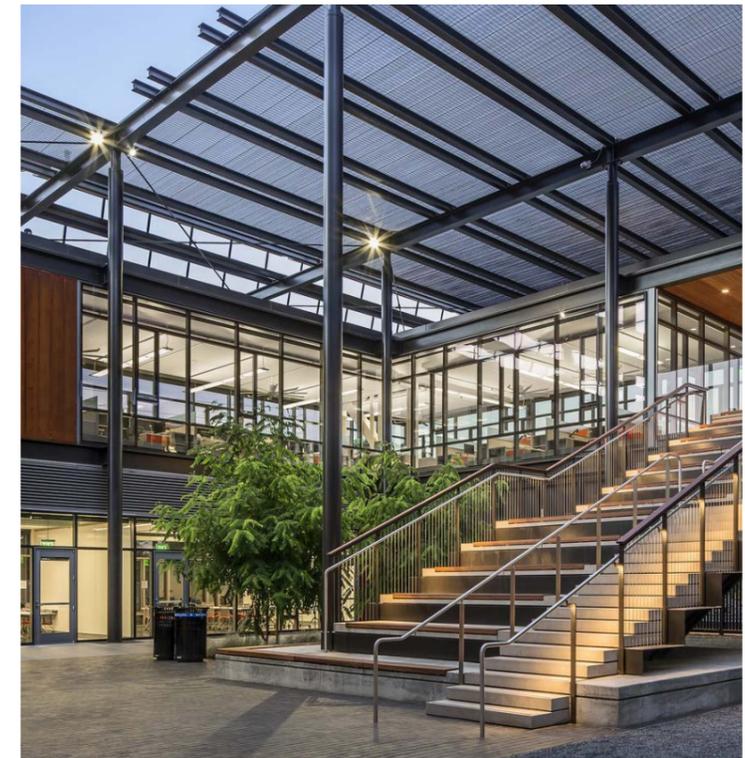
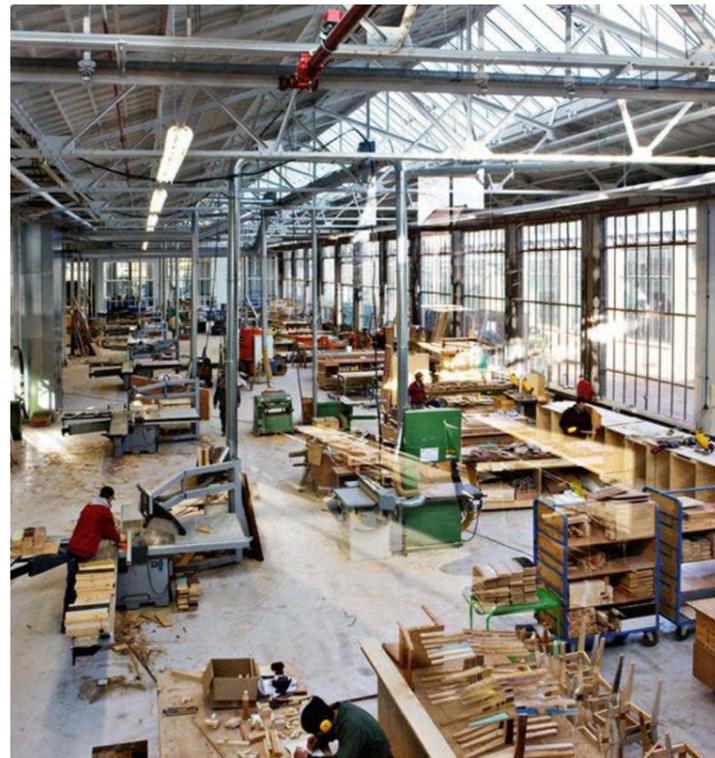
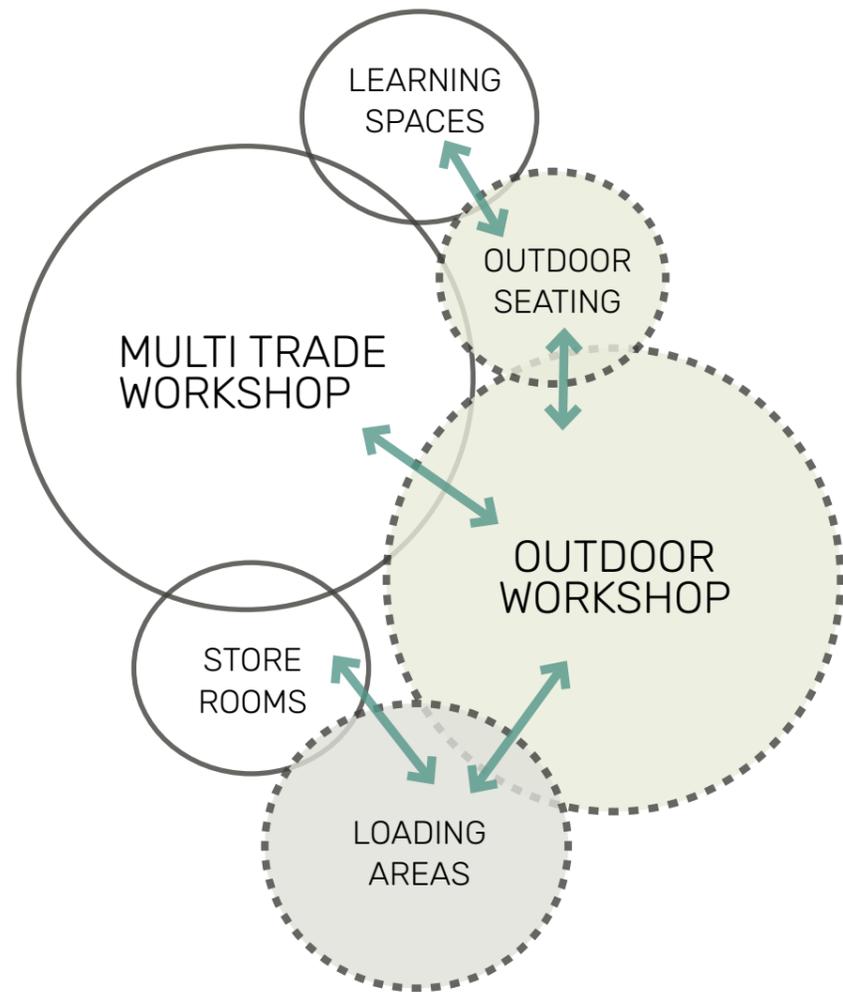
Implement sustainable design strategies that respond to local climate while enhancing the campus' parkland qualities

- + Design varied outdoor learning, gathering and movement spaces to provide options for year round comfort and use
- + Maximise energy efficiency with passive cooling & heating of spaces to support building sustainability
- + Respond to existing topography and landscape character through an integrated landscape approach
- + Prioritise spaces which support building function, sustainability & connectivity
- + Extend the parkland campus through endemic plantings suitable for local environment & landscape function

4.0 DESIGN OBJECTIVES & STRATEGIES

4.1 Outdoor learning spaces to support building function & curriculum

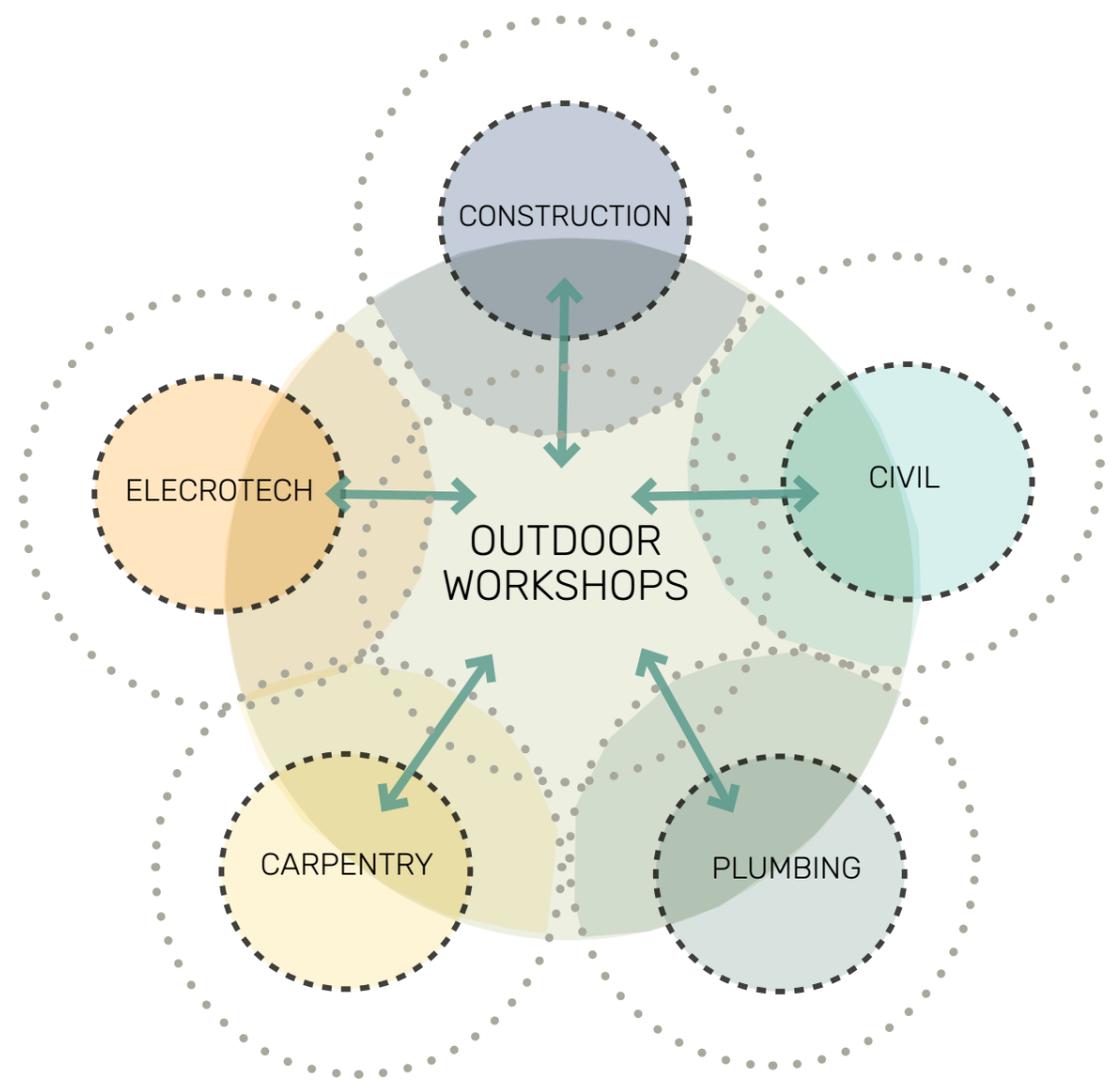
The buildings learning spaces & workshops will be supported and enhanced through the adjacent landscape spaces to provide opportunities for outdoor learning at various scales



4.0 DESIGN OBJECTIVES & STRATEGIES

4.2 Adaptive & flexible outdoor learning spaces

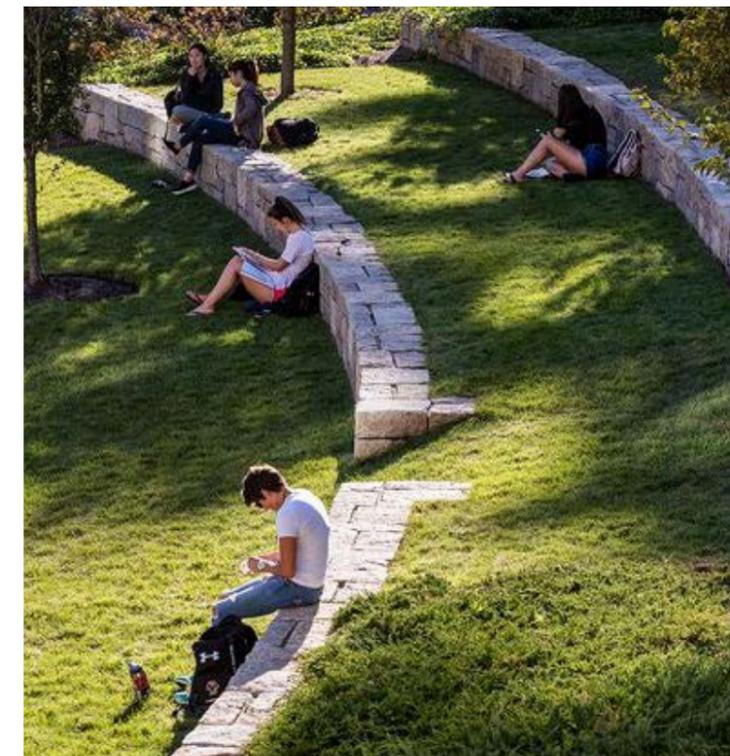
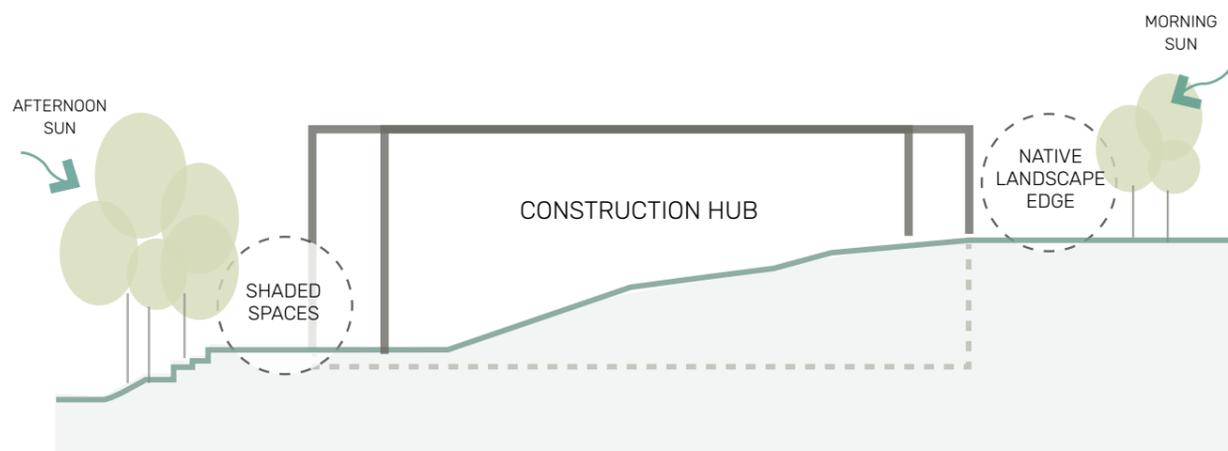
Outdoor learning spaces to support real world learning skills & simulated work environments in open, adaptive & flexible spaces that encourage collaboration across learning streams



4.0 DESIGN OBJECTIVES & STRATEGIES

4.3 Parkland Campus

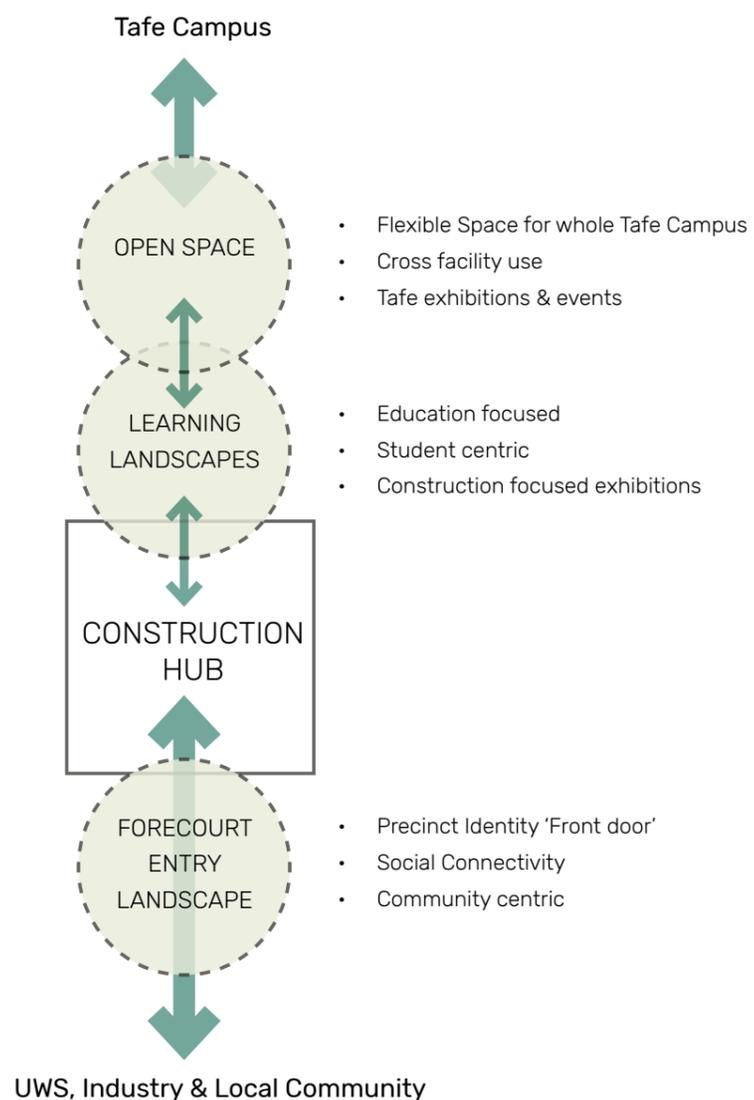
The landscape strategy will enhance the campus parkland landscape character through environmental & site responsive design that considers topography, microclimate and native flora.



4.0 DESIGN OBJECTIVES & STRATEGIES

4.4 Connected Campus Precinct

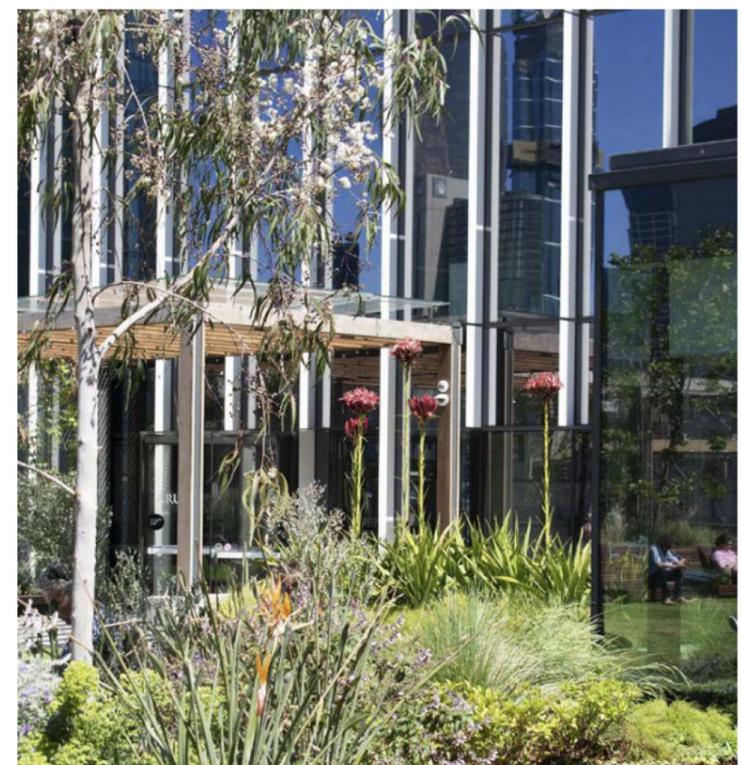
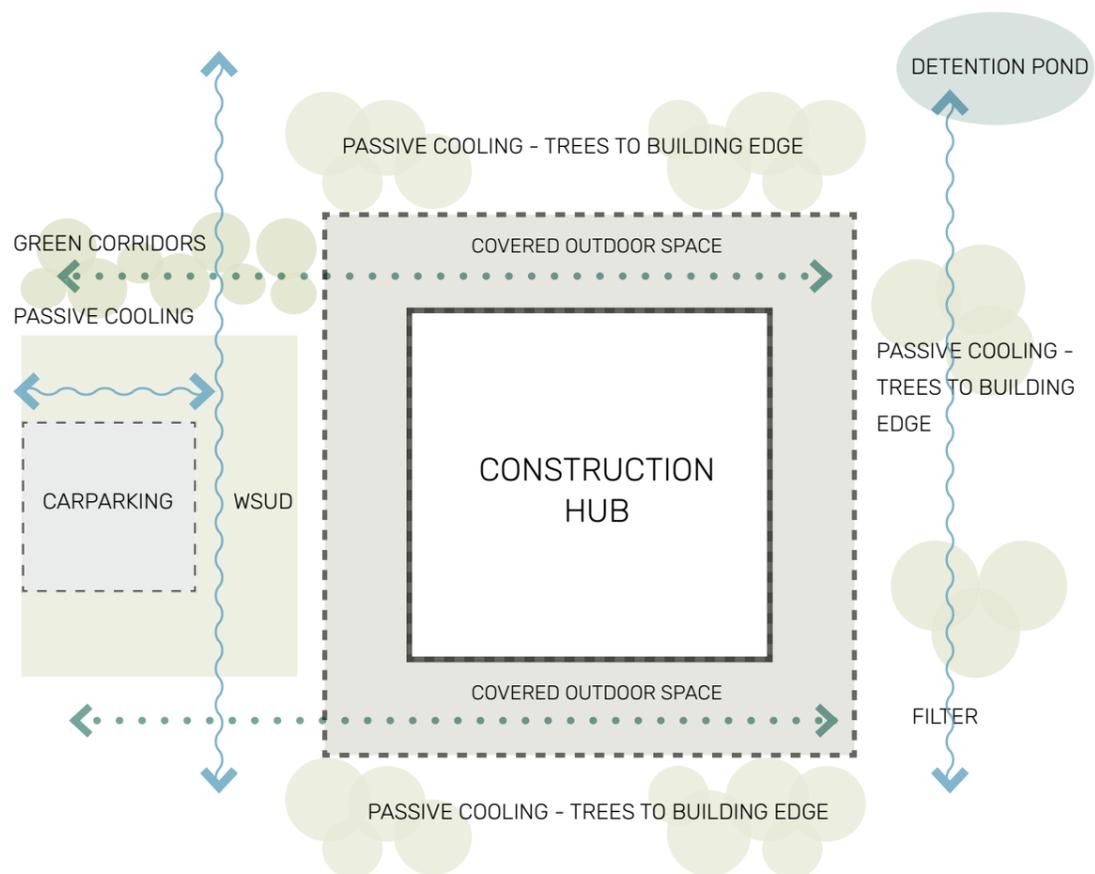
Establish a strong identity for the Construction Hub while improving connections with UWS, Industry & wider community through a series of landscape spaces that provide opportunities for events & collaborations between communities



4.0 DESIGN OBJECTIVES & STRATEGIES

4.5 Sustainable Landscapes

- Design landscapes suitable for the local climate to maximise use throughout the year
- Solar access & wind protection in winter months and shade and passive cooling over summer months
- Assist Building with Passive Heating & Cooling
- Water Sensitive Urban Design to filter hardstand run off
- Green Corridors to enhance pedestrian, vehicle & cycling connections
- Endemic planting for habitat creation

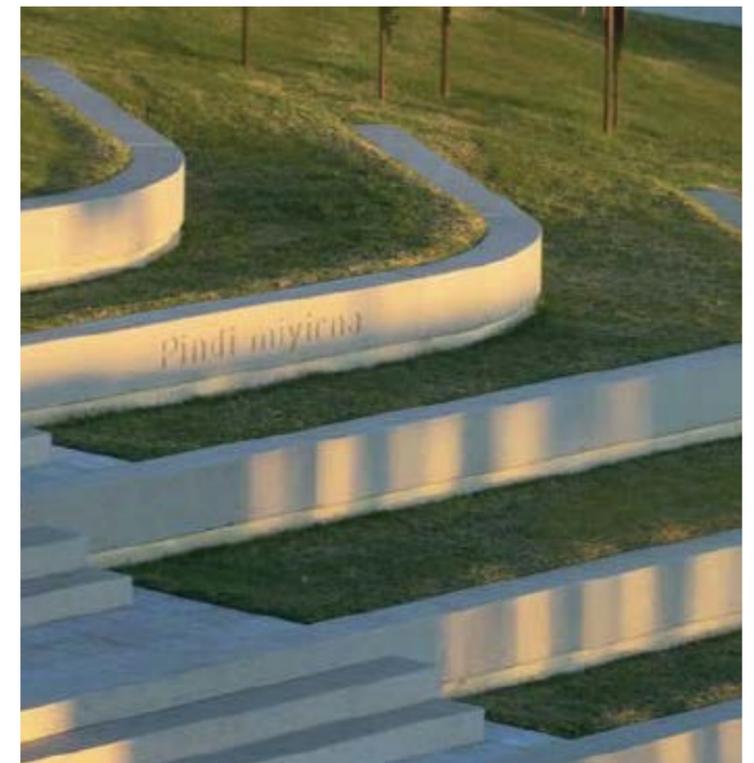
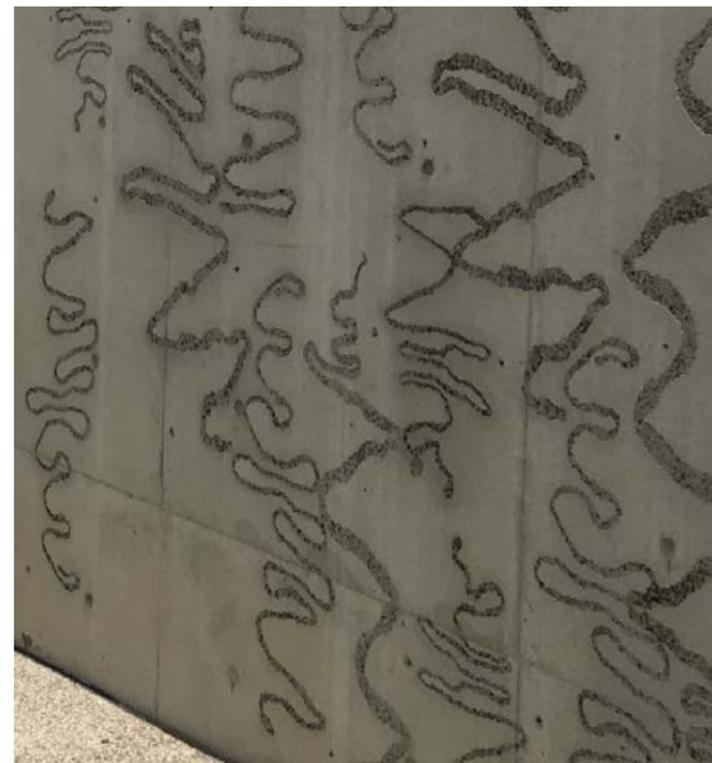


4.0 DESIGN OBJECTIVES & STRATEGIES

4.6 Connection to Country

The Tafe Campus is located in the Deerubbin Local Aboriginal Land Council Area. First Nation stakeholder consultation will be undertaken to inform detailed expression of cultural narratives, and how these will manifest in the built environment. Opportunities for integration of First Nation principles include;

- Design responsive to place (material, form, planting)
- Cultural narrative imbedded along movement corridors (through signage, art, planting etc)
- Symbolism, Language & Identity integration within built elements
- Outdoor spaces for ceremony
- Create areas for conversation and discussion throughout the landscape (areas to dwell and reflect)
- Wayfinding system that references indigenous culture
- Areas which provide opportunities for indigenous artists to curate objects within the landscape (sculpture, imagery, stories etc)

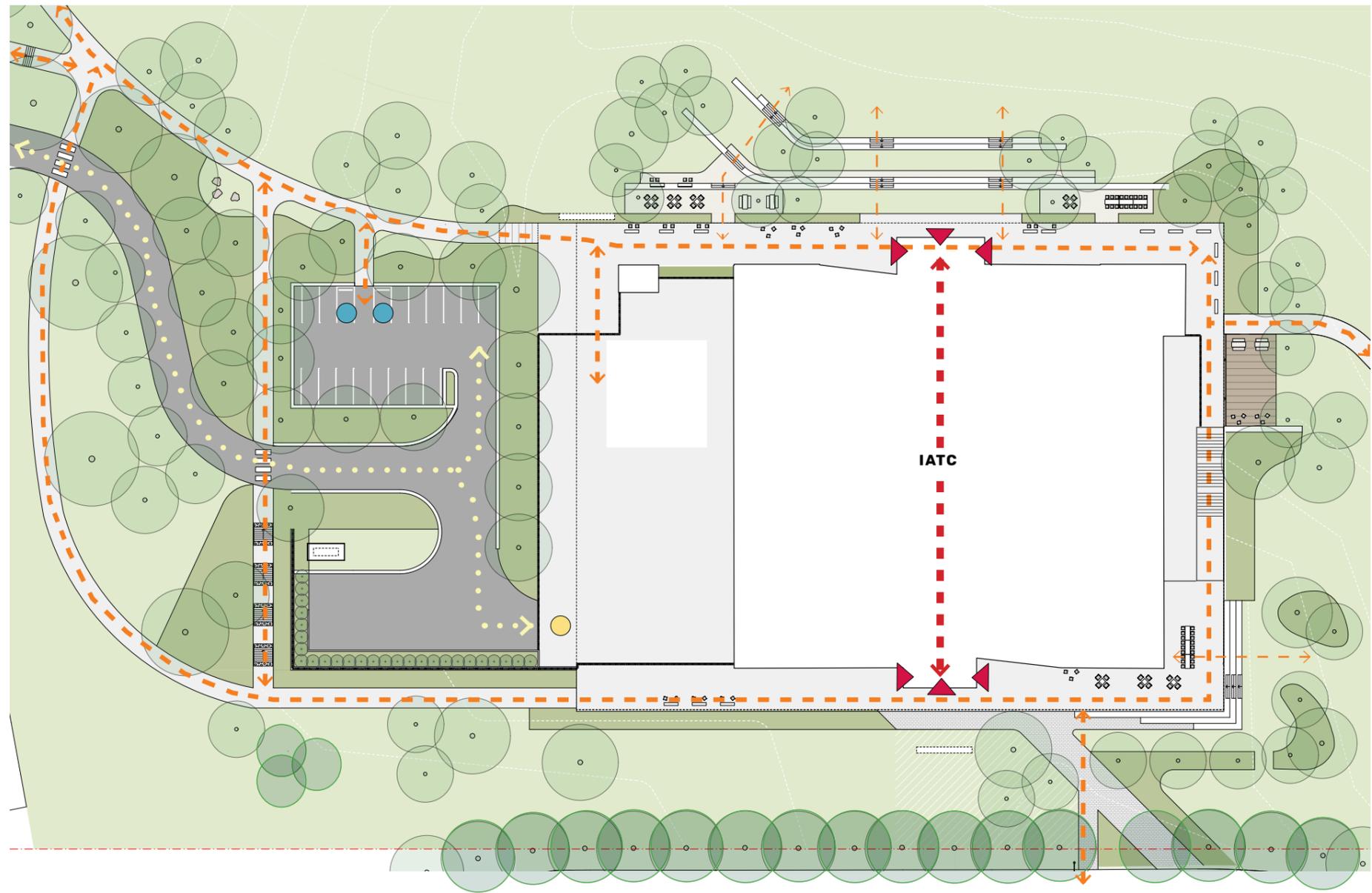


5.0 LANDSCAPE ZONING

5.1 Construction Hub Landscape Planning Diagram

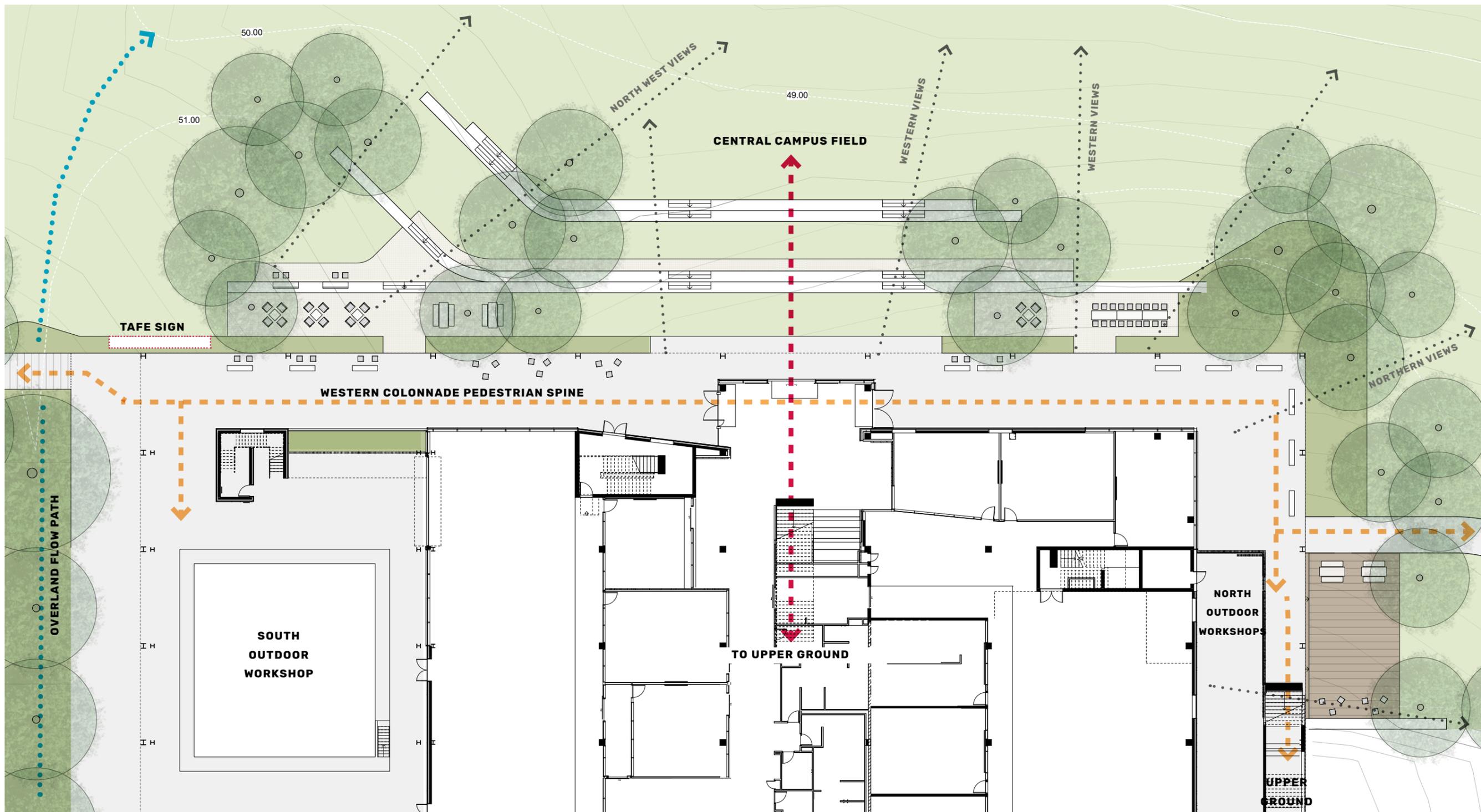
KEY

-  Pedestrian Circulation
-  Construction Hub Student Spine
-  Main Entries
-  Vehicle Circulation (New Road)
-  Loading Bay
-  Accessible Parking
-  Existing Trees to be retained



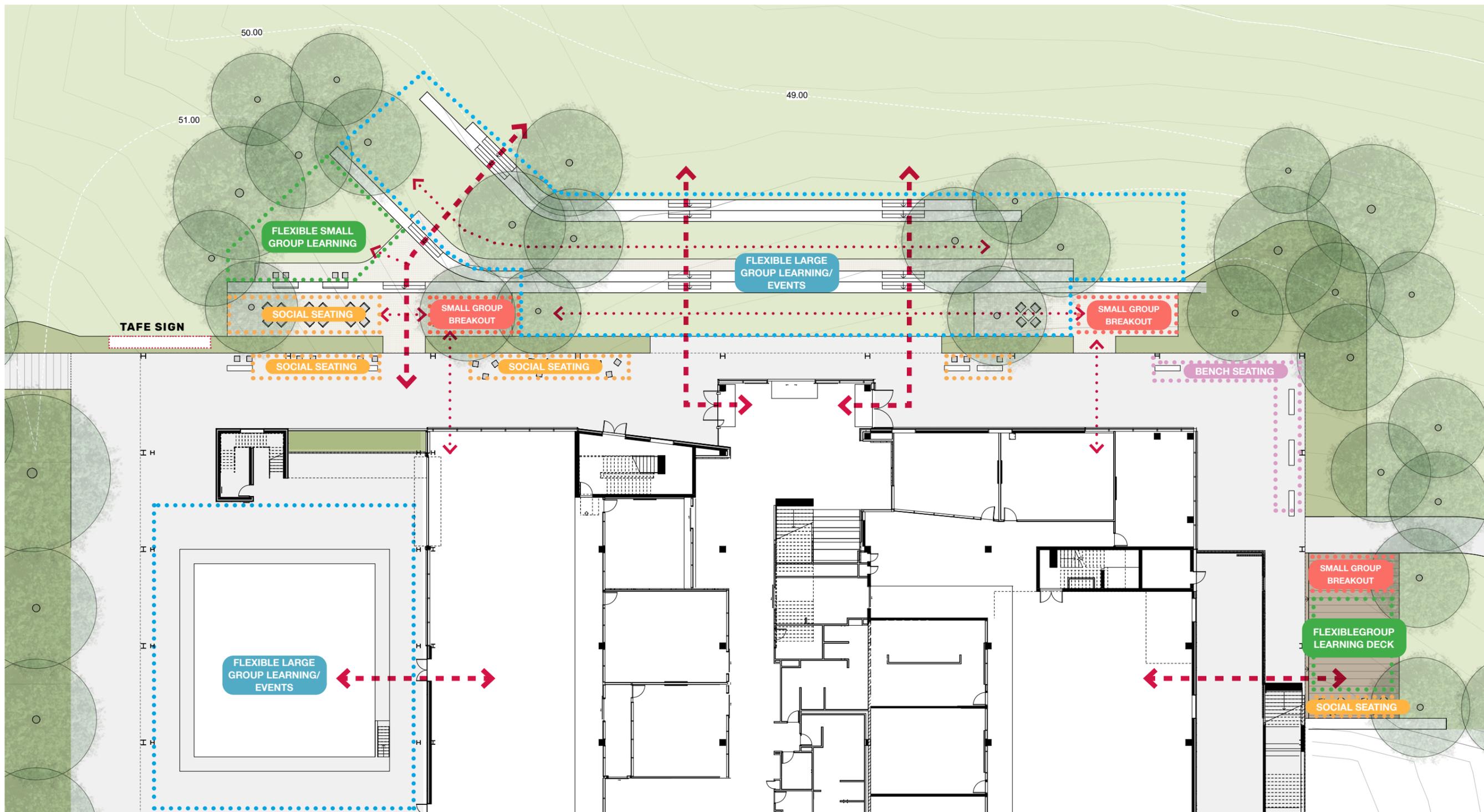
5.0 LANDSCAPE ZONING

5.2 Lower Ground Landscape Connections



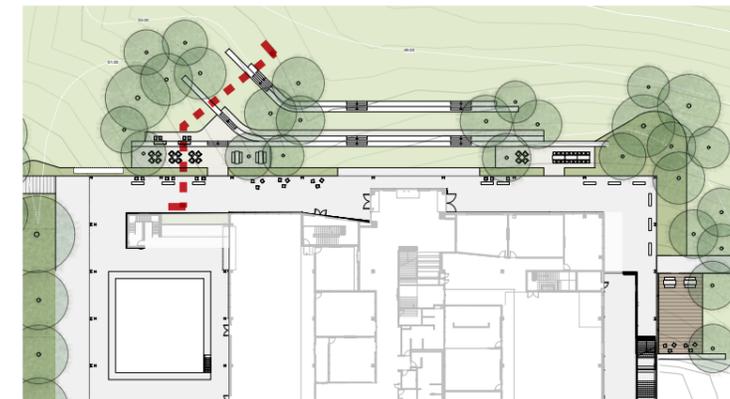
5.0 LANDSCAPE ZONING

5.3 Lower Ground Landscape Zoning



5.0 LANDSCAPE ZONING

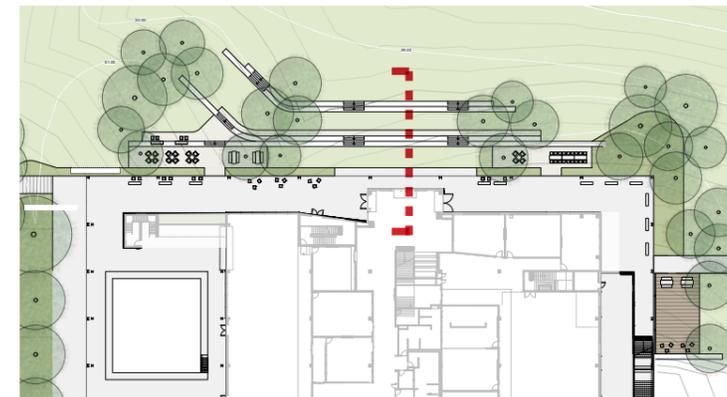
5.4 Lower Ground Landscape Sections



KEY PLAN

5.0 LANDSCAPE ZONING

5.5 Lower Ground Landscape Sections



KEY PLAN

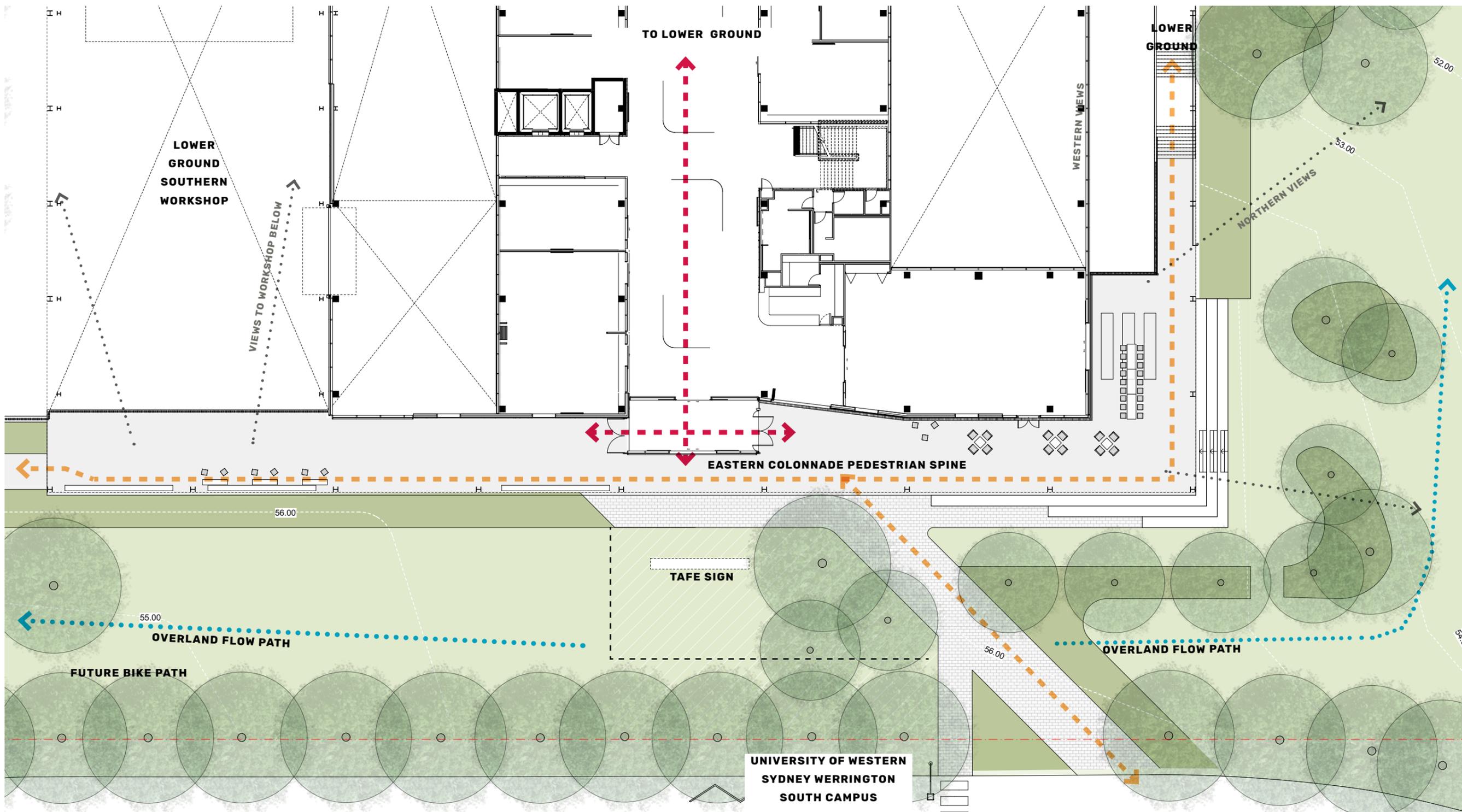


• SOCIAL SEATING •

FLEXIBLE LARGE
GROUP LEARNING/
EVENTS

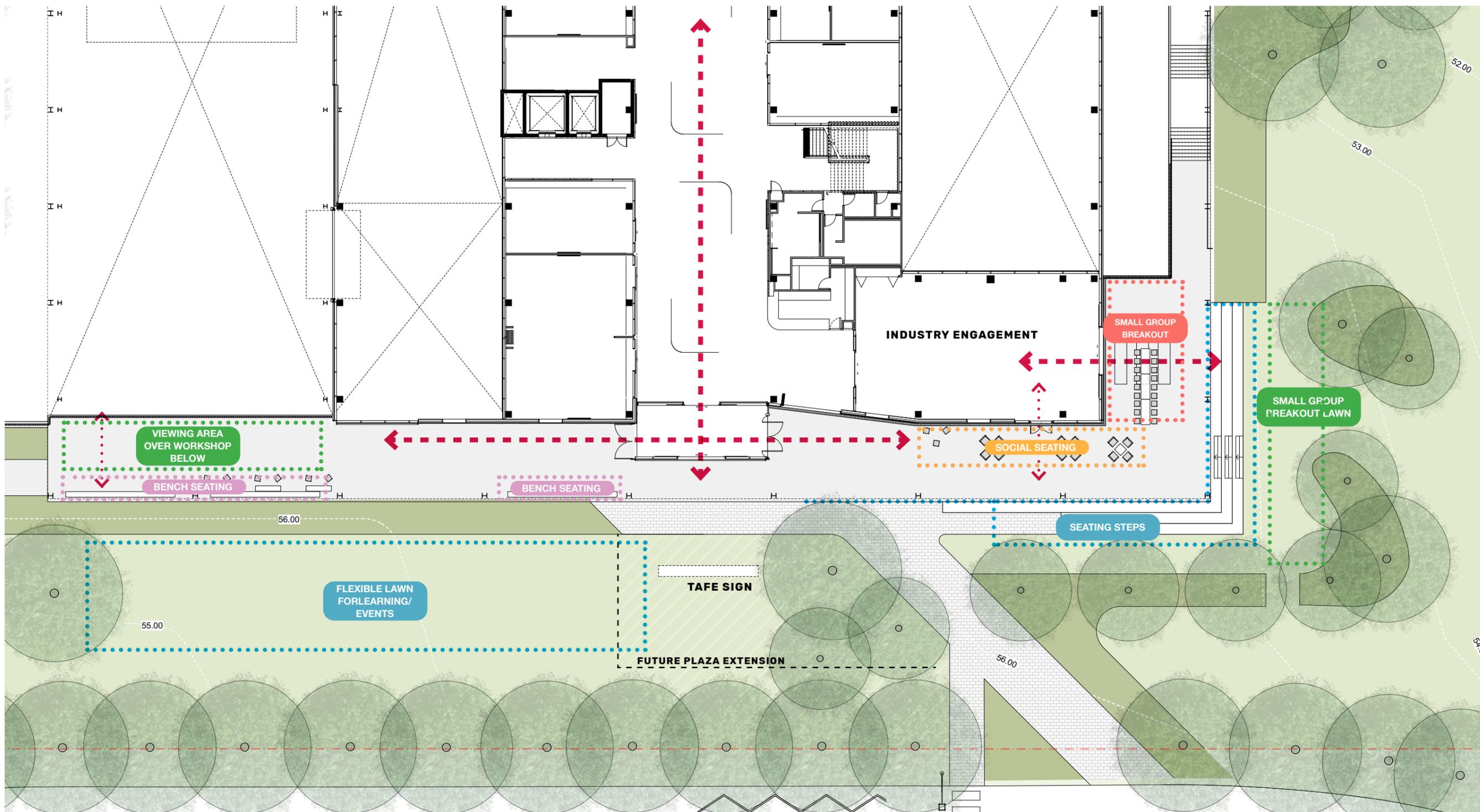
5.0 LANDSCAPE ZONING

5.6 Upper Ground Landscape Connections



5.0 LANDSCAPE ZONING

5.7 Upper Ground Landscape Zoning



6.0 PLANTING & MATERIALS

6.1 Planting Palette & Schedule

TREES



SHRUBS & PERENNIALS



GRASSES



GROUNDCOVERS & SPILLOVERS



PLANTING SCHEDULE

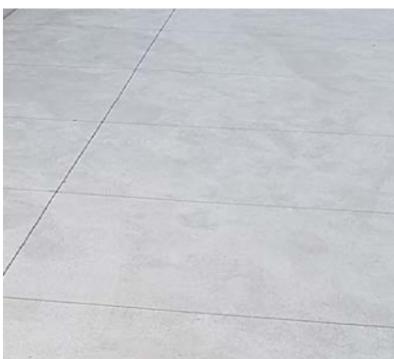
Botanical Name	Pot Size	Origin
TREES		
<i>Corymbia maculata</i>	400L	Cumberland Plain Native +
<i>Eucalyptus polyanthemos</i>	100L	NSW Native
<i>Eucalyptus tereticornis</i>	400L	Cumberland Plain Native +
<i>Fraxinus pennsylvanica</i> 'Urbanite'	100L	Exotic
<i>Geijera parvifolia</i>	100L	NSW Native
<i>Melaleuca decora</i>	75L	Cumberland Plain Native +
<i>Tristaniopsis laurina</i>	100L	Cumberland Plain Native ^
<i>Waterhousea 'Sweeper'</i>	75L	NSW Native Cultivar
<i>Ulmus parvifolia</i>	400L	Exotic
SHRUBS & PERENNIALS		
<i>Babingtonia virgata dwarf</i>	200mm	NSW Native
<i>Banksia aemula</i>	200mm	NSW Native
<i>Callistemon 'Great Balls of Fire'</i>	200mm	NSW Native Cultivar
<i>Dodonaea viscosa subsp. cuneata</i>	200mm	Cumberland Plain Native +
<i>Euonymus Green Rocket</i>	200mm	Exotic
<i>Grevillea rosmarinifolia</i>	200mm	Grevillea rosmarinifolia
<i>Indigofera australis</i>	200mm	Cumberland Plain Native +
<i>Ozothamnus diosmifolius</i>	200mm	NSW Native
<i>Westringia fruticosa</i>	200mm	NSW Native
GRASSES		
<i>Dianella 'Little Jess'</i>	150mm	NSW Native Cultivar
<i>Lomandra filiformis</i>	150mm	Cumberland Plain Native +
<i>Lomandra longifolia 'Verday'</i>	150mm	Cumberland Plain Native ^ cltv.
<i>Poa labillardieri</i>	150mm	Cumberland Plain Native ^
<i>Themeda australis</i>	150mm	Cumberland Plain Native +
GROUNDCOVERS		
<i>Acacia howittii 'Honey Bun'</i>	150mm	NSW Native Cultivar
<i>Carpobrotus rossii</i>	150mm	NSW Native Cultivar
<i>Casuarina 'Cousin It'</i>	150mm	NSW Native Cultivar
<i>Einadia nutans</i>	150mm	Cumberland Plain Native +
<i>Grevillea 'Poorinda Royal Mantle'</i>	150mm	NSW Native Cultivar
<i>Hardenbergia violacea</i>	150mm	Cumberland Plain Native +
<i>Rosmarinus 'Blue Lagoon'</i>	150mm	Exotic
<i>Wahlenbergia gracilis</i>	Tube	Cumberland Plain Native +

Key:
 + Cumberland Plain Shale Woodland Species
 ^ Sydney Coastal River Flat Species

6.0 PLANTING & MATERIALS

6.2 Landscape Materials

HARD FINISHES



Concrete with expressed saw cut-joints



Permeable Resin bonded gravel



Permeable Trihex paving



Precast Concrete Seating Steps & Walls



Inlay's into hardstand in key locations



Timber/Composite Timber Decking

FURNITURE



Sandstone Blocks for informal seating/ tables



Fixed Table & Seats
Linea Seating Range (SFA)
with wood look aluminium batterns



Integrated seating
Linea Seating Range (SFA)
with wood look aluminium batterns



Loose Casual Seating
Forum Seating Range (SFA)
with wood look aluminium batterns



Loose seating
Linea Seating Range (SFA)
with wood look aluminium batterns



APPENDIX - LANDSCAPE DOCUMENTATION