

360°

# INSTITUTE OF APPLIED TECHNOLOGY FOR CONSTRUCTION

SSDA REPORT  
REVISION G





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# 1.0 SITE ANALYSIS

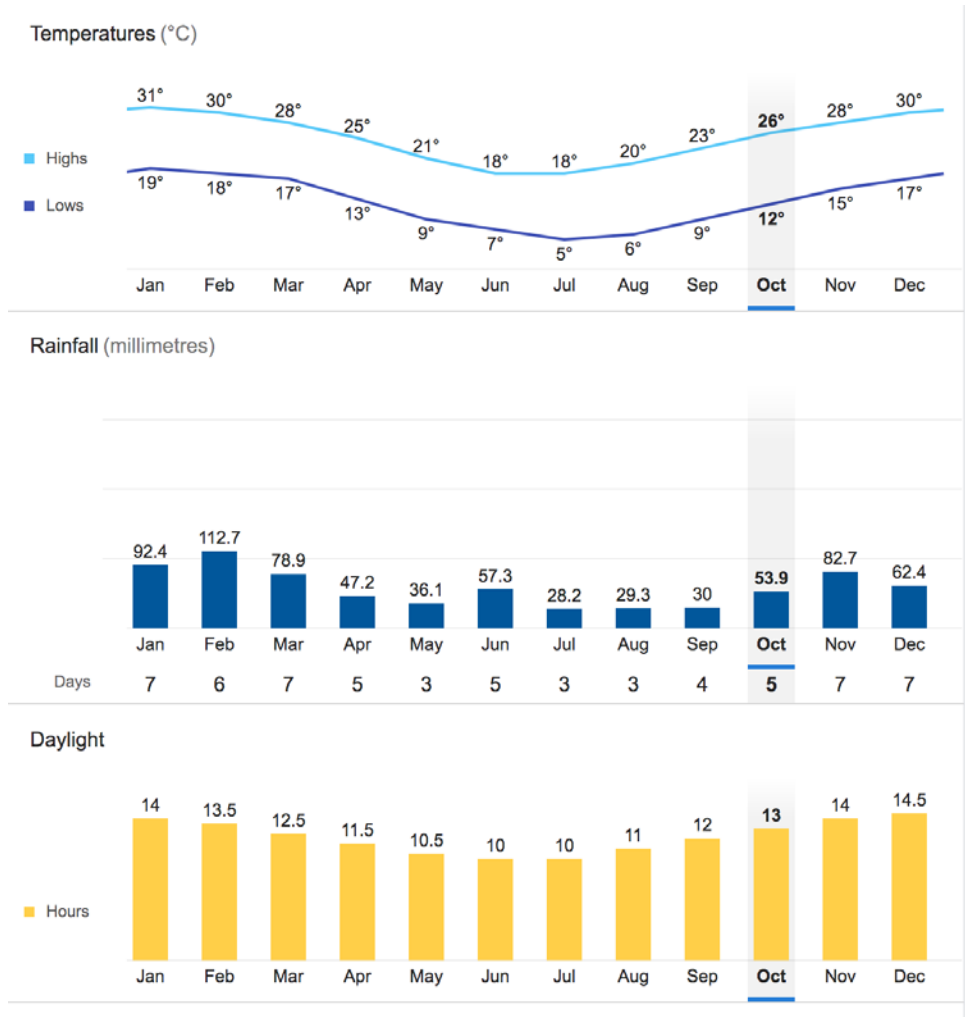
## 1.1 Local Climate – Penrith & Surrounds

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

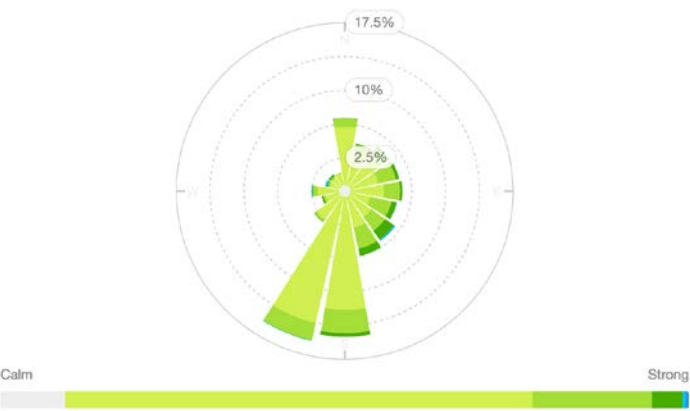
WINDS

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



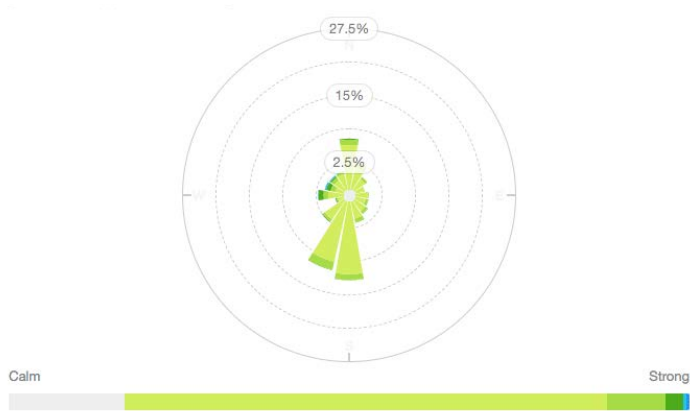
SUMMER

FEBRUARY (5 YEAR WIND ROSE)



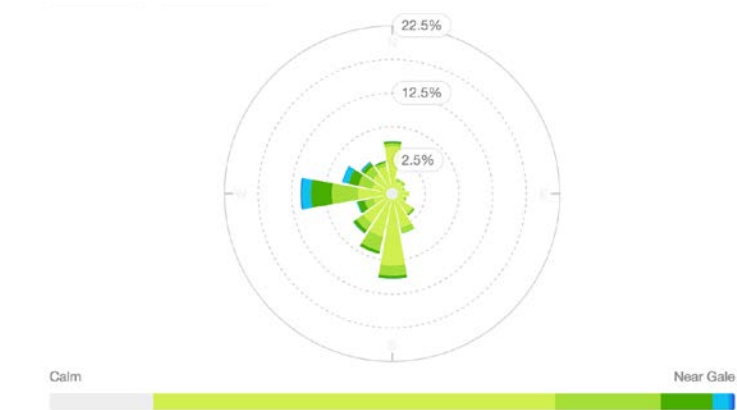
AUTUMN

APRIL (5 YEAR WIND ROSE)



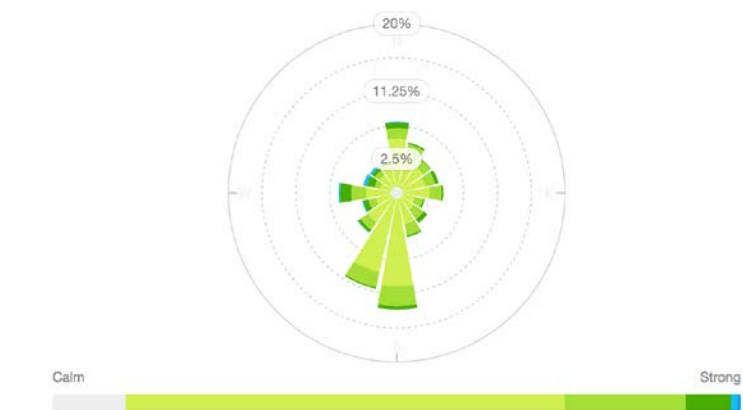
WINTER

AUGUST (5 YEAR WIND ROSE)



SPRING

OCTOBER (5 YEAR WIND ROSE)



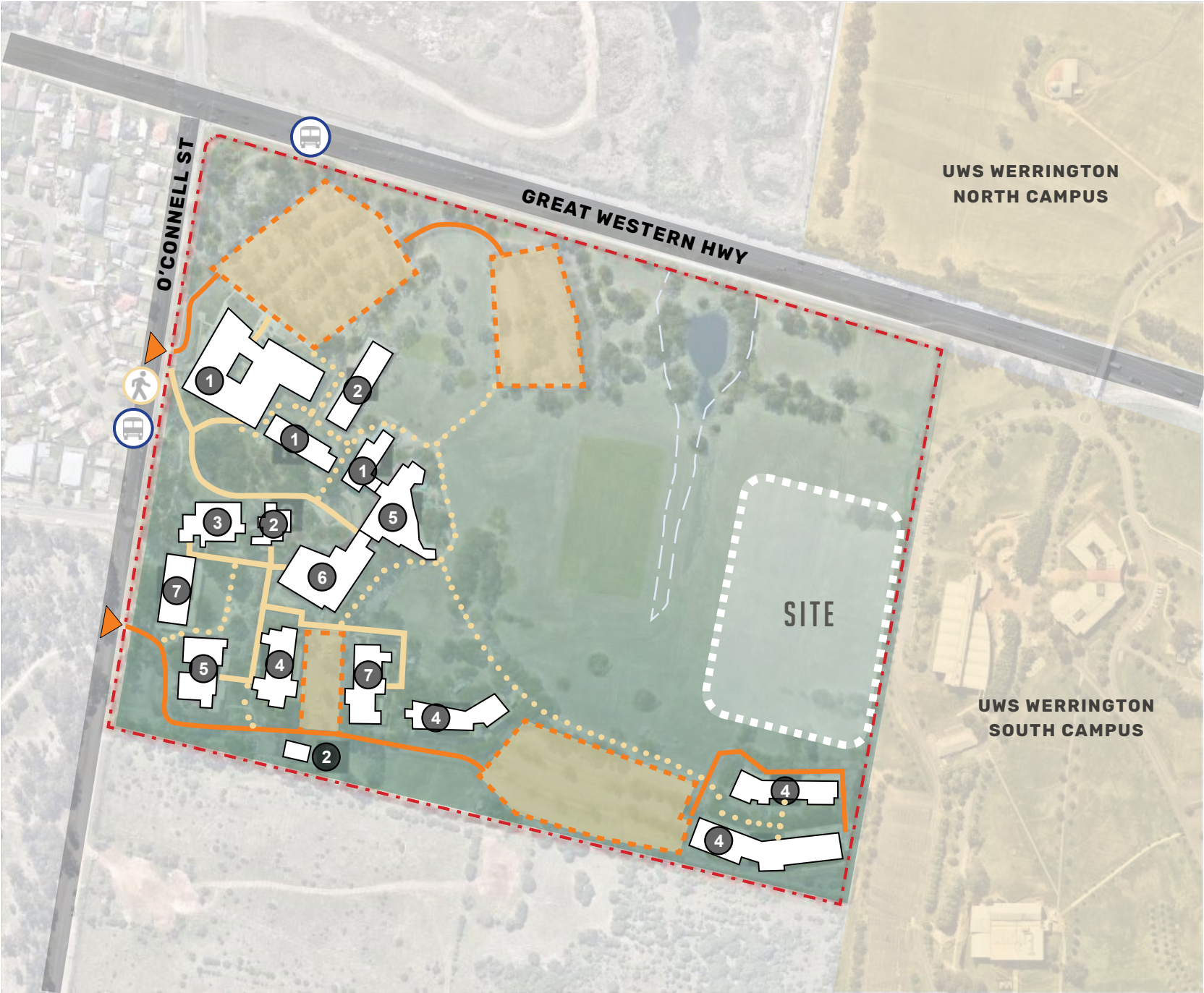
SOURCE : Bureau of Meteorology via Willy weather (<https://www.willyweather.com.au/climate/weather-stations/nsw/greater-western-sydney/penrith-lakes>)

# 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

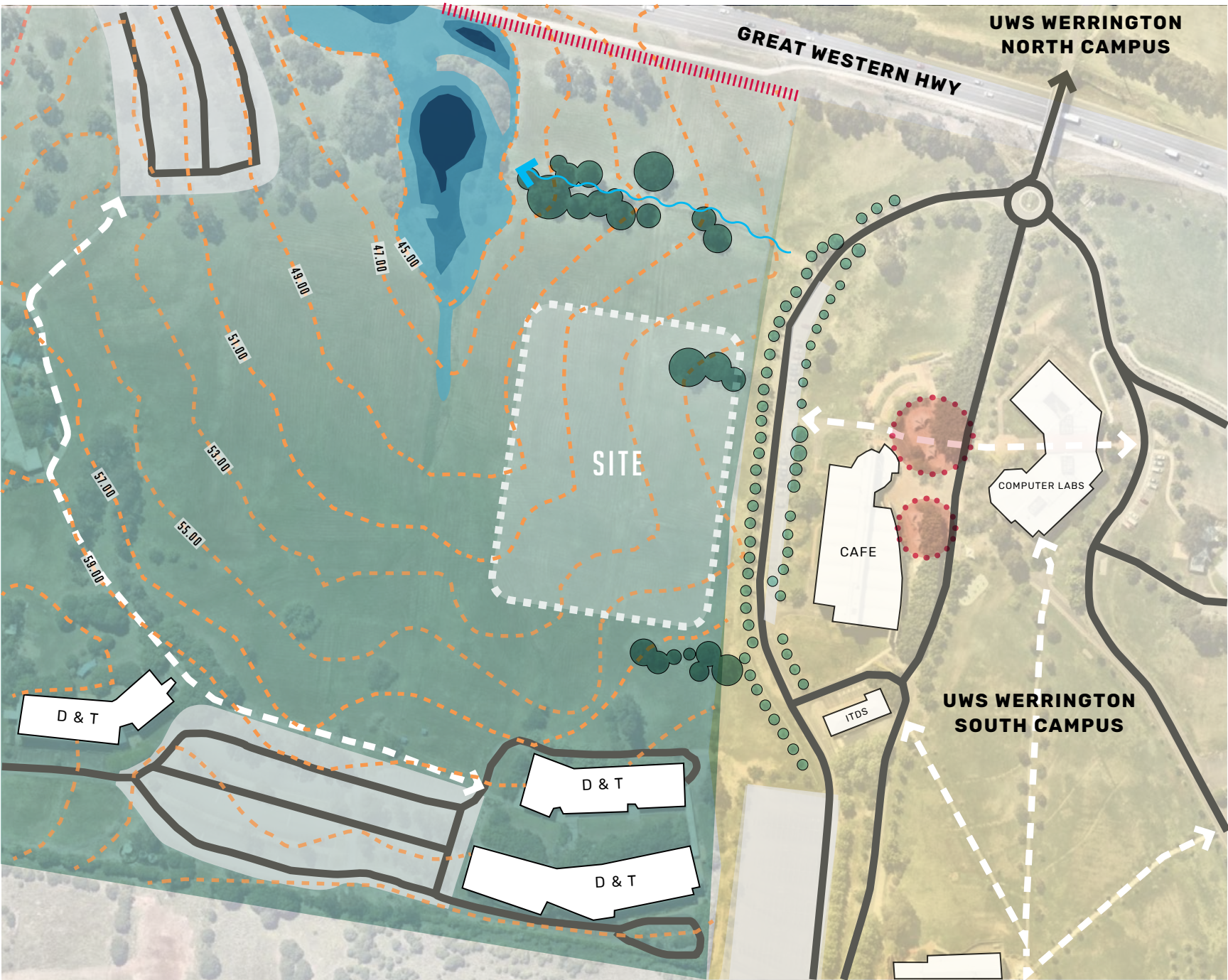




# 1.0 SITE ANALYSIS

## 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



1



2



3

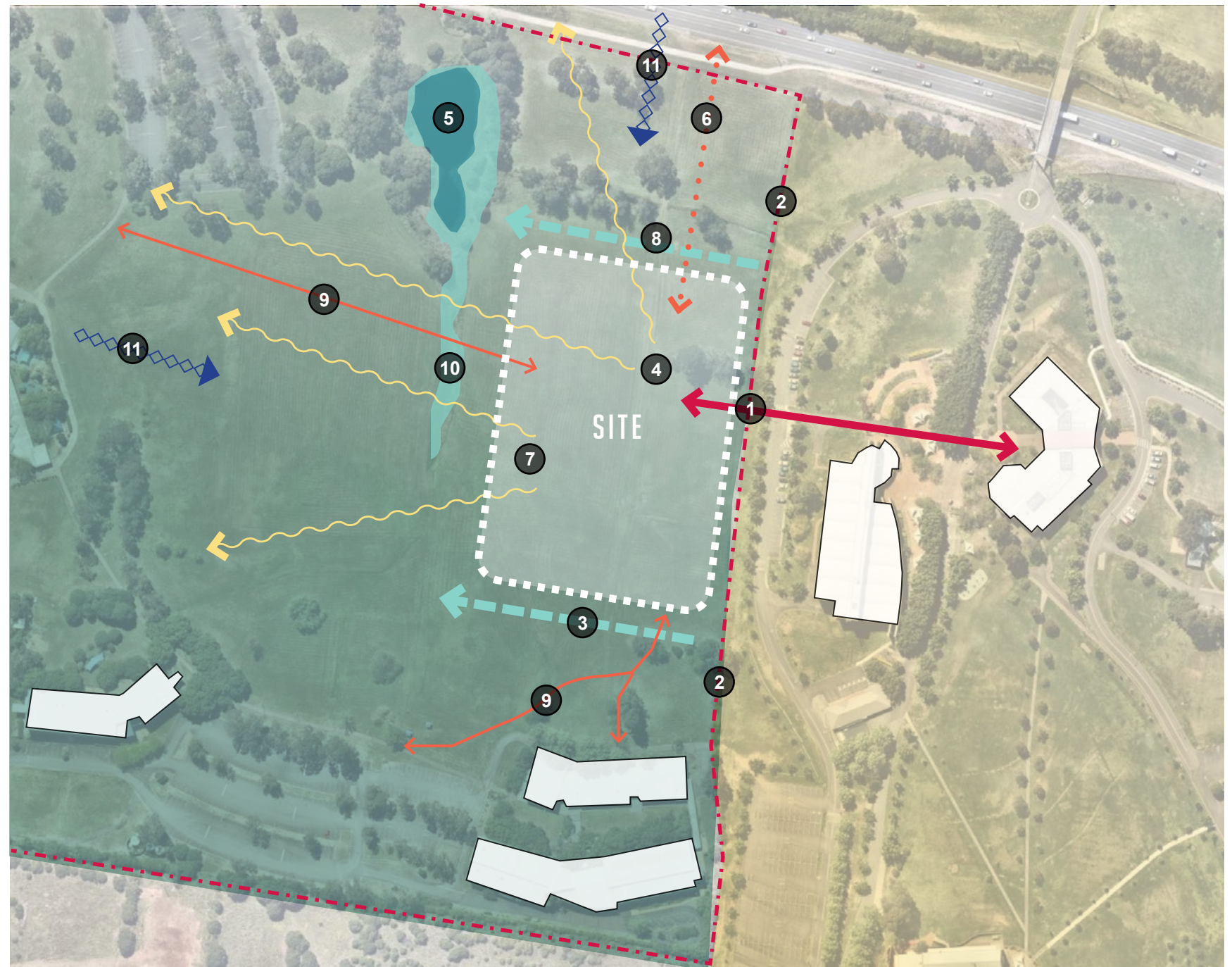




## 2.1 Opportunities & Constraints

- 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

- 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*

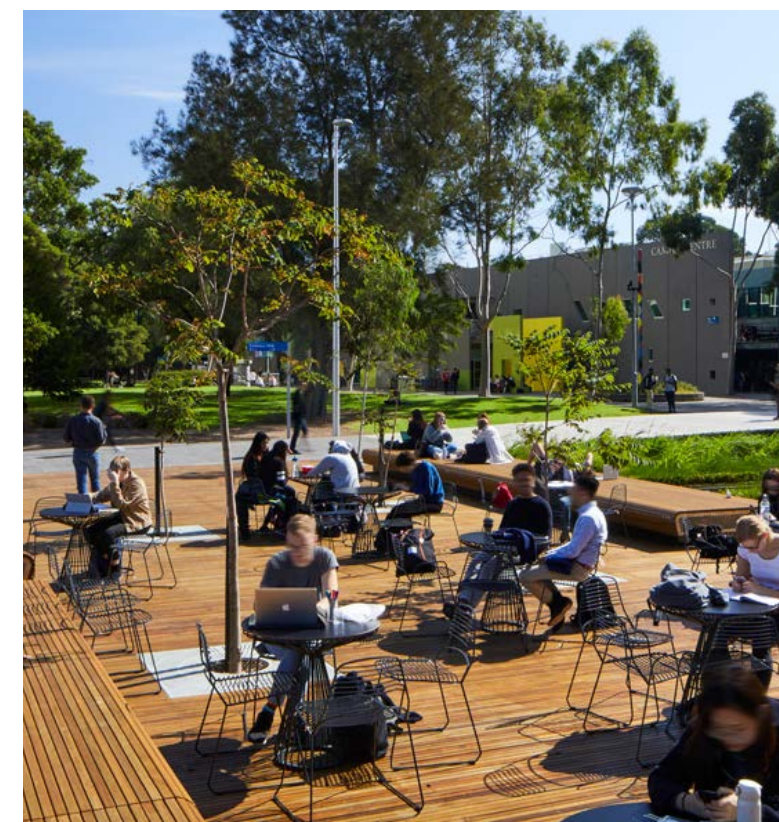
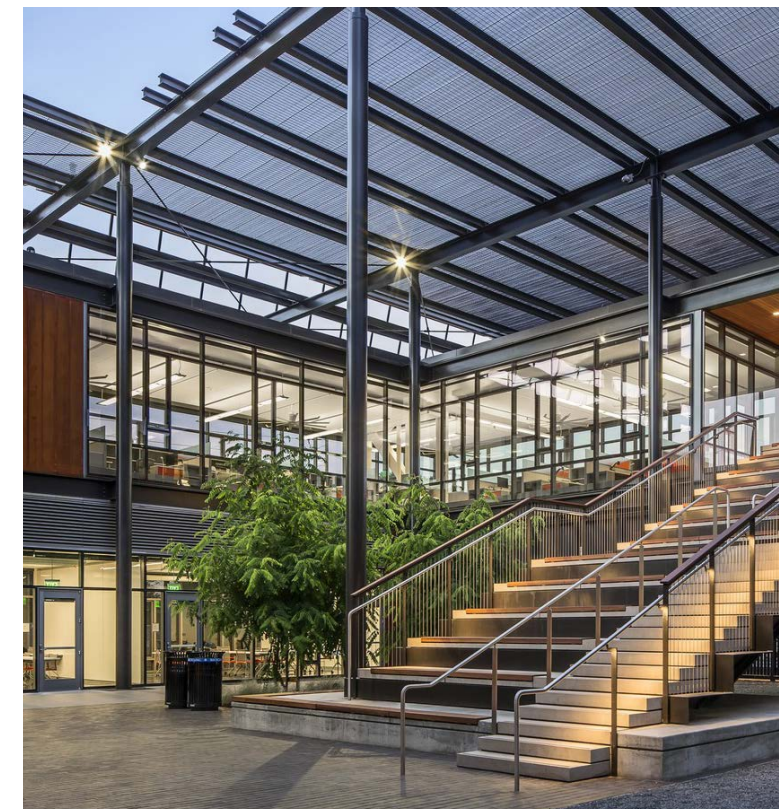
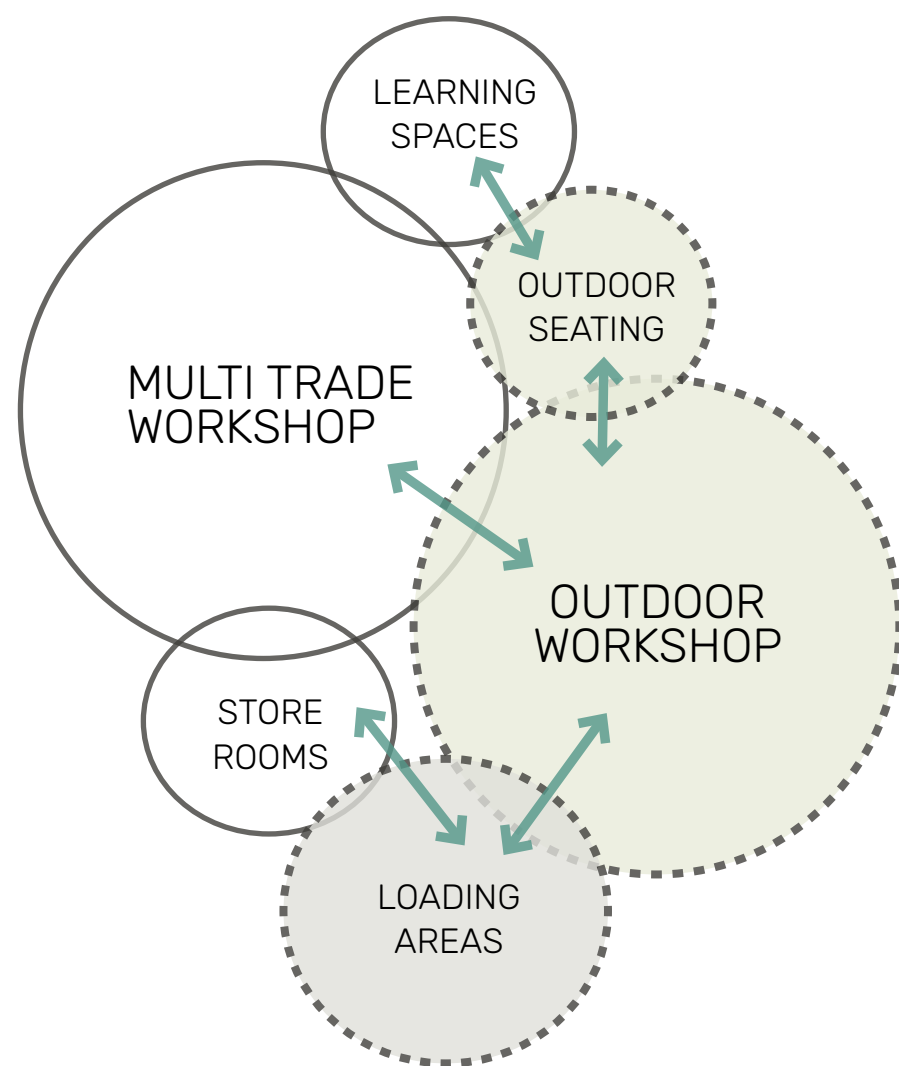
- + Design varied outdoor learning, gathering and movement spaces to provide options for year round comfort and use
- + Maximise energy efficiency with passive cooling & heating of spaces to support building sustainability
- + Respond to existing topography and landscape character through an integrated 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

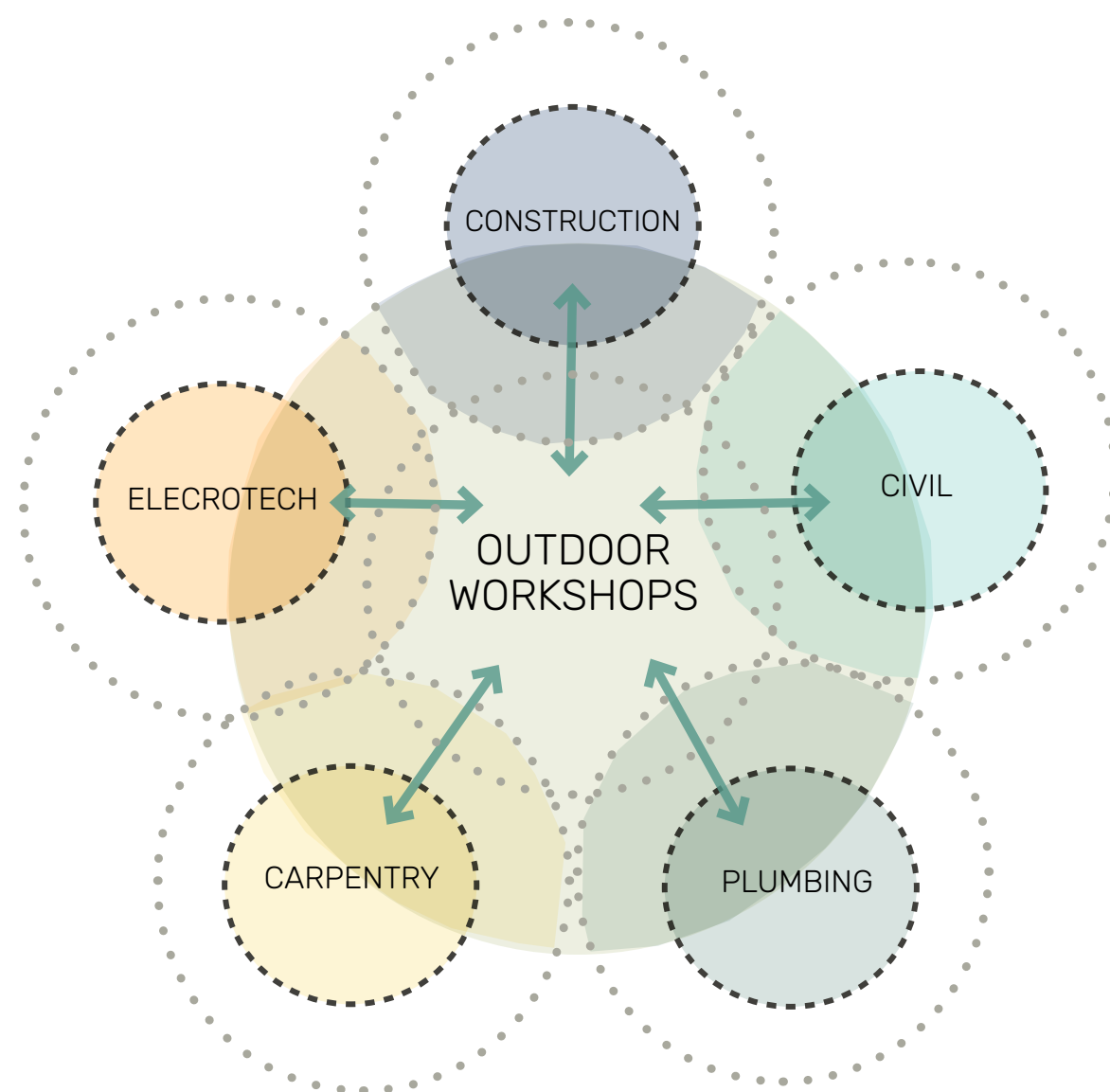




## 4.0 DESIGN OBJECTIVES & STRATEGIES

### 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

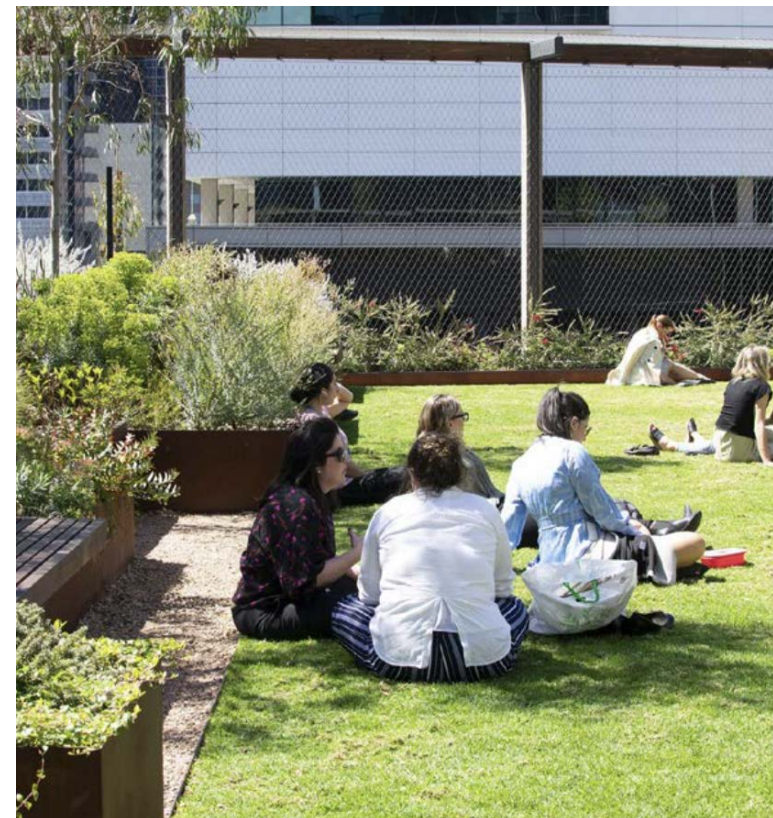
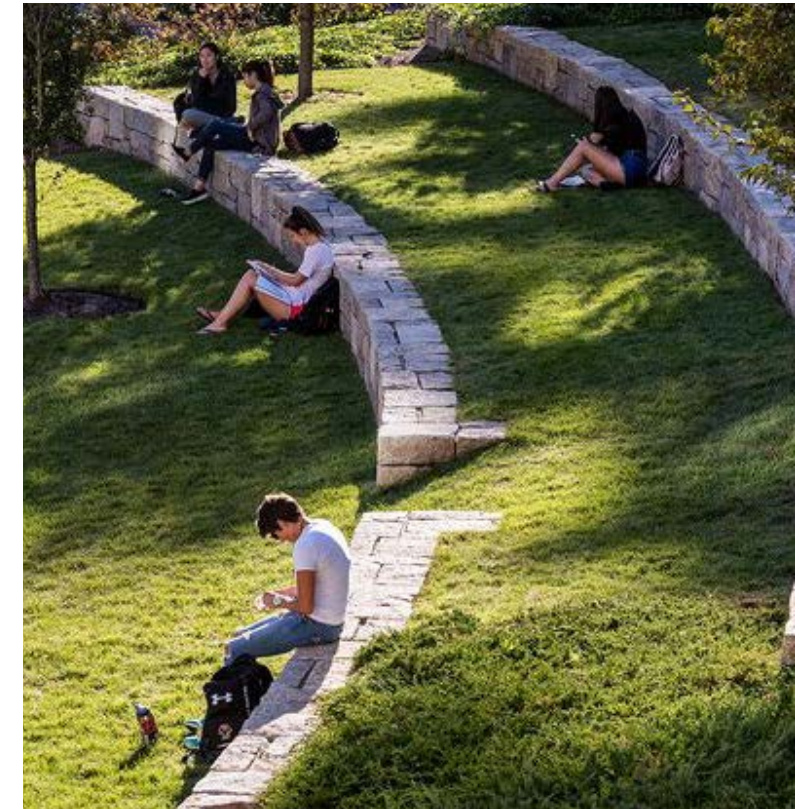
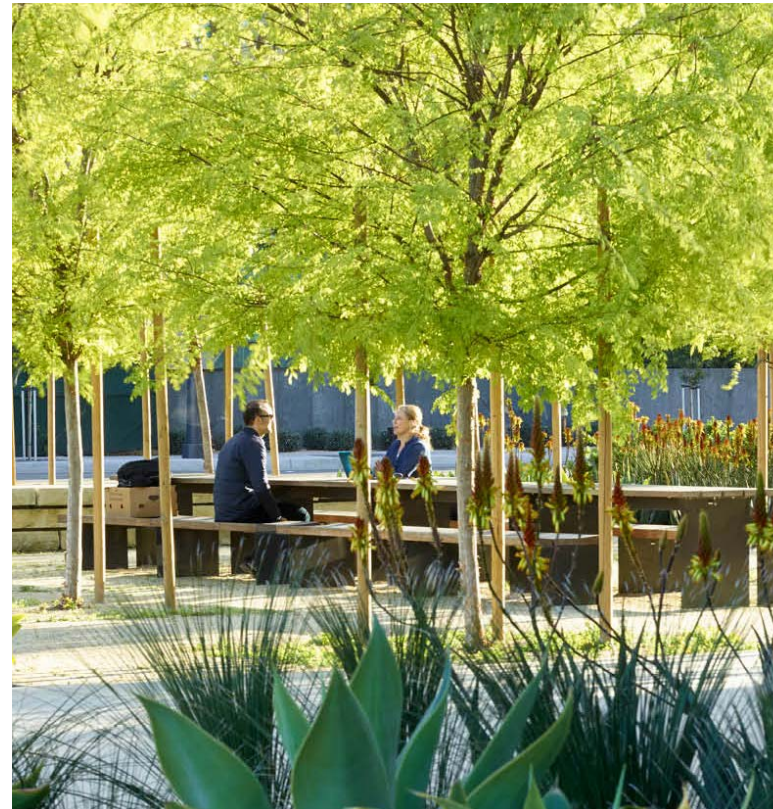
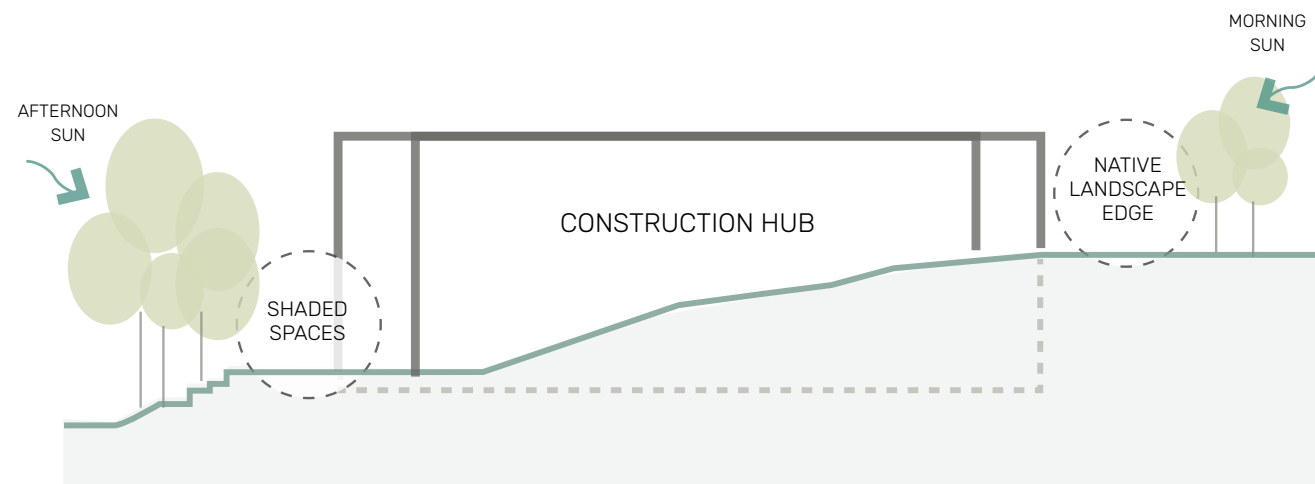




## 4.0 DESIGN OBJECTIVES & STRATEGIES

### 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.

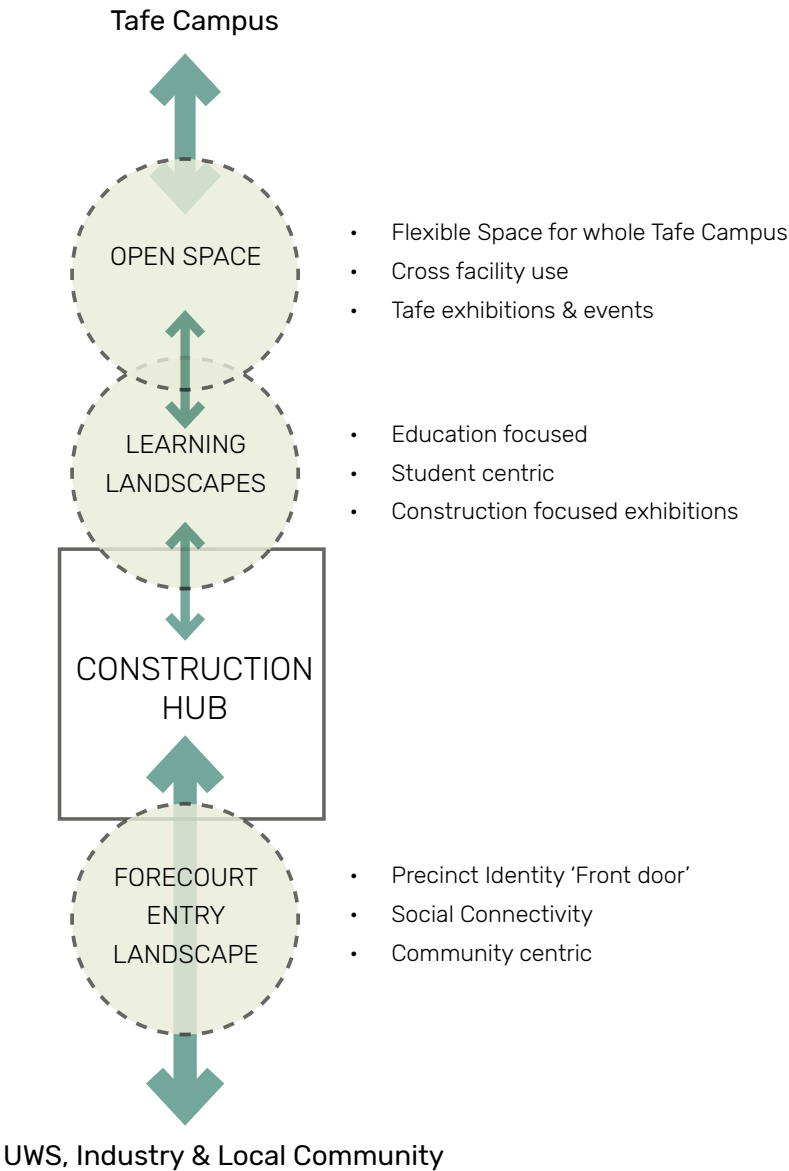




# 4.0 DESIGN OBJECTIVES & STRATEGIES

## 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

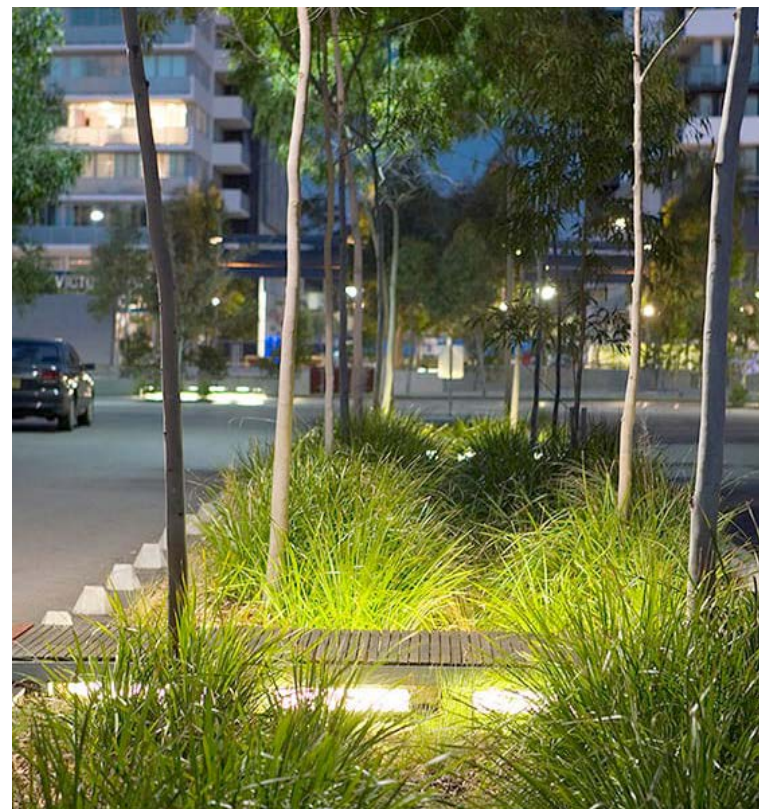
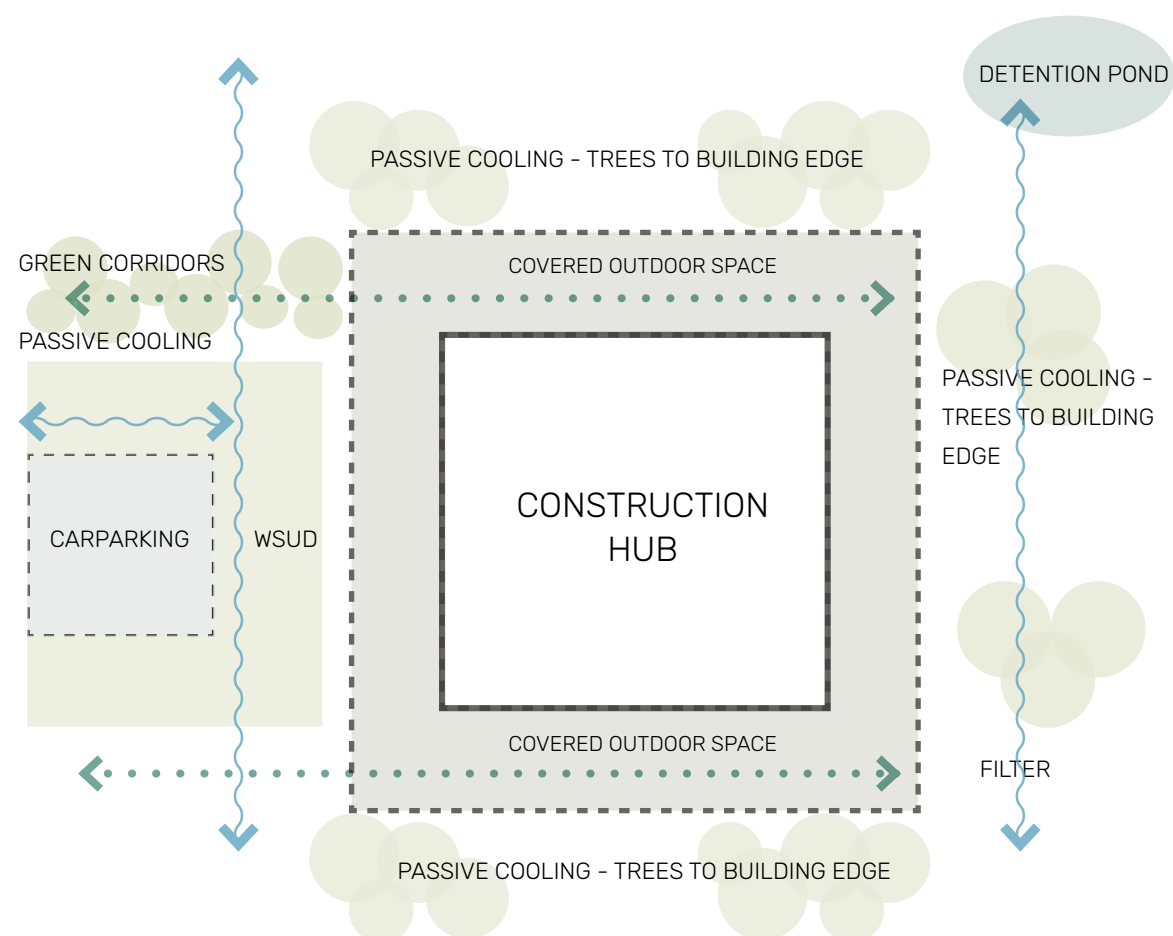




## 4.0 DESIGN OBJECTIVES & STRATEGIES

### 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)










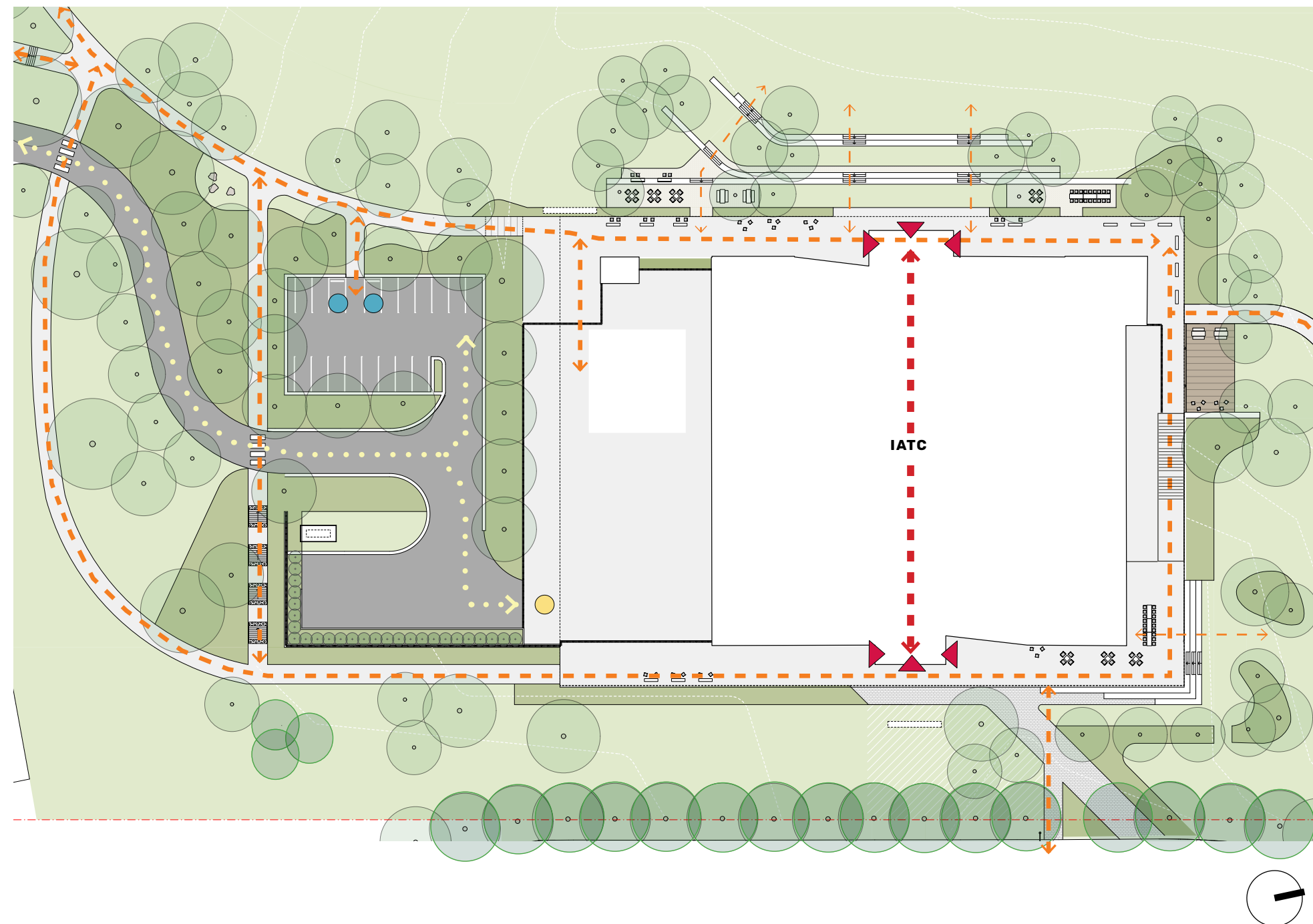


## 5.0 LANDSCAPE ZONING

### 5.1 Construction Hub Landscape Planning Diagram

#### KEY

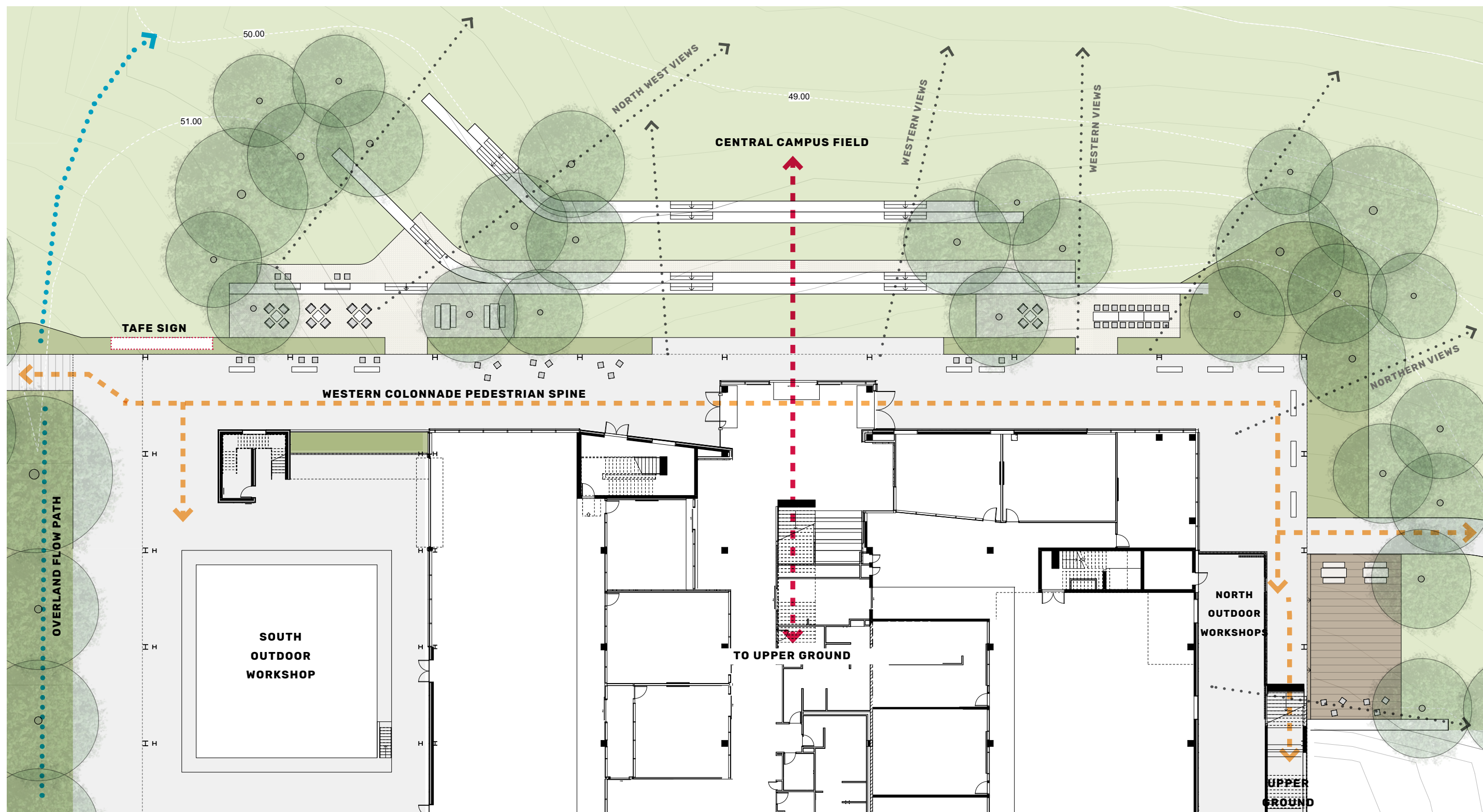
-  Pedestrian Circulation
-  Construction Hub Student Spine
-  Main Entries
-  Vehicle Circulation (New Road)
-  Loading Bay
-  Accessible Parking
-  Existing Trees to be retained





## 5.0 LANDSCAPE ZONING

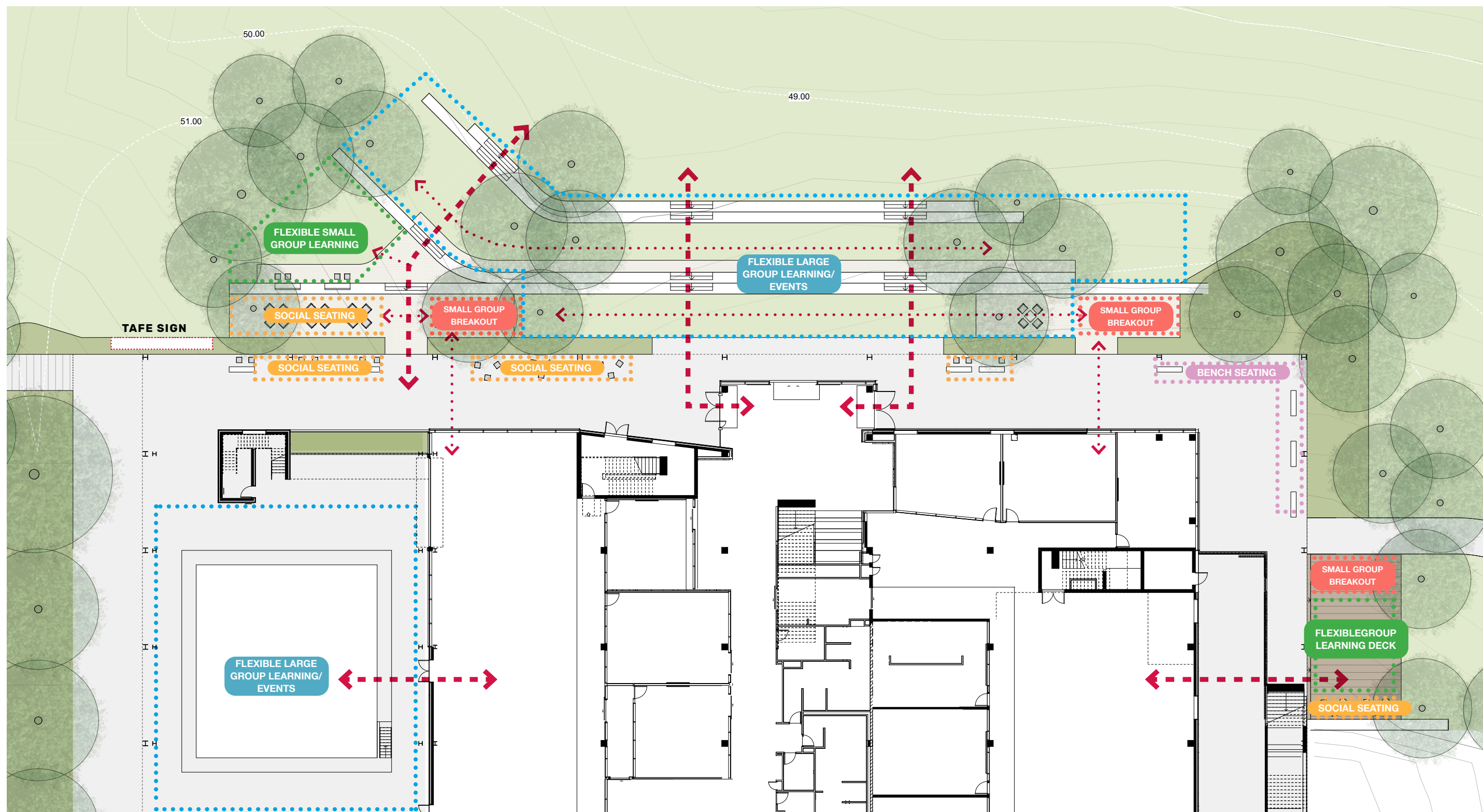
### 5.2 Lower Ground Landscape Connections





## 5.0 LANDSCAPE ZONING

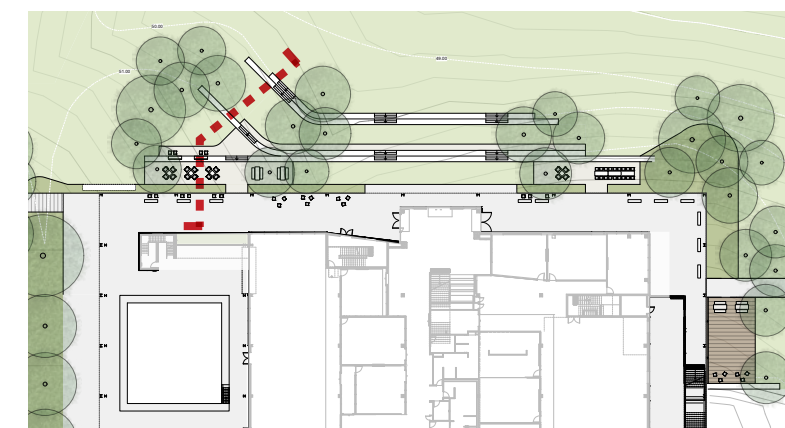
### 5.3 Lower Ground Landscape Zoning





## 5.0 LANDSCAPE ZONING

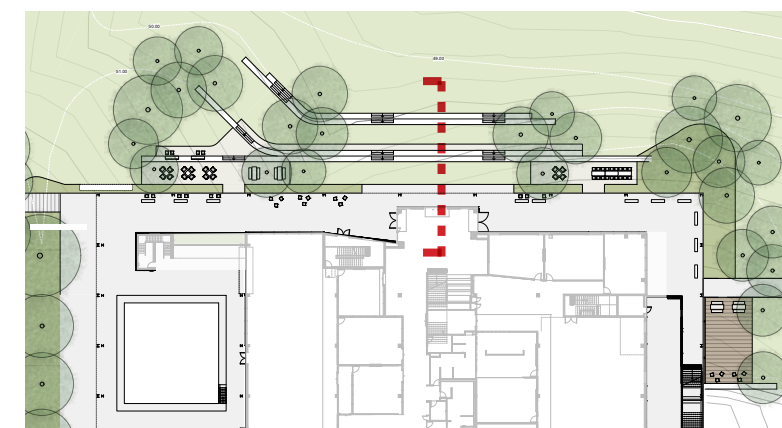
### 5.4 Lower Ground Landscape Sections





## 5.0 LANDSCAPE ZONING

### 5.5 Lower Ground Landscape Sections



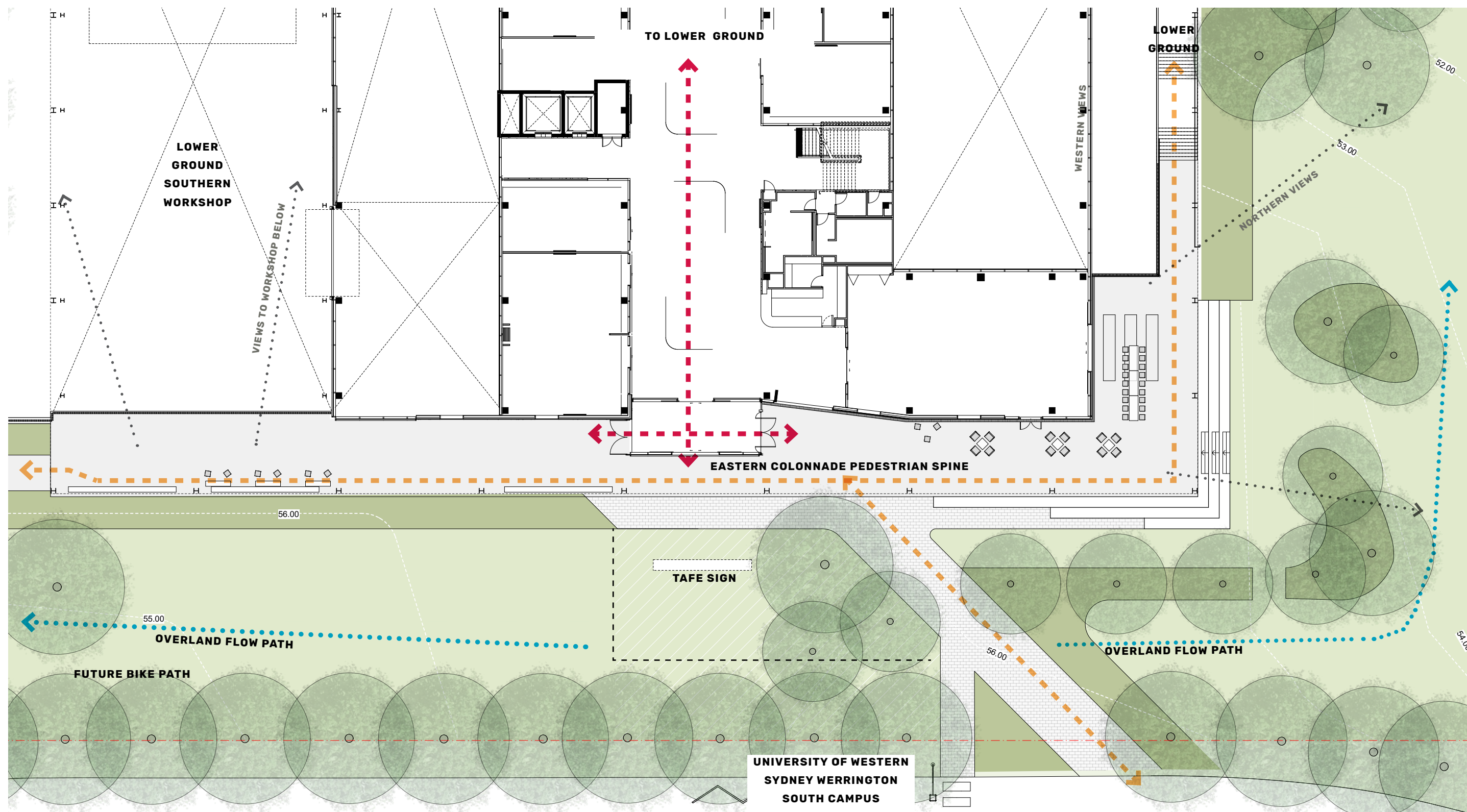
KEY PLAN





## 5.0 LANDSCAPE ZONING

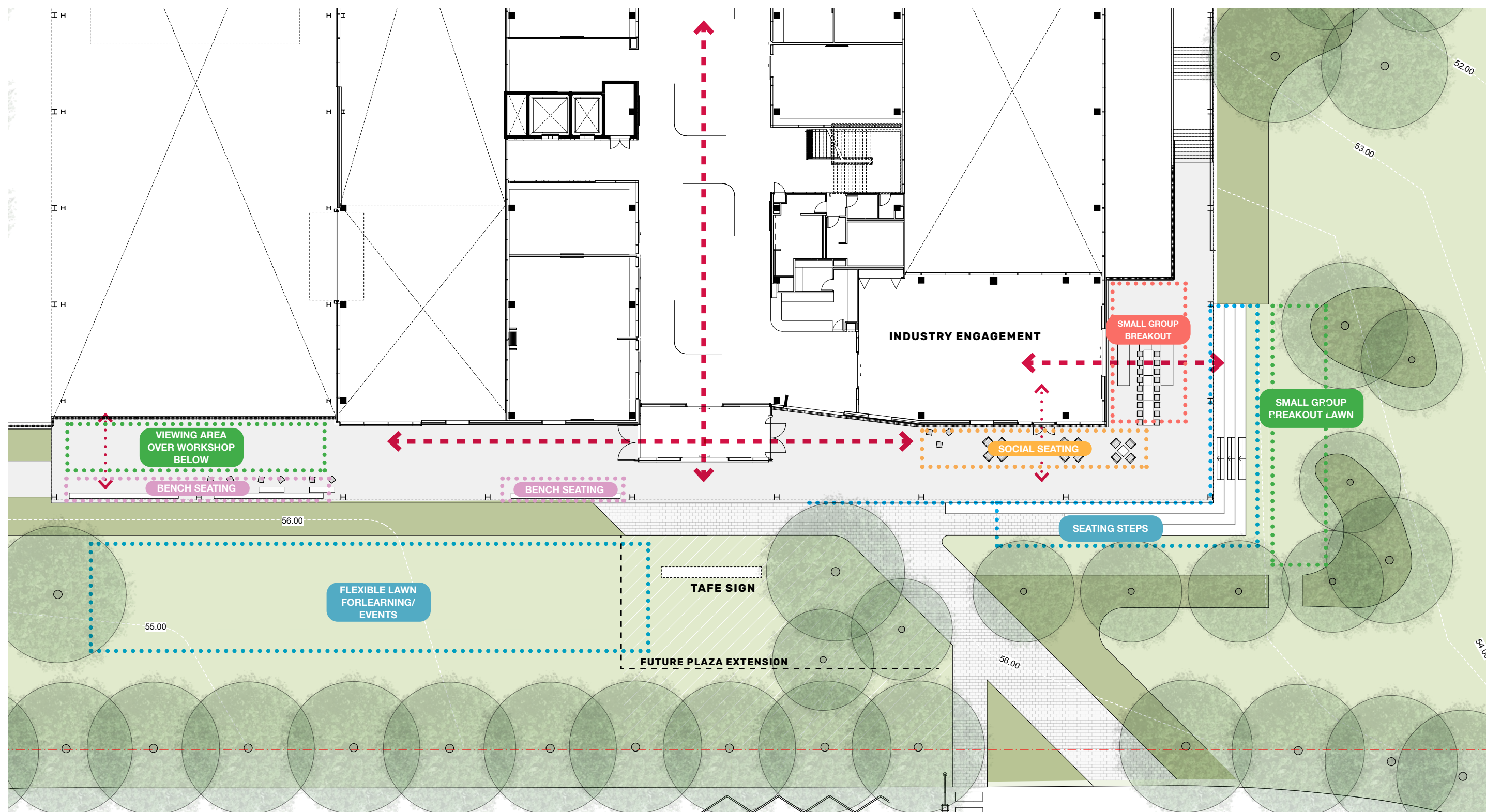
### 5.6 Upper Ground Landscape Connections





## 5.0 LANDSCAPE ZONING

### 5.7 Upper Ground Landscape Zoning





# 6.0 PLANTING & MATERIALS

## 6.1 Planting Palette & Schedule

### TREES

Corymbia maculata Spotted Gum	Eucalyptus polyanthemos Red Box	Eucalyptus tereticornis Forest Red Gum	Fraxinus 'Urbanite' Urbanite Ash	Geijera parvifolia Wilga	Melaleuca decora White Feather Honeymyrtle	Tristaniopsis laurina Water Gum	Waterhousea floribunda 'Sweeper' Weeping Lilly Pilly	Ulmus parvifolia Chinese elm
								
Cumberland Plain Native +	NSW Native	Cumberland Plain Native +	Exotic	NSW Native	Cumberland Plain Native +	Cumberland Plain Native ^	NSW Native Cultivar	Exotic

### SHRUBS & PERENNIALS

Babingtonia virgata dwarf Heath Myrtle	Banksia aemula Wallum Banksia	Callistemon 'Great Balls of Fire' Bottlebrush	Dodonaea viscosa subsp. cuneata	Euonymus Green Rocket Spindle Tree	Grevillea rosmarinifolia Spider Flower	Indigofera australis Australian Indigo	Ozothamnus diosmifolius Rice Flower	Westringia fruticosa Native Rosemary
								
NSW Native	NSW Native	NSW Native Cultivar	Cumberland Plain Native +	Exotic	NSW Native	Cumberland Plain Native +	NSW Native	NSW Native

### GRASSES

Dianella 'Little Jess' Native Flax	Lomandra filiformis Wattle Mat Rush	Lomandra longifolia 'Verday' Basket Grass	Poa labillardieri Tussock Grass	Themeda australis Kangaroo Grass
				
NSW Native Cultivar	Cumberland Plain Native +	Cumberland Plain Native ^	Cumberland Plain Native ^	Cumberland Plain Native +

### GROUNDCOVERS & SPILLOVERS

Acacia howittii 'Honey Bun' Sticky Wattle	Carpobrotus rossii Pig Face	Casuarina 'Cousin It' Shagpile	Einadia nutans Climbing Saltbush	Grevillea 'Poorinda Royal Mantle'	Hardenbergia violacea False Sarsaparilla	Rosmarinus 'Blue Lagoon' Rosemary	Wahlenbergia gracilis Australian Bluebell
							
NSW Native Cultivar	NSW Native Cultivar	NSW Native Cultivar	Cumberland Plain Native +	NSW Native Cultivar	Cumberland Plain Native +	Exotic	Cumberland Plain Native +

### PLANTING SCHEDULE

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

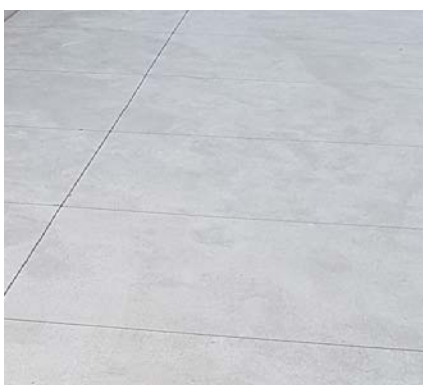
Key:  
+ Cumberland Plain Shale Woodland Species  
^ Sydney Coastal River Flat Species



## 6.0 PLANTING & MATERIALS

### 6.2 Landscape Materials

#### HARD FINISHES



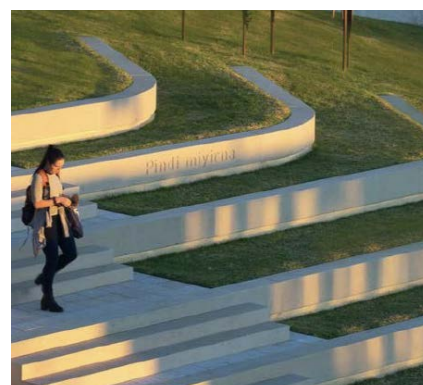
Concrete with expressed saw cut-joints



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 battens



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



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



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





## APPENDIX - LANDSCAPE DOCUMENTATION