Landscape

1.0 Introduction:

The principal address of the Physics Building is complimented by the large lawn area of 'The Square' and tennis courts, both directly across Physics Road, informally providing a grand landscape curtilage to the building. The green fringe of planting directly along the facade, and trees near the ends of the street frontage, frame and reinforce the landscape setting . A large Fig tree to the west of the Physics Building (adjacent to Wesley College) provides mature landscape feature to that end of the proposed building. Large Fig and Jacaranda trees occur to the Edward Ford Building boundary to the east, providing an important landscape outlook and interface to this frontage, being a significant pedestrian corridor. A number of trees to the southern side of the existing building are to be removed, with a new built interface to marry with building proposals for St Paul's College allowing creation of a new pedestrian link space along this boundary.

In summary, there are four primary landscape open space areas in the AIN precinct with design proposals illustrated and discussed in this report, being:

– Central courtyard, providing interface between existing Physics Building and new AIN Building;
– Eastern Entry Courtyard, Parking and Loading Dock Area, including the Edward Ford interface and new elevated walkway link;
– Southern Entry Courtyard and Terrace, and the St Paul's proposed colonnade and open space corridor to AIN building interface;
– Western Café Courtyard, incorporating an existing external stair of the Physics Building.

The Landscape Design has been developed in coordination with the Architect and project team, and with consultation with the University staff, and utilizing landscape guidelines and feedback on specific site issues, and interfaces with adjoining areas. Design proposals have been developed in consultation with the Heritage Consultant, and making reference to the Conservation Management Plans for both the School of Physics and for the Edward Ford Building. Consideration has also been made for the design proposals for extensions to St Paul's College through continuing dialogue and review of design drawings, and discussion of the circulation space being created by the AIN and St Paul's proposals, and the relationship with important University walking routes and established and proposed pathways.

Existing trees and palms on the site has been a key consideration of the landscape for the project, with review and investigation of the tree health, structure, root locations, and relationship to pavements, structures and allied proposed works. Tree iQ consultant Arborists provide an accompanying discussion in relation to the key tree species identified for retention – being a large Fig and Jacaranda tree to the eastern boundary, and a large Fig to the western boundary. These are outstanding specimen trees, and on-going dialogue and review of design options has occurred to ensure proposals will all the trees to be retained and protected, with some root and canopy adjustment required for the Jacaranda tree. A range of other trees occurring on the site fall within the proposed building footprint and are proposed to be removed. Consideration of transplantation of some specimens included on site review with the Arborist, and none were considered suitable. Based on the input of Tree iQ, we are confident the proposed landscape works will provide a suitable setting for the trees proposed to be retained, and that through appropriate tree management and detailing of adjoining surfaces and structures that trees will be maintained in good health.









Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

2.0 Landscape Masterplan:

Design considerations for the building complex and integrated and adjoining open spaces, incorporated into the proposals, include:

– Sustainability principles and initiatives incorporated into the landscape design (ie heritage landscape, tree protection, materials, and paving permeability)
– Pedestrian and passive open space amenity in terms of accessibility, comfort (sun / shade / wind), seating provision, safety and 'Crime Prevention through Environmental Design' principles, Security and access, passive and active surveillance of spaces, hazard and risk consideration generally in the open space, etc.;
– User group input to the functionality and amenity, security, identity and quality of open spaces generally across the site;
– Clear and legible walking routes consistent with broader University way-finding and pedestrian pathway network and strategies;
– Bicycle parking located clearly at building entry as part of sustainable transport strategy (Eastern Courtyard);
– Landscape finishes and fixtures, furniture and built elements to be consistent with the Sydney University Urban Design manual;
– Engineering aspects of landscape such as drainage, soil provision and depths, irrigation, structure, lighting, acoustics, wind, etc.
– Interpretive overlay regarding heritage and key pursuits of the School of Physics, which will be developed more in design development phase;
– On-going landscape maintenance and management issues (ie cleaning of Fig tree litter drop), and tree protection and management.

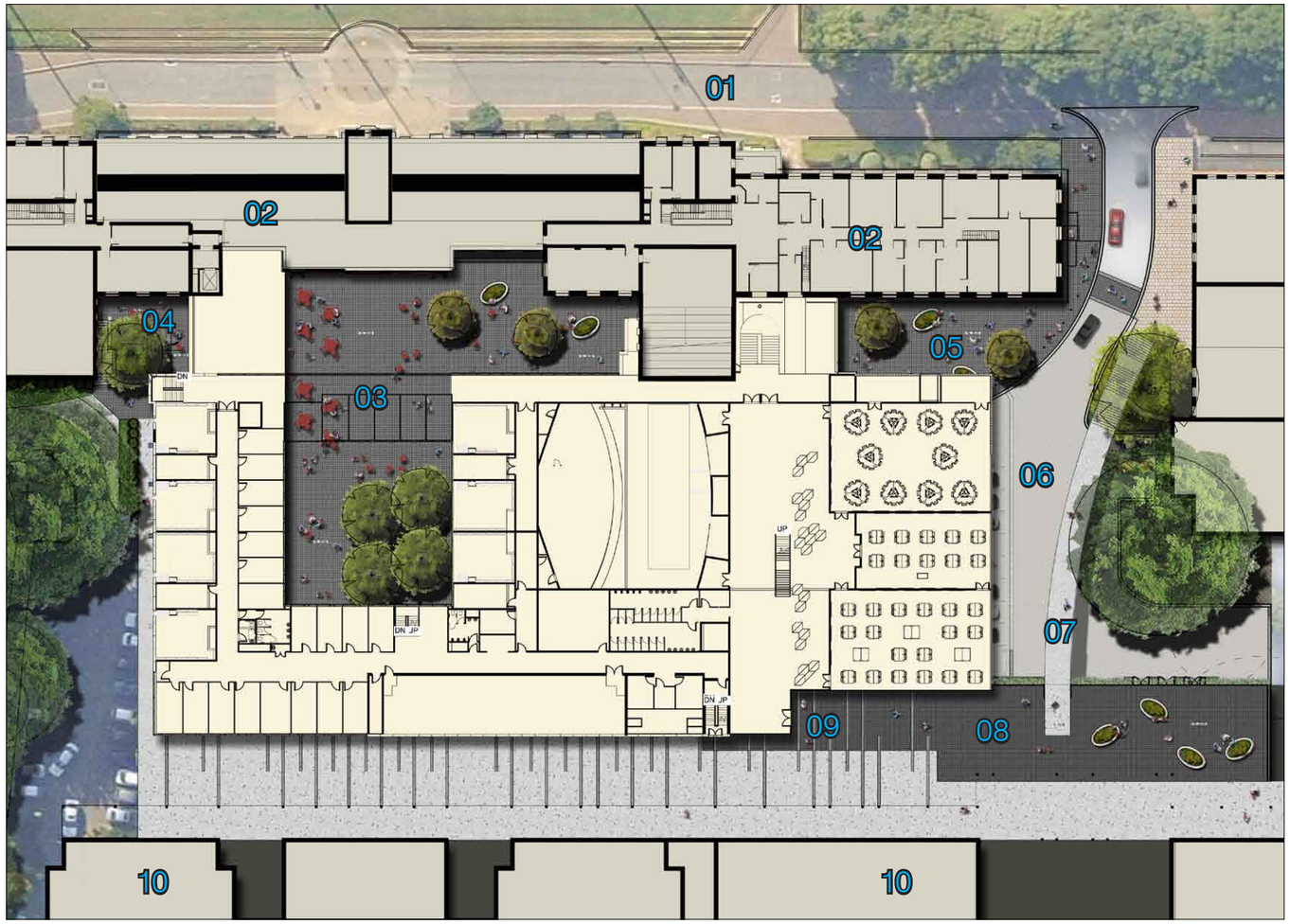
In response to the CMP for the School of Physics we note the design has been developed to address the following Policies with planting selections and landscape design as appropriate:

Policy 2.2.3
Seek to re-instate a landscaped pedestrian courtyard between the former School of Tropical Medicine and the School of Physics incorporating the pergola and the surviving plantings. Relocate unsightly functions such as garbage dumpsters whilst improving delivery access.

Policy 2.2.4
Enliven the facade of the Physics Building by the occassional splash of colour to the pergolas, possibly utilising the range of plantings associated with this style of architecture, particularly fl owering climbers (wisterias, bouganvilleas, ornamental grape or star jasmine) and potted plants such as geraniums

This report will provide design discussion for the four principal areas, and the considerations as noted above. It also outlines proposals for finishes, and for the plant species that are to form the basis for final design selections in the design development and documentation phase.

In summary, the landscape design proposals outlined in the following pages have been developed in cooperation with a full consultant team, and as such relevant team members provide related commentary to be read in conjunction with these pages, including Heritage, Arborist, Access, Architecture, Engineering, and other consultants as appropriate.



Landscape Concept Plan

01 Physics Road
02 Existing Physics Building
03 Physics Courtyard
04 Western Courtyard
05 Entry Courtyard
06 Loading Dock & Parking
07 Pedestrian walkway / cross site link
08 Upper Terrace
09 Entry to Atrium (Level 3)
10 Proposed St. Pauls Development

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

3.0 Landscape Design:

Physics Courtyard:

The central courtyard is the focal open space of the project, providing a feature for overlooking and adjoining office, laboratory and circulation spaces, and a central activity and circulation space for pedestrians. The café to the eastern edge will provide an active seating, eating and meeting area, and through access to the west. The courtyard design strives for simplicity and elegance, with a refined granite sett pavement providing a crisp interface with the architecture. The primary feature of the space is the visual contrast of the heritage of the Physics Building and the new architecture of the AIN Building. A copse of trees is located to the south-east corner of the space – to provide a landscape counterpoint of volume, colour, texture and light/shade within the simple space. Tree species are subject to final selection – with consideration given to specimen semi-mature stock specifically available. To the north-east, oval shaped planters are to have an elegant, refined form and finish, and have massed low plantings of distinctive foliage plants with strongly contrasting scale of leaf, colour and texture - as if microscopic elements enlarged. Accent colour is to be provided through furniture and tables – as a dramatic counterpoint to the simplicity of the space and it's finishes.

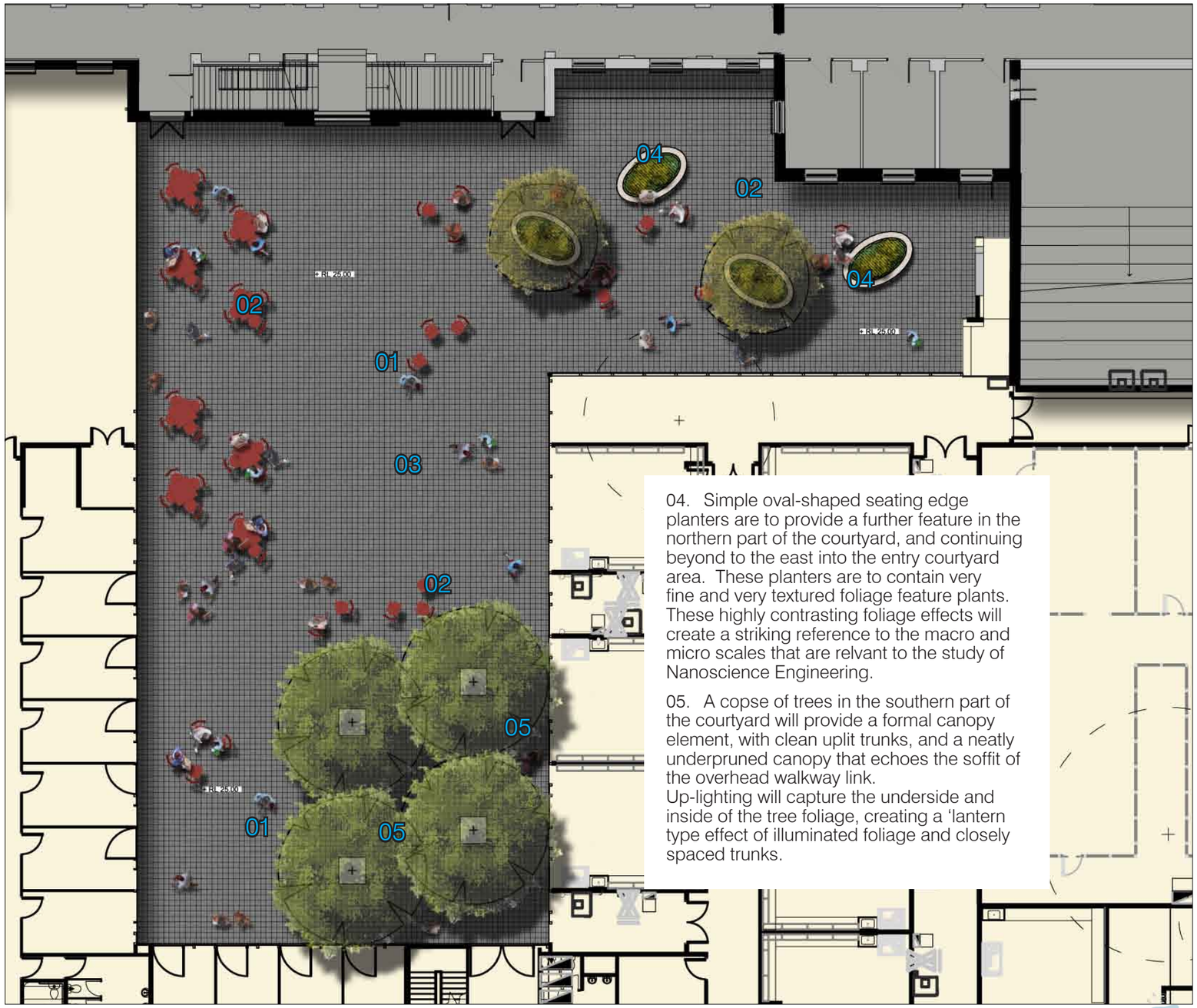
A thematic overlay is being developed, and will be refined in the design development phase. Current proposals subtle sand-blasting of patterns into the honed granite setts. The design and refinement of detail is subject to further design development and consultation.

Design of drainage, lighting, signage, furniture, fixtures and landscape detailing generally will be resolved in the Design Development phase of the project.

01. Unit pavers are proposed for the courtyard spaces, with a more open-jointed laying pattern for the pavers around the base of the trees so as to create a porous surface suitable to provide aeration and natural water access to the roots.

02. A simple overlay of highly coloured loose furniture and seating across the area will provide maximum flexibility for use of the overall space. These seats will of course extend from the café area and be subject to their control and storage after hours.

03. Down-lighting from the soffit of the overhead walkway is seen as a potentially important aspect of the lighting of the space, where other lighting is to principally spill lighting from adjacent building facades to compliment the lighting of the trees & planters.



04. Simple oval-shaped seating edge planters are to provide a further feature in the northern part of the courtyard, and continuing beyond to the east into the entry courtyard area. These planters are to contain very fine and very textured foliage feature plants. These highly contrasting foliage effects will create a striking reference to the macro and micro scales that are relvant to the study of Nanoscience Engineering.

05. A copse of trees in the southern part of the courtyard will provide a formal canopy element, with clean uplit trunks, and a neatly underpruned canopy that echoes the soffit of the overhead walkway link.
Up-lighting will capture the underside and inside of the tree foliage, creating a 'lantern type effect of illuminated foliage and closely spaced trunks.

Landscape Detail Plan - Physics Courtyard

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

3.1 Landscape Design cont:

Western Courtyard:
A small breakout space is proposed to adjoin the western side of the ground floor café – which opens principally to the central courtyard. The western café frontage is proposed to have bleacher type seating / stair, with the tiers providing a significant additional seating capacity, or simply a small intimate separate seating area. A feature planter is proposed integral with the top seating tier, with accent planting consistent with the 'heritage' species list supplied by the University. The area adjoins a retained Physics Building external stair to the west, rising to the adjoining roadway / shared pedestrian zone. That adjoining space is dominated by a large Fig Tree, that significantly overshadows the area – with Arborist review confirming that the tree will be suitably protected from impact from the AIN Building proposals.

01. Unit pavers to match main Physics Courtyard.

02. Existing Hertiage steps to be retained and protected. Additional steps to be added at the top to allow access to the paved area above.

03. Large terraced steps (for seating) to accomodate the 3m level change within this small courtyard space.

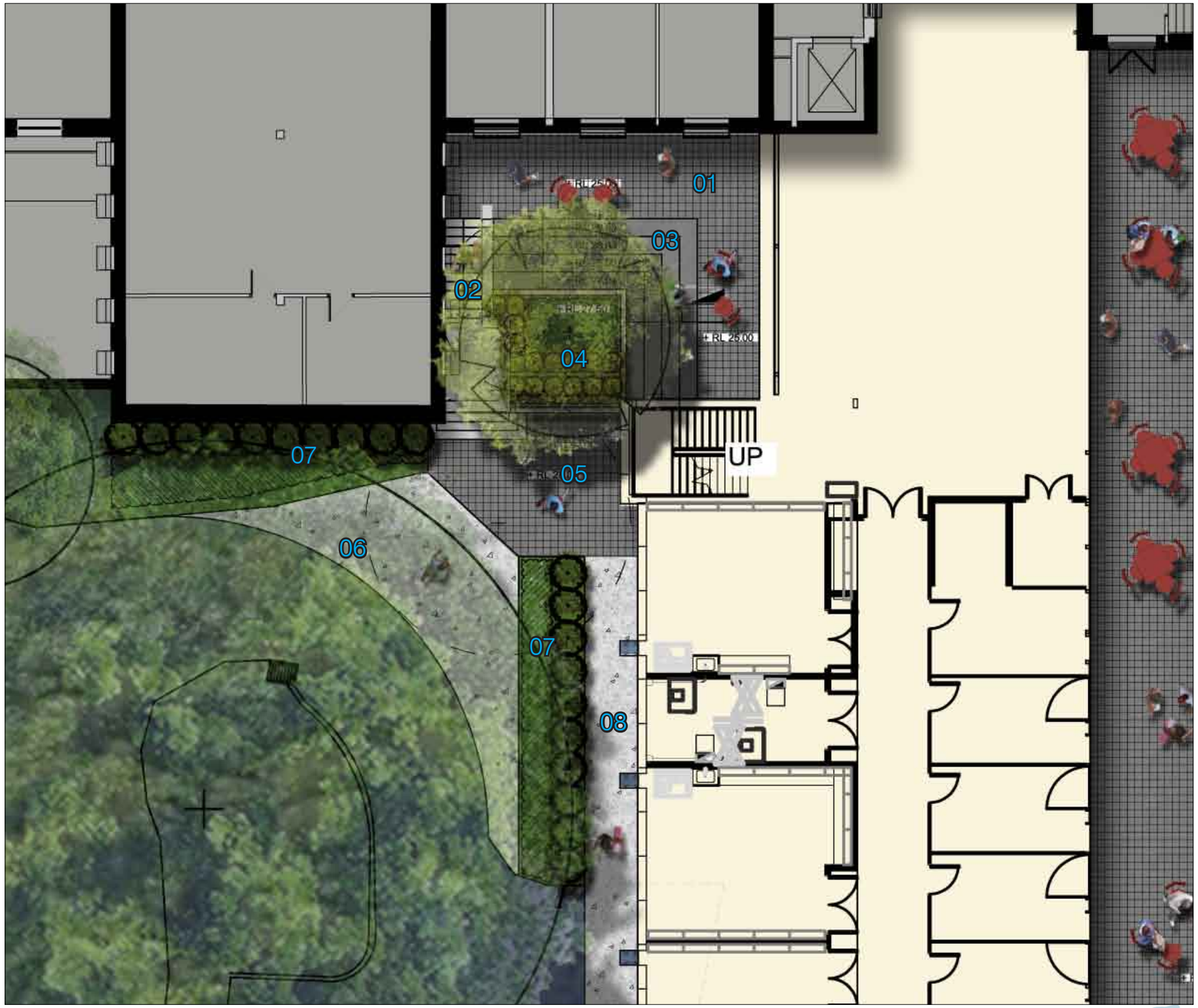
04. A planter at the top of the steps with a small Magnolia / Lilly Pilly tree is proposed to soften the height difference and create shade for users of the courtyard / caf'e breakout space.

05. Small landing providing access from Stairwell within Building. Unit pavers to match main Physics Courtyard.

06. Make good existing road edge / kerb & create a footpath and entry (access of roadway)

07. Subtle planting eithor side of to create an entry point

08. Access path to the edge of the building. Light shafts set in paving to allow light to lower levels of the building. (refer to Architects drawings)



Landscape Detail Plan - Entry Courtyard / Loading Bay

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

3.2 Landscape Design cont:

Eastern Entry Courtyard :
A small entry / address plaza is proposed to this eastern building entry, to have a strong visual correlation with the central courtyard and the entry terrace on level three. The repetition of oval shaped planters in each of these areas will reinforce these as being related spaces, with a unified visual identity. The planters will be detailed to have elegant, refined form and finish, and have massed low plantings of distinctive foliage plants with strongly contrasting scale of leaf, colour and texture - as if microscopic elements enlarged. The paving is to provide a simple textured ground plane - being butt jointed granite setts.

01. 100x100mm unit paving to match the Physics courtyard adjacent

02. Bike stands / parking

03. Bollards to define loading dock area from courtyard

04. Simple oval-shaped seating edge planters are to provide continuality from the Physics courtyard. Locations of the planters are to direct pedestrian traffic to the entrance of the building without imparing pedestrian routes from the parking/loading dock area.

05. Proposed Tree planting:

- option 1: New tree planted in the location where a large Jacaranda tree recently stood

- option 2: Transplant existing *Magnolia ashei*

Landscape Detail Plan - Entry Courtyard & Loading Dock

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

3.3 Landscape Design cont:

Eastern Site Precinct:

This area of the site is to provide suitable curtilage and address to existing and proposed buildings; provide multiple pedestrian links; and provide loading dock access, parking, and allow retention and protection of important heritage trees and walls.

Driveway and pedestrian path entries to this area from Physics Road are restricted by the dimension between the existing buildings, and the existing heritage wall and pergola opposite the entry. Level changes between the buildings, required truck-turning radii , and reasonable accessible pathway dimensions and grades all restrict available options for renewal of the area to suit access requirements. An important cross-site pedestrian route is also to be enhanced., linking St Paul's College and the Level 3 east-west walkway to Physics Road and beyond. Assisting resolution of these factors is the decision to restrict courtyard truck access to the Edward Ford Building, allowing creation of an enlarged pedestrian zone up to and around the Jacaranda tree. This elevated terrace affords a location for a stair and elevated walkway as a practical link that eliminates the need for pedestrians to cross the loading dock, or to go down and then back up - therein exaggerating a vertical link if located at the southern boundary. (cont. over page)

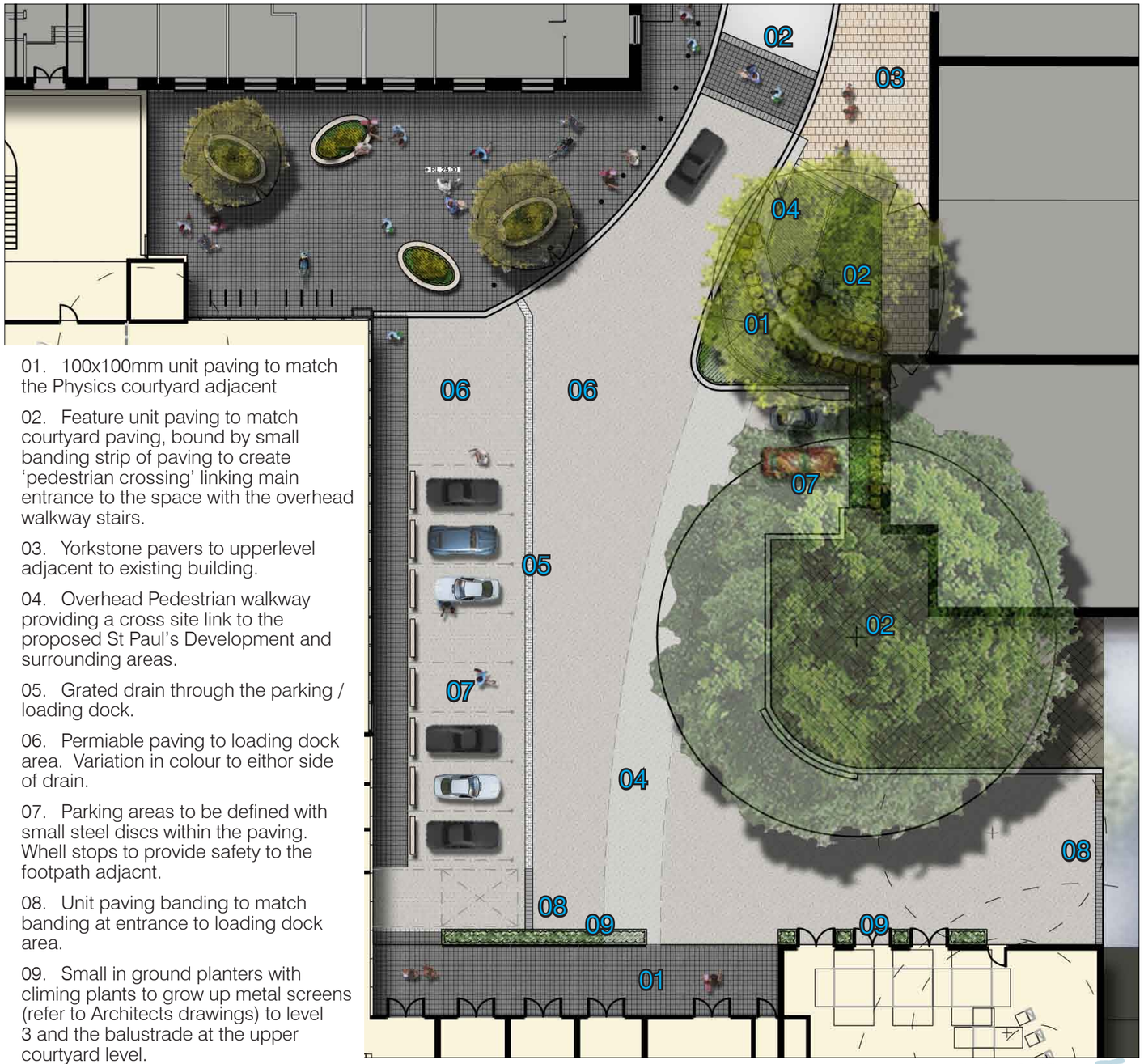
The design proposals are for a broad unified vehicular hardstand across the broad area below the existing Fig tree, with suitable detailing to ensure tree protection. A high quality honed concrete unit-paver similar to 'Eco-Trihex' is proposed, providing a permeable surface whose pattern is not strongly directional, and will junction comfortably with the various angles and edges around the space. This pavement is considered resilient against the Fig tree litter drop, and with a charcoal colour and sandstone fleck will complement the heritage wall and modern building finishes, and limit the visibility of stains from Figs when these fall.

The sloping pedestrian path from Physics Road provides an accessible route to the eastern entry courtyard, whilst also maintaining stairs down to the entry to the eastern end of the Physics Building. Adjustment of planters, stairs and walls is proposed, achieving unified path and road alignment – and permitting a pedestrian crossing logically linking towards the elevated walkway leading south to St Paul's College.

The terrace of expanded pedestrian paving against the Edward Ford Building will provide a widened forecourt, with sandstone paving proposed to compliment the base course of the building and the landscape heritage retaining walls. This wall is proposed to be significantly modified / realigned to the northern side of the tree, with excavation required to create the new roadway alignment down to the hardstand area. A sympathetic symmetrical wall arrangement has been determined with the Heritage consultant, Architect, and Engineer – with the strengthened wall to provide the footing for the stair and suspended walkway rising from it's southern edge around and through the Fig tree canopy. This structure will provide a 'signature' pedestrian link, suitably acknowledging this important route that has existing since the foundation of St Paul's College.

Planting design is to reinforce existing planting and create new planted edges and areas to compliment the new plaza, hardstand pavement and parking areas, and provide screening as required. Tree management and protection has been paramount throughout the design process, with supportive Arborist report confirming that proposals are acceptable, and nominating required detailing, treatment and management of the trees.

Design of drainage, lighting, signage, furniture, fixtures and landscape detailing generally will be resolved in the Design Development phase of the project.



01. 100x100mm unit paving to match the Physics courtyard adjacent

02. Feature unit paving to match courtyard paving, bound by small banding strip of paving to create 'pedestrian crossing' linking main entrance to the space with the overhead walkway stairs.

03. Yorkstone pavers to upperlevel adjacent to existing building.

04. Overhead Pedestrian walkway providing a cross site link to the proposed St Paul's Development and surrounding areas.

05. Grated drain through the parking / loading dock.

06. Permiable paving to loading dock area. Variation in colour to eithor side of drain.

07. Parking areas to be defined with small steel discs within the paving. Whell stops to provide safety to the footpath adjacnt.

08. Unit paving banding to match banding at entrance to loading dock area.

09. Small in ground planters with climing plants to grow up metal screens (refer to Architects drawings) to level 3 and the balustrade at the upper courtyard level.

Landscape Detail Plan - Loading Dock

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

3.4 Landscape Design cont:

Level 3 Entry Terrace & Walkways:

The level three terrace and walkway directly link to the proposed adjoining St Paul's College new buildings, with consideration given to integrating finishes, whilst also creating suitable forecourt identity specific to the AIN Building. As noted, this entry, the eastern building entry, and the central courtyard plaza are all to have similar visual character and finishes. The repetition of paving finish and of oval shaped planters in each of these areas will provide a unified visual identity. Granite setts are proposed as pavement to the building entry and the terrace space overlooking the Fig tree and hardstand area below, and as inlay paving to the first portion of suspended walkway.

The St Paul's pavement is yet to be defined, but is assumed to be sandstone or similar pale colour pavement. The design as shown on the plan shows a linear pattern that threads together the grid of the St Paul's colonnade columns, and a regular pattern to the AIN building façade. The paving pattern is seen to suitably join the two precincts, contrasting new and traditional styles with the contrasting finishes and patterns overlapping to create a pleasant visual rhythm along the length of the east-west link walkway.

Consideration has been given in the design to this space as a transitory space rather than a gathering or seating space – in order to reduce potential for noise generation adjacent to the residential units within St Paul's. The open visual character, with minimal planting, was a conscious decision so as to minimize visual obstruction and assist the safety of users of the space.

Design of drainage, lighting, signage, furniture, fixtures and landscape detailing generally will be resolved in the Design Development phase of the project.

01. Pedestrian walkway providing a cross site link to the proposed St Paul's Development and surrounding areas.

02. Climbing plants from below to grow up Steel Balustrade and screens below (refer to Architects drawings)

03. 100x100mm unit paving to match Physics and Entry courtyards below.

04. Unit paving banding to run along the length of the proposed Nanoscience building to match the pattern set out by the columns of the proposed St Paul's building adjacnt. This is to integrate both developments into a cohesive precinct of new buildings.

05. Simple oval-shaped seating edge planters are to provide continuality from the Physics and entry courtyards below.

06. Proposed St. Paul's development extension.

Landscape Detail Plan - Secondary Entry / boundary treatment to St Paul's Development

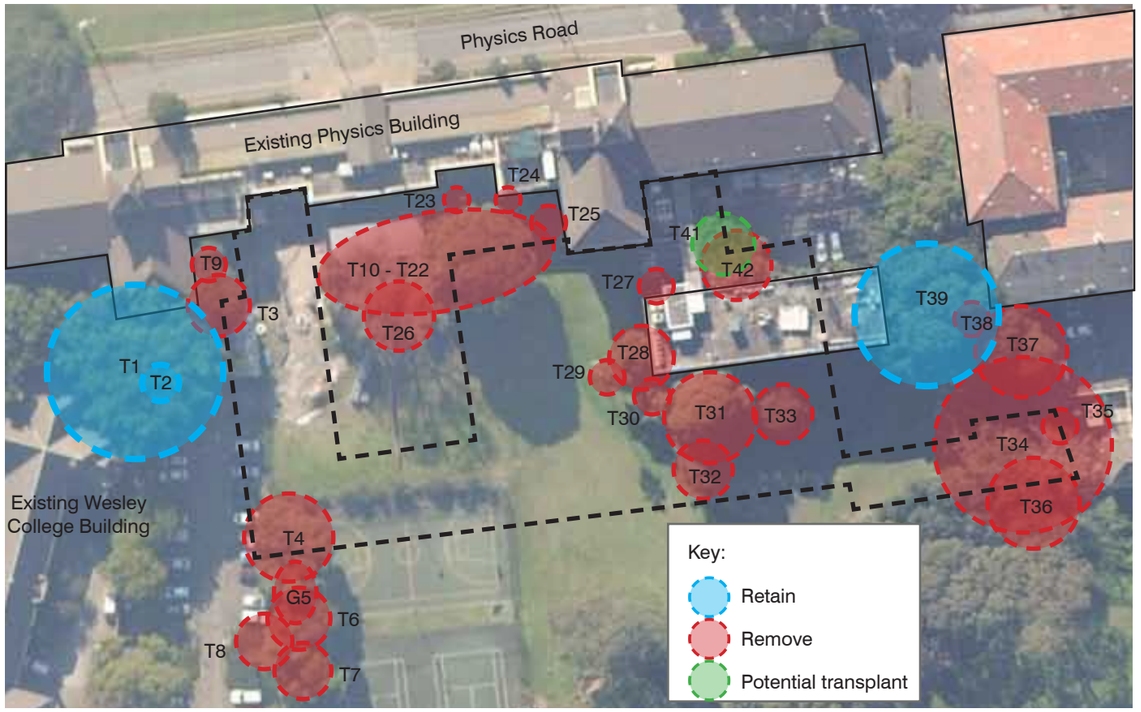
Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

4.0 Existing Trees:

Identify and mark trees and shrubs to be retained using a suitable non-injurious, easily visible and removable means of identification. Protect from damage the trees and shrubs to be retained, including those beyond the site area, both above and below the ground. If a tree becomes damaged during the works or it is proposed to perform work on a tree, give written notice immediately and obtain instructions.

Work near Trees: Keep the area of the drip-line free from construction material and debris. Do not place bulk materials and harmful materials under or near trees. Do not place spoil from excavations against tree trunks. Prevent wind-blown materials such as cement from harming trees and plants. Do not remove topsoil from, or add topsoil to, the area within the drip-line of trees.



EXISTINGTREE SCHEDULE

ID	Botanic Name	Common Name	Status
T1	*Ficus microcarpa* var. Hillii	Hills Weeping Fig	retain
T2	*Livistona australis*	Cabbage Tree Palm	retain
T3	*Celtis sinensis*	Chinese Hackberry	remove
T4	*Lophestemon confertus*	Brush Box	remove
G5	*Lophestemon confertus*	Brush Box	remove
T6 - T8	*Lophestemon confertus*	Brush Box	outside scope
T9	*Pittosporum undulatum*	Sweet Pittosporum	remove
T10	*Melaleuca quinquenervia*	Broad Leaf Paperbark	remove
T11	*Melaleuca quinquenervia*	Broad Leaf Paperbark	remove
T12	*Melaleuca quinquenervia*	Broad Leaf Paperbark	remove
T13	*Melaleuca quinquenervia*	Broad Leaf Paperbark	remove
T14	*Melaleuca quinquenervia*	Broad Leaf Paperbark	remove
T15	*Melaleuca quinquenervia*	Broad Leaf Paperbark	remove
T16	*Callistemon viminalis*	Weeping Bottlebrush	remove
T17	*Callistemon viminalis*	Weeping Bottlebrush	remove
T18	*Callistemon viminalis*	Weeping Bottlebrush	remove
T19	*Callistemon viminalis*	Weeping Bottlebrush	remove
T20	*Callistemon viminalis*	Weeping Bottlebrush	remove
T21	*Lophestemon confertus*	Brush Box	remove
T22	*Lophestemon confertus*	Brush Box	remove
T23	*Stenocarpus sinuatus*	Firewheel Tree	remove
T24	*Stenocarpus sinuatus*	Firewheel Tree	remove
T25	*Prunus persica*	Peach	remove
T26	*Populus nigra*	Black Poplar	remove
T27	*Viburnum tinus*	Laurstinus	remove
T28	*Lophestemon confertus*	Brush Box	remove
T29	*Livistona australis*	Cabbage Tree Palm	remove
T30	*Phoenix roebelenii*	Dwarf Date Palm	remove
T31	*Lophestemon confertus*	Brush Box	remove
T32	*Lophestemon confertus*	Brush Box	remove
T33	*Lophestemon confertus*	Brush Box	remove
T34	*Populus nigra*	Black Poplar	remove
T35	*Celtis sinensis*	Chinese Hackberry	remove
T36	*Celtis sinensis*	Chinese Hackberry	remove
T37	*Lophestemon confertus*	Brush Box	remove
T38	*Celtis sinensis*	Chinese Hackberry	remove
T39	*Ficus macrophylla*	Moreton Bay Fig	retain
T41	*Magnolia* spp	Magnolia	transplant
T42	*Lagerstoemia indica*	Crepe Myrtle	remove


T39 (T38 background)

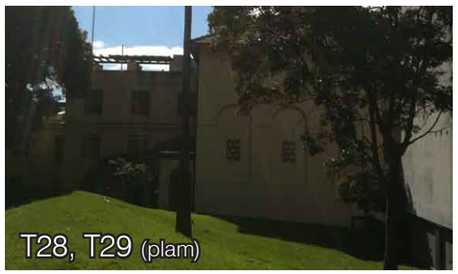

T39


T1


T41, T42


T30 - T32


T10 - T22


T28, T29 (plam)

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

5.0 Landscape Design Analysis:

Tree & Shade analysis:

The open space amenity requirement is that 50% of areas are afforded shade, including from tree canopies and we assume from buildings. There is of course variable sun and shade through the day and year, and therefore this is not a specific calculation that can be made. However, we estimate that over 50% of open space areas across the site will be in shade for the large majority of each day throughout the year.

Tree species will be selected during the design development phase, we note this selection will respond to current visual setting and aim to maintain existing views/glimpses of trees where possible.

Key:

existing tree to remain

proposed tree

Pedestrian Circulation & Amenities:

From user group discussion and from discussion with the University, pedestrian access, movement corridors and links to adjoining sites and path networks has been a prime consideration of the landscape and building design. The amenity of courtyard spaces has been determined through dialogue with user groups and with the Architect, and maximum flexibility for open areas was preferred. For this reason, fixed seating is limited to the western courtyard bleacher seating, with oval shaped planter / seating elements being located in the three primary gathering locations. These are supported by loose furniture in the central courtyard. Bicycle racks are provided adjacent to the building entry in the eastern courtyard area.

Key:

seating edge/raised planters

bike racks

large steps/terraced seating

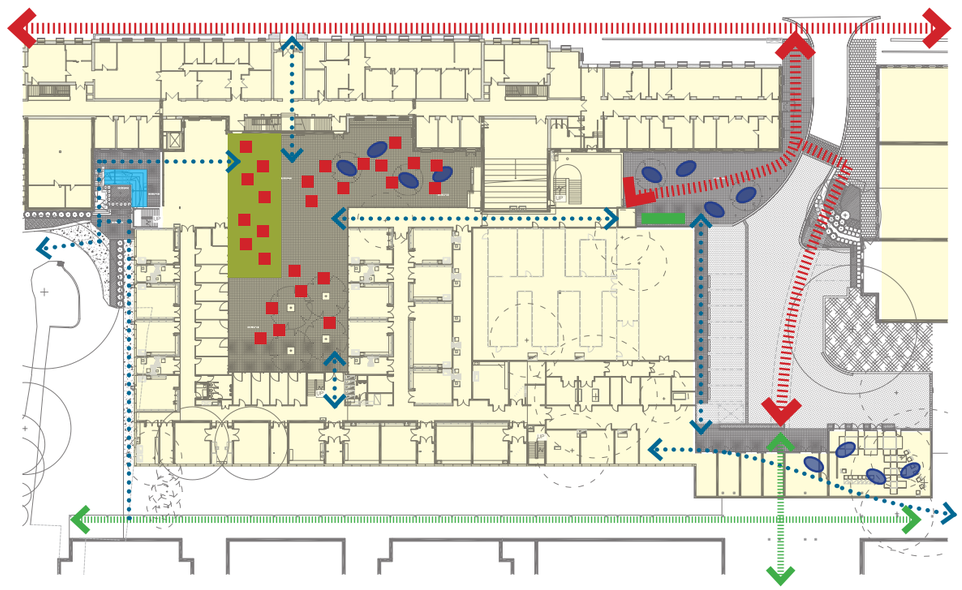
courtyard furniture (indicative location only)

zone for cafe seating

major pedestrian routes

minor pedestrian routes

cross site links



Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

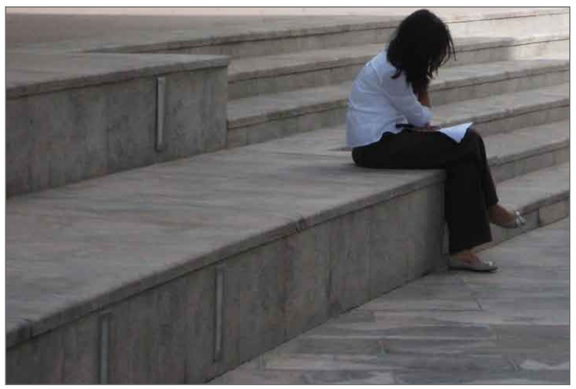
6.0 General conceptual imagery:









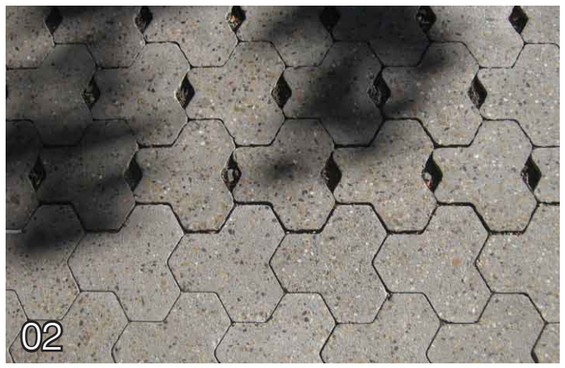



Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

7.0 Landscape Materials:

All materials indicated are subject to design development and are to be used as a guide at this point only.



04. Unit Paving Banding
400x200mm
colour: Charcoal / Dark Grey

05. Grated Drain
Aco Drain: KlassikDrain K100

01. Unit Paving
100 x 100mm
colour: Black Granite

02. Permiable concrete pavers
Ecopave range - Ecotrihex
181mm x 88mm x 80mm thick
colour: Charcoal

03. Unit Paving
400x400mm
colour: Sandstone

06. Courtyard Furniture (indicative only)

07. Bike Stand
Semi Bike Stand - Street Furniture Australia
845W x 850H mm
ø42 Pipe
Galvanised Mild Steel
Stainless Steel. Linished

08. Elliptical Bollard
Street Furniture Australia
200 x 100 x 1000H mm
Body: Cast Aluminium Powder Coated

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

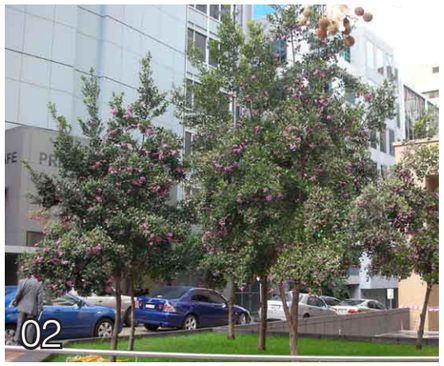
Landscape

8.0 Proposed Softscape:

All plant selections indicated are subject to design development and are to be used as a guide at this point only. Specific Plant labelling will also be carried out during Design Development stages.

INDICATIVE PLANT SCHEDULE

Symbol	Botanic Name	Common Name	Native	Height (m)	Spread (m)	Pot Size	Spacing
PALMS							
La	*Livistona australis*	Cabbage Tree Palm	✓	to 20m	2	75L	as shown
TREES							
Ap	*Acer palmatum*	Japanese Maple		4	2	75L	as shown
As	*Acmena smithii*	Lilly Pilly	✓	12	6	75L	as shown
Ca	*Cupaniopsis anacardioides*	Tuckaroo	✓	10	5	75L	as shown
Ee	*Elaeocarpus eumundi*	Eumundi quandong	✓	15	8	75L	as shown
Mg	*Magnolia grandiflora* 'Exmouth'	Little magnolia		10	3	75L	as shown
Tl	*Tristaniopsis laurina*	Water Gum	✓	10	8	75L	as shown
Wf	*Waterhousia floribunda*	Weeping lilly pilly	✓	10	6	75L	as shown
SHRUBS AND ACCENTS							
AA	*Acmena* 'Allyn Magic'	Dwarf Lilly Pilly	✓	0.5	0.5	150mm	as shown
Aat	*Agave attenuata*	Fox Tail Agave		1	0.8	300mm	as shown
As	*Azalia* sp.	Azalia		varies	varies	300mm	as shown
CLL	*Callistemon* 'Little John'	Bottlebrush	✓	1	1	300mm	as shown
CRS	*Cordyline* 'Red Sensation'	Red Cordyline	✓	2.5	1	300mm	as shown
De	*Doryanthes excelsa*	Gymea Lily	✓	1	1	300mm	as shown
Hi	*Hebe inspiration*	Purple Inspiration		3	2	300mm	as shown
Mc	*Muehlenbeckia complexa*	Wire Vine		1.5	spreading	300mm	as shown
Sr	*Strelitzia reginae*	Bird-of-Paradise		1.5	1.5	300mm	as shown
St	*Syzygium 'Path Finder'*	Dwarf Lilly Pilly	✓	1	1	300mm	as shown
Tp	*Tradescantia pallida*	Purple Heart		0.4	0.4	150mm	as shown
GROUNDCOVERS AND GRASSES							
Ao	*Agapanthus orientalis*	Agapanthus		1	1.5	300mm	3/m2
Ar	*Ajuga reptans*	Ajuga		50-80mm	spreading	150mm	5/m2
Ae	*Aspidistra elatior*	Cast Iron Plant		0.6	1	150mm	5/m2
DcB	*Dianella caerulea* 'Breeze'	Breeze Flax Lily	✓	0.6	0.4	150mm	5/m2
Dr	*Dianella revoluta* 'Little Rev'	Little Rev Flax Lily	✓	0.3	0.3	150mm	5/m2
Lcw	*Lomandra longifolia* 'Tanika'	Matt Rush Grass	✓	0.7	0.6	150mm	5/m2
Lm	*Liriope muscari*	Lily Turf		0.5	0.5	150mm	5/m2
Oj	*Ophiopogon japonicus*	Mondo Grass		0.2	0.2	150mm	5/m2
Pl	*Poa labillardieri*	Tussock Grass	✓	0.8	0.5	150mm	5/m2
SC	*Spathiphyllum* 'Clevelandii'	Madonna Lily		0.5	0.4	150mm	5/m2
Tv	*Thymus sp*	Thyme		0.3	spreading	150mm	5/m2
CLIMBERS							
PtV	*Parthenocissus tricuspidata* 'Veitchii'	Boston Ivy		15m	spreading	150mm	5/m2
Tj	*Trachelospermum jasminoides*	Star Jasmine		0.6	spreading	150mm	5/m2
Vv	*Vitis vinifera*	Ornamental Grape		7m	spreading	150mm	5/m2



01. *Magnolia grandiflora* 'Little Gem'
Little Magnolia

02. *Acmena smithii*
Lilly Pilly

03. *Acer palmatum*
Japanese Maple

04. *Cupaniopsis anacardioides*
Tuckaroo

05. *Tristaniopsis laurina*
Weeping Lilly Pilly

Landscape

8.0 Softscape cont:

06. *Agapanthus orientalis* 'Dwarf White'
Agapanthus

07. *Liriope muscari*
Lily Turf

08. *Trachelospermum jasminoides*
Star Jasmine

09. *Vitis vinifera*
Ornamental Grape

14. *Dianella revoluta* 'Little Rev'
Little Rev Flax Lily

15. *Thymus sp*
Thyme

16. *Ajuga Reptans*
Ajuga

10. *Doryanthes excelsa*
Gymea Lily

11. *Spathiphyllum* 'Clevelandii'
Madonna Lily

12. *Cordyline* 'Red Sensation'
Red Cordyline

13. *Agave attenuata*
Fox Tail Agave

Landscape

9.0 Landscape Materials & Installation:

9.1 Generally

All materials are to be installed new or recycled so that they are the best quality and fit for purpose. The whole of the landscape works is to be carried out by a competent Contractor who is experienced in horticultural practice, landscape construction, and planting techniques. All work shall be faithfully carried out in the most tradesmanlike and substantial manner in accordance with accepted superior trade standards and applicable Australian Standards.

Finishes to the walls and pavements are to remain in keeping with the quality and appearance of the built elements. Pavement finishes are to be of a type that has adequate slip resistance and does not present an uneven surface to avoid trip hazards. Landscape lighting will provide security lux levels and will accent feature elements (seating walls, water features and advanced tree planting) as well as providing an ambient light source to illuminate garden areas while avoiding light “washing” into private spaces.

9.2 Planting Strategy

The proposed plant material will be substantially selected from Council and relevant authorities approved plant species lists, and for hardiness, ease of maintenance and proven ability to tolerate site conditions. Of importance are the foliage characteristics and floral displays to create garden character. Regular planting of similar species allows for ease of maintenance with regard to fertilising, pruning and pest treatment. Defined edges to all planting beds will allow for ease of trimming of groundcovers. Indigenous planting will be selected for its ability to attract native bird life. Exotic plants will be incorporated to civic spaces and courtyard areas where suitable to provide variety and consistency with the character of the locality.

9.3 Garden Detailing

Gardens are to be mulched with a pine bark or decorative gravel products. Areas of lawn and gardens are to be defined by raised concrete edges, capped with a high quality paver.

Imported and improved site soils shall be tested to ensure a low Phosphorus content and are suitable in other aspects for the growth and development of Australian native plants. On slab garden beds will be have a specially blended light weight and free draining soil mix with sand bed drainage layer to establish minimum soil depths of 450 mm depth for grass areas, 600 mm depth for shrub planting and between 800 and 1200 mm depth for tree planting, with soil volume to be carefully considered to be appropriate for tree species and to create a suitable mature size.

The detailing of the on slab planters incorporates the following components:

- a free draining soil mix specially blended for planter box use
- a washed sand drainage layer placed beneath the soil mix
- a drainage cell product with filter fabric to establish a drainage void above the slab falls in slabs to
- drainage outlets inspection pipes over drainage outlets

All on slab planters will be made accessible for maintenance. Where safety issues exist for working in areas above ground anchor points and the like will be provided for safety harnesses. 10.4 Hardscape Materials

Paving materials are generally indicated on the plans and will be developed to be integral with the detailed Architectural proposals. Public plaza and footpath areas are to be paved to meet Council’s paving standards and details. A full range of integrated street and garden furniture and other fixtures will also be provided to meet Council and relevant Authority codes and requirements.

9.4 Landscape Irrigation

The use of irrigation system will aid the successful establishment and long-term development of the landscape. Utilisation of harvested and recycled water will be achieved in consultation with the Hydraulic Engineer and project team to meet the principles of WSUD.

9.5 Establishment and Maintenance

The design of all areas to be subsequently passed to Council ownership / management are to be prepared in consultation with Council so that the design and detailing meets their requirements in terms of sustainable maintenance, vandal resistance and design to assist minimizing graffiti. The installation of the works shall be subject to a 52 weeks defects liability period. The landscape contractor shall be required to undertake regular maintenance inspections and works during this period and replace any failed plants / finishes / equipment as determined to be defective. As a part of the Construction Documentation the landscape specification shall describe a full Maintenance Schedule. Regular inspections and reporting by the Landscape Architect on behalf of the developer will occur during this period.

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

Landscape

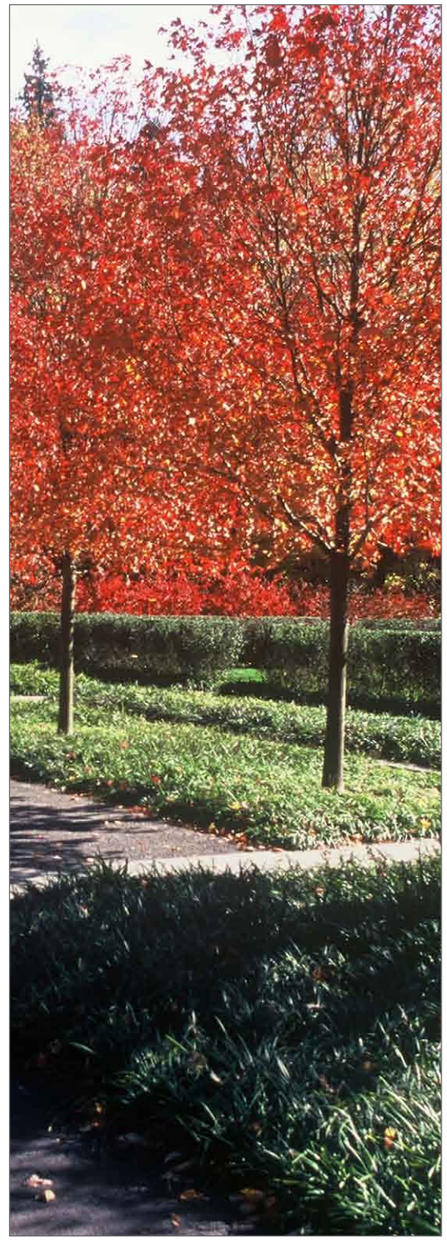
10.0 Conclusion:

The landscape proposals for the Australian Institute of Nanoscience (AIN) building development, University of Sydney, provide the comprehensive framework for an appropriate setting and treatment to the proposed buildings and courtyards and civic spaces. The AIN proposals have suitably considered relevant University policies and requirements; and have been coordinated with the project team including Architectural, Civil, Hydrology, ESD / Environmental, Engineering, Accessibility, Heritage and input from the Client.

The preparation of landscape design proposals for AIN project will stive for simplicity and elegance while ensuring sustainability principles and initiatives are incorporated into the design (ie heritage landscape, tree protection, materials, and paving permeability). The central courtyard is the focal point with a central activity and circulation space for pedestrians, with clear and legible walking routes consistent with the broader University way-finding and pedestrian pathway network and strategies.

The following have been considered throughout the design process and will continue to be drivers of further detailed design; accessibility, comfort (sun / shade / wind), seating provision, safety and 'Crime Prevention through Environmental Design' principles, security and access, passive and active surveillance of spaces, hazard and risk consideration generally in the open space and the like.

We believe the proposals and documents are suitable for consideration and approval by the Department.



Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600