

## Environmental Impacts to level 5 Sky Terrace

**TERRACE**

RETRACTABLE SHADE ARBOUR OVER OUTDOOR DAY SPA AREA. REFER FJMT DRAWINGS.

TIMBER BATTEN SCREENING + BAMBOO PLANTING GIVING PRIVACY TO DAY SPA FACILITY.

TREE MOUNDS WITH SCREENING TREES (CUPANIOPSIS ANACARDIODES)

SCREEN PLANTING TO GIVE PRIVACY TO ADJACENT APARTMENTS.

LINE OF ROOF OVER

VOID TO LEVEL 3

+ RL 29.80

LINE OF ROOF OVER

SKYLIGHT TO LEVEL 3

SEATING PODS FRAMED BY SMALL TREES + SHRUBS.

WARM GREY GRANITE PAVING (LARGE FORMAT)

LEVEL 4 MUEF ACCESS

+ RL 29.80

F&B

BOH

LINE OF ROOF OVER

ENCLOSED SKYLIGHT TO LEVEL 3 BELOW

BOSQUE OF TREES (OLIVES WITH ROSEMARY AND DICHONDRA 'SILVER FALLS')

LIFT 54

BRIDGE OVER

EVENT TERRACE

POOL DECK OVER

+ RL 29.80

RESTAURANT

BALUSTRADE

LOW PLANTER WITH LOW SHRUBS + GROUND COVERS

USED PLANTER WITH CASCADING GROUND COVERS + SUCCULENTS

LINE OF ROOF OVER

WARM GREY GRANITE PAVING (LARGE FORMAT)

RAISED PLANTER WITH MAGNOLIA TREES

+ RL 29.80

FEATURE TREES, OLEA EUROPEA

RESTAURANT

POOL DECK OVER

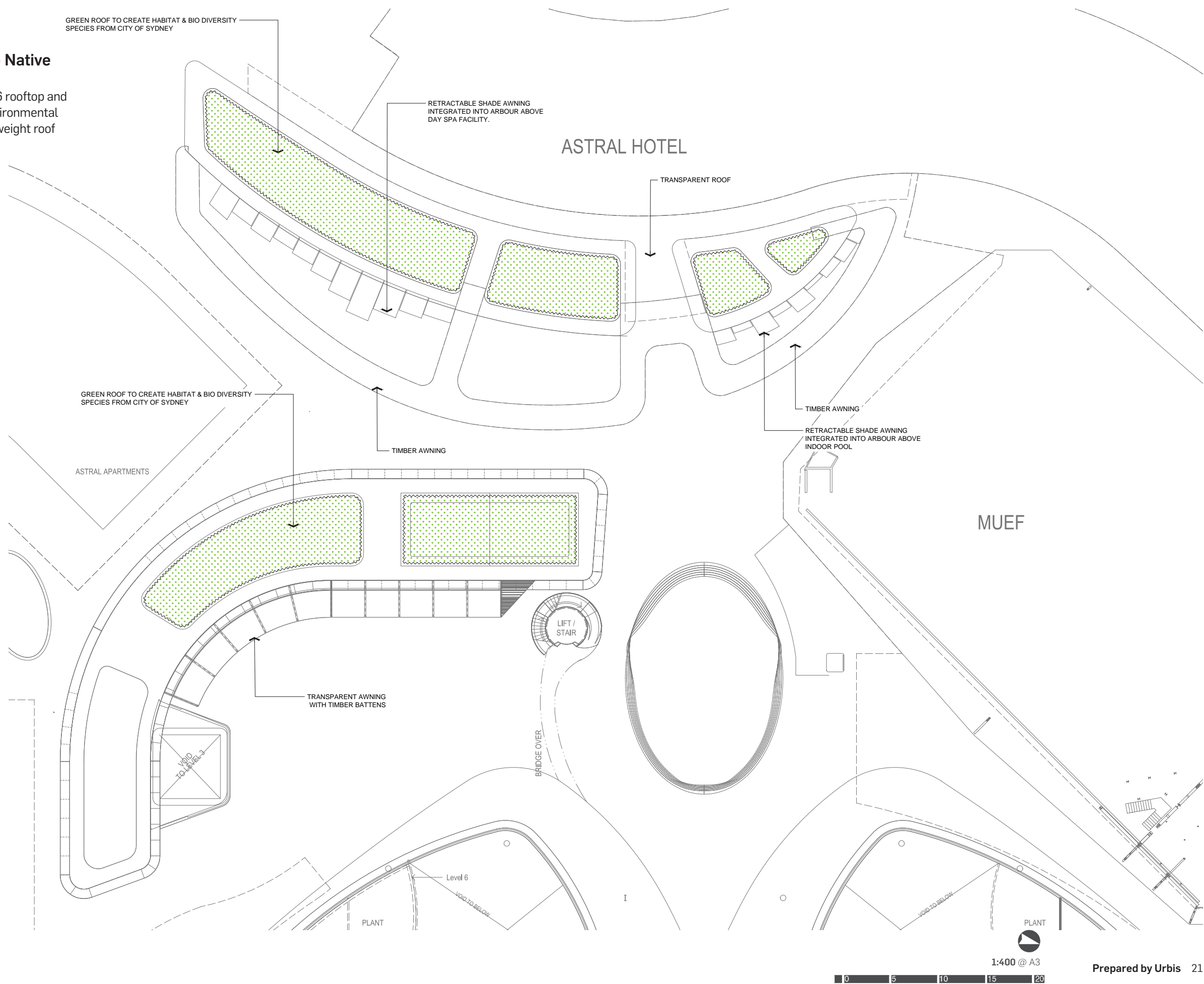
POOL DECK OVER

POOL DECK OVER

# LEVEL 6 - NATIVE GREEN ROOF

## Environmental Impacts to Level 6 Native Grass Roof

Currently there is no existing approved level 6 rooftop and this landscape works will be an improved environmental outcome by providing a softening to the lightweight roof structure.

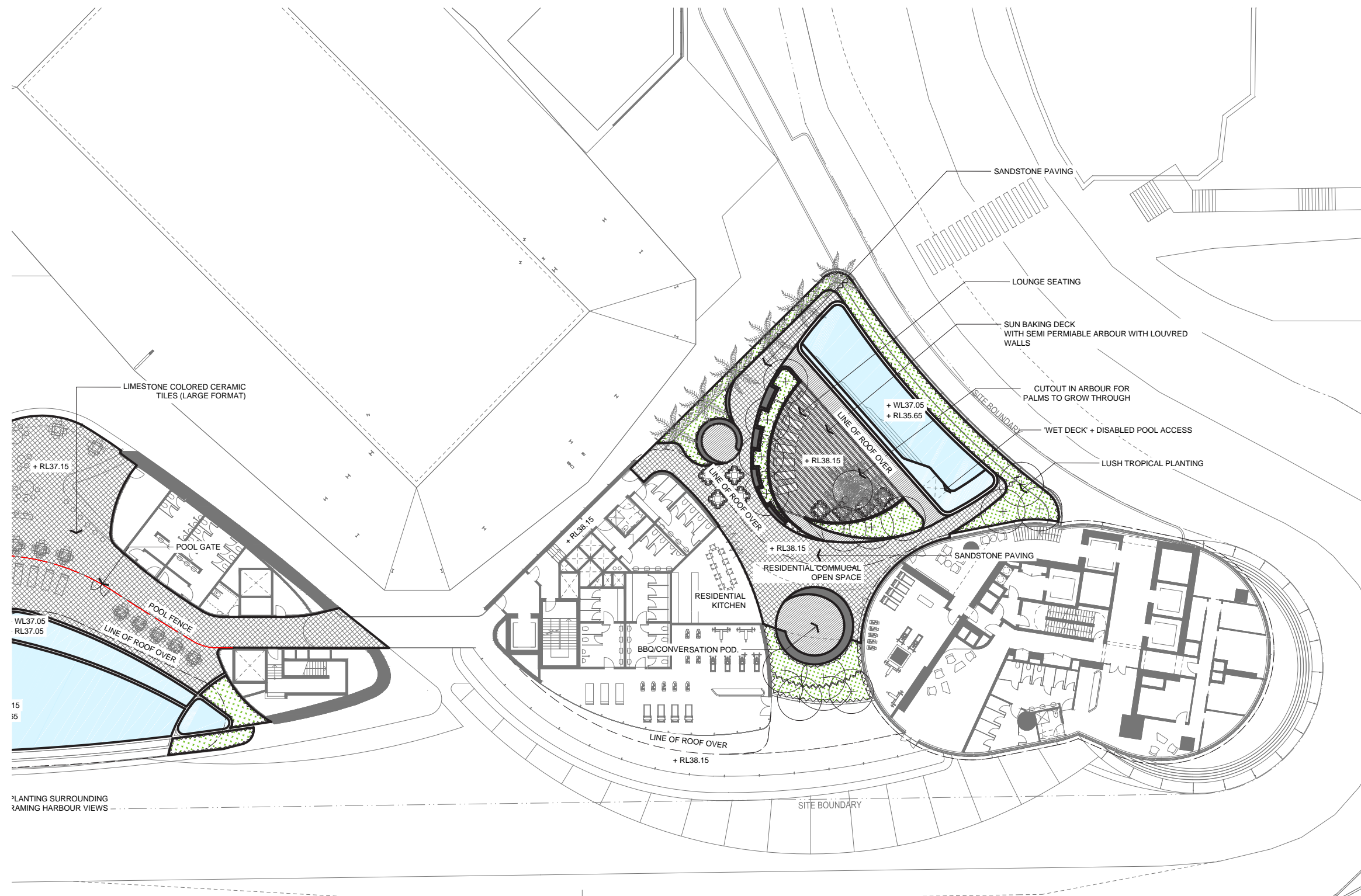




## LEVEL 7 - RESIDENTIAL POOL + GARDENS

## Environmental Impacts to Level 7 Residential Pool + Gardens

Currently there is no existing or approved landscape in this space. The residential pool and gardens provides a functional use of space with pool, sun baking deck BBQ pods and a shared kitchen space for residents of the proposed tower. The space framed by lush planting areas including 9 x palms 13 x small canopy trees. The landscape environmental impact of this space will be minimal in comparison to the existing space.



# LEVEL 8 - NATIVE GREEN ROOF

## Environmental Impacts to Level 8 Native Grass Roof

Currently there is no approved level 8 rooftop. The native grass roof species will soften the space visually from above as well as the general benefits of a green roof. These landscape works will be an improved environmental outcome.



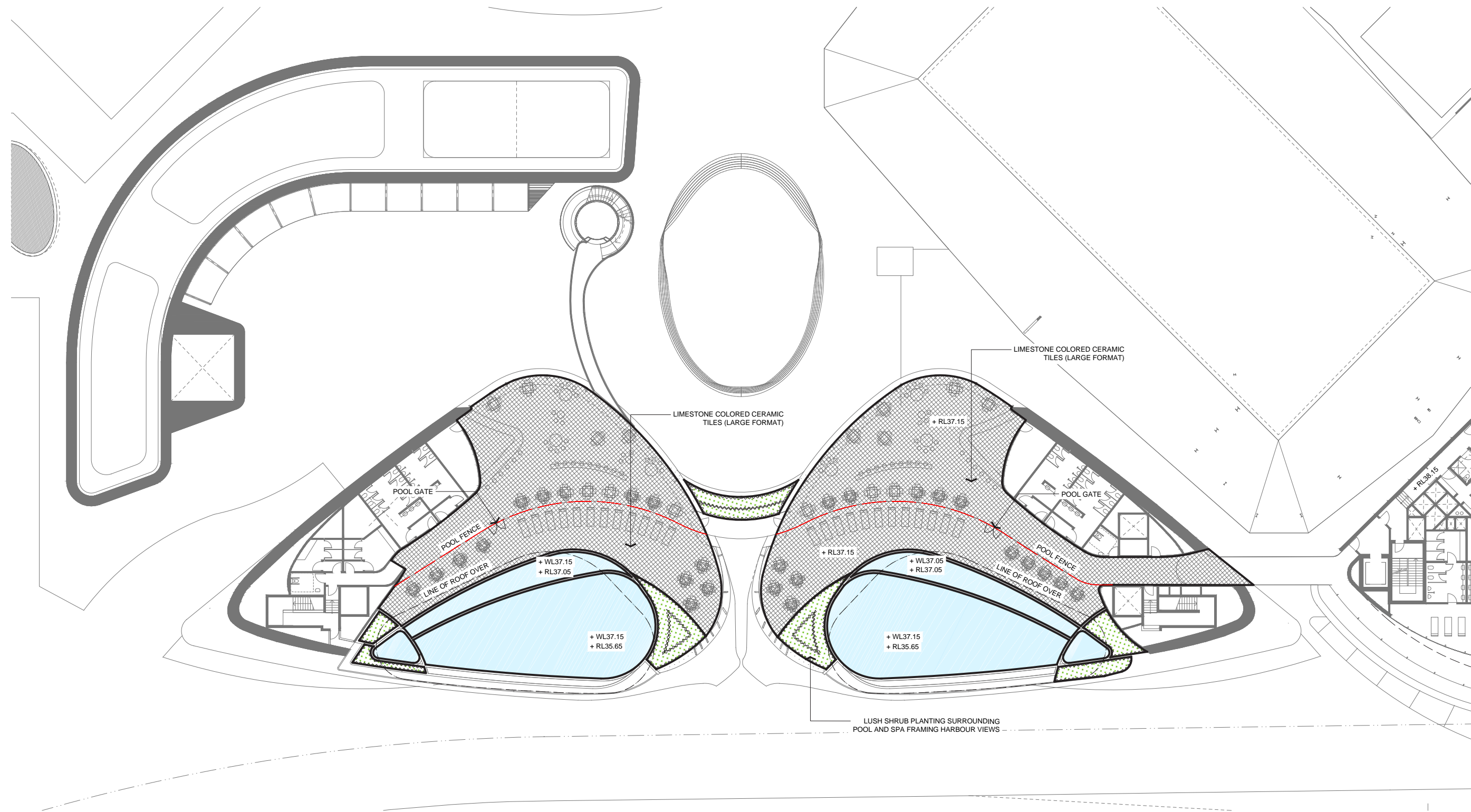
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0 5 10 15 20

# LEVEL 7 - RIBBON

## Environmental Impacts to level 7 Ribbon

As this is a new addition to the site the landscape impacts are minimal. The 2 new pools surrounded by beds of lush planting allow for a diverse use of space which frames views of Darling Harbour.

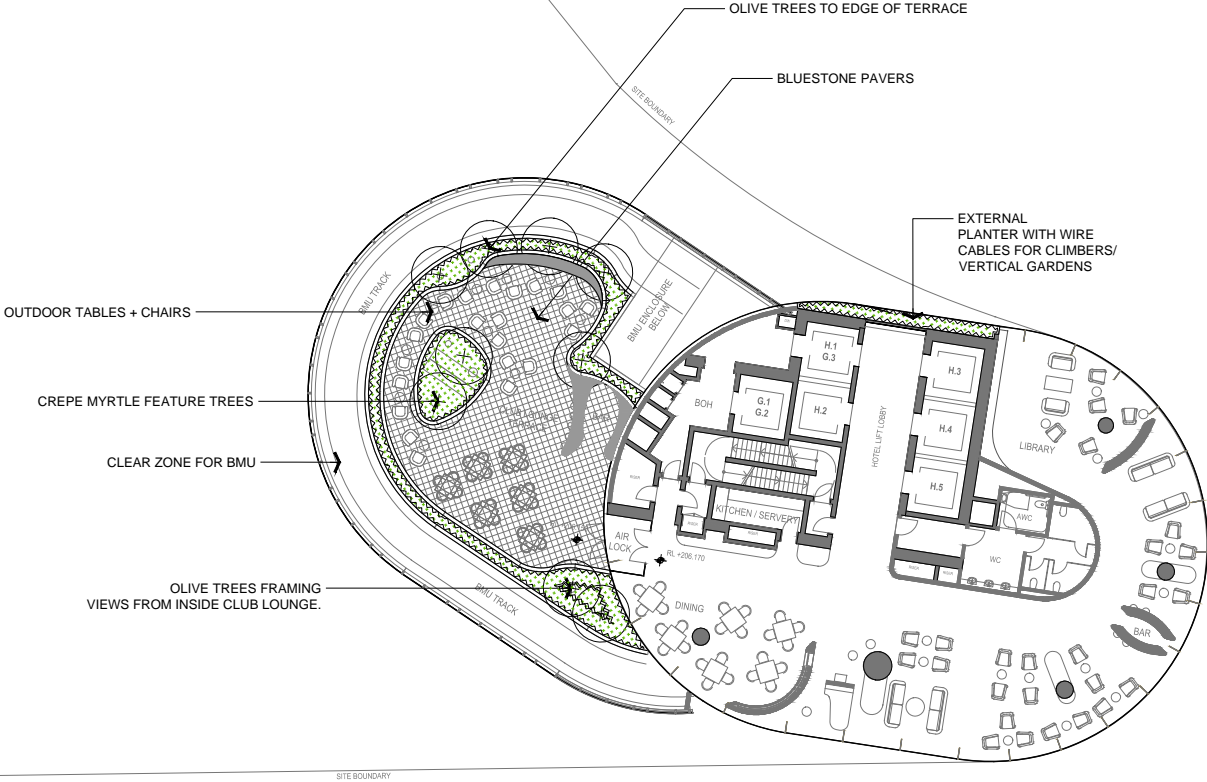




# ROOF TOP - CLUB LOUNGE

## Environmental Impacts to Club Lounge

Currently there is no approved rooftop space, the rooftop will have minimal impacts environmentally. It provides users with a passive space to dine and take in elevated views over Darling Harbour. 9 x small trees in raised planter beds will soften the space visually and provide shade to the outdoor areas.



1:400 @ A3

0 5 10 15 20

# GREEN SPINE - TYPICAL FLOOR PLAN

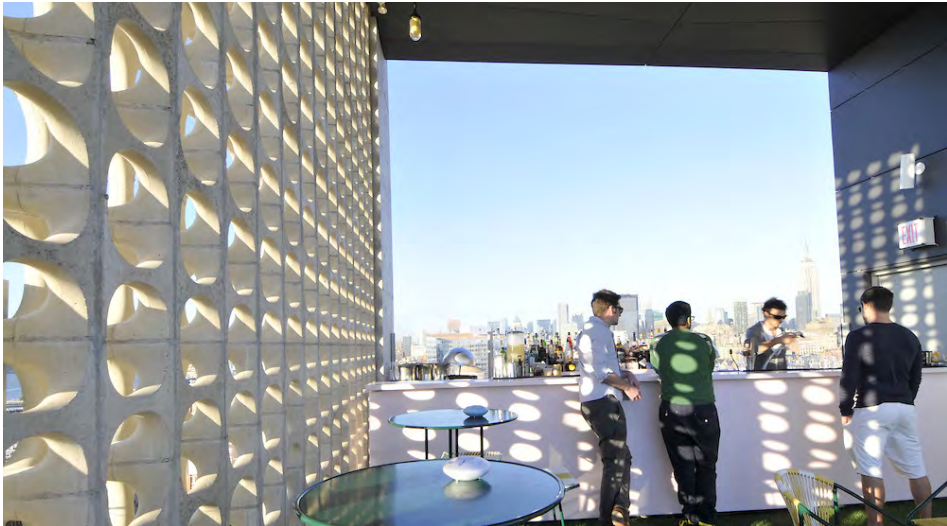
## Environmental Impacts to Green Spine

The green spine is a series of vertical gardens that extends from level 21 to 59 of the proposed tower. The gardens will consist of climbing species that will grow up tensile wires to create a 'spine' effect on the side of the tower. The benefits of this treatment allows natural insulation to the tower and a decreased carbon footprint. The environmental impacts of this are minimal.



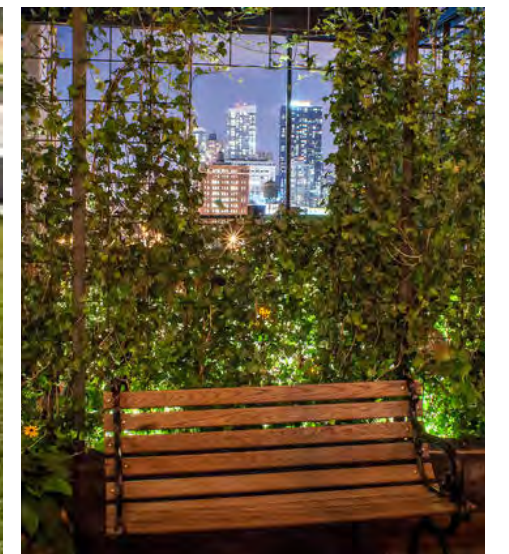
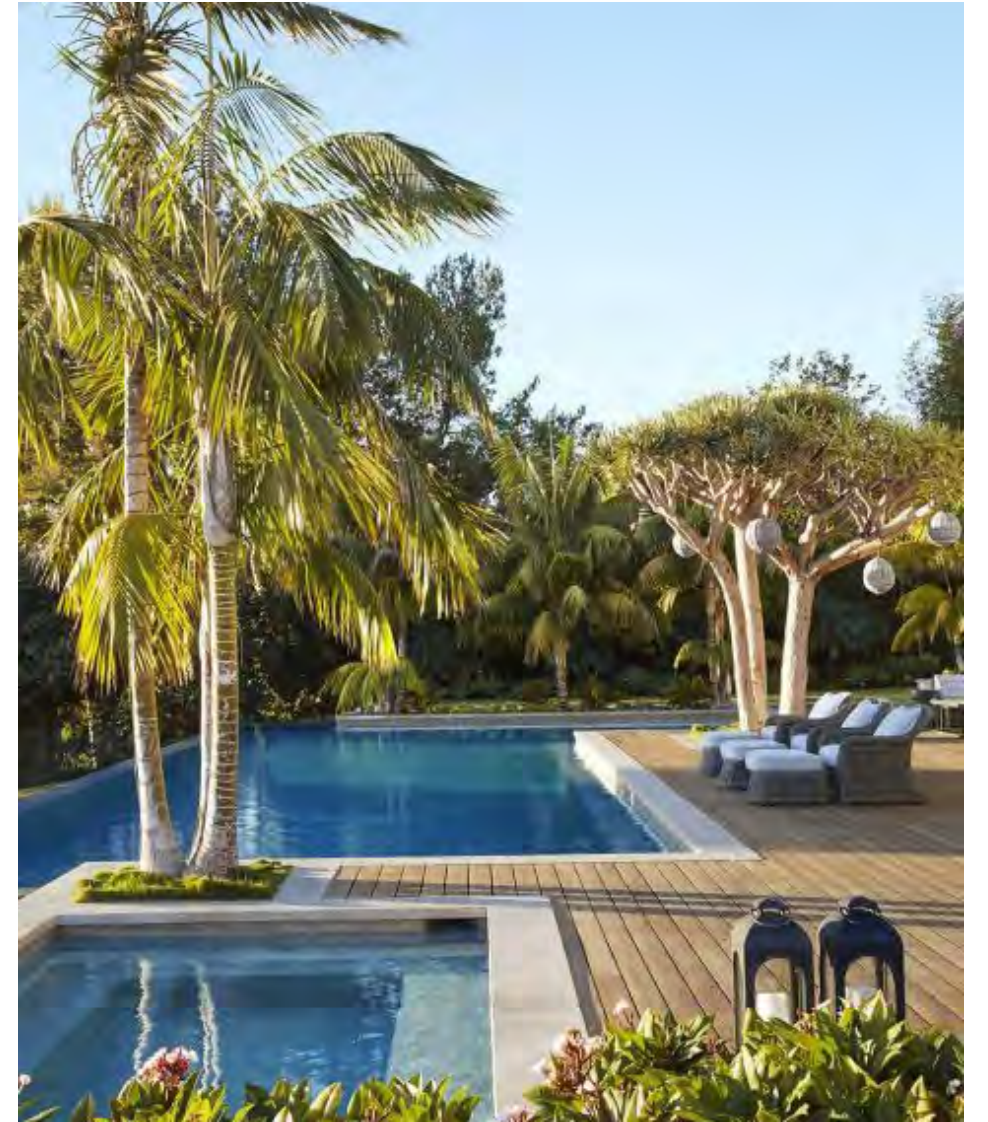
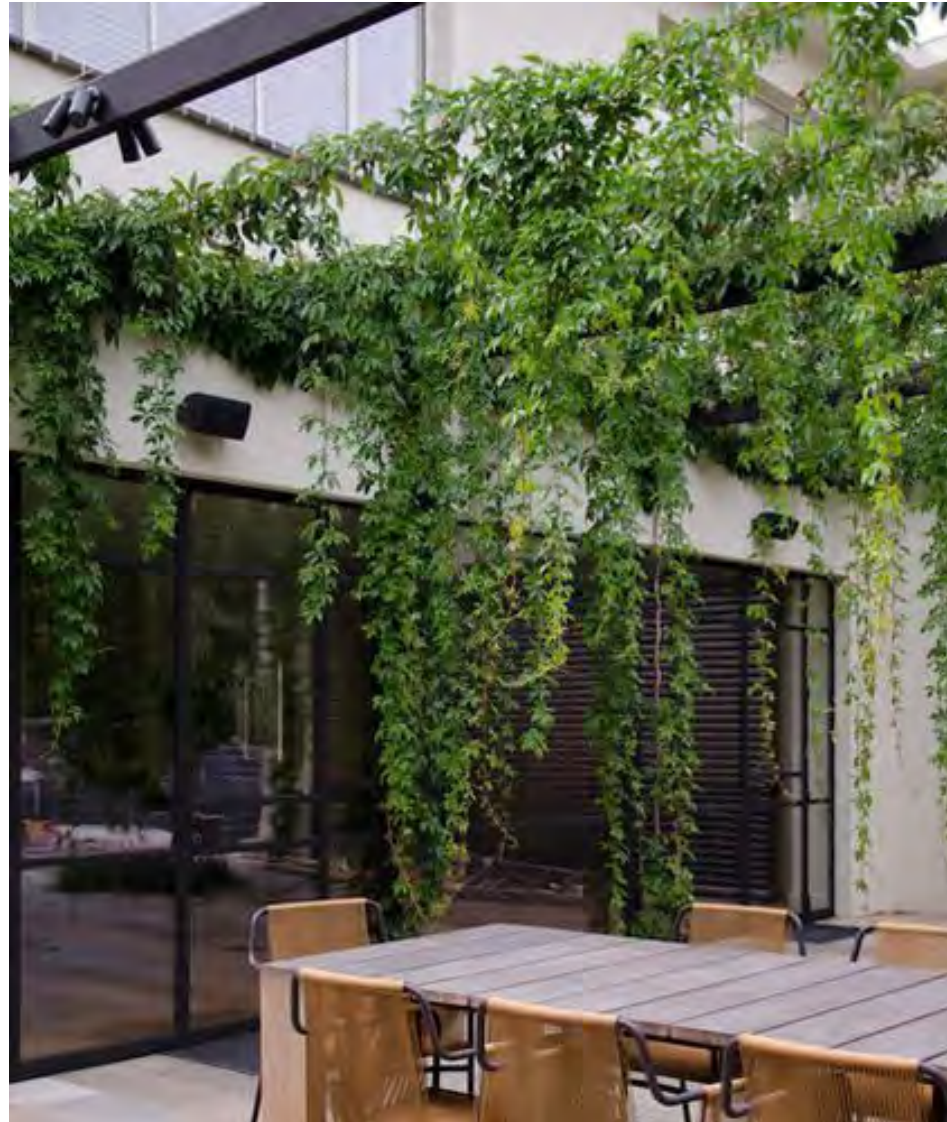


PRECEDENT IMAGES





# PRECEDENT IMAGES



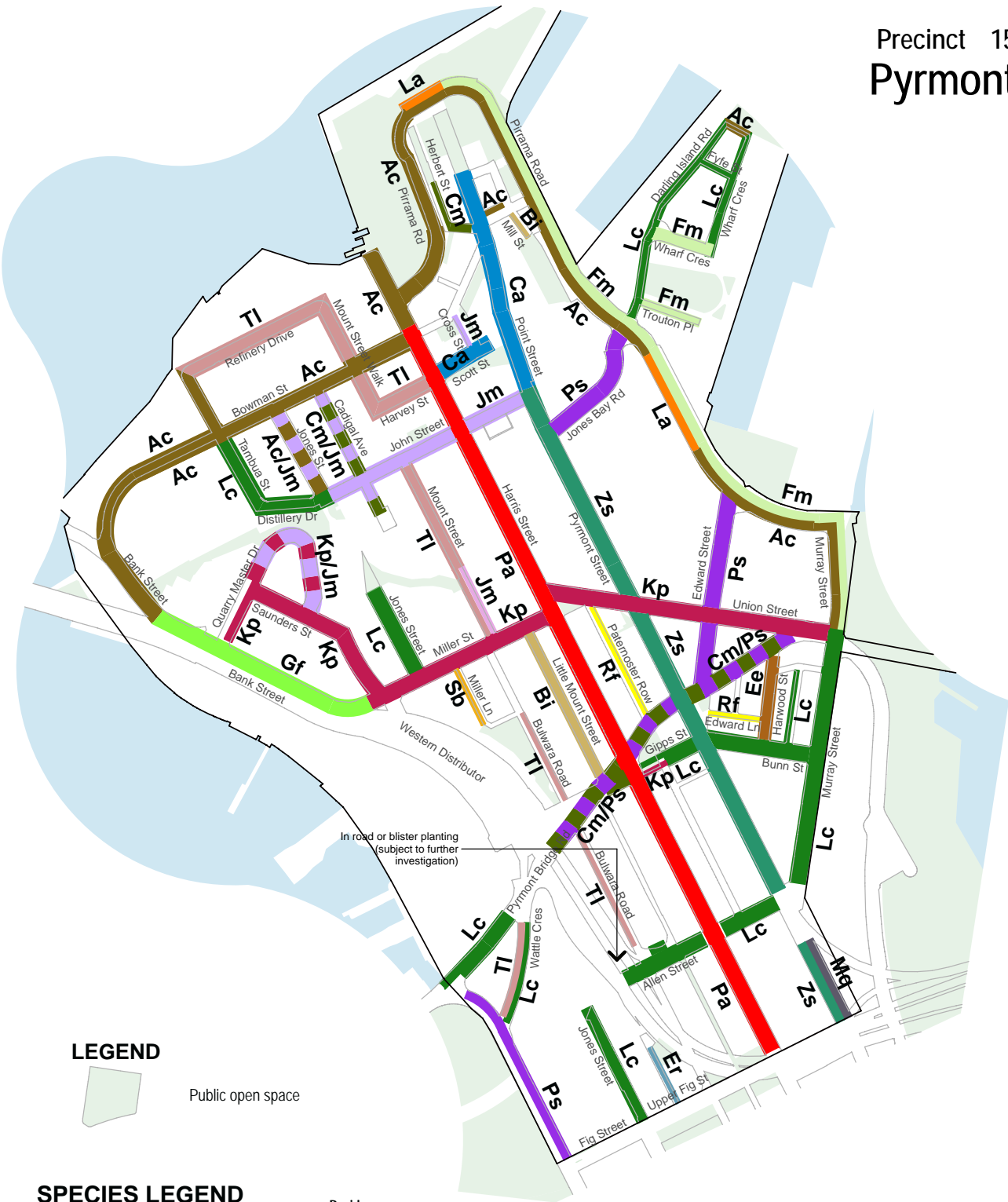


# INDICATIVE PLANTING STRATEGY

- Plant species have been carefully chosen to form a rich pallet of size, form, colour and texture. The planting design compliments the architecture and the natural landscape. Planting will be design to define spaces; direct site lines; provide privacy and screening; shade during summer and light during the winter; and without compromise beautiful and interesting garden spaces.
- Street trees species have been chose based on CoS tree strategy.

Public Domain		
Street Trees	Common Name	Mature Height x Spread (m)
Angophora costata	Smooth Barked Apple	20 x 12m
Livistona australis	Cabbage Tree palm	8-10 x 3m
Private Gardens		
Trees	Common Name	Mature Height x Spread (m)
Cupaniopsis anacardiodes	Tuckeroo	8 x 5
Howea forsteriana	Kentia Palm	10 x 6
Olea europaea	Olive Tree	6 x 3
Plumeria species	Frangipani	8 x 5
Pyrus callyrana	Ornamental Pear	11 x 4
Ulmus parvidolia	Chinese elm	10 x 11
Magnolia grandiflora 'Little Gem'	Evergreen Magnolia	6 x 4
Washingtonia robusta	Washington palm	10 x 4
Shrubs		
Agave attenuata	Agave	2 x 1
Alocasia macrorrhizos	Elephants Ear	1.5 x 1.5
Doryanthes excelsa	Gynea lily	2 x 1.5
Hymenocallis littoralis	Spider lily	0.7 x 0.7
Muraya paniculata	Mock Orange	3x 1
Monstera deliciosa	Swiss Cheese Plant	3 x 3
Philodendron Xanadu	Xanadu	1 x 1
Phormium tenax	New Zealand Flax	1.5 x 1
Strelizia juncea	Bird of Paradise	6 x 3.5
Grasses + Groundcovers		
Agapanthus africanus	African Lily	0.6 x 0.6
Aspidistra elatior	Cast Iron Plant	0.4 x 0.6
Casurina 'cousin it'	Cousin it	0.3 x 1
Dianella longifolia	Blueberry Lily	1 x 0.5
Dichondra argenta	Silver falls	Ground cover
Dietes grandiflora	Pale Flax Lily	1.5 x 1
Pandorea jasminoides	Bower of beauty	Climber
Sedum species	Stonecrop	Ground Cover
Trachelospermum jasminoides	Chinese Star Jasmine	Ground Cover/climber
Corpobrotus rossii	Pig Face	Ground Cover
Zoyzia sp	No-mow grass	Ground Cover

Precinct 15  
Pymont

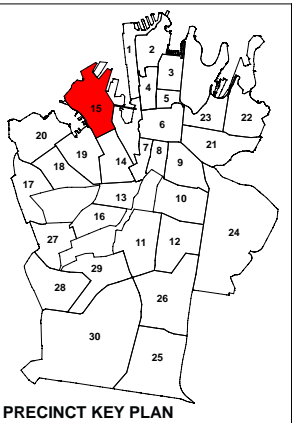


## LEGEND

Public open space

## SPECIES LEGEND

Evergreen		Deciduous	
Ac	Angophora costata (Smooth-barked Apple)	Ca	Celtis australis (Southern Hackberry)
Bi	Banksia integrifolia (Coast Banksia)	Jm	Jacaranda mimosifolia (Jacaranda)
Cm	Corymbia maculata (Spotted Gum)	Kp	Koelreutaria paniculata (Golden Rain Tree)
Ee	Elaeocarpus eumundi (Eumundi Quondong)	Pa	Platanus acerifolia (London Plane)
Er	Elaeocarpus reticulatus (Blueberry Ash)	Ps	Populus simonii (Simons Poplar)
Fm	Ficus microcarpa var. hillii (Hill's Weeping Fig)	Pc	Pyrus calleryana 'Chanticleer' (Callery Pear)
Gf	Glochidion ferdinandi (Cheese Tree)	Rf	Robinia pseudoacacia 'Frisia' (Golden Robinia)
Lc	Lophostemon confertus (Brush Box)	Sb	Sapium sebiferum (Chinese Tallow Tree)
Mq	Melaleuca quinquenervia (Broad-Leaf Paperbark)	Zs	Zelkova serrata 'Green Vase' (Japanese Zelkova)
TI	Tristanopsis laurina (Water Gum)	Palms	
		La	Livistona australis / Washingtonia robusta (Cabbage Tree Palm/ Mexican Fan Palm)





# INDICATIVE PLANTING PALETTE

## TREES



## SHRUBS + GRASSES + GROUND COVERS





# MATERIALS STRATEGY

All paving materials and street furniture would be subject to relevant Australian Standards and comply with Council's guidelines.

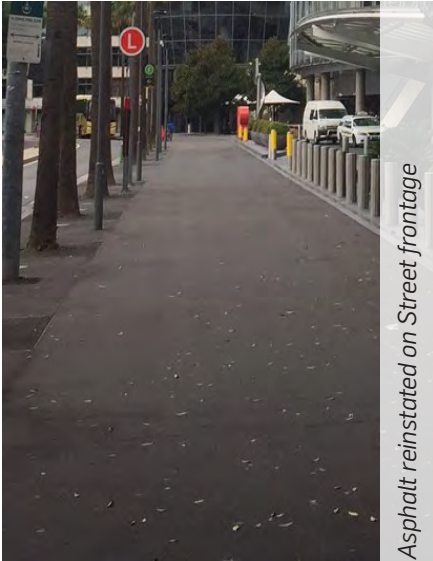
Paving will consist of contrasting finishes, textures and materials (concrete, stone and gravel). Paving sizes and textures will delineate public and private spaces and accentuate common entrance points and pedestrian linkages.

Street lighting will be provided as per Australian standards and CoS Council's requirements. Pedestrian lighting in common spaces will be designed to compliment the landscape design, direct pedestrian movement through spaces, and create bright and friendly night time spaces. Uplighting to feature trees will be provided where possible.

## PAVING



Small linear paving to match existing on Pirrama Rd



Asphalt reinstated on Street frontage



Paving bands for proposed SELS plaza



Granite driveway crossovers + footpath upgrades

## FURNITURE



Sculptural seating elements



Bike racks for private and communal use



Typical City of Sydney Street Furniture

## LIGHTING



Uplighting to feature trees



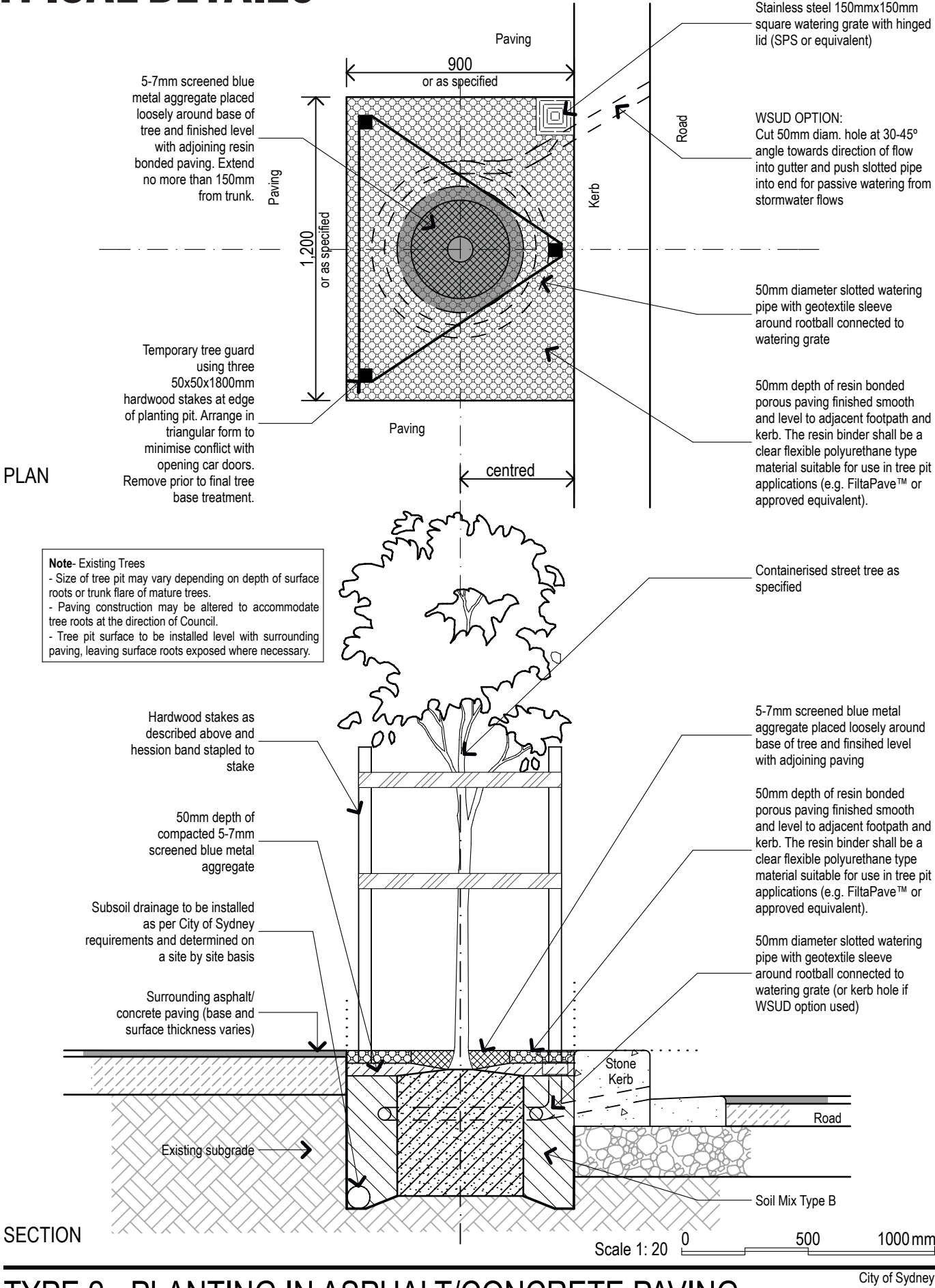
Integrated lighting elements in walls + furniture



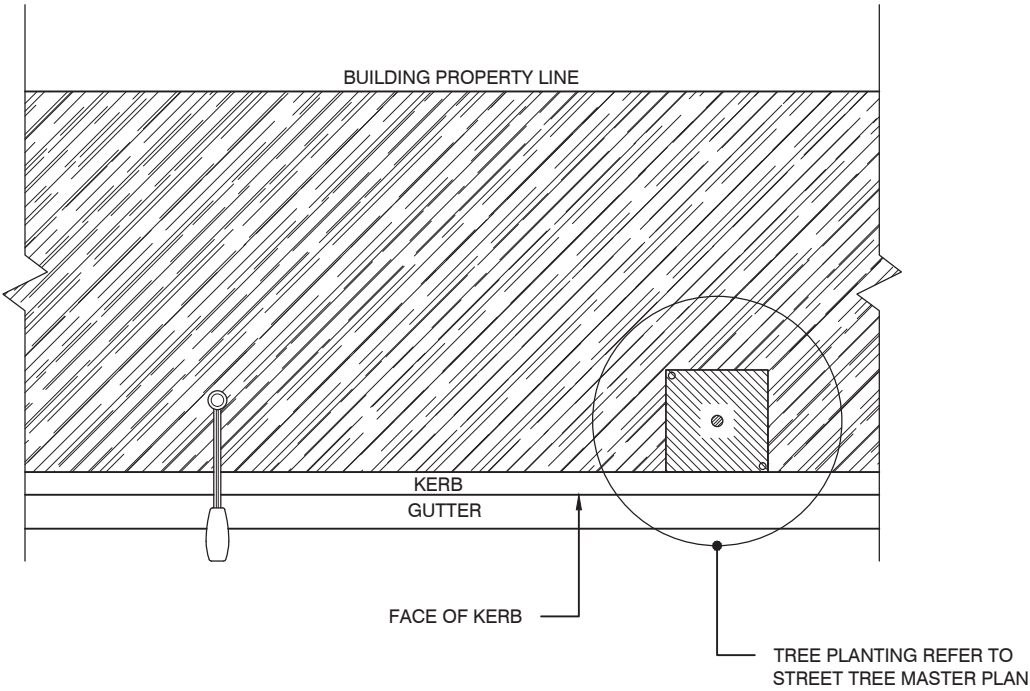
Overhead Catenary Lighting



TYPICAL DETAILS



TYPE 2 - PLANTING IN ASPHALT/CONCRETE PAVING



PLAN 1:100

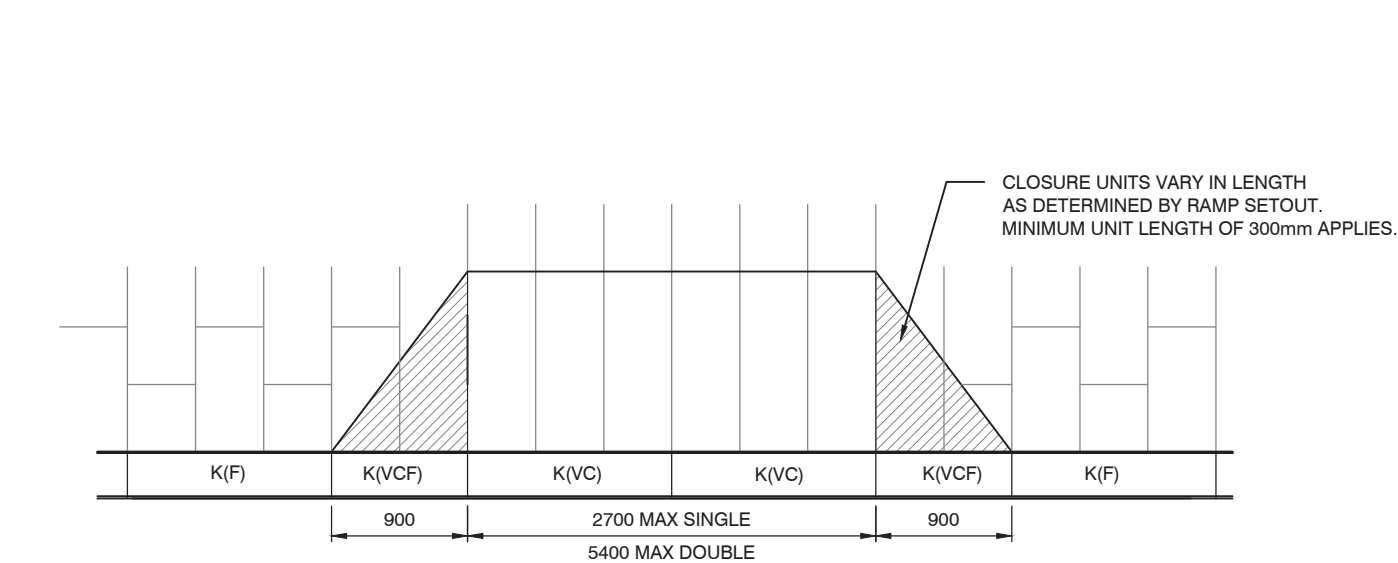
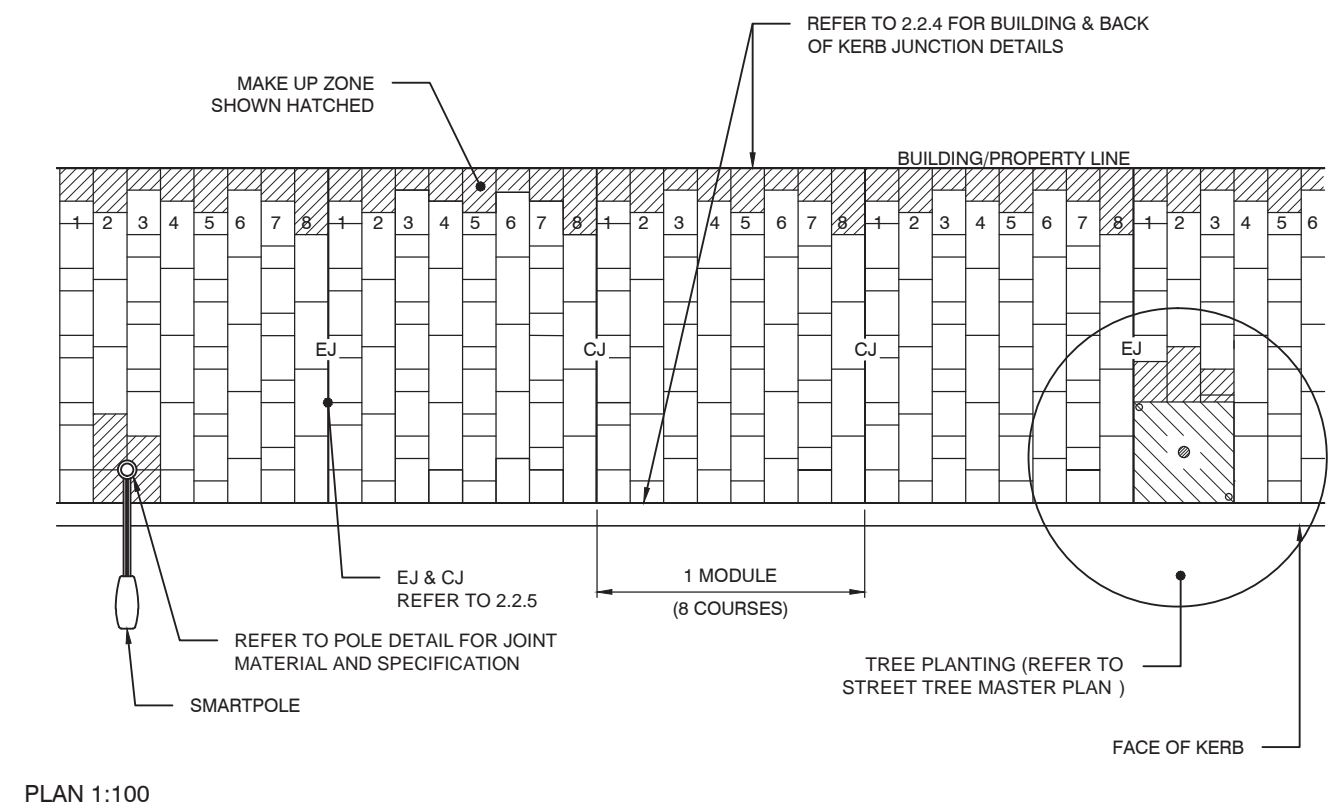
NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED



ASPHALT PAVING  
GENERAL ARRANGEMENT PLAN

Rev		Footways
Date	B	Dwg No.
22.03.13		
Approved	P S	2.5.1

TYPICAL DETAILS



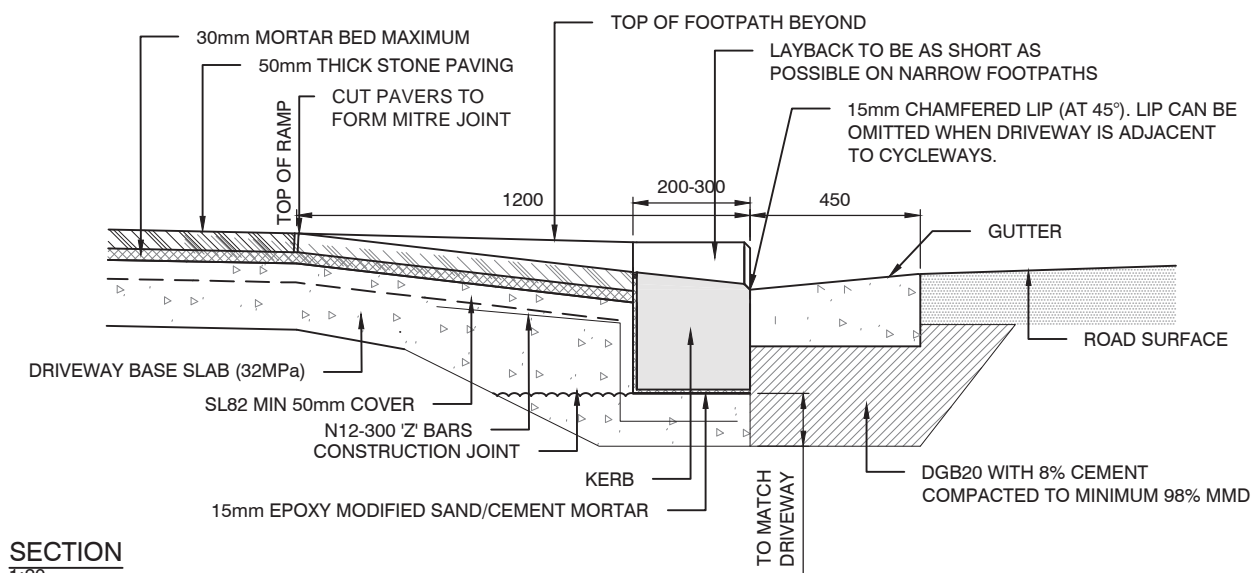
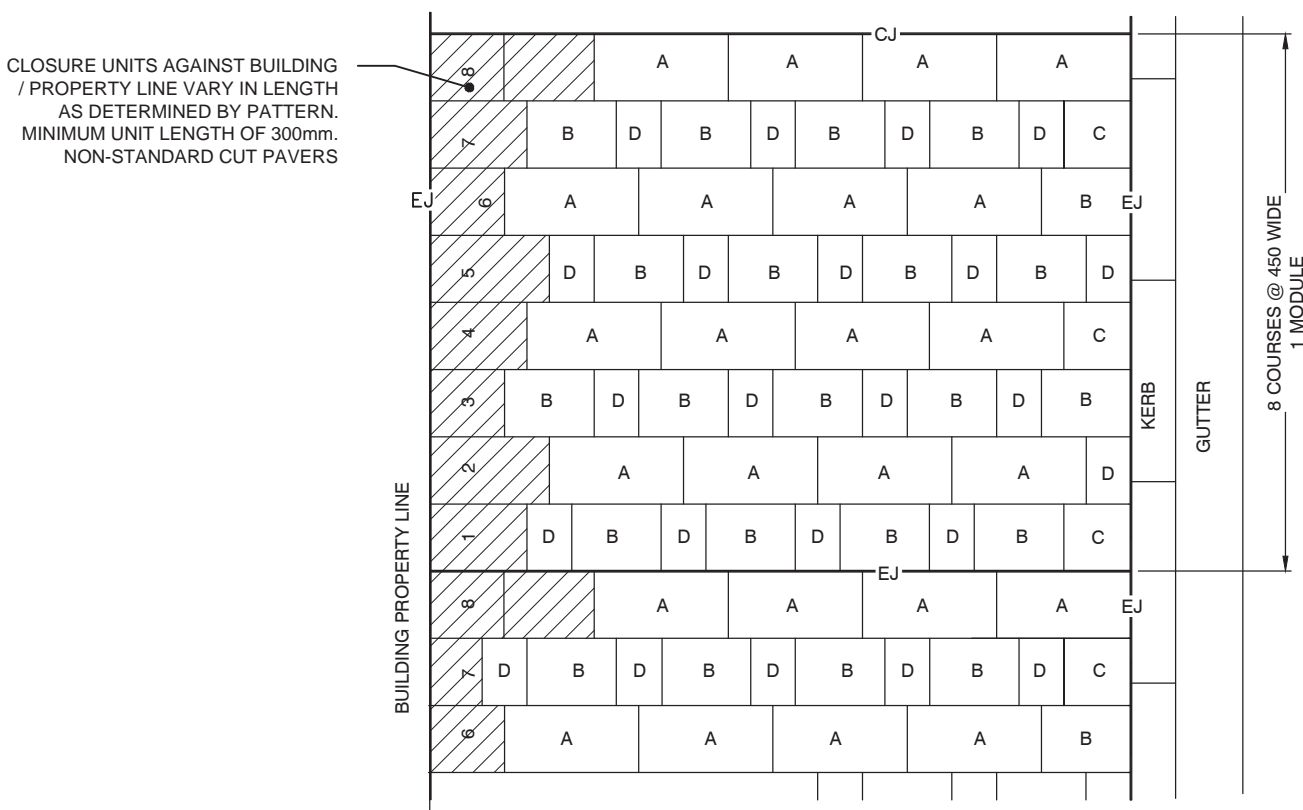
PLAN 1:50

NOTES:

- 1. ALIGN CENTRE OF DRIVEWAY WITH ENTRY.
- 2. DRIVEWAY TO BE GENERALLY PERPENDICULAR TO KERB LINE UNLESS APPROVED OTHERWISE.
- 3. FOR NARROW FOOTPATHS, LENGTH OF RAMP TO BE REDUCED TO 900mm.
- 4. VERTICAL AND HORIZONTAL CLEARANCE SHALL BE CHECKED BY THE DESIGNER IN ACCORDANCE WITH AS2890.1.

KERB PROFILES

- TYPE K(F): FULL HEIGHT
- TYPE K(VCF): VEHICULAR CHAMFERED TO FALL
- TYPE K(VC): VEHICULAR CROSSOVER



SECTION 1:20

DRIVEWAY SPECIFICATIONS			
DRIVEWAY USE	CONCRETE STRENGTH	THICKNESS	REINFORCEMENT
SINGLE RESIDENTIAL	32MPa	150mm	SL82
MULTI RESIDENTIAL	32MPa	200mm	SL82
COMMERCIAL/ INDUSTRIAL	32MPa	250mm	TWO LAYERS SL82

NOTE:

- 1. 60MM THICK PAVERS WILL BE REQUIRED IN DISTINCTIVE PLACES AS SPECIFIED (REFER TO FOOTWAYS SPECIFICATION FOR FURTHER DETAILS)

NOTE:

- 1. MAINTAIN PAVER BAND WIDTH OF 450mm EXCEPT WHERE REQUIRED TO ADJUST PAVERS TO SUIT SITE CONDITIONS, THEN MIN 400mm BAND WIDTH OVER MIN 5 COURSES IS ACCEPTABLE.
- 2. 1-3mm GAP REQUIRED BETWEEN PAVERS.
- 3. 60MM THICK PAVERS WILL BE REQUIRED IN DISTINCTIVE PLACES AS SPECIFIED (REFER TO FOOTWAYS SPECIFICATION FOR FURTHER DETAILS)

STONE SIZES:

- TYPE A: 900 x 450 x 50mm
- TYPE B: 600 x 450 x 50mm
- TYPE C: 450 x 450 x 50mm
- TYPE D: 300 x 450 x 50mm

- CJ: CONTRACTION JOINT
- EJ: EXPANSION JOINT

TYPICAL PAVING MODULE 1:50

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED



# CONCLUSION

## Environmental Impacts of the Landscape Design

The landscape design proposal for this modification will significantly improve the existing public domain appearance, pedestrian experiences, amenity, access arrangements and the public interface with The Star & light rail station. Overall, the proposed landscaping will provide high amenity to a mixture of users including hotel guests, residents, staff, patrons, commuters and the general public

Pedestrian experiences will be improved in the public and private domain relative to the current arrangements as previously assessed. Most notably to the Pirrama road and Jones Bay Road frontages, where sight lines, safety, wayfinding and surface finishes are being improved in the public realm and within the site to the existing light rail stop.

The existing and proposed upper level/podium landscape areas are being increased with this modification. The currently approved non accessible green roof will be replaced with a high use multi functional space, giving improved usability for a diverse mix of patrons. Green roofs and vertical gardens will be incorporated into this modification across the site for improved biodiversity, lower energy consumption and improved aesthetics.

There will be a number of immediate impacts within the public domain with the removal of street trees. However their replacement with species aligned with council's STMP will provide improved consistency and longevity in the area. They will also provide increased amenity to the public realm as many will be larger canopy trees than the existing condition as last assessed.

Overall, the proposed landscaping and public domain improvements will have a significant improvement of the amenity on site and surrounding the site. The environmental impact of modifying these spaces, with the addition of new spaces, will bring many benefits for the site and the local environment. Any environmental impacts relative to the existing conditions as previously assessed and approved will be limited.

**APPENDIX A - URBIS' RESPONSE TO THE COS AND DPE SUBMISSIONS**





01.11.18\_RevD

## **The Star Modification 13 - Landscape Design**

Response to Letter received from Alex Greenwich and the City of Sydney Submission

The updated report and additional drawings (Appendix A) have been prepared by Urbis on behalf of The Star Entertainment Group Limited in response to the City of Sydney Submission (items highlighted below).

### **Item 1: Re. Letter dated 10.09.18 from Alex Greenwich**

#### **P4. Tree Loss**

*The development would result in the loss of 24 trees including 16 of high retention value, to be replaced with 24 trees of various species. This represents the absolute bare minimum that could be done; no attempt has been made to increase the net number of trees, to ensure there is no loss of tree canopy or to replace trees with mature plants. This proposal shows contempt for community efforts to increase greenery and for NSW Government and City of Sydney plans to increase green cover to address increasing temperatures and heat sink effects.*

#### **Urbis Response**

An arboricultural assessment of seventy-two (72) trees located in the vicinity of The Star Casino and Entertainment Complex, located at 80 Pyrmont Road, Pyrmont was prepared. The purpose of the report was to assess the potential impact of works proposed under the Modification 13 Application on existing trees surrounding the proposed development.

The proposed development will necessitate the removal of four (4) trees of low and very low retention value, four (4) of moderate retention value and sixteen (16) trees of high retention value. The trees of low and moderate value can be replaced with new tree planting in the short term (next 10 to 15 years). As such, there will be a relatively minor and temporary loss of amenity resulting from the removal of these trees to accommodate the proposed development.

The trees of high retention value have no special heritage or ecological significance, but they are mature specimens that make a positive contribution to the amenity of the site and streetscape areas. There are no feasible options that can be implemented that would permit the retention of these trees given the design intent. Replacement planting is proposed to compensate for loss of amenity in streetscape areas in accordance with the City of Sydney Council's Street Tree Master Plan. The sixteen (16) trees of high retention value that will be removed include twelve (12) Cabbage Tree Palms and four (4) Hill's Weeping Figs, all located on the Pirrama Road frontage. The proposed replacement trees *Angophora costata* are as per the City of Sydney Tree Master Plan they will increase the amenity to pedestrians using this area, in particular increased shade to paved areas. The replacement trees will be specified as mature plants.

Tree Protection Measures and a Tree Protection Plan will ensure the remaining trees surrounding The Star are retained and protected during construction.



**Item 2: Re. Letter dated 09.10.18 from City of Sydney**

**2.2 - P.10 Landscaping/Drawing Coordination**

*The plans omit the level of detail expected at detailed application stage such as SSL, RL, TW levels to demonstrate the design and confirm soil depth, soil volume, edges, materials and planting design and details.*

**Urbis Response**

**Urbis have coordinated this detail with FJMT** and confirm soil depth, soil volume, edges, materials and planting design and details in Appendix A. Soil depths are shown on the details to all planters.

Minimum soil depths are in accordance with both 'The City of Sydney Landscape Code Vol 2' and the 'Apartment Design Guide':

- Turf 200mm soil depth
- Ground Cover 300-450mm soil depth
- Shrubs 500-600mm soil depth
- Small Trees (6-8m high) 800mm soil depth
- Medium Trees (8-12m high) 1000mm soil depth
- Large Trees (12-18m high) 1200-1500mm soil depth

All volumes are subject to review against tree species, location, desired effect and current industry best practice standards. An arborist or soil scientist will provide specific advice about the volume of soil that planting required.

**2.3 - P.10 Green Seam**

*There is a lack of detail provided to understand the proposed scheme.*

**Urbis Response**

Refer to Junglify Report (Appendix B) and architect's drawings (FJMT, Façade Details, Western Seam planter details, SM13 AF8302).

**2.4 - P.11 Green Roof**

*Again, there is insufficient detail provided to enable a full and proper assessment.*

**Urbis Response**

Urbis have developed a planting design for the green roof to create habitat and biodiversity, the plant schedule and detail was developed with City of Sydney (and is consistent with the Mod 14 submission). Refer to Appendix A for plans and section details of the Green Roof.

**2.5 - P.11 Green Wall – Hotel Port Cochere**

*An extensive green wall is proposed under the building and will be in complete shade* **Urbis**

**Response**

Refer to Junglify Report (Appendix B) and architect's drawings





## **2.6 - P.11 Pool decks and Leisure Areas**

*No information has been provided on the pool design, levels, edges, materials, balustrades, pool fencing, consideration of design for safety etc*

### **Urbis Response**

Refer to 3D model images (by FJMT) and plans in Appendix A for pool design intent, levels, surface finishes, pool fence detail and location.

## **2.7 - P.11 Other landscaping comments:**

*•The Level 59 Club Lounge description does not match the plans. There is no wind study evidence to confirm that the landscaping proposed has been designed to withstand the western aspect and likely wind effects. Is the proposal achievable at upper levels of the tower?*

### **Urbis Response**

The description has been updated to match the latest design. The Wind Consultant has reviewed the landscape design and with the architects are proposing a 2m high glass balustrade to the perimeter of the terrace.

*•Generally the plans provide a layout only or legend indicating areas of planting. There is no planting design and species selection provided.*

### **Urbis Response**

Refer to Appendix A for planting plans and schedule which highlight species, densities and size.

*•The plant species nominated in the plant schedule is reliant on a very high percentage of exotic species. There is a very low percentage of native species.*

### **Urbis Response**

Refer to Appendix A for planting plans and schedule, additional native species have been added to create habitat and biodiversity.

*•There are no levels for any of the works - SSL, FFL, RL, TW. Are planters raised or set down?*

### **Urbis Response**

Refer to Appendix A for planter details, all levels have been coordinated with the architects and added to the plans and planter details.

*•No details have been provided to confirm the design of planters, soil depth and soil volume, design of all landscape features, lighting, furniture, structures, gates etc.*

### **Urbis Response**

Refer to Appendix A levels for details of all planters, confirming soil depth and volume. Minimum soil depths are in accordance with both 'The City of Sydney Landscape Code Vol 2' and the 'Apartment Design Guide' as described above.

Surface finishes are described on all the plans, the lighting, furniture, structures, gates etc design intent are captured in FJMT's 3D fly through, still images have been included in Appendix A.



- The landscape maintenance is lacking detail. Detailed consideration of maintaining works above ground level and at upper levels should be provided.*

#### **Urbis Response**

Urbis has included a plant establishment & maintenance strategy in the report for public domain and podium planting, please refer to Junglefy Report (Appendix B) for an indicative maintenance strategy of green walls and spine.

#### **Item 3.0: DPE Site Visit / Letter received 23.10.18**

*3.1 - 19. The Department notes the concerns raised by Council about the level of detail provided in support of the proposed landscaping and public domain works. In addition to addressing Council's concerns:*

- a) provide additional information on the design of the proposed SELS forecourt on the corner of Jones Bay Road/Pymont Road, including confirmation of levels, the requirement for any railings/fencing, seating wall design and sections*

#### **Urbis Response**

Urbis has included sections in Appendix A, these confirm levels, seating wall design intent and property boundary.

- b) To improve the biodiversity value of the proposed green roofs, consider replacing or supplementing the planting of sedum with native species mix / biodiverse wildflower planting*

#### **Urbis Response**

Urbis has replaced the sedum rooftops with a native species mix / biodiverse wildflower planting as per Mod 14 (species co-ordinated with City of Sydney). Additional native plants have also been added to the plant schedule.

- c) confirm the reduction in green roof area between the approved (MOD14) and proposed.*

#### **Urbis Response**

The Mod 14 non-accessible level 5 green roof is proposed to be replaced with the accessible level 5 terrace which integrates external dining areas, leisure, event and circulation spaces within a garden setting. The reduction of green roof from Mod 14 is 4311m<sup>2</sup> to 794m<sup>2</sup> for Mod 13, which is made up of 637m<sup>2</sup> on level 6 and 300m<sup>2</sup> on Level 8 rooftop areas.



## **APPENDIX B - JUNGLEFY'S RESPONSE TO THE COS AND DPE SUBMISSIONS**

26 October 2018

## Star Casino – Ritz Carlton Tower – Green Spine

Dear Sean and Raymond,

Further to our initial assessment on the viability of the green spine proposed for the Ritz Carlton Tower we provide the following comments to ensure its long term success and architectural vision is realised.

### **Safe access and maintenance of the green spine**

Access to the planter boxes of the green spine will require a multi-pronged approach. This will likely include; a Building Maintenance Unit, Ropes Access, as well as walkways at landing levels every three floors. The use of a Building Maintenance Unit (BMU) is limited to accessing exposed planter boxes of the Green Spine, as tolerances appear too narrow between the glass panels and the building façade.

However, a BMU may be utilised for major services or rectification works such planter box removal or soil replacement. Access to planter boxes behind the glass return would need to be via Ropes technicians. Access walkways at landing levels every three floors would improve efficiency and provide a means of access for transporting green waste, both laterally along walkways and then into the building via maintenance access doors.

An access strategy would entail a detailed description of systems and processes/methodology for access to all areas for BMU access, ropes access and access walkways. Access walkways integrated into the building on the outside of the planter boxes that include height access lifelines would increase the efficiency of maintenance, by both improving accessibility via ropes and utilising 'Working at Heights' trained façade maintenance technicians working in harnesses.

If a BMU were to be integrated into the building for façade maintenance, testing and commissioning of the BMU is critical to ensure it can safely and effectively access all areas proposed.

### **Removal of green waste.**

The volume of green waste will increase with advancement of plant growth and it is essential that transport and removal of green waste is carefully considered.

Proposed options for green waste transport and removal are as follows:

- Access walkways and access doors every three floors to allow for transport of green waste from BMU or ropes teams into the building. Once green waste has been transported into the building, green waste would need to be transported to a basement level via a goods lift.
- Alternatively, a dedicated chute on various floors for transport of green waste to basement level could be installed. (Adequate aperture opening to avoid blockages essential- min. 700mm x700mm).
- Separate rigging apparatus (block and tackle type system to be integrated) to aid in transporting bags of green waste while working via ropes access.
- Sufficient space and weight restrictions to be designed into BMU's for transporting green waste and growing media in addition to tool stowage.
- Composting or bio-digester integrated into basement for disposal/recycling of green waste.

### **Recommendations for irrigation.**

- Rainbird IQ as site control irrigation software/hardware with remote access.
- Automatic flow controlled (or Electrical Conductivity based) dosing pumps to be used in a fertigation system.
- Access to drainage water collection for measurement of EC run off, to ensure balanced fertilisation.



- Electronic pump controllers to be specified to minimise/mitigate 'hunting' of pressure (ie. pressure spiking). This would reduce strain on the irrigation network and minimise the likelihood of irrigation leaks.
- Electrofusion welds to be carried out to strict manufacturers specifications to avoid failure. All irrigation to be tested, commissioned and documented prior to handover.
- 13mm dripline with 300mm spacings to be used in planter boxes.
- All irrigation and drainage to be accessible for maintenance purposes.
- Drainage to be flood tested prior to handover.

#### **Recommended plant species for a western façade.**

Drawings and comments suggest there will be airflow behind glazing, as it sails past as a screen, rather than enclosing the space. However, concern remains regarding the elevated heat levels which may be present behind the glazing. If these concerns could be alleviated via heat modelling or assurances that radiant and reflective heat would not exceed acceptable levels, then the following species are recommended for use on a western façade:

- **Climbers:** *Pyrostegia venusta*, *Hibertia scandens*, *Mandevilla x amabilis* 'Alice du Pont', *Mandevilla x amabilis* 'Red Velvet', *Pandorea pandorana* 'Bower of Beauty', *Pandorea pandorana* 'Golden Showers', *Pandorea pandorana* 'Lady Di'.
- **Trailing/cascading:** *Convolvulus sabatius sub sp mauritanicus*, *Juniperus conferta* 'Blue Pacific', *Rosmarinus officinalis* 'prostratus' (Huntington's Carpet), *Myoporum parvifolium*.
- **Shrubs:** *Raphiolepis* 'Snow Maiden', *Westringia* 'Aussie Box', *Nandina domestica* 'Gulf Stream'.

#### **Recommendations for planter boxes, soil/media, climbing wires.**

- Rotomolded planter using V0 fire rated polyethylene (with the inclusion of accessible inspection points integrated into planter box for drainage inspection and maintenance).
- Planters could be clad in 3mm fire rated aluminium cladding (not composite cladding)
- Mineral based, free draining planter box media.
- Stainless steel climber cables.

#### **Indicative maintenance strategy.**

Allowance for ropes access at 4-6 weekly intervals, with major services 10-12 weekly intervals. Maintenance via BMU access could occur at similar intervals. Integration of access walkways into the building façade would allow for further flexibility of access. By employing the proposed mixed strategy, utilising BMU, ropes, and access walkways, reliance upon one system such as BMU is eliminated. As a result, continuity of maintenance of the building can be assured.

#### **Green Wall in Porte Cochere**

There is a green wall proposed for the Porte Cochere at the entrance to the building. We support the suitability of a green wall in this location on the proviso that it has LED grow lighting installed to ensure successful plant growth. We further propose the installation of a Junglefy Breathing Wall that would use fans to actively filter the exhaust fumes produced from the vehicles in the area, thereby creating a greatly improved air quality for patrons of the hotel. We have provided an indicative detail and specification for the Junglefy Breathing Wall and also provided a list of plant species that would be suitable for this outdoor shaded location.

We look forward to working with Star City, FJMT & Multiplex to further develop this concept and to realise their vision of introducing Living Infrastructure and biodiversity into the City of Sydney LGA.