Archipelago

5 Hercules Street, Hamilton
Landscape statement of design intent

2024

The Cullen

HERCULES STREET · HAMILTON

—CONTACT

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—DOCUMENT ISSUE RECORD

Client:	Limitless	
Report:	5 Hercules Street Hamilton	
	Statement of Landscape intent	
File:	J:\Projects\22010_HSH_Hercules Street Hamilton	
Date:	Issue:	Checked:
06/07/22	Issued for DA_A	DP
19/12/23	Issued for DA_B	DP
10/05/24	Issued for DA_C	DP

Archipelago

Landscape Design - Master Plan

NTS

Design Approach

The landscape design for “The Cullen” will deliver a lush subtropical haven for residents and their guests whilst concurrently contributing significantly to the local streetscape through character amenity and visual engagement.

For the Hercules Street frontage a richly textured public realm composition that embraces the sites heritage through the integration of historic wharf timber in a bespoke arbor structure engaging with the local neighbourhood to draw people in and energise their walking and cycling journeys.

Complementing the architectural facade along the lower levels a contemporary yet timeless palette of brown porphyry, olive trees and lush leafy subtropical and sculptural under-story planting in conjunction with the re-purposed historic timber features will realise a unique and visually activated frontage.

Cascading down from both the precast concrete facades at the upper level a diverse mix of attractive trailing plants within a sequence of planters will add an organic texture whilst simultaneously visually elevating the green of the ground-plane to contribute to the wider neighbourhood character.

Landscape Design - Ground Level

Legend

1.	Pavement type 1 - Feature paving	5.	Subtropical mass planting	8.	Security gate	12.	Heritage wharf timber arbor
2.	Pavement type 2 - Natural broom finish	6.	Entry statement with feature planting, sculptural garden and integrated art	9.	Shade planting	13.	Heritage wharf timber totems
3.	Raised Planter	7.	Sculptural furniture	10.	Bicycle parking		
4.	Planting on natural ground			11.	Visitor parking		

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Ground Level

The public realm at ground level has been curated to celebrate both the sites unique location and its visual and physical role as an entry moment marker into the Portside precinct by creating a vibrant and engaging entry experience.

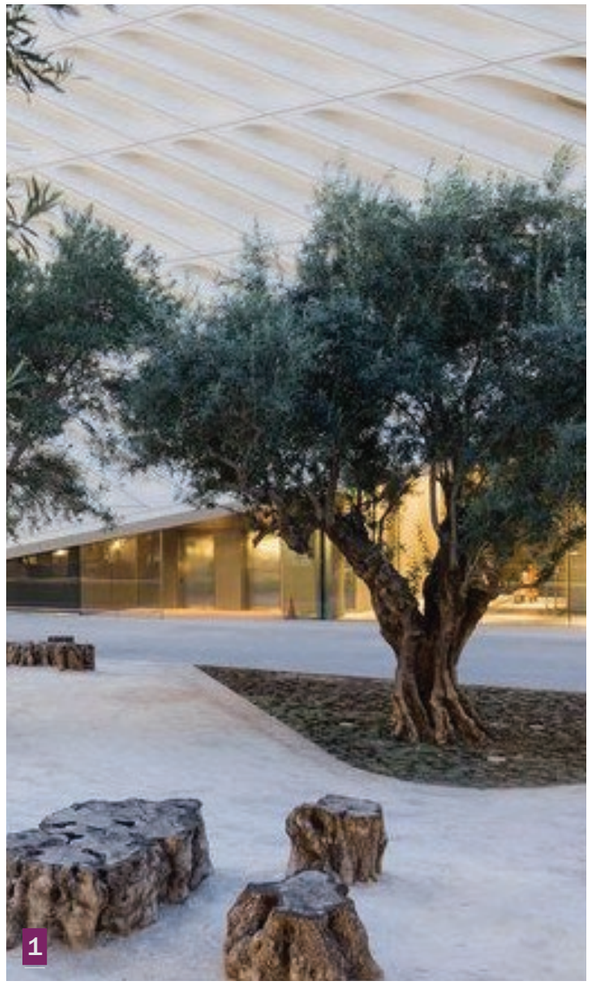
Hardscape treatments, and landscape embellishments have been designed to integrate with the built form, reference the sites history through material choices, reinforce the existing local landscape character, and contribute to the public streetscape.

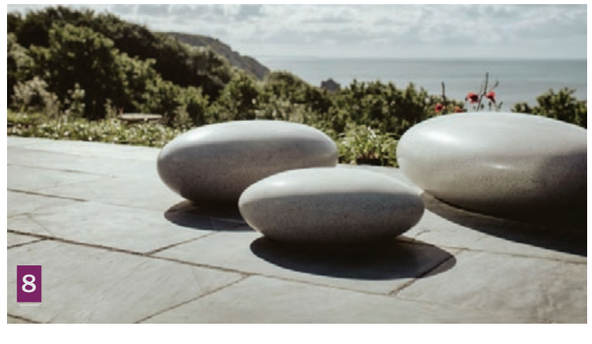
In partnership with the buildings articulated and contemporary yet timeless architectural presence, the public realm deliberately blends the public realm in a seamless subtropical manner with an eclectic planting palette featuring richly textured sculptural ground-covers in partnership with the refined elegance of semi-mature olives tree resting resplendently within an elegant natural porphyry stone pavement.

A bespoke heritage wharf timber arbor featuring climbing species and cultural heritage signage will be a distinctive feature of the ground level frontage creating the possibility for a true local place to evolve through community engagement with the activated building ground floor.

Landscape palette

1. Exemplar entry statement landscape
2. Mixed agave species and creeping ground covers to create textural interest
3. Planted arbor adopting heritage wharf timbers
4. Feature pavement - Crazy Pave
5. Ficus pumila - Creeping fig
6. Subtropical shade planting mixed species
7. Heritage wharf timber totems
8. Feature seating - Pico Pebble seat





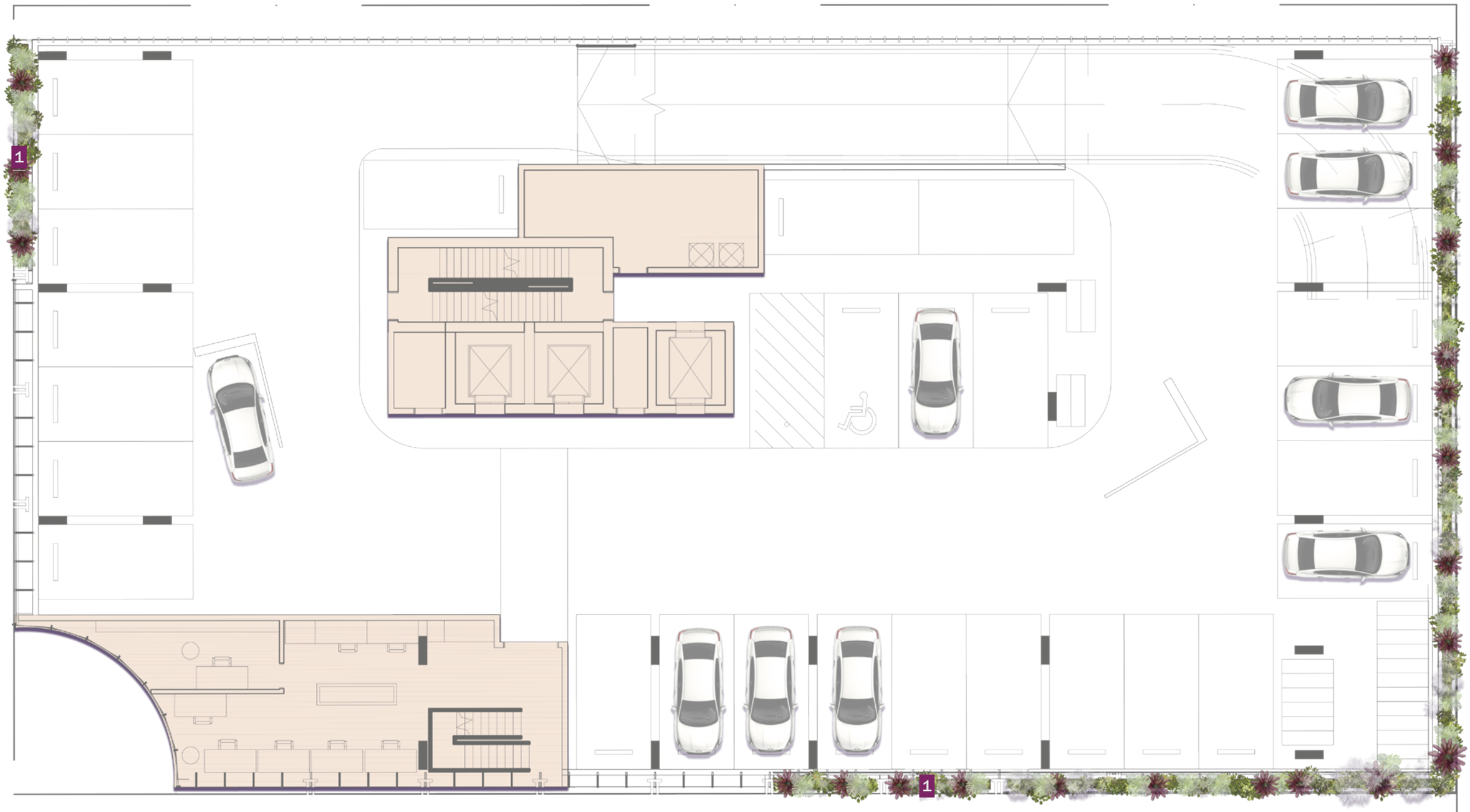
Ground Level - Sections

The ground level landscape is designed to celebrate the sites unique location as the secondary entry moment into the Portside precinct by creating a vibrant and engaging entry statement.

Hardscape treatments, and landscape embellishments have been designed to integrate with the built form and existing landscape character, contribute to the local streetscape and enhance the sub-tropical qualities of the site.

Section A - Main Street streetscape - Entry

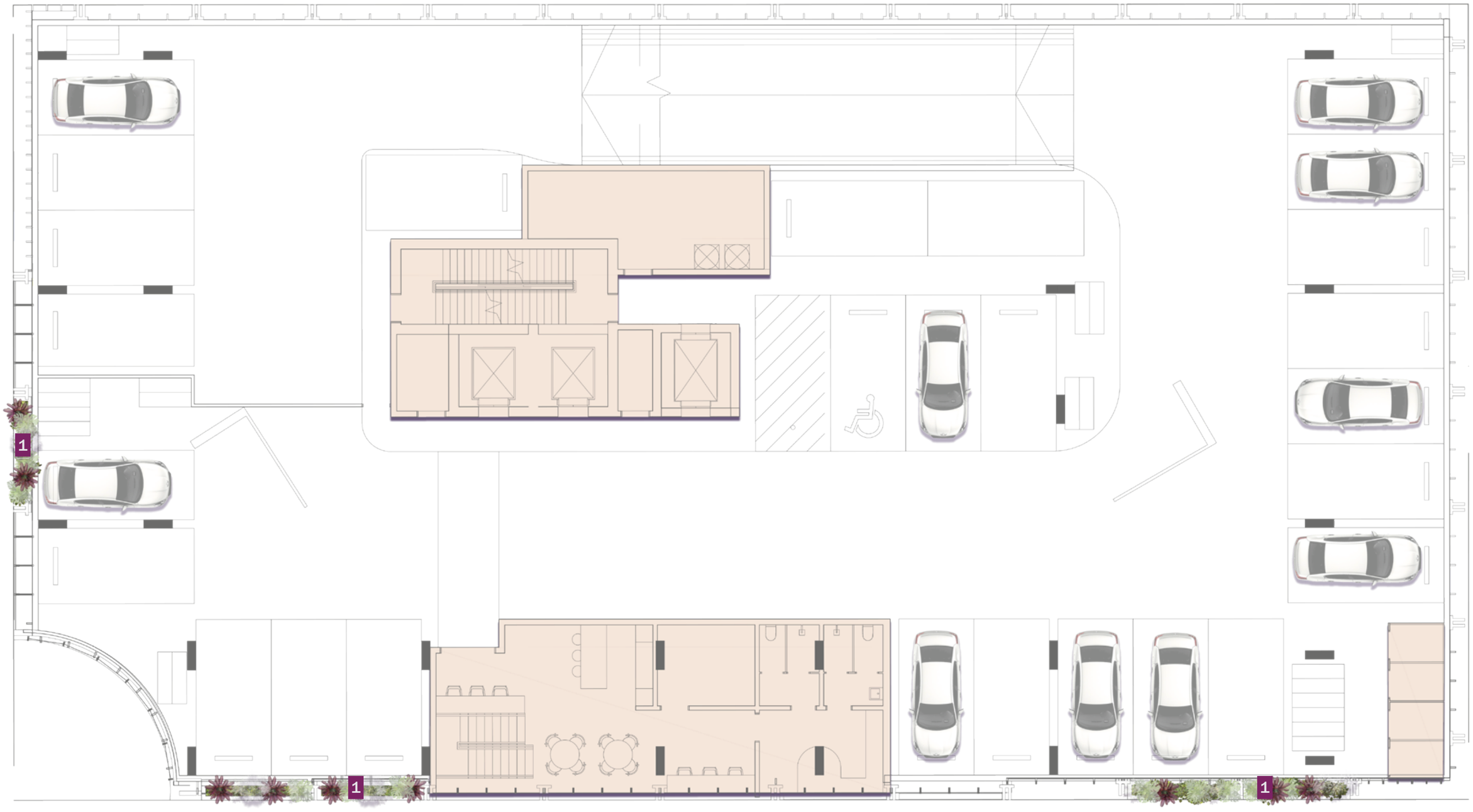
Landscape Design - Level 1



Legend

1. Subtropical feature podium planting
   400mm internal planter width.
   875mm depth

Landscape Design - Level 2 Podium carparking



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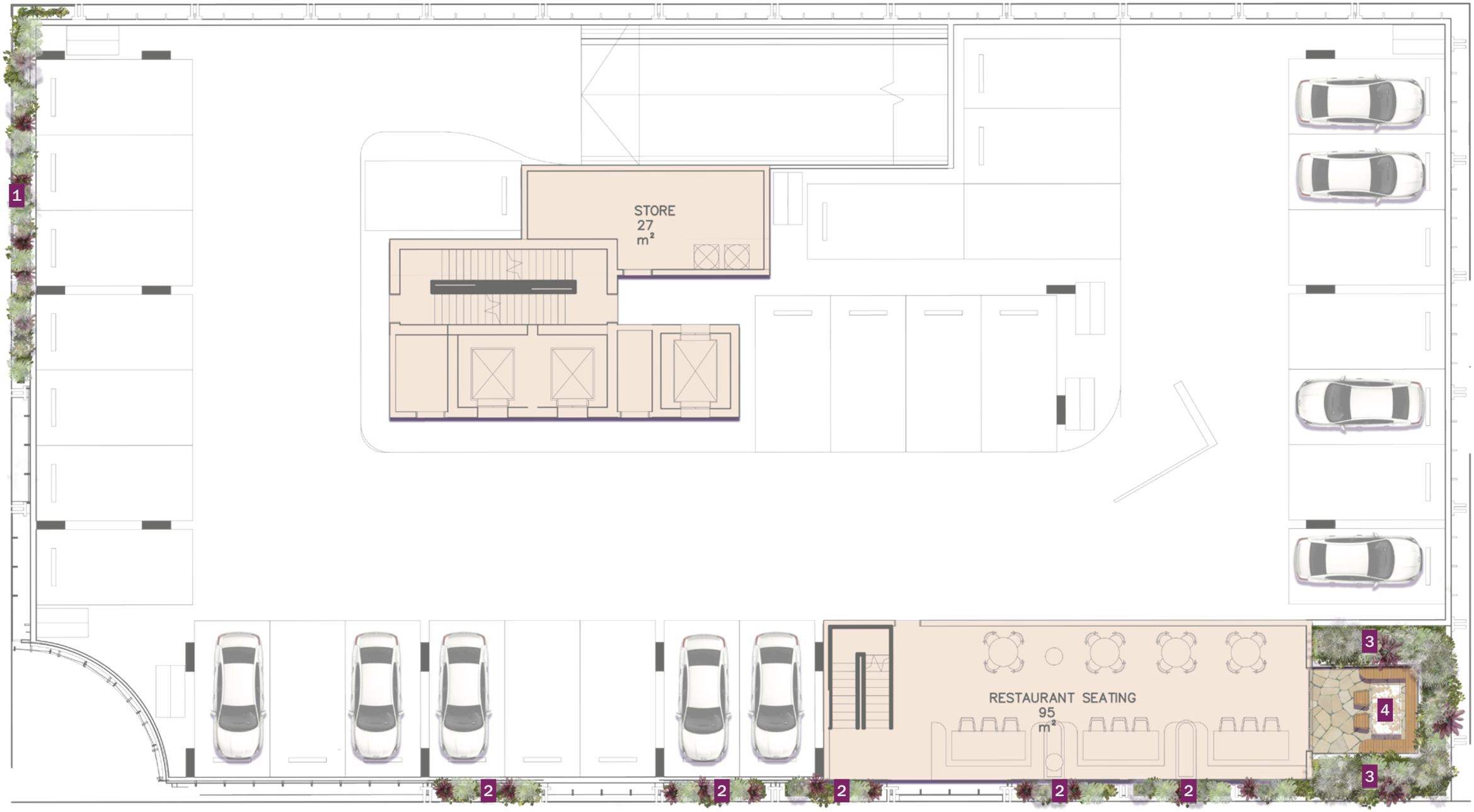
Legend

1. Subtropical feature podium planting
   400mm internal planter width.
   875mm depth

Landscape Design - Level 3 Outdoor Terrace and Podium carparking



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Legend

1. Subtropical feature podium planting
   440mm internal planter width.
   875mm depth

2. Subtropical feature podium planting
   450mm internal planter width.
   875mm depth

3. Subtropical feature podium planting
   750-1250mm internal planter width.
   1175mm depth

3. Casual dining area for small groups

Level 3 Outdoor Terrace

The recreation deck has been inspired by it's industrial location and brings together a combination of boutique industrial design and luxury to create a recreational space that users will want to be in.

A shaded oasis, the Level 4 amenities include a resort-style pool, cooking facilities, casual eating areas and a gym and fitness space for yoga and Pilates for residents to enjoy at their leisure.

Planting palette

Exposed to the elements with a constrained soil profile, the species chosen are tested in these conditions to complement the luxurious setting. A sample of proposed plant species is listed below.

Planting (Indicative)		
1.	Alocasia macrorrhizos	Giant Taro
2.	Alcantarea Imerialis 'Rubra'	Imperial Bromeliad
3.	Zamia furfuracea	Cardboard Palm
4.	Mesembryanthemum cordifolia	Baby sun rose
5.	Casuarina glauca	Casuarina Cousin It
6.	Dichondra argentea	Silver Falls
7.	Philodendron congo	Rojo
8.	Rhapis excelsa	Lady Palm


4


5


6


7

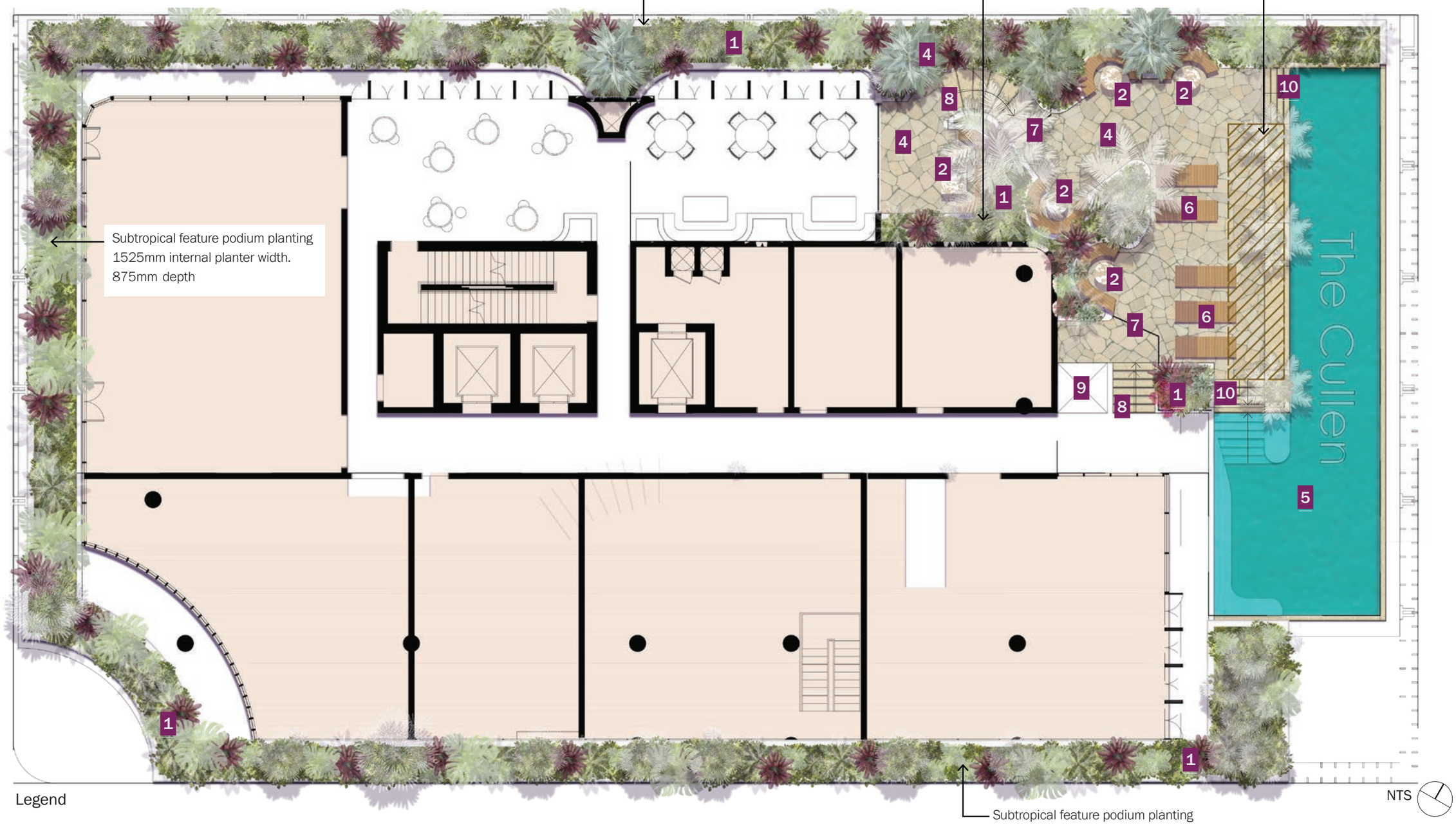

1


8


2


3

Landscape Design - Level 4 Recreation



Legend

1.	Subtropical feature podium planting	5.	Pool	8.	Stairs up from (19.1 - 20.150m FSL)
2.	Casual seating areas for small groups	6.	Poolside Lounge	9.	Wheelchair lift
4.	Feature pavement	7.	Pool fencing and gate	10.	Steps up to pool (20.15 - 20.60m FSL)

Level 4 Recreation

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The Level 4 amenities include a resort-style pool, casual eating areas and a gym and fitness space for residents to enjoy at their leisure.

Planting palette

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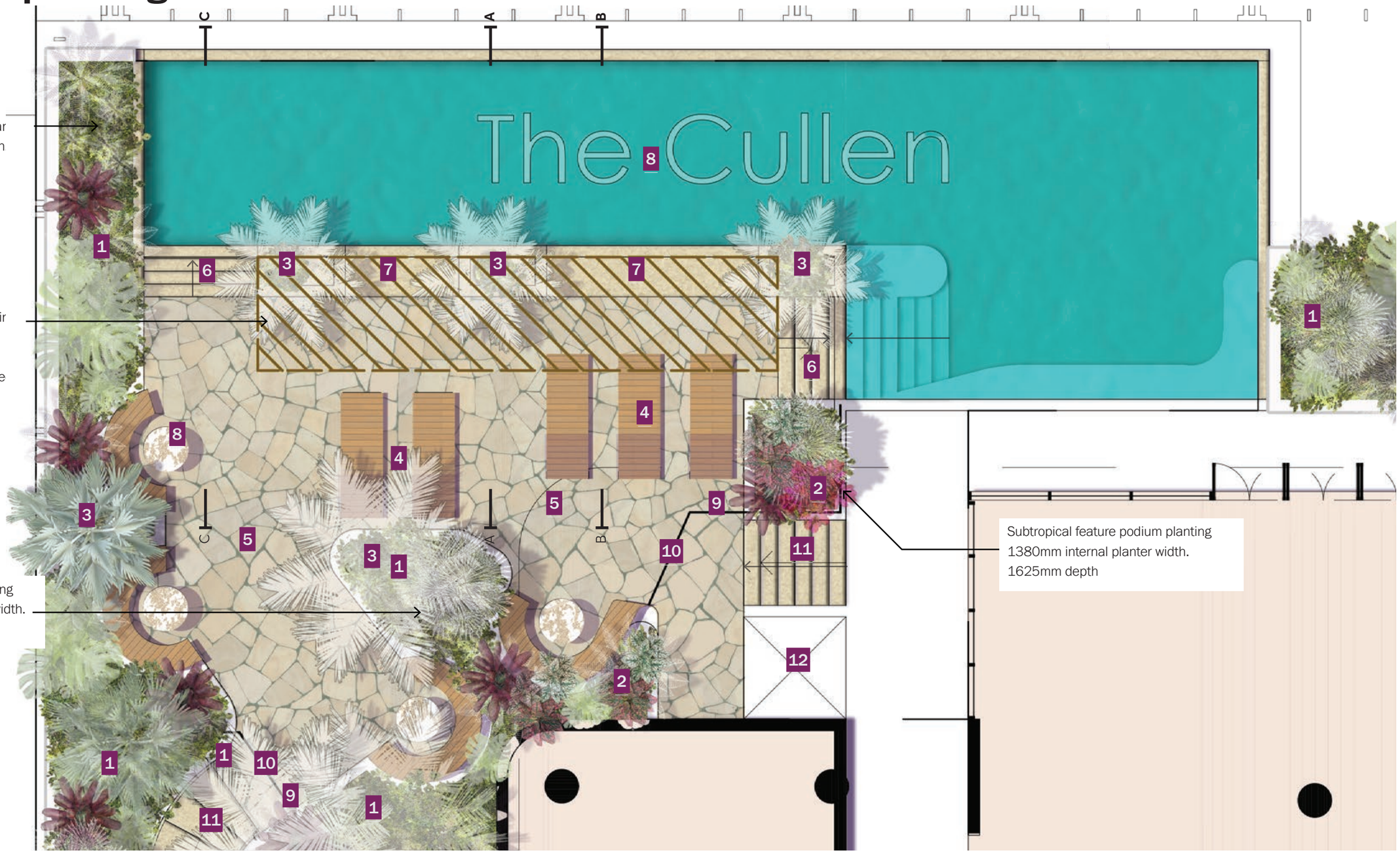
2.	Alcantarea Imerialis 'Rubra'	Imperial Bromeliad
3.	Zamia furfuracea	Cardboard Palm
4.	Anthurium Great Red	Flamingo Lilly
5.	Rosmarinus officinalis 'Prostratus'	Prostrate Rosemary
6.	Trachelospermum	Star jasmine
7.	Bismarck Palm	Bismarck Palm
8.	Rhapis excelsa	Lady Palm

Landscape Design - Level 4 Pool

Subtropical feature podium plar
1300mm internal planter width
1175mm - 2000mm depth

Subtropical feature palm plantir
1000mm diameter aperature,
2000mm width
1625mm depth continuous me
trench beneath pool coping

Subtropical feature podium planting
300 - 2000mm internal planter width.
575mm depth



Subtropical feature podium planting
1380mm internal planter width.
1625mm depth

Legend

1.	Podium planting	5.	Feature paving	9.	Pool fence
2.	Podium shade planting	6.	Pool entry stairs up (20.15 - 20.60m FSL)	10.	Pool Gate
3.	Palm planting	7.	0.9m Pool seating ledge	11.	Stairs up from (19.1 - 20.150m FSL)
4.	Day bed	8.	Pool	12.	Wheelchair lift

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Level 4 Pool

Planting surrounding the pool will be in planters flush with the pool coping with edge protection through a glass balustrade to give a sense of expansiveness. Planting will cascade from the pool edge over the facade to soften the built form edge whilst providing a green skirt to the recreation terraces viewlines out.

The pool has been articulated to provide for 20m lap and casual swimming

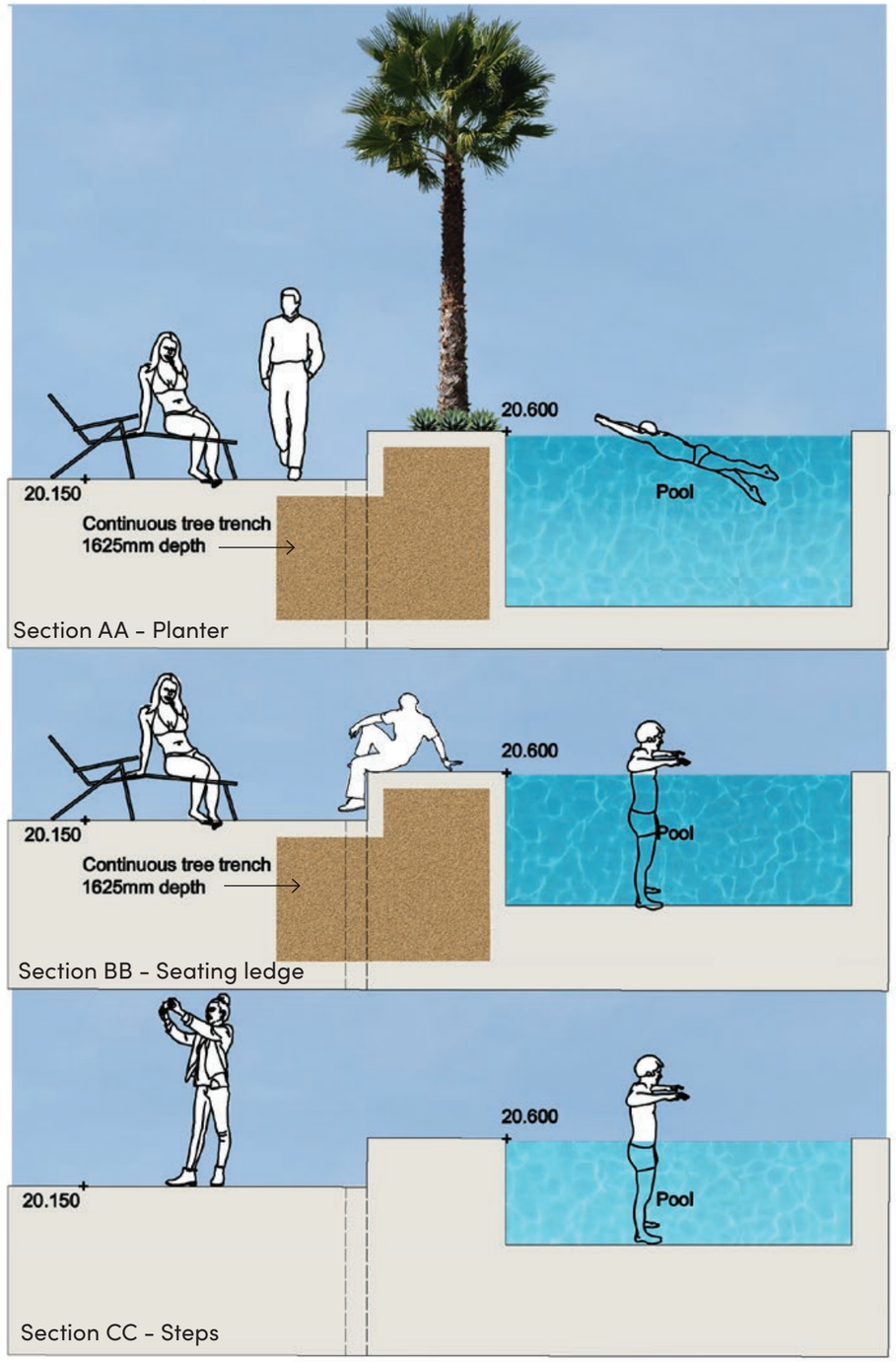
Planting palette

Pool friendly plants will be chosen for their low maintenance, drought tolerance, non invasive roots and ability to cope with the challenges of pool adjacency.

Planting (Indicative)		
1.	Livistona australis	Cabbage Palm
.	Phoenix canariensis	Canary Island date pal
.	Philodendron ‘xanadu’	Xanadu
.	Senecio serpens	Blue chalk sticks
.	Dichondra argentea	Silver Falls
2.	Mixed shade species (Eppipremnum aureum, Peperomia obtusifolia, Syngonium podophyllum)	


1


2



Landscape Design - Level 22

Legend

1.	Penthouse open plan outdoor terrace
2.	Integrated seating
3.	Outdoor kitchen
4.	Podium planting mixed species Subtropical feature podium planting 600-825mm internal planter width. 575-775mm depth

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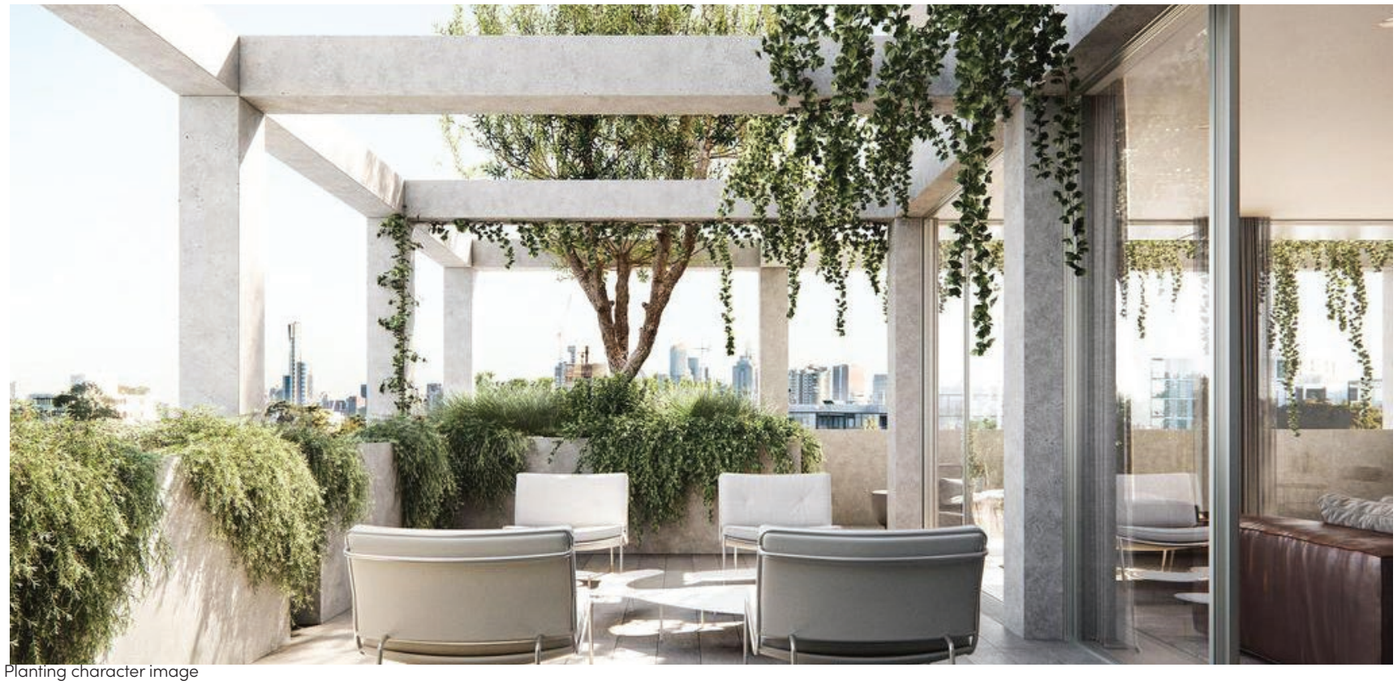
Level 22

The Penthouse Terraces provide the opportunity to experience local and long views from behind a parapet of subtropical planting. The edge planters will provide a safe solid “green” edge with low ground-covers and cascading planting softening the roof profile whilst also providing a sense of prospect and refuge - allowing the viewer to see but not feel exposed.

Planting palette

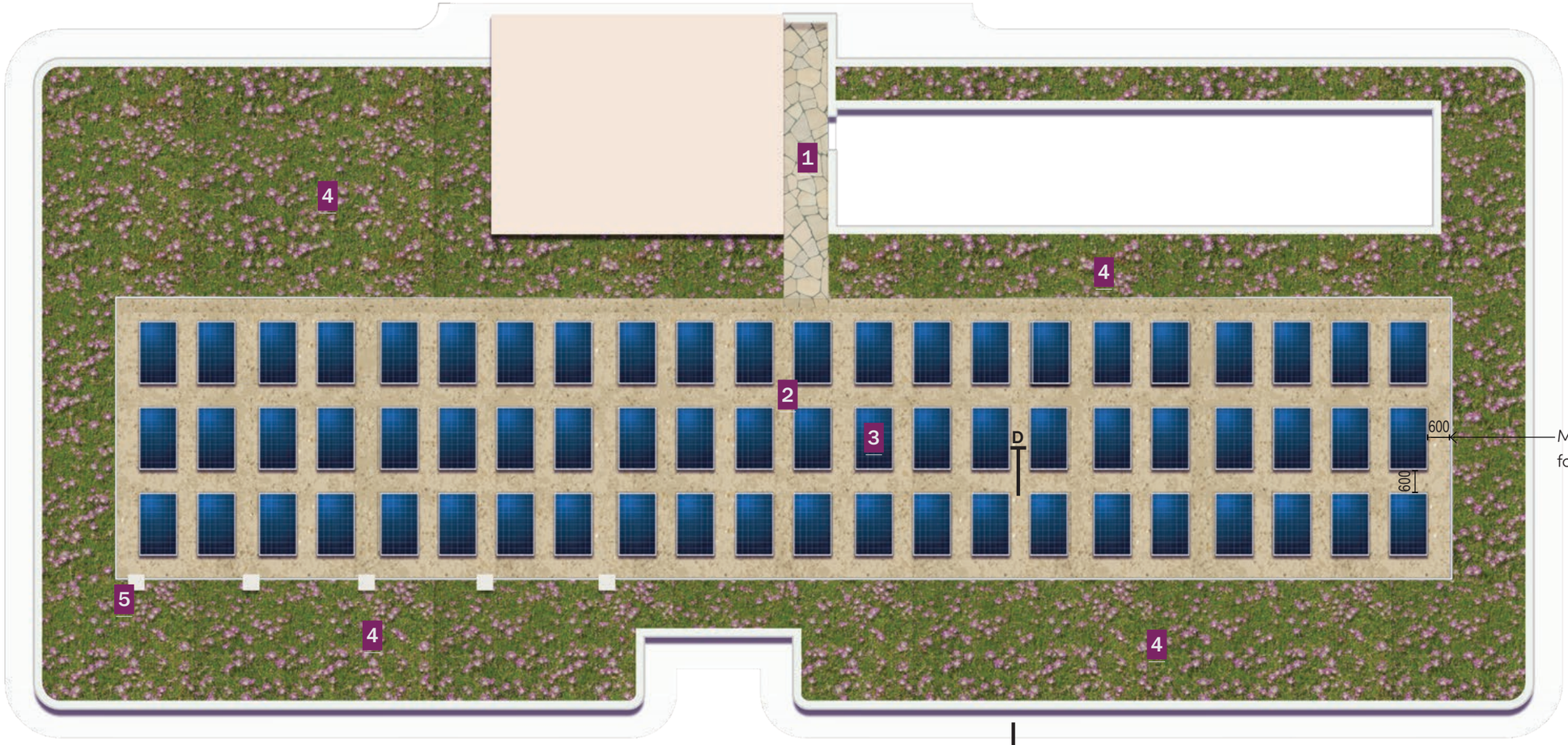
The planting palette for the roof text will feature a diversity of native and exotic species suited to the challenging conditions present on higher building levels.

Planting (Indicative)	
1. Russelia equisetiformis	Fire cracker fern
2. Casuarina glauca	Casuarina Cousin It
3. Carpobrotus glaucencens	Pig face
4. Brachyscome multifida	Native Daisy
5. Dichondra argentea	Silver Falls
6. Epipremnum aureum	Devils ivy
7. Senecio serpens	Blue Chalk Sticks
8. Westringia fruticosa	Native Rosemary



Planting character image

Landscape Design - Level 23 Rooftop



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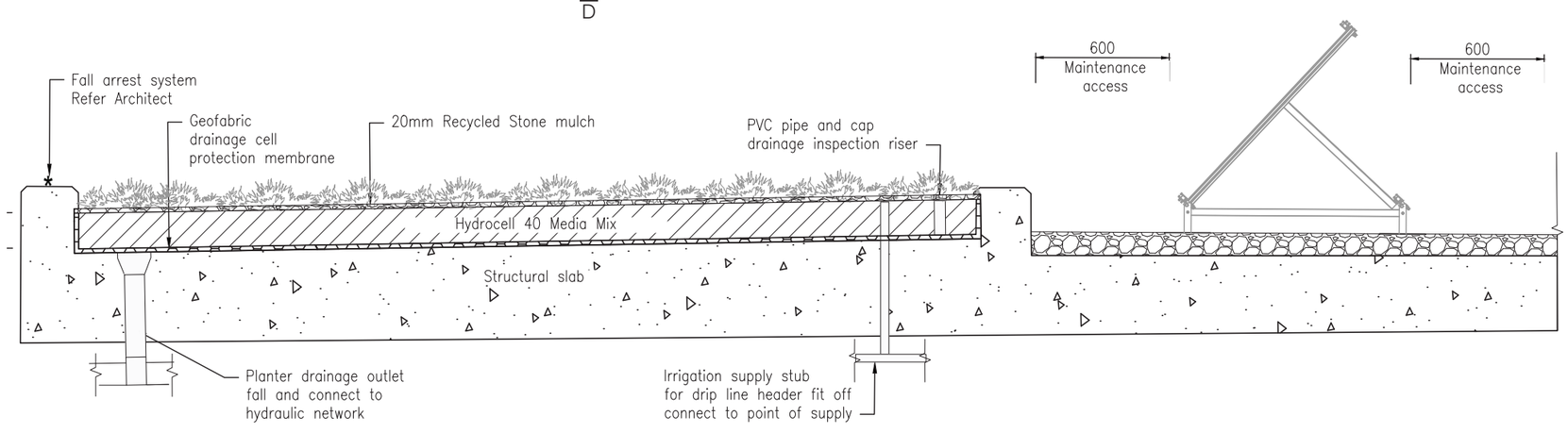
Legend

1.	Pavement
2.	Decorative Gravel
3.	Solar panel
4.	Fytogreen extensive green roof system
5.	Urban Bee hives - Refer architectural package



Section DD

Level 23 Rooftop

The Roof top offers the opportunity for the integration of solar panels with a extensive green roof system (Fytogreen), creating a biosolar rooftop.

Biosolar rooftop exemplar

Planting palette

The planting palette for the roof will be designed with Fytogreen.

Planting (Indicative)
1. Sedum Sp.

Exemplar Urban Beekeeping

Exemplar rooftop planting

Exemplar rooftop planting

Landscape Design - Upper Levels

Levels 5-11

Levels 12

Legend

1. Podium edge planting
   750-1400mm internal planter width.
   575mm depth

2. Extensive green roof system (Fytogreen). to Level 4 Rooftop with integrated signage

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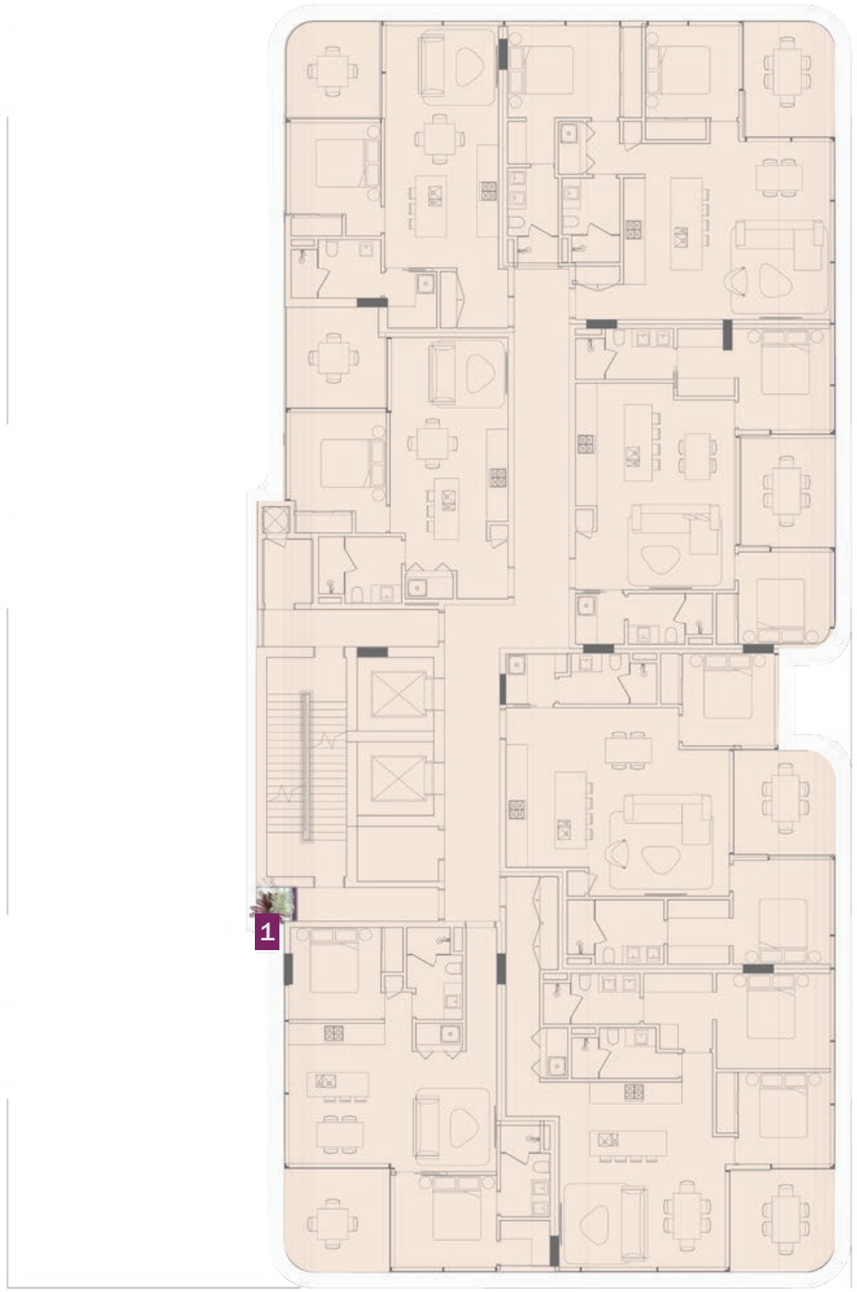
Landscape Design - Upper Levels

Levels 13-21



Legend

1. **Podium edge planting**
   700mm internal planter width.
   575mm depth

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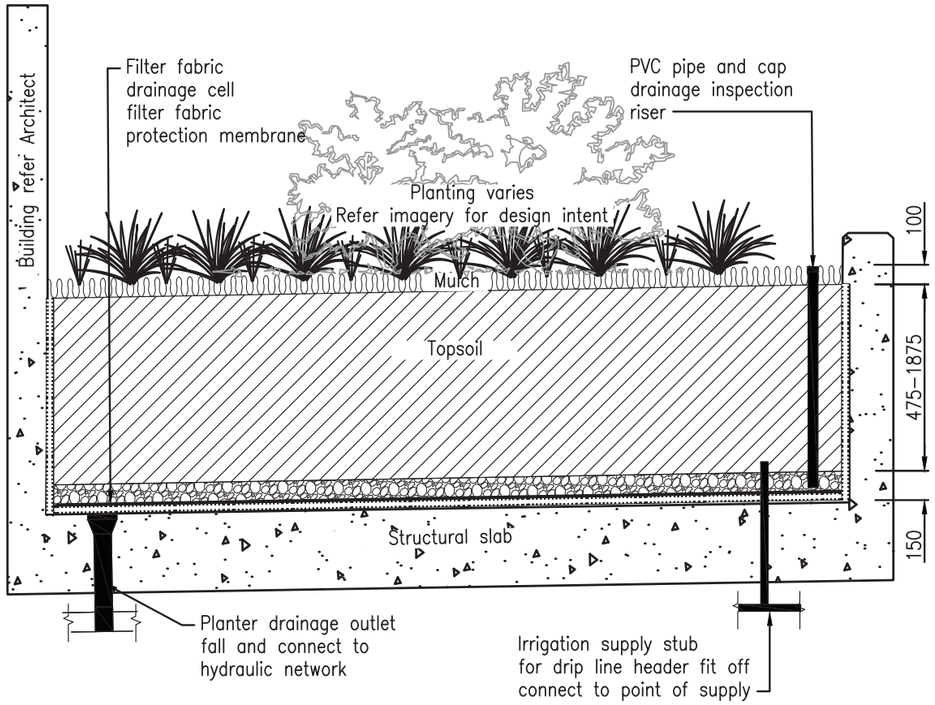
Planting palette

Cascading plants	
1.	*Convolvulus sabatius*
2.	*Rosmarinus Prostrate Rosemary*
3.	*Epopremnum ' devils ivy'*
4.	*Dichondra 'Silver Falls'*

Climbers	
5.	*Stephanotis floribunda*
6.	*Ficus pumila*
7.	*Monstera deliciosa*
8.	*Chonemorpha fragrans*

Typical planter detail



Landscape Design - Media depths

Ground Floor

NTS

Legend

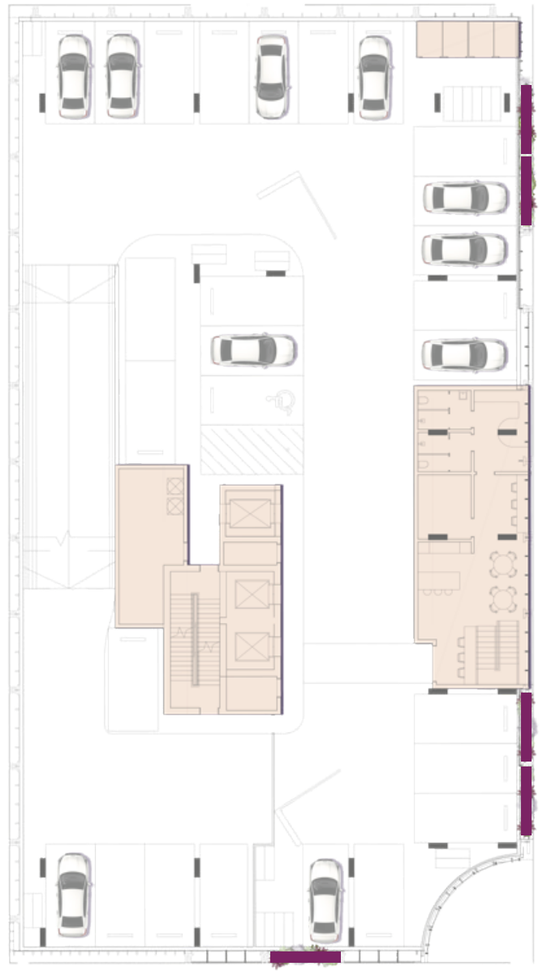
- Podium planting 575mm depth
- Planting on natural ground

On Podium planting - levels 01.

NTS

Legend

- Podium planting 875mm depth



On Podium planting - Level 2

NTS

Legend

- Podium planting 875mm depth

On Podium planting - Level 4

NTS

Legend

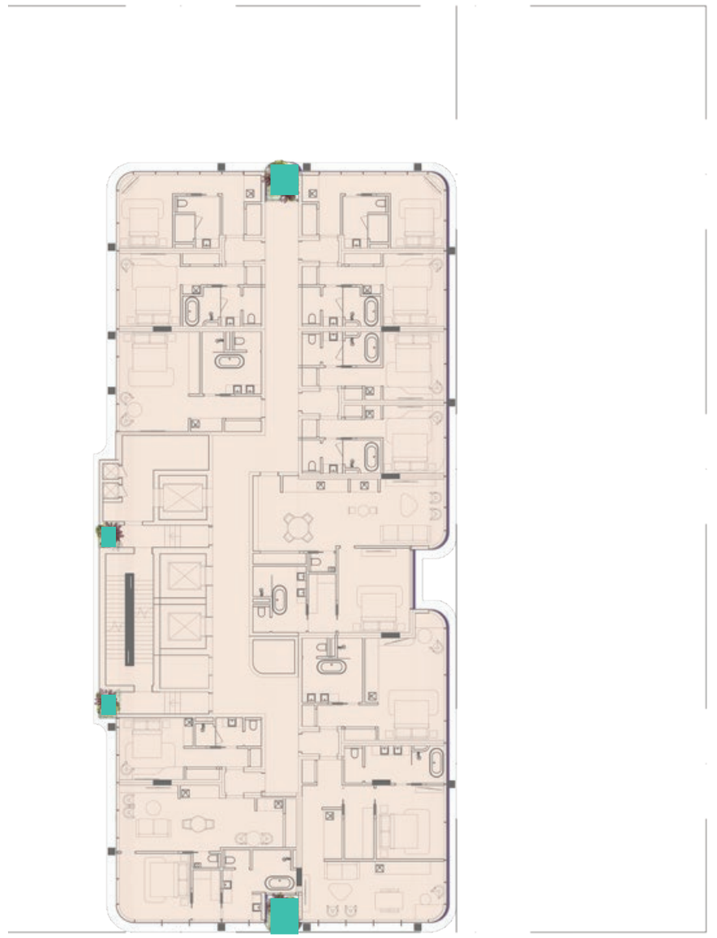
- Podium planting 575mm depth
- Podium planting 1125mm depth
- Podium planting 1650mm depth
- Podium planting 1975 mm depth

On Podium planting - Level 05-11

NTS

Legend

- Podium planting 575mm depth
- Podium planting 200mm depth (Fytogreen system) to level



On Podium planting - Level 12

NTS

Legend

- Podium planting 575mm depth

Landscape Design - Media depths

On Podium planting - Level 13-21

NTS

Legend

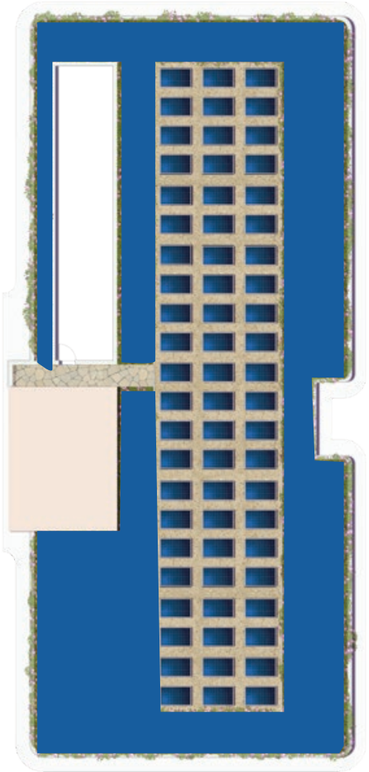
- Podium planting 575mm depth

On Podium planting - Level 22

NTS

Legend

- Podium planting 575mm depth
- Podium planting 775mm depth



On Podium planting - Level 23

NTS

Legend

- Podium planting 200mm depth (Fytogreen system)

Landscape Design - Planting Areas

Ground Floor

Level 1

Level 2

Level 3

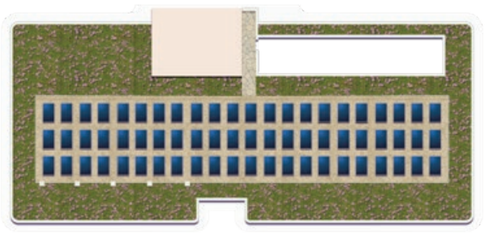
Level 4

Level 22

Level 5-11

Level 12

Level 13-21



Level 23

	Planting Area m2
Ground Floor	66
Level 1	18
Level 2	6
Level 3	23
Level 4	177
Levels 5-11	132
Level 12	3
Level 13-21	4.5
Level 22	60
Level 23	294
Total	782.5

Irrigation Design Australia

2024

5 Hercules Street
Hamilton

Irrigation Strategy Report

Irrigation Design Australia
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Postal address: P.O. Box 496, KALLANGUR, QUEENSLAND, 4503
Rick Freeman Phone: - 0410 594 460 Email: rick@irrigationdesignaustralia.com.au
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IRRIGATION WATER USAGE, CATCHMENT & IRRIGATION STRATEGY
5 HERCULES STREET V2 - 15.05.24

Please see below the Irrigation Design / Strategy Information.

Regardless of irrigation application method the water volume required will be the same. Irrigation water usage calculations are based on container size, soil volumes, infiltration rates, soil moisture holding capacity, area volumes, plant requirements (crop factor) and environmental conditions (epan).

See Item 1 below.

1 - IRRIGATION APPLICATION WATER USAGE PER APPLICATION:

Application rates for ***Planting*** based on:

- Arid Plant Selection Crop Factor of 0.3
- Soil / water holding capacity being 110mm.
- Root Zone depth of 150mm
- Allowable depletion of Fill capacity being 75%
- Irrigation efficiency with **ALL sub surface drip** is 98%
- Evapotranspiration (Epan) value being:
    - Summer - **5.7**, Autumn – **3.8**, Winter – **2.8**. Spring – **4.9**

2 - SITE DATA (IRRIGATION): LANDSCAPING: Planting 697m2

Based on these figures Irrigation requirement is **12.6mm** per application cycle for the standard Planting.

The interval between irrigation cycles based on these figures and historical BOM data is as follows:

SUMMER ***7 Days***, AUTUMN ***11 Days***, WINTER ***15 Days***, SPRING ***8 Days.***

(See Table 1 for site data and calculations)

Allowing for a 12.6mm application over **782.5m2** of Planting requires an irrigation application requirement of **9,860 litres.**

WATER REQUIREMENT PER APPLICATION IS 8,782.0litres

9,859.5 litres x 12 Applications in Summer is 118,314 Litres.

9,859.5 litres x 8 Applications in Autumn is 78,876 Litres.

9,859.5 litres x 6 Applications in Winter is 59,157 Litres.

9,859.5 litres x 9 Applications in Spring is 88,736 Litres.

Total Annual Water Usage for the Planting is 345,083 Litres

3 - IRRIGATION WATER CAPTURE AND STORAGE:

South-East Queensland's climate is volatile. There are no sureties as to the volume of rainfall that will fall in a given season. We have utilised the available historical BOM data to try to forecast potential issues and the figures below depict possible water catchment compared to irrigation requirements. *Catchment from roof areas can be inefficient and hardscape areas need to be noted as they have different run-off efficiencies. The calculations below have been based on approximately 80% of the catchment area.* Area of Catchment. 101m2 x 80% = 81m2

4 - RAINFALL AND CATCHMENT CALCULATIONS

SITE DATA (CATCHMENT): AREA 81m2

SUMMER

Summer rainfall average capture of 28,668 Litres

Summer irrigation requirement 118,314 Litres

Shortfall of 89,646 Litres

AUTUMN

Autumn rainfall average capture of 20,192 Litres

Autumn irrigation requirement 78,876 Litres

Shortfall of 58,684 Litres

WINTER

Winter rainfall average capture of 8,840 Litres

Winter irrigation requirement 59,157 Litres

Shortfall of 50,317 Litres

SPRING

Spring rainfall average capture of 14,576 Litres

Spring irrigation requirement 88,736 Litres

Shortfall of 74,159 Litres

Utilising the historical BOM data the above information informs us that the catchment will provide harvested water for 21% of annual requirements.

*The annual catchment is **72,276 Litres,*** the annual irrigation requirements are ***345,083 Litres*** a shortfall of ***272,807litres.***

5 - TANK SIZING OPTIONS (WATER STORAGE):

TANK SIZING (WATER STORAGE):

Tank sizing requires consideration of potential harvest volumes as well as irrigation water requirements. The highest average rainfall in Brisbane is 37.6mm a week, therefore the highest volume of water that can potentially be harvested over the project catchment is **3,038 Litres** in a week.

The suggestion is for storage is as follows:

3,000 Litre Storage would hold enough water for:

Approximately 0.3 weekly applications of irrigation.

This size tank will require **37mm** of Rain over the nominated catchment area to fill the Tank.

5,000 Litre Storage would hold enough water for:

Approximately 0.5 weekly applications of irrigation.

This size tank will require **62mm** of Rain over the nominated catchment area to fill the Tank.

10,000 Litre Storage would hold enough water for:

Approximately 1.01 weekly applications of irrigation

This size tank will require **124mm** of Rain over the nominated catchment area to fill the Tank.

6 - ALTERNATE WATER SUPPLY

In periods of low rainfall or when tank levels are below requirements an **External Water Supply** may be required. Currently water for irrigation is available for approximately $250 - $300 for a 15,000-litre tanker delivered. This could be utilised for tank fill if / when rainfall is not available. The locating of the tanks in an accessible location on the property will assist with access for Tanker fill. Alternatively, a fill line could be installed with an external connection point for a tanker to fill from. **Potable back up** could be utilized (if required) at a 10-25% Tank level. This would safeguard the system should there be an issue with the alternative supply or nil rainfall in periods of demand.

We trust this information, and calculations meet requirements and assist with planning for the required project.

Regards

Rick Freeman

5 HERCULES STREET Table 4

Soil Profile & Watering Requirements PLANTING

All irrigation data shown below represents watering required for the given specific soil and plant data on site during NON rain events.

Site Data

Soil Type:		Sand	Fine Sand	Sandy Loam	Loam	Silt Loam	Clay Loam	Clay
Infiltration Rate (mm/hr):	Low	20	15	10	10	8	5	1
Infiltration Rate (mm/hr):	High	25	20	18	15	12	10	5
Available Water (AW or Fill Capacity FC)		60	90	110	170	170	165	140
Root Zone Depth (mm)		50	100	150	200	250	300	350
Allowable Depletion (%)		25%	50%	75%	100%			
Irrigation Efficiency (Ef)		Aerial	80%	SubSurface	98%			
Plant Water Usage or Crop Factor (F)		Trees	Shurbs	Ground Covers	Turf - Couch	Turf - Rye		
		0.3	0.3	0.3	0.5	0.65		
Daily Evapotranspiration Rate (Epan)		Summer	Autumn	Winter	Spring			
(mm / day)		5.7	3.77	2.77	4.87			
Sprinkler Data		Pressure	Flow (L/H)	Spacing			App Rate (mm/hr)	
DRIP		350kpa	2.3	.3 X.3			25.5	

Irrigation required to initially bring soil to fill capacity (Initial Irrigation Cycle)

Plant Available Water (PAW) = Root zone Depth (RD) x Available Water Holding Capacity (Fill Capacity) — RD x (FC/1000)

RD =	150	(mm depth)
FC =	110	(mm depth per 1000mm)
PAW =	16.5	mm/m2 (initial irrigation cycle)

Irrigation required to maintain soil to fill capacity with allowable depletion (Regular Irrigation Cycle)

Applied Irrigation Depth (Id) = (% Allowable Depletion x PAW) / Application efficiency

AD % =	75%	Allowable depletion depth (mm/m2) =	12.375
PAW =	16.5	mm/m2	
Ef =	98%		
Id =	12.6	mm/m2 (per irrigation cycle)	

Plant Water usage incorporating Daily Eavporation (Epan) and Crop Factor (F)

Plant Water Usage (ETc) =	Crop Factor (F) x Daily Evapotranspiration (Epan)		SUMMER
F =	0.3	%	
Epan =	5.7	(mm/day)	
ETc =	1.7	mm/day	
Plant Water Usage (ETc) =	Crop Factor (F) x Daily Evapotranspiration (Epan)		AUTUMN
F =	0.3	%	
Epan =	3.77	(mm/day)	
ETc =	1.1	mm/day	
Plant Water Usage (ETc) =	Crop Factor (F) x Daily Evapotranspiration (Epan)		WINTER
F =	0.3	%	
Epan =	2.77	(mm/day)	
ETc =	0.8	mm/day	
Plant Water Usage (ETc) =	Crop Factor (F) x Daily Evapotranspiration (Epan)		SPRING
F =	0.3	%	
Epan =	4.87	(mm/day)	
ETc =	1.5	mm/day	

Irrigation Intervals (Days between irrigation events required to maintain Fill Capacity of soil)

Irrigation Interval (Ti) =	Allowable depletion depth (mm) / Etc (mm/day)				
AD =	12.375	mm/m2	SUMMER	Interval between Irrigation schedules rounded to days	7
Etc =	1.7	mm/m2			
Ti =	7.2	days between irrigation cycles			
Irrigation Interval (Ti) =	Allowable depletion depth (mm) / Etc (mm/day)				
AD =	12.375	mm/m2	AUTUMN	Interval between Irrigation schedules rounded to days	11
Etc =	1.1	mm/m2			
Ti =	10.9	days between irrigation cycles			
Irrigation Interval (Ti) =	Allowable depletion depth (mm) / Etc (mm/day)				
AD =	12.375	mm/m2	WINTER	Interval between Irrigation schedules rounded to days	15
Etc =	0.8	mm/m2			
Ti =	14.9	days between irrigation cycles			
Irrigation Interval (Ti) =	Allowable depletion depth (mm) / Etc (mm/day)				
AD =	12.375	mm/m2	SPRING	Interval between Irrigation schedules rounded to days	8
Etc =	1.5	mm/m2			
Ti =	8.5	days between irrigation cycles			

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RAINFALL/ E.T.R./ IRRIGATION SUMMARY BASED ON MEDIAN RAINFALL DATA FROM BOM.

5 HERCULES STREET

REGIONAL AREA: Brisbane

Table 2

Landscape Area (m2): **782.5**

Total Catchment Area: (m2) **101**

Irrigation Application Rates for Establishment Period (mm/wk)	32.00			
	SUMMER	AUTUMN	WINTER	SPRING
Irrigation Application Rates for Seasons after estab. (mm)	12.6	12.6	12.6	12.6
Interval between Irrigation to Planting (days)	7	11	15	8

Statistic Element	December	January	February	March	April	May	June	July	August	September	October	November
Rainfall (Median)												
Monthly (mm) [Data from BOM]	133.30	159.60	158.30	140.70	92.50	73.70	67.80	56.50	45.90	45.70	75.40	97.00
Weekly (mm)	33.33	39.90	39.58	35.18	23.13	18.43	16.95	14.13	11.48	11.43	18.85	24.25
Seasonal Average (mm)		37.60			25.58			14.18			18.18	
Potential Catchment for defined roof area, less other usages i.e. Toilet flushing												
Monthly Rainfall Catchment (L)	13,463	16,120	15,988	14,211	9,343	7,444	6,848	5,707	4,636	4,616	7,615	9,797
Weekly Rainfall Catchment (L)	3,366	4,030	3,997	3,553	2,336	1,861	1,712	1,427	1,159	1,154	1,904	2,449
Season Average (L)		3797.60			2583.08			1432.52			1835.68	
Average Weekly Rainfall Catchment (L)		2,412										
Evapotranspiration (Median)												
Monthly (mm)	170.80	162.40	145.60	126.00	106.40	84.00	70.00	70.00	92.40	117.60	134.40	156.80
Weekly (mm)	42.70	40.60	36.40	31.50	26.60	21.00	17.50	17.50	23.10	29.40	33.60	39.20
Daily (mm) [Data from BOM]	6.10	5.80	5.20	4.50	3.80	3.00	2.50	2.50	3.30	4.20	4.80	5.60
Seasonal Average (mm)		5.70			3.77			2.77			4.87	
Adjusted Irrigation Appl. Rate comparing ETvsRainfall		**- VE indicates irrigation IS required**					**+ VE indicates irigation NOT required**					
Adjusted Monthly ETvsRain (mm)	-37.50	-2.80	12.70	14.70	-13.90	-10.30	-2.20	-13.50	-46.50	-71.90	-59.00	-59.80
Adjusted Weekly ETvsRain (mm)	-9.37	-0.70	3.18	3.68	-3.48	-2.58	-0.55	-3.38	-11.63	-17.98	-14.75	-14.95
Irrigation Required 1=Yes 0=No	1	1	0	0	1	1	1	1	1	1	1	1
Irrigation Supplement												
Weekly Irrigation Required (L)	-7,336	-548	0	0	-2,719	-2,015	-430	-2,641	-9,097	-14,065	-11,542	-11,698

Irrigation for 1 wk of Establishment (during no rain) (L)	25,040
Irrigation for 1 wk during Summer (during no rain) (L)	9,860
Irrigation for 1 wk during Autumn/Spring (during no rain) (L)	9,860
Irrigation for 1 wk during Winter (during no rain) (L)	9,860
Irrigation for 1 wk during Spring (during no rain) (L)	9,860

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HERCULES STREET

CATCHMENT & IRRIGATION WATER USAGE

Landscape Area (m2): 782.5 **Catchment** 101 **Adjusted Catchment** 81

WATER USAGE METHOD - HORTICULTURAL APPLICATIONS (12.6mm)

SEASON	Irrigation Application Requirements	Volume per Application	Seasonal Irrigation Application quantities	Annual Irrigation Requirements
SUMMER	12.6	9859.5	12	118,314
AUTUMN	12.6	9859.5	8	78,876
WINTER	12.6	9859.5	6	59,157
SPRING	12.6	9859.5	9	88,736
Average	12.6	9859.5	35	345,083

WATER USAGE METHOD - INDUSTRY STANDARD APPLICATIONS (25,20,15,10mm)

SEASON	Irrigation Application Requirements	Volume per Application	Seasonal Irrigation Application quantities	Annual Irrigation Requirements
SUMMER	25	19562.5	13	254,313
AUTUMN	15	11737.5	13	152,588
WINTER	10	7825	13	101,725
SPRING	20	15650	13	203,450
Average	18	13693.75	52	712,075

CATCHMENT CALCULATION METHOD A - BOM DATA ANNUAL RAINFALL

	AREA	Annual Rainfall	Cunliffe Adjustment	Adjusted Annual Rainfall	Catchment
	m2	mm	mm	m2	litres
ROOF CATCHMENT AREA	81	1200	24	1,176	95,021
ANNUAL CATCHMENT					95,021

CATCHMENT CALCULATION - BOM DATA SEASONAL RAINFALL

SEASON	Average Weekly Rainfall	Average Weekly Catchment	Weeks in Season	Average Seasonal Catchment
	mm	litres	qty	litres
Highest Weekly Volume (February)	40.40	3,264	1	
SUMMER	33.89	2,738	13	35,598
AUTUMN	24.36	1,968	13	25,588
WINTER	10.82	874	13	11,365
SPRING	17.39	1,405	13	18,266
TOTALS		6,986	52	90,818
Highest Average Rainfall (BOM Data)	37.60	3,038	13	39,495

AVERAGES	Annually	Summer	Autumn	Winter	Spring
METHOD A					
IRRIGATION REQUIREMENT (Horticultural Applications)	345,083	118,314	78,876	59,157	88,736
CATCHMENT SEASONAL	90,818	2,738	1,968	874	1,405
% provide by Rainfall	26%	2%	2%	1%	2%
DIFFERENCE	-254,265	-115,576	-76,908	-58,283	-87,330
METHOD B					
IRRIGATION REQUIREMENT (Industry Standards)	712,075.0	19,563	11,738	7,825	15,650
CATCHMENT SEASONAL	90,818	2,738	1,968	874	1,405
% provide by Rainfall	13%	14%	17%	11%	9%
DIFFERENCE	-621,257	-16,824	-9,769	-6,951	-14,245

Tank Sizing	Average Weekly Application	TANK SIZE	TANK SIZE	TANK SIZE	TANK SIZE
STORAGE		5,000	7,500	10,000	15,000
Applications of Irrigation (Horticultural requirements)	9,860	0.51	0.76	1.01	1.52
Applications of Industry Standard (Average)	13,694	0.37	0.55	0.73	1.10
mm OF RAIN TO FILL TANK		62	93	124	186