Archipelago

5 Hercules Street, Hamilton
Landscape statement of design intent

2022

The Garden

HERCULES STREET | HAMILTON

Image Attribute:

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—DOCUMENT ISSUE RECORD

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	Statement of Landscape intent	
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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 seating and a bespoke arbor structure will engage with the local neighbourhood to draw people in and energise their walking and cycling journeys.

Complementing the warmth of the articulated brick pattern 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 brick patterned facade and 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.

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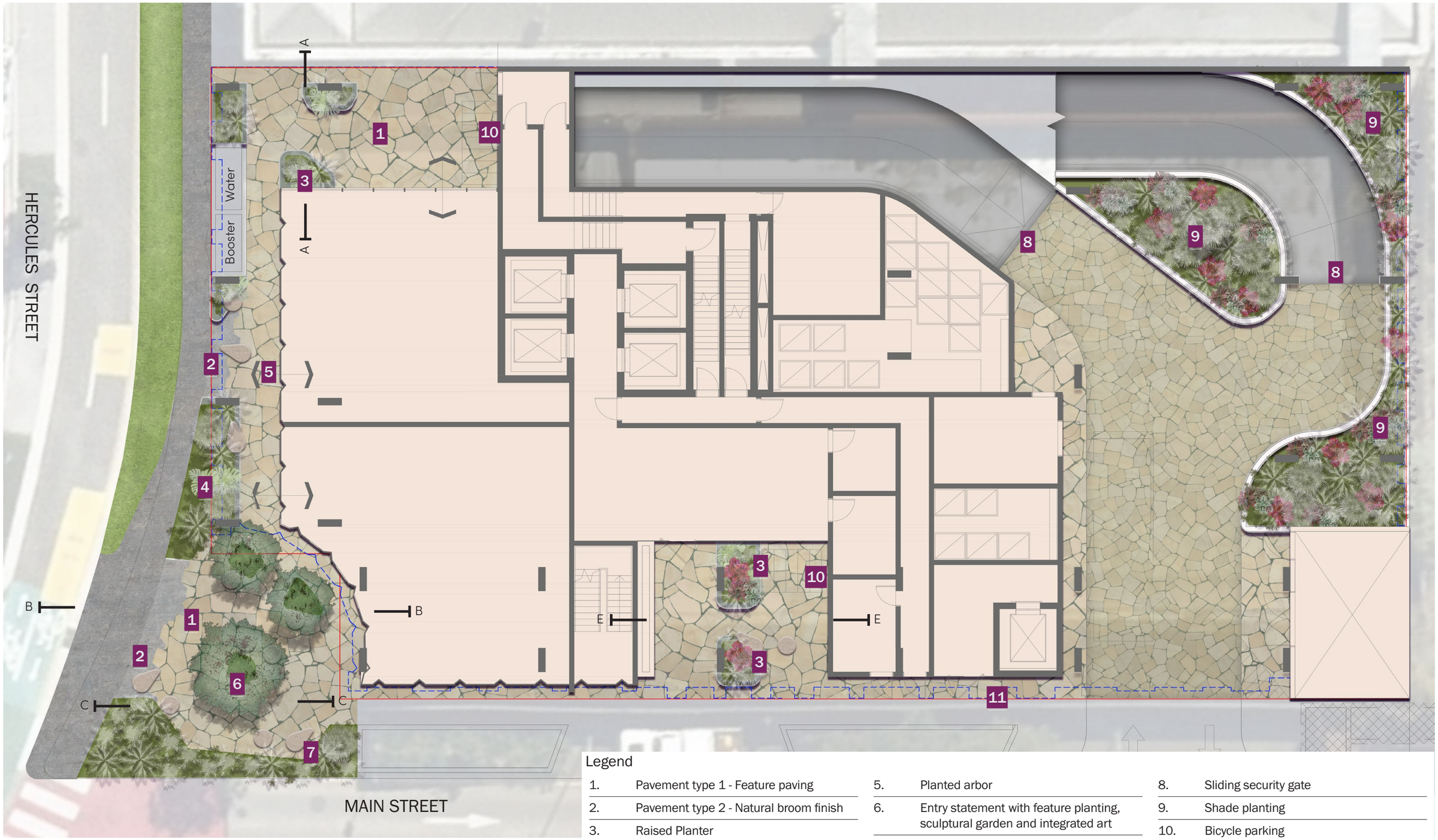
Landscape Design - Ground Level



Legend

1.	Pavement type 1 - Feature paving	5.	Planted arbor	8.	Sliding security gate
2.	Pavement type 2 - Natural broom finish	6.	Entry statement with feature planting, sculptural garden and integrated art	9.	Shade planting
3.	Raised Planter	7.	Sculptural furniture	10.	Bicycle parking
4.	Deep Planting			11.	Basement below

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.

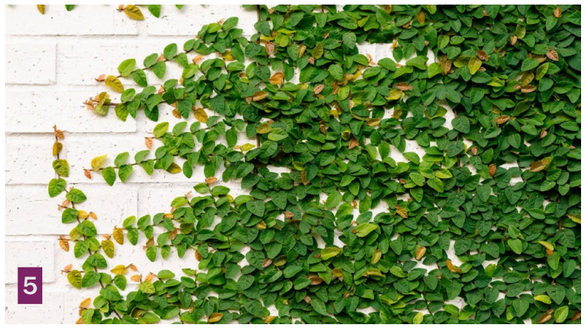
Hardscape treatments, and landscape embellishments have been designed to integrate with the built form, reference the sites history through material choices, reinforce the existing local landscape character, and contribute to the public streetscape.

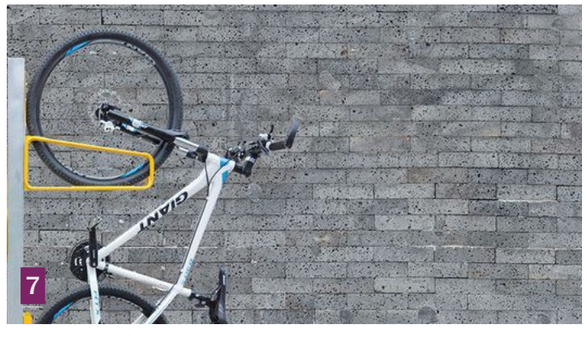
In partnership with the buildings articulated and contemporary yet timeless architectural presence, the public realm deliberately blends the public realm in a seamless subtropical manner with an eclectic planting palette featuring richly textured sculptural ground-covers in partnership with the refined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

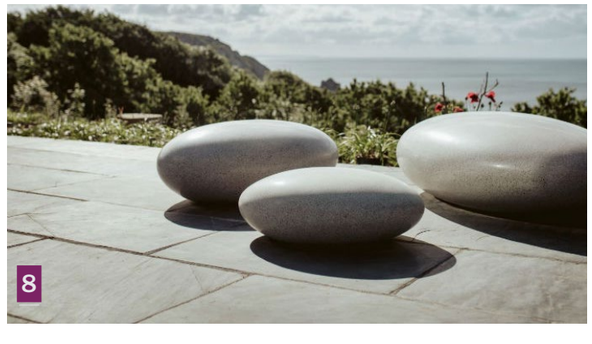
A bespoke heritage wharf timber arbor featuring climbing species, cultural heritage signage and wharf timber seating will be a distinctive feature of the ground level frontage creating the possibility for a true local place to evolve through community engagement with the activated building ground floor.

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. Vertical Bike Parking
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 - Hercules Street Cafe frontage

Section B - Hercules street streetscape - Residential lobby

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Landscape Design - Level 4 Recreation

Legend

1.	Subtropical feature podium planting	4.	Feature pavement	7.	Yoga Lawn
2.	Casual dining area for small groups	5.	Pool		
3.	Casual dining area for large group	6.	Poolside Lounge		

Level 4 Recreation

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.	Anthurium Great Red	Flamingo Lilly
5.	Calathea Freddie	Zebra Plant
6.	Hedera helix	English Ivy
7.	Philodendron congo	Rojo
8.	Rhapis excelsa	Lady Palm


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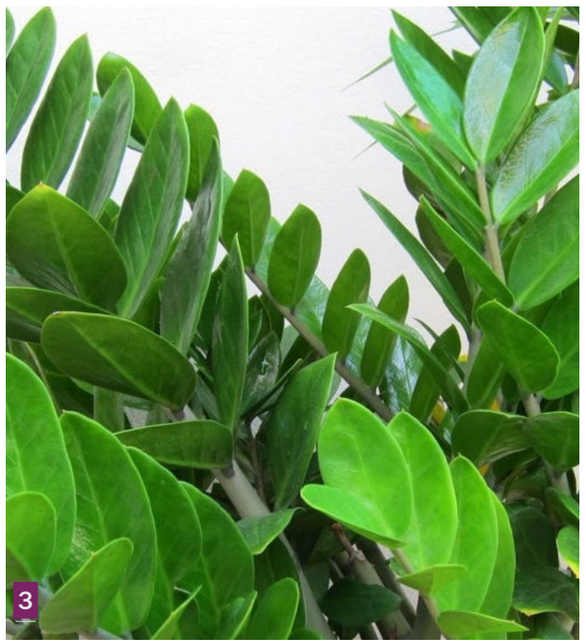
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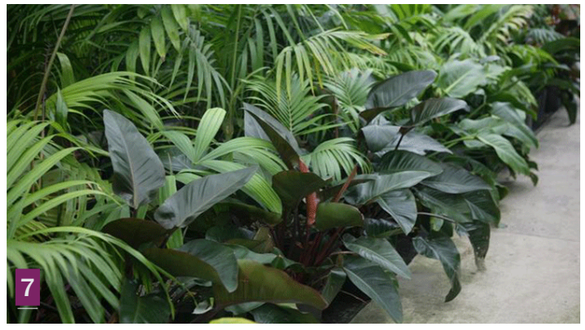
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Level 4 Recreation deck - Sections

View A

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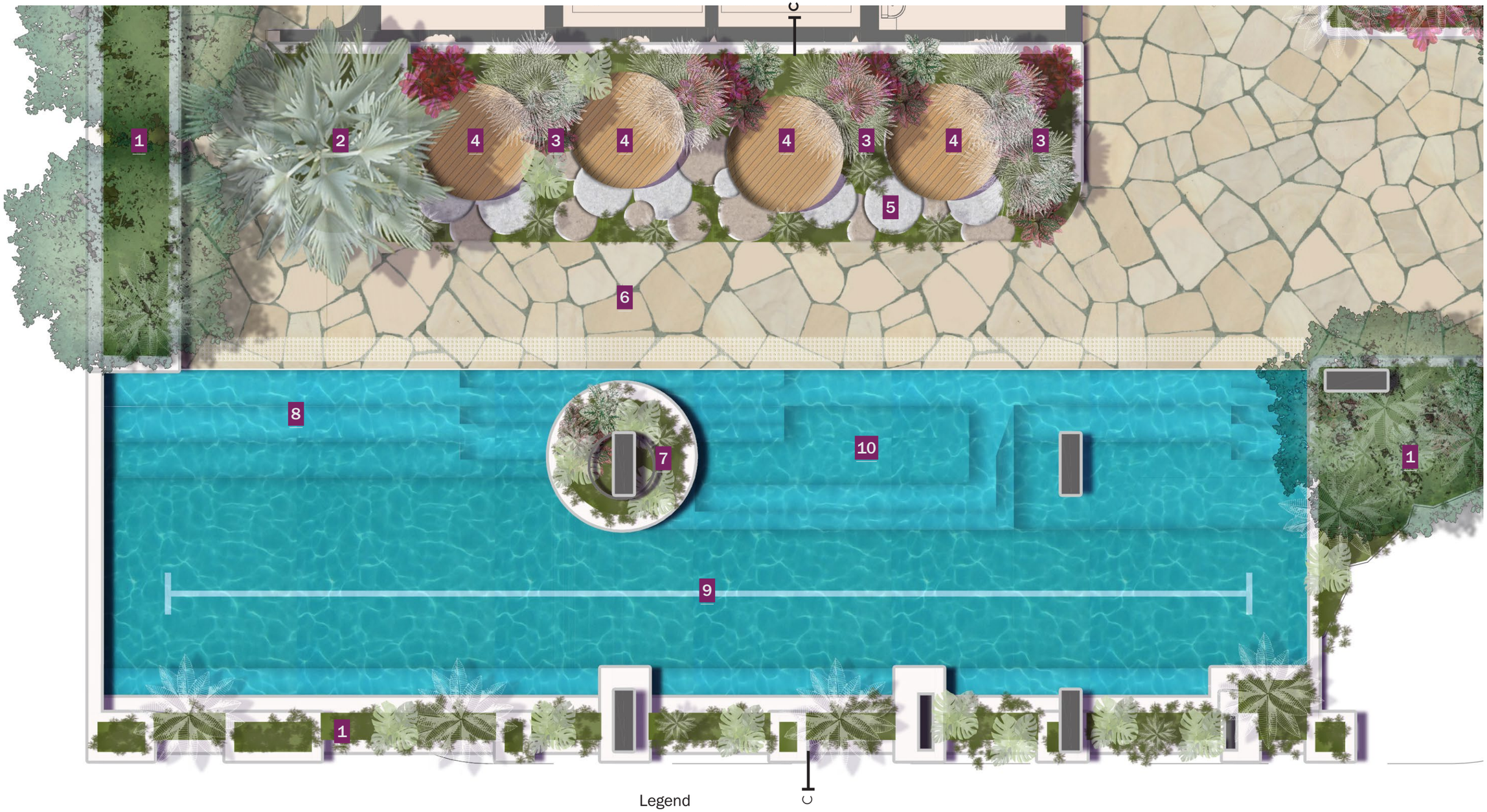
View B

View C

A

Landscape Design - Level 4 Pool



Legend

1.	Podium edge planting	5.	Feature paving type 1	9.	Lap Pool
2.	Podium internal planting	6.	Feature paving type 2	10.	Spa Pool
3.	Hanging screen planting	7.	Pool planting		
4.	Day bed	8.	Pool entry stairs		

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.

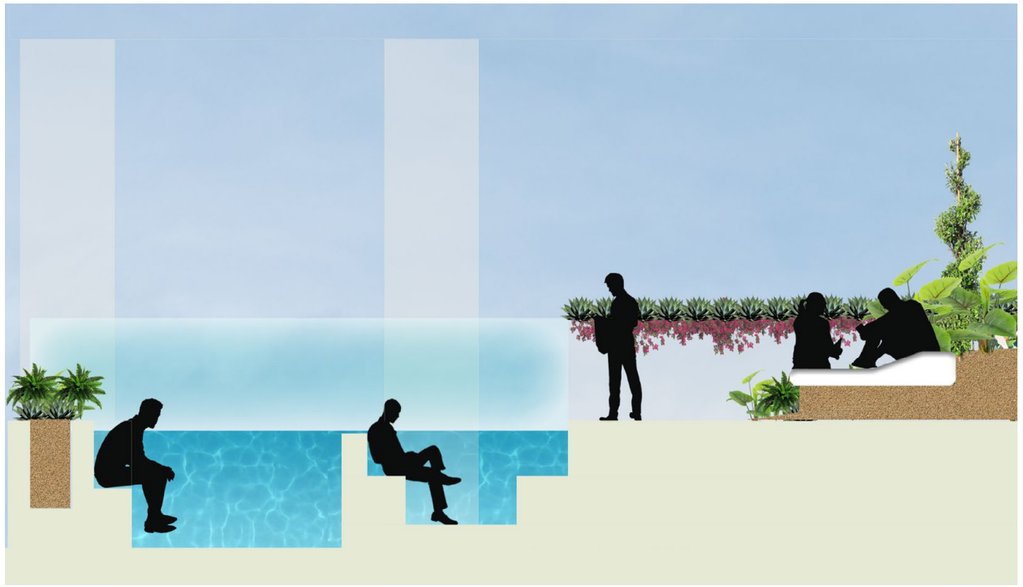
The pool has been articulated to provide for 20m lap and casual swimming along the outer Hercules Street edge (west) with the inner edge heavily articulated through seating steps and a linear spa that will allow pool users to converse with non-swimmers lounging in the hanging garden beds.

Within the pool a feature circular bed envelops the building column with an artistic woven trellis structure draping from the soffit to encase the column with climbers and epiphytes.

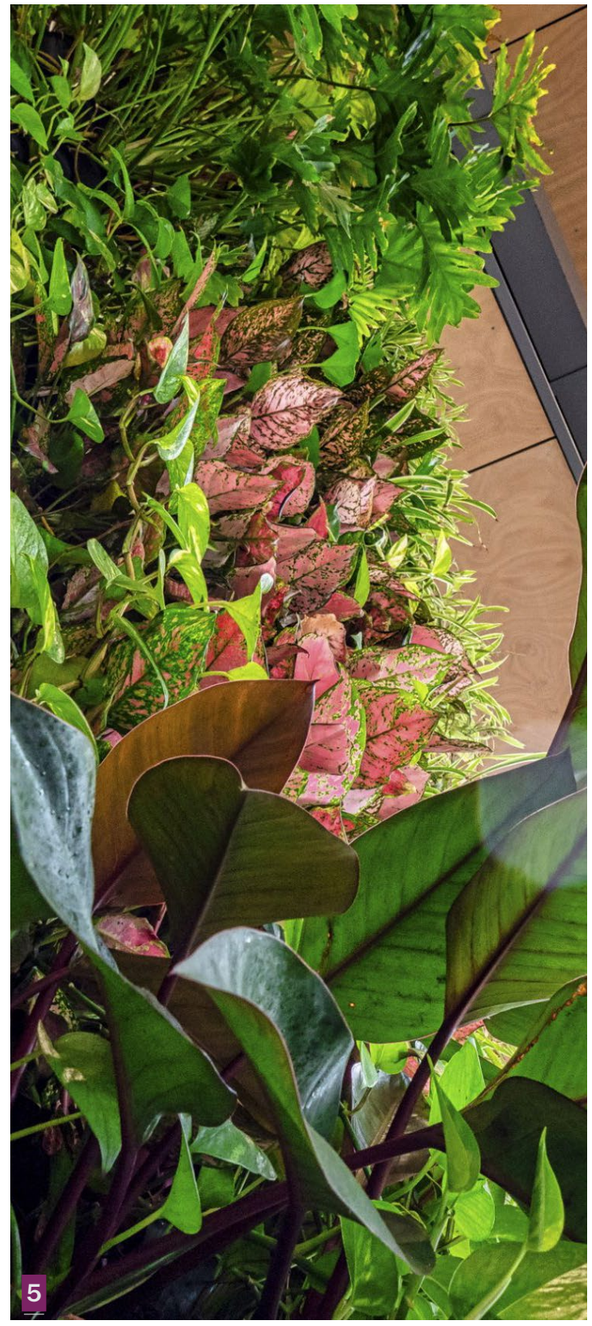
Planting palette

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.	Alocacia macrorrhizos	Giant Taro
2.	Philodendron ‘xanadu’	Xanadu
3.	Senecio serpens	Blue chalk sticks
4.	Dichondra argentea	Silver Falls
5.	Mixed shade species (Eppipremnum aureum, Peperomia obtusifolia, Syngonium podophyllum)	



Section C Pool



Landscape Design - Roof Terrace

Legend

1.	Penthouse open plan outdoor terrace	5.	Pool deck
2.	Floating stairs	6.	Podium planting mixed species
3.	Integrated seating	7.	Residents roof terrace
4.	Pool		

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Roof Terrace

The Roof Terraces provide the opportunity to experience local and long views from behind a parapet of subtropical planting. The edge planters will provide a safe sold “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

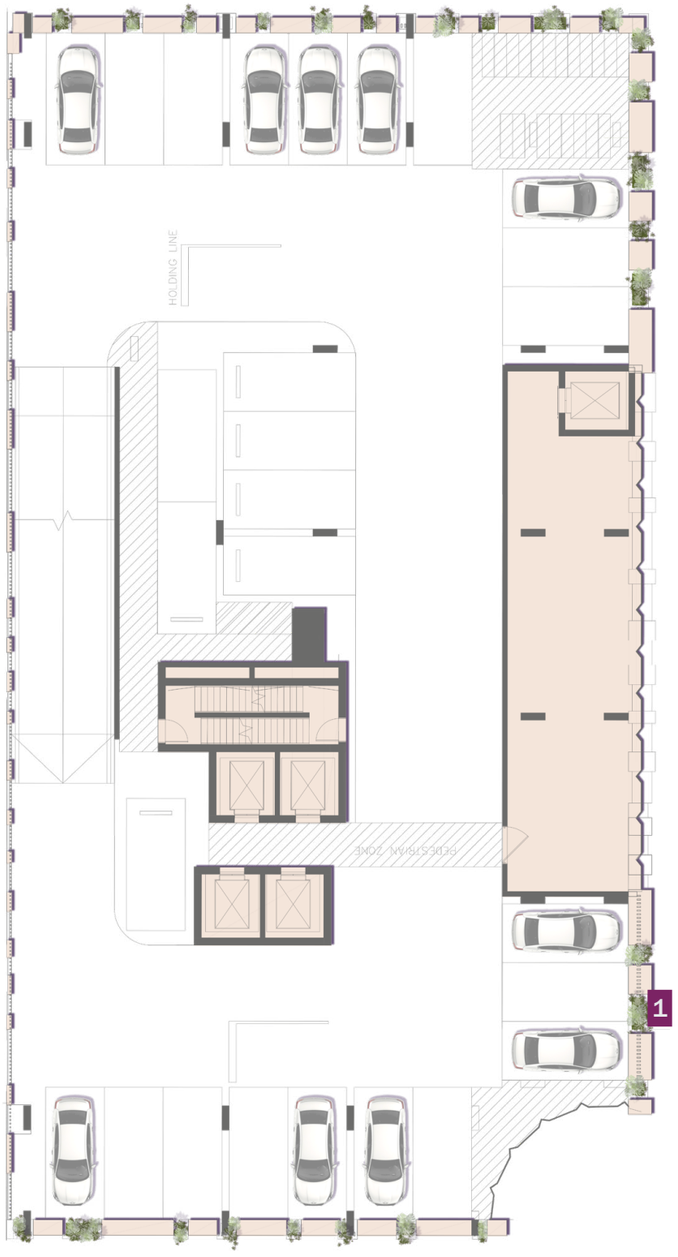
The planting palette for the roof text will feature a diversity of native and exotic species suited to the challenging conditions present on higher building levels.

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 - Upper Levels

Level 2



Level 3

Legend

1 Podium edge planting

2 Feature podium planting

Levels 5-14

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*

Landscape Design - Upper Levels

Levels 15-21

Level 22

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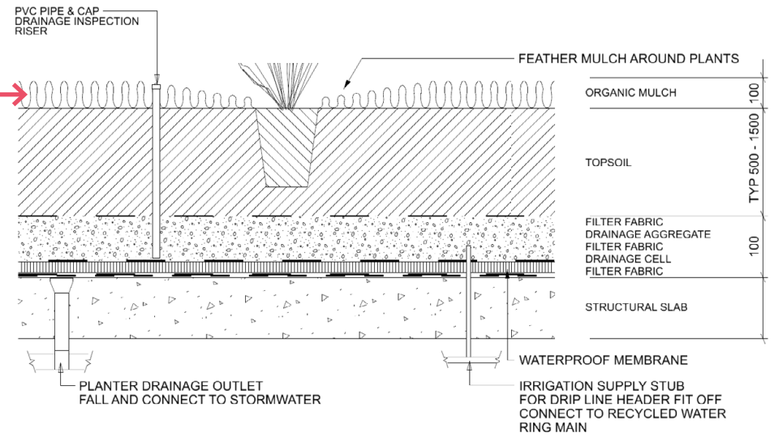
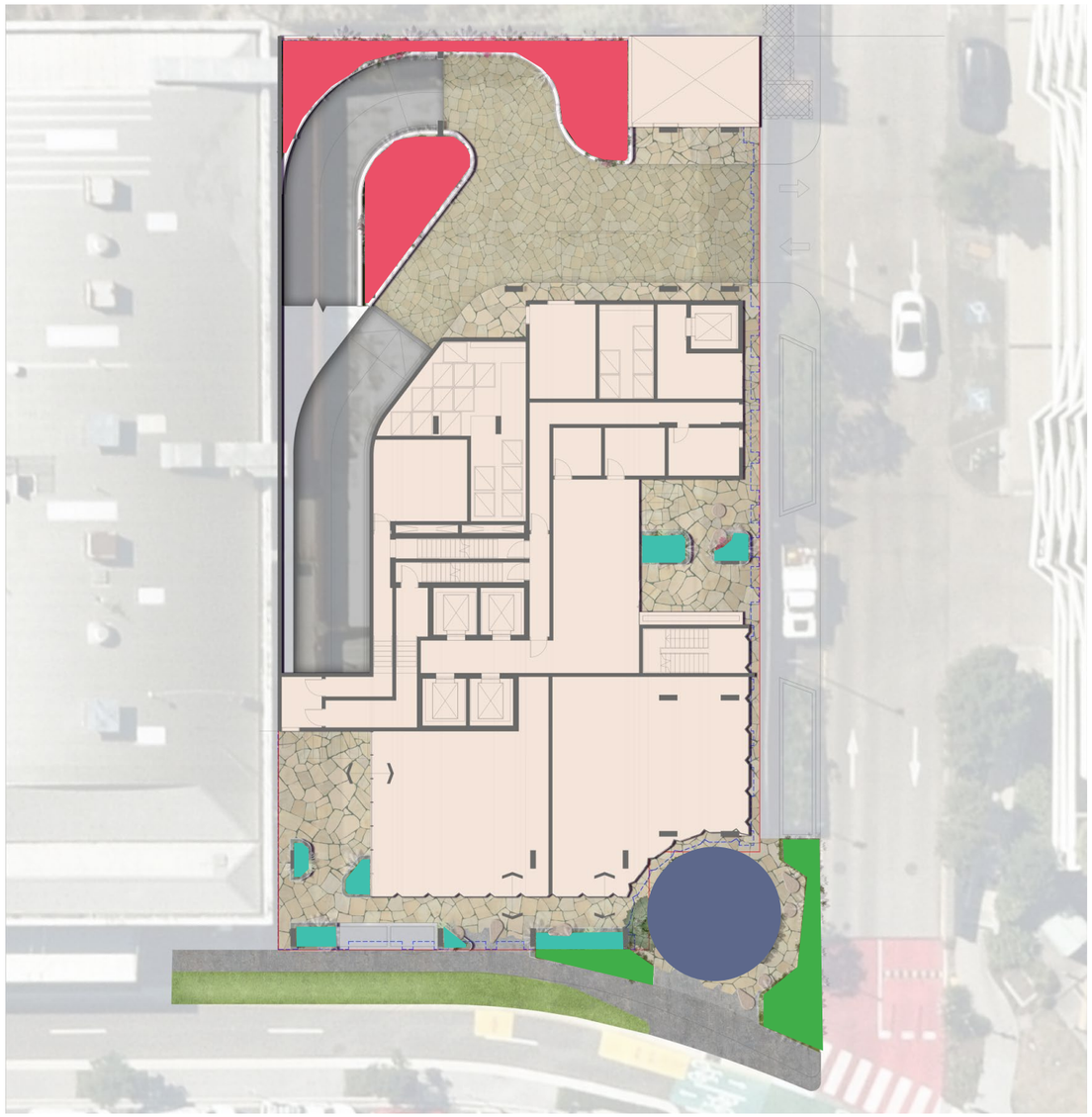
Typical planter detail



Legend

1.	Podium edge planting
2.	Feature podium planting

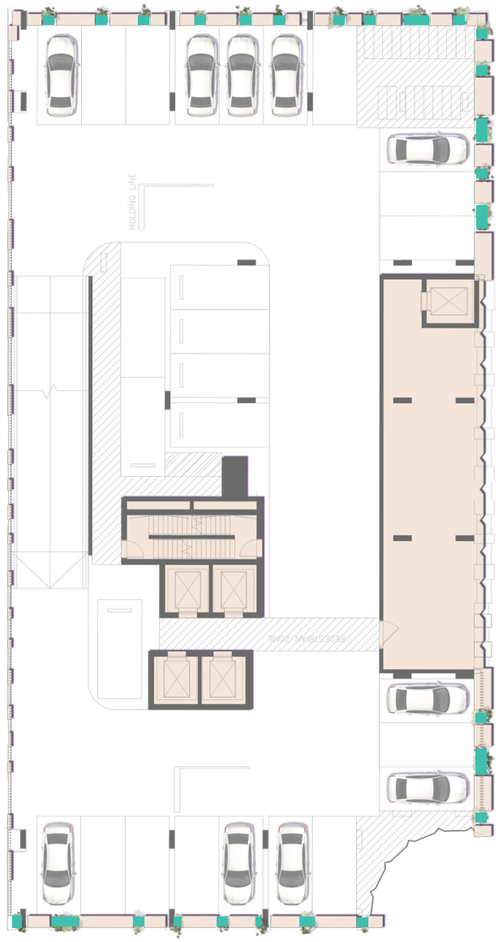
Landscape Design - Media depths



Ground Floor

Legend

- Soil Structure system
- Podium planting 600mm depth
- Podium Planting 1200mm depth
- Planting on natural ground 600mm depth

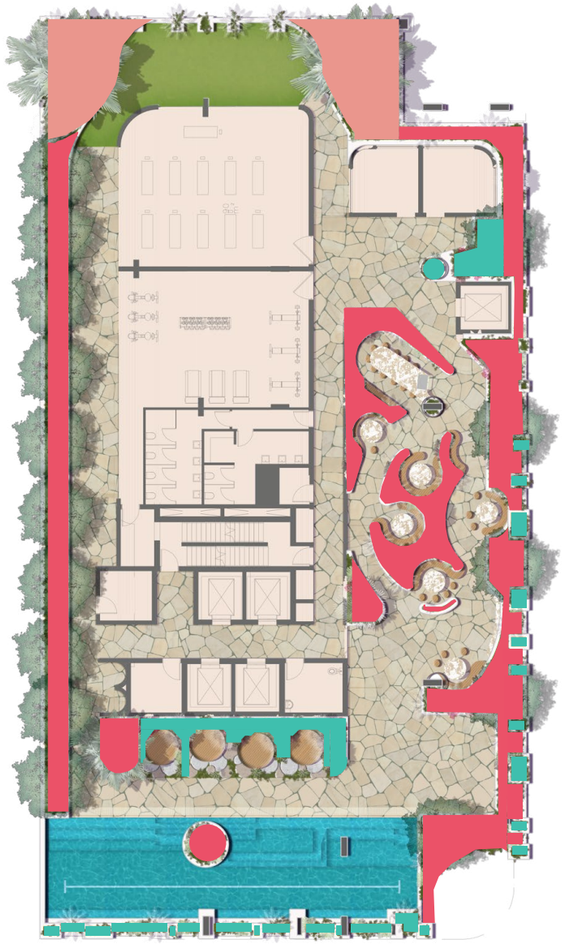


On Podium planting - Planting depth typical for levels 1-3 and 5-22.

Refer to upper level planting plans for planting extent

Legend

- Podium planting 600mm depth



On Podium planting - Level 4

Legend

- Podium planting 600mm depth
- Podium planting 1200mm depth
- Podium planting 1600mm depth

On Podium planting - Level 23

Legend

- Podium planting 600mm depth
- Podium planting 1200mm depth
- Podium planting 1600mm depth

Irrigation Design Australia

2022

5 Hercules Street
Hamilton

Irrigation Strategy Report

Image Attribute:

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IRRIGATION WATER USAGE, CATCHMENT & IRRIGATION STRATEGY
5 HERCULES STREET

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 the **697m2** of Planting requires an irrigation application requirement of **8,782 litres.**

WATER REQUIREMENT PER APPLICATION IS 8,782.0litres

8,782litres x 12 Applications in Summer is 105,386litres

8,782litres x 8 Applications in Autumn is 70,258litres

8,782litres x 6 Applications in Winter is 52,693litres

8,782litres x 9 Applications in Spring is 79,040litres

Total Annual Water Usage for the Planting is 307,377litres

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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 75% of catchment area.* Area of Catchment. 400m2 x 75% = 300m2

4 - RAINFALL AND CATCHMENT CALCULATIONS

SITE DATA (CATCHMENT): AREA 300m2

SUMMER

Summer rainfall average 37.6mm per week over 300m2 = Capture of 11,280litres

Summer irrigation requirement 8,782litres every **7** days – **Less than catchment volume.**

13 weeks of catchment is 146,640litres

AUTUMN

Autumn rainfall average 25.58mm per week over 300m2 = Capture of 7,674litres

Autumn rainfall average for 11 Days over 300m2 = Capture of 12,059litres

Autumn irrigation requirement 8,782litres every **11**days – **Less than catchment volume.**

13 weeks of catchment is 99,762litres

WINTER

Winter rainfall average 14.18mm per week over 300m2 = Capture of 4,254litres

Winter rainfall average for 15 Days over 300m2 = Capture of 9,115litres

Winter irrigation requirement 8,782litres every **15** days – **Less than catchment volume.**

13 weeks of catchment is 55,302litres

SPRING

Spring rainfall average 18.18mm per 7 Days, over 300m2 = Capture of 5,454itres

Spring rainfall average for 8 Days Capture over 300m2 of 6,233litres

Spring irrigation requirement 8,782litres every **8** days – 2,549litre tank fill required**.**

13 weeks of catchment is 70,902litres

Utilising the historical BOM data the above information informs us that the catchment will provide harvested water for 9 months of the year or 75% of annual requirements.

Spring requirements may require the purchase of 2,549litres of water from an external source.

Given that the annual catchment is 372,606litres, this exceeds the annual irrigation requirements ***307,377litres*** by ***65,229litres***, so if storage and irrigation is managed correctly the external source may not be required.

5 - TANK SIZING OPTIONS (WATER STORAGE):

With **"average" weekly** rainfall 15,000 Litres of storage would provide adequate water for 52 weeks irrigation requirements. The Irrigation application requirement of 8,782 litres is 58.5% of Tank capacity **15,000 Litres storage is the recommended storage size. It provides 1.71 applications of irrigation and requires 50mm of rain for refill. This size is the most practical and provides surety dependent on there being the required rainfall.**

6 - IRRIGATION STRATEGY REPORT

The recommendations regarding plant & soil selection and irrigation methodology were and have been considered and included in the methodology. The irrigation can be designed so that exposed planters for example western facing would be on one station (valve) and eastern facing on another, and planters of different species could be on different stations. However, the reality is that, unless you have individually controlled systems to each plant and or planter there will always be some overwatering, this is always balanced by management of the irrigation so water is not wasted. All irrigation would be either sub surface drip or if required for larger plantings bubblers could be utilised. **No spray irrigation.** The irrigation treatment will be sub surface drip to Garden and Planters.
For the purpose of this strategy it is presumed that the operational water supply and pressure will allow for 25mm Solenoid Valves operation at 350kpa with a flow maximum of 120litres per minute (2lps). Drip design would be calculated utilizing 2.3litre per hour drippers at 300mm spacing with drip laterals at 300mm.

7 - 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, calculations and stated strategy meets requirements and assists with planning for the required project.

Regards
Rick Freeman

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

5 HERCULES STREET **REGIONAL AREA: Brisbane** **INDUSTRY STANDARDS FOR APPLICATION**

Table 1

Landscape Area (m2): **697** Total Catchment Area: (m2) **400**

Irrigation Application Rates for Establishment Period (mm/wk)	32.00			
	SUMMER	AUTUMN	WINTER	SPRING
Irrigation Application Rates for Seasons after estab. (mm) Industry Standard	25.0	15.0	10.0	20.0

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)	53,320	63,840	63,320	56,280	37,000	29,480	27,120	22,600	18,360	18,280	30,160	38,800
Weekly Rainfall Catchment (L)	13,330	15,960	15,830	14,070	9,250	7,370	6,780	5,650	4,590	4,570	7,540	9,700
Season Average (L)		15040.00			10230.00			5673.33			7270.00	
Average Weekly Rainfall Catchment (L)					9,553							
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)	-6,534	-488	0	0	-2,422	-1,795	-383	-2,352	-8,103	-12,529	-10,281	-10,420

Irrigation for 1 wk of Establishment (during no rain) (L)	22,304
Irrigation for 1 wk during Summer (during no rain) (L)	17,425
Irrigation for 1 wk during Autumn (during no rain) (L)	10,455
Irrigation for 1 wk during Winter (during no rain) (L)	6,970
Irrigation for 1 wk during Spring (during no rain) (L)	13,940

Storage Available (L)

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Irrigation Design Australia **RAINFALL/ E.T.R./ IRRIGATION SUMMARY BASED ON MEDIAN RAINFALL DATA FROM BOM.**

5 HERCULES STREET **REGIONAL AREA: Brisbane**

Table 2

Landscape Area (m2): **697** Total Catchment Area: (m2) **400**

Irrigation Application Rates for Establishment Period (mm/wk)	32.00			
Irrigation Application Rates for Seasons after estab. (mm)	SUMMER	AUTUMN	WINTER	SPRING
	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)	53,320	63,840	63,320	56,280	37,000	29,480	27,120	22,600	18,360	18,280	30,160	38,800
Weekly Rainfall Catchment (L)	13,330	15,960	15,830	14,070	9,250	7,370	6,780	5,650	4,590	4,570	7,540	9,700
Season Average (L)		15040.00			10230.00			5673.33			7270.00	
Average Weekly Rainfall Catchment (L)		9,553										
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)	-6,534	-488	0	0	-2,422	-1,795	-383	-2,352	-8,103	-12,529	-10,281	-10,420

Irrigation for 1 wk of Establishment (during no rain) (L)	22,304
Irrigation for 1 wk during Summer (during no rain) (L)	8,782
Irrigation for 1 wk during Autumn/Spring (during no rain) (L)	8,782
Irrigation for 1 wk during Winter (during no rain) (L)	8,782
Irrigation for 1 wk during Spring (during no rain) (L)	8,782

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CATCHMENT & IRRIGATION WATER USAGE

5 HERCULES STREET
Table 3

Landscape Area (m2):	697	Catchment	400	Adjusted Catchment	300
Turf Area (m2)	0			Tank Size	15,000

WATER USAGE - IRRIGATION REQUIREMENT

	Applications	mm	litres
697.00	qty	qty	qty
Application	1	12.6	8,782
ESTABLISHMENT	1	32	22,304
SUMMER every 7 Days	12	12.6	105,386
AUTUMN every 11 Days	8	12.6	70,258
WINTER every 15 Days	6	12.6	52,693
SPRING every 8 Days	9	12.6	79,040
			307,377

CATCHMENT CALCULATION METHOD A - BOM DATA ANNUAL RAINFALL

	AREA	QTY	Catchment
	m2	mm	litres
ROOF CATCHMENT AREA	300		
ANNUAL RAINFALL		1,200	360,000
AVERAGE WEEKLY RAINFALL (/52)		23	6,923
SEASON AVERAGE (13weeks)		13	90,000
ANNUAL CATCHMENT	**300**	**1,200**	*360,000*

CATCHMENT CALCULATION METHOD B - BOM DATA SEASONAL RAINFALL

SEASON	Average Weekly Rainfall	Average Weekly Catchment	Weeks in Season	Average Seasonal Catchment
	mm	litres	qty	litres
SUMMER	37.60	11,280.0	13	146,640
AUTUMN	25.58	7,674.0	13	99,762
WINTER	14.18	4,254.0	13	55,302
SPRING	18.18	5,454.0	13	70,902
TOTALS		**28,662**	**52**	*372,606*

AVERAGES	**ANNUALLY**	**MONTHLY**	**WEEKLY**
METHOD A			
IRRIGATION REQUIREMENT	*307,377*	*25,615*	*5,911*
CATCHMENT	*360,000*	*30,000*	*6,923*
DIFFERENCE	*52,623*	*4,385*	*1,012*
METHOD B			
IRRIGATION REQUIREMENT	*307,377*	*25,615*	*5,911*
CATCHMENT	*372,606*	*31,051*	*7,166*
DIFFERENCE	*65,229*	*5,436*	*1,254*

Tank Size	*10,000*	*15,000*	*20,000*	*25,000*
Applications of Irrigation	***1.14***	***1.71***	***2.28***	***2.85***
mm of Rain to Fill Tank	*33.33*	*50.00*	*66.67*	*83.33*

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			