

A vibrant lorikeet with a blue head, red beak, and green body is perched on a branch of a bottlebrush plant. The plant has several large, orange, cylindrical flower heads and green, needle-like leaves. The background is a blurred concrete wall.

ARCADIA
LANDSCAPE ARCHITECTURE

architectus

||||| cbus
property

12-22 LANGSTON PLACE EPPING

**LANDSCAPE DEVELOPMENT APPLICATION
MAY 2017**



PREPARED FOR:

CBUS PROPERTY: LANGSTON PLACE PTY LTD

PREPARED BY:

ARCADIA LANDSCAPE ARCHITECTURE

In collaboration with
Architectus architecture + urban design
WT Partnership quantity surveyors
Urbis planners
Norman Disney Young engineers
WSP engineers

12-22 LANGSTON PLACE EPPING

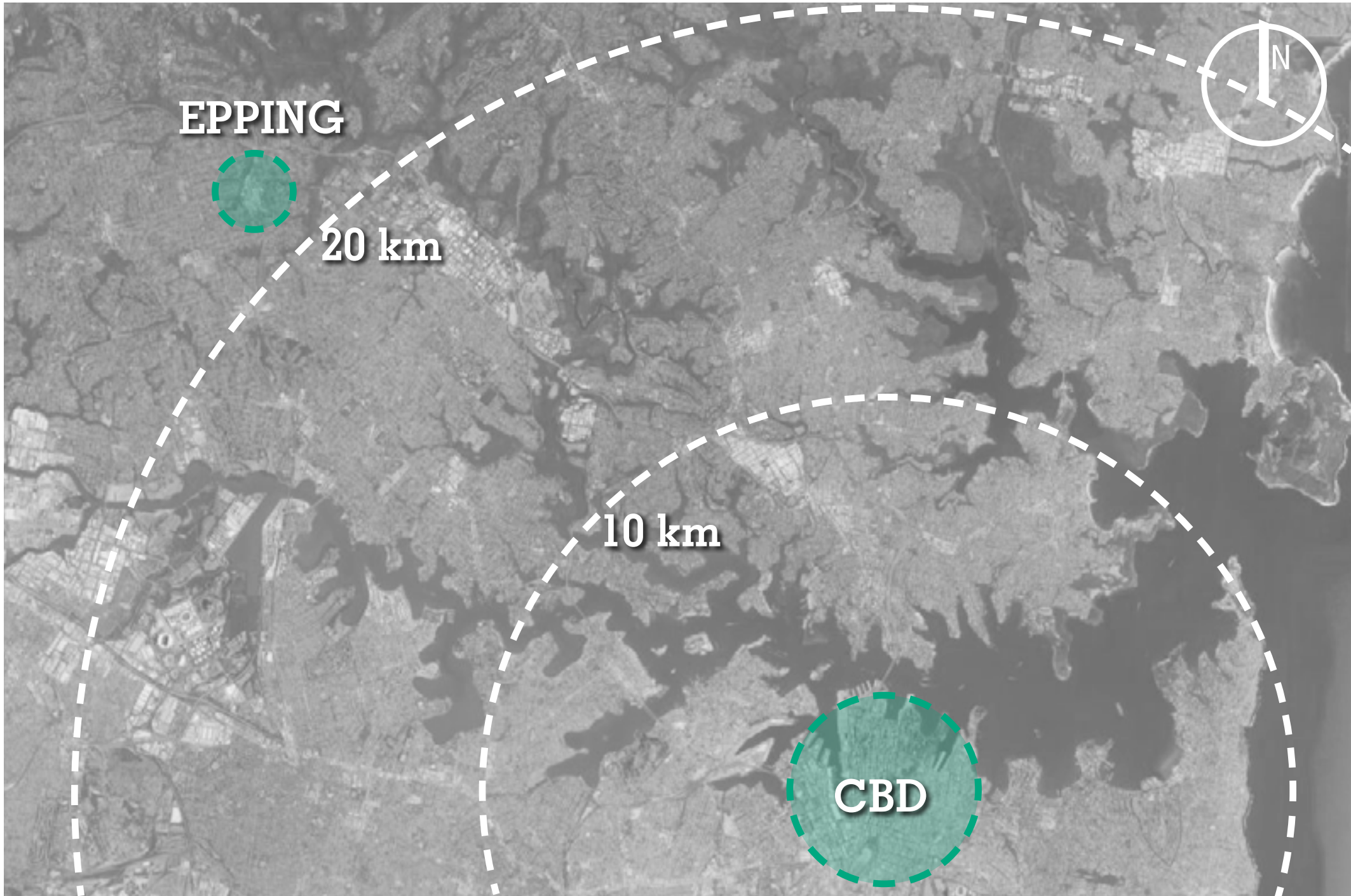
LANDSCAPE DEVELOPMENT APPLICATION
MAY 2017

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REGIONAL CONTEXT



LOCAL CONTEXT



SITE



LOCAL CONTEXT

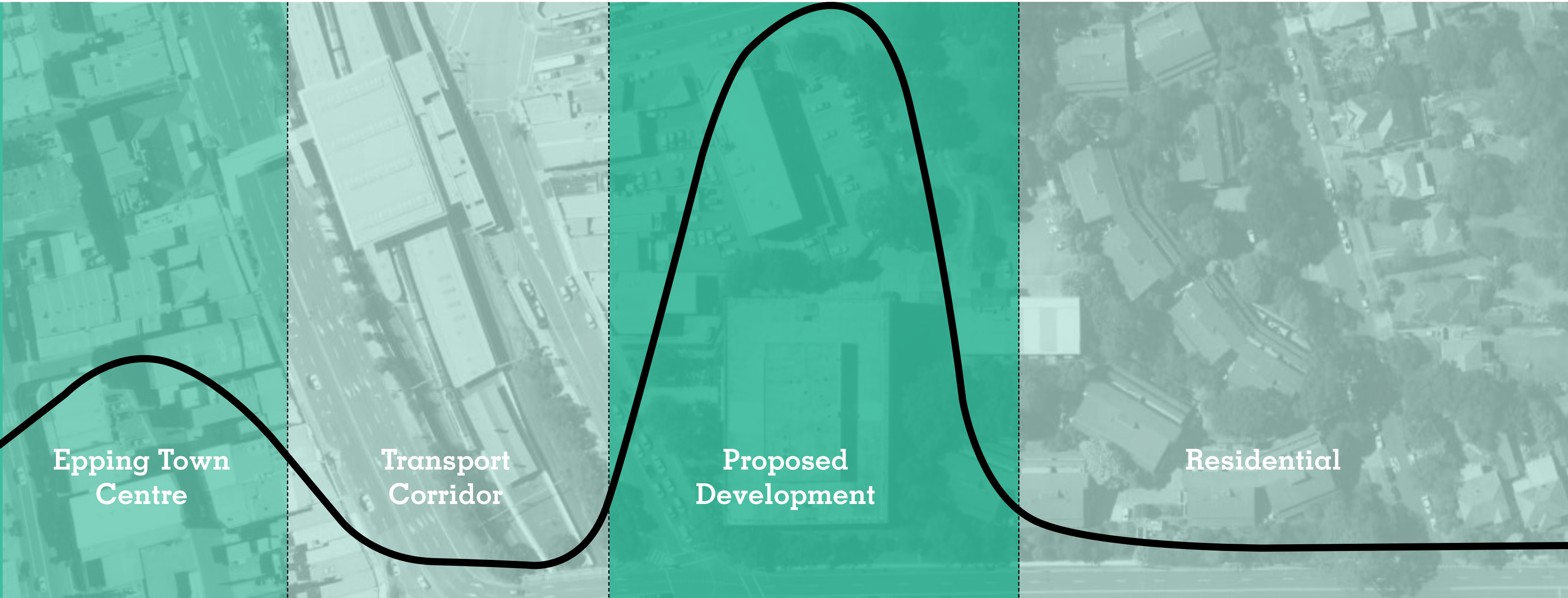
The proposed development site lies within the Epping town centre, at the junction of Langston Place and Epping Road, and also faces onto both Pembroke Street and Chambers Crescent. The site forms the south eastern transition between the retail oriented town centre and the residential zone to the east. Epping train station lies in close proximity.

In 2012 Epping was identified as the first Urban Activation Precinct due to its capacity to support high density growth in a well-served location.

The proposed development will aim to integrate into the existing urban fabric of landuse, infrastructure, and amenities to create a destinational space for the local community, in addition to providing a significant new residential and retail offering to the existing town centre.

The proposed development site is bracketed by two major vegetation corridors extending south from the main body of the Lane Cove National Park. The ecological communities here are primarily defined by Sydney Blue Gum High Forest, dominated by Sydney Blue Gum, Blackbutt, and Smooth Barked Apple. Epping is a city with a strong peripheral connection to its native bushland and the new development will explore the potential for extending this character into the heart of Epping Town Centre.

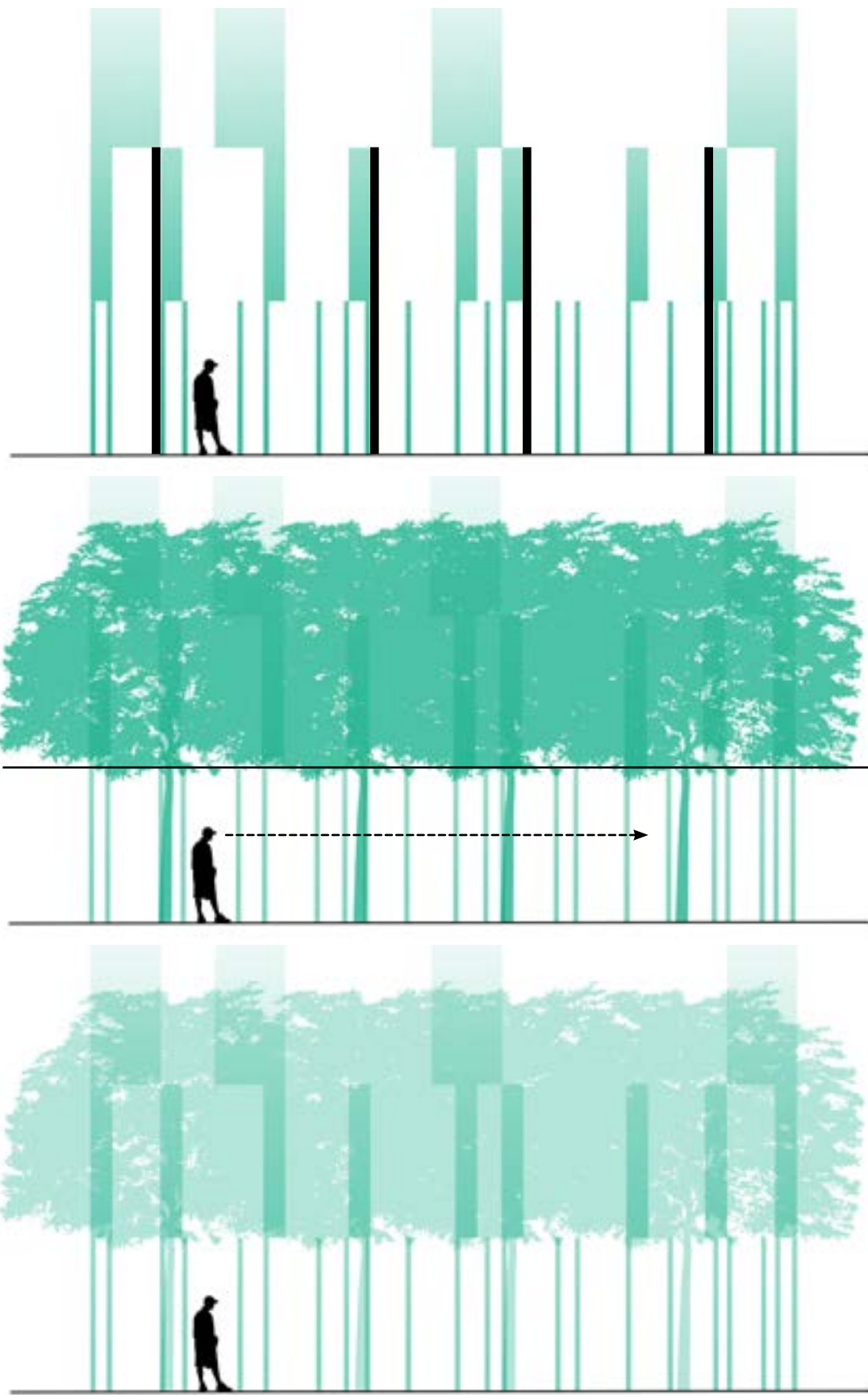
Throughout the early colonial years Epping played an important role in supplying timber to other parts of Sydney, with the local Blue Gum, Blackbutt, and Cedar in high demand. Unfortunately the timber industry soon saw the area rapidly denuded, leading to the name 'Barren Ridges'.



BUILT FORM - LARGE GRAIN
Key architectural elements which will define the identity of the development from distant viewpoints will be refined and woven through the landscape to reinforce sense of place

CANOPIES - MID GRAIN
Architectural and vegetative canopies will provide immediacy to the pedestrian experience through the plaza spaces and rationalise the vertical scale of the towers by shaping perception of space in favour of horizontal vistas

SURFACES - FINE GRAIN
A palette of urban materials at the ground plane will complement a sequence of space forming fixtures and furniture and streetscape character to the site.



PERCEPTION OF SPACE

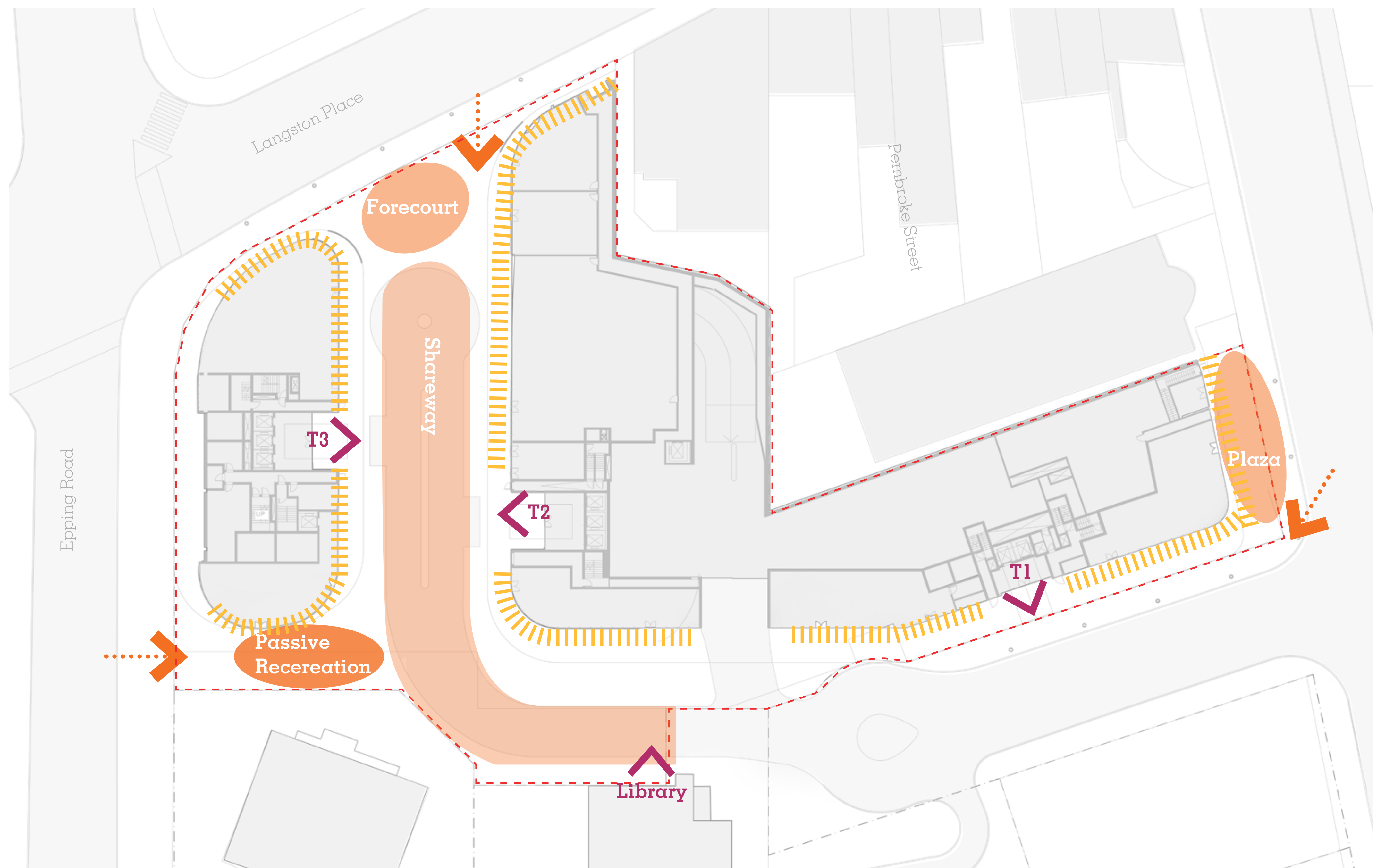
The proposed high density residential towers will introduce substantial new vertical masses into the existing urban form of Epping Town Centre, the railway corridor, and low density residential adjacencies.

A philosophy based on masterplaning and optics of scale allows for a progression of scale within the built form.

The amount of detail within the various architectural components is based around how much the eye can focus on and what it can process from certain distances.

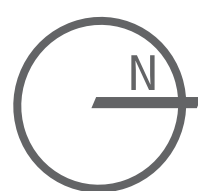
While the tower forms feature strong bold lines to focus on from a distance, the landscape will activate the streetscape to ground the buildings in a human experience.





LEGEND

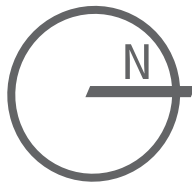
- Site Boundary
- Open Spaces & Shareway
- Key Pedestrian Entries
- Key Building Connections
- ||||| Retail Activated Frontages





LEGEND

- 01/ Food + Beverage Plaza with unit paver
- 02/ Retail frontages
- 03/ Civic Square with feature paving and furniture
- 04/ Planted buffer and feature timber screen to podium edge
- 05/ Terrace steps to through site link
- 06/ Existing trees retained
- 07/ Public domain to be refurbished with granite flagstone paving and new street trees
- 08/ New civic plaza to address Pembroke Street
- 09/ New street trees to Chambers Court
- 10/ Bollards to edges of shareway
- 11/ New trees in deep soil with timber benches between
- 12/ Proposed Shareway



EXPERIENCE

DESIGN PRINCIPLES

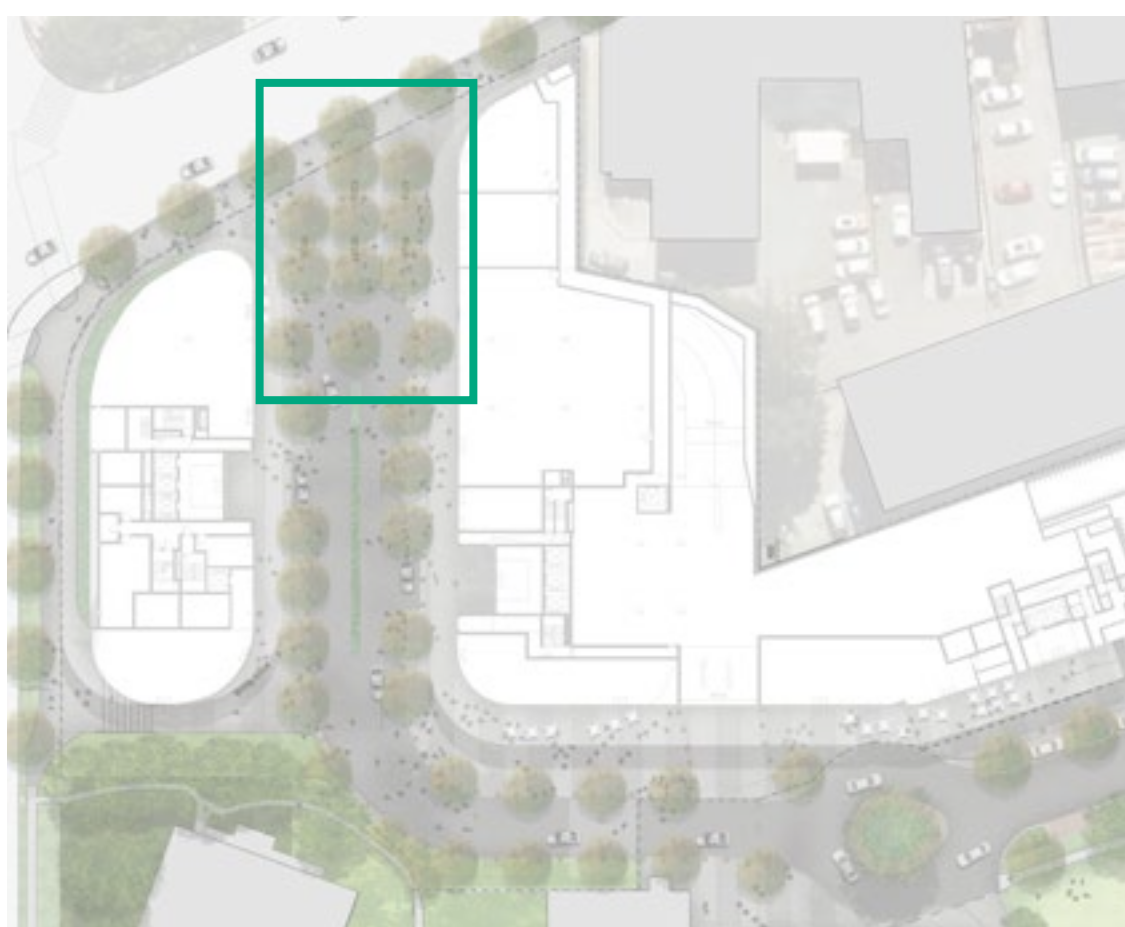
The Food and Beverage Plaza has been designed to balance the need for ease of access to the residential building entries with the provision of active retail and cafe frontages.

Space for cafe tables and passive seating amenity has been incorporated underneath the canopies of grids of ornamental trees.

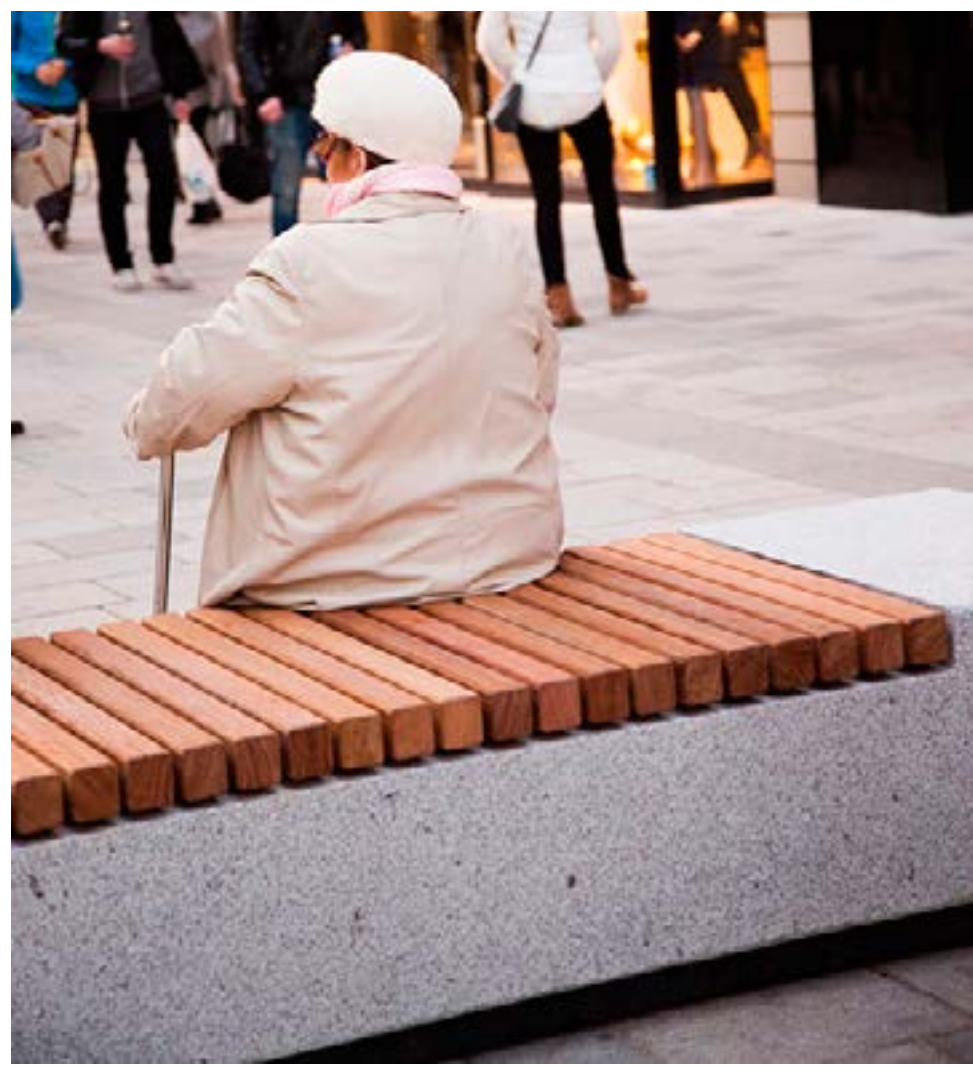
ACTIVATION

use:	daily
hours of use:	7am - 10pm
main uses:	thoroughfare, dining, public amenity
adaptability:	medium
ownership:	private
dependency:	commercial / retail activation
fixed features:	tree planting, seating elements, lighting
furniture:	tables + chairs
surface:	paving
lighting:	awning, shop front, post catenary

KEY PLAN

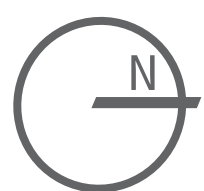
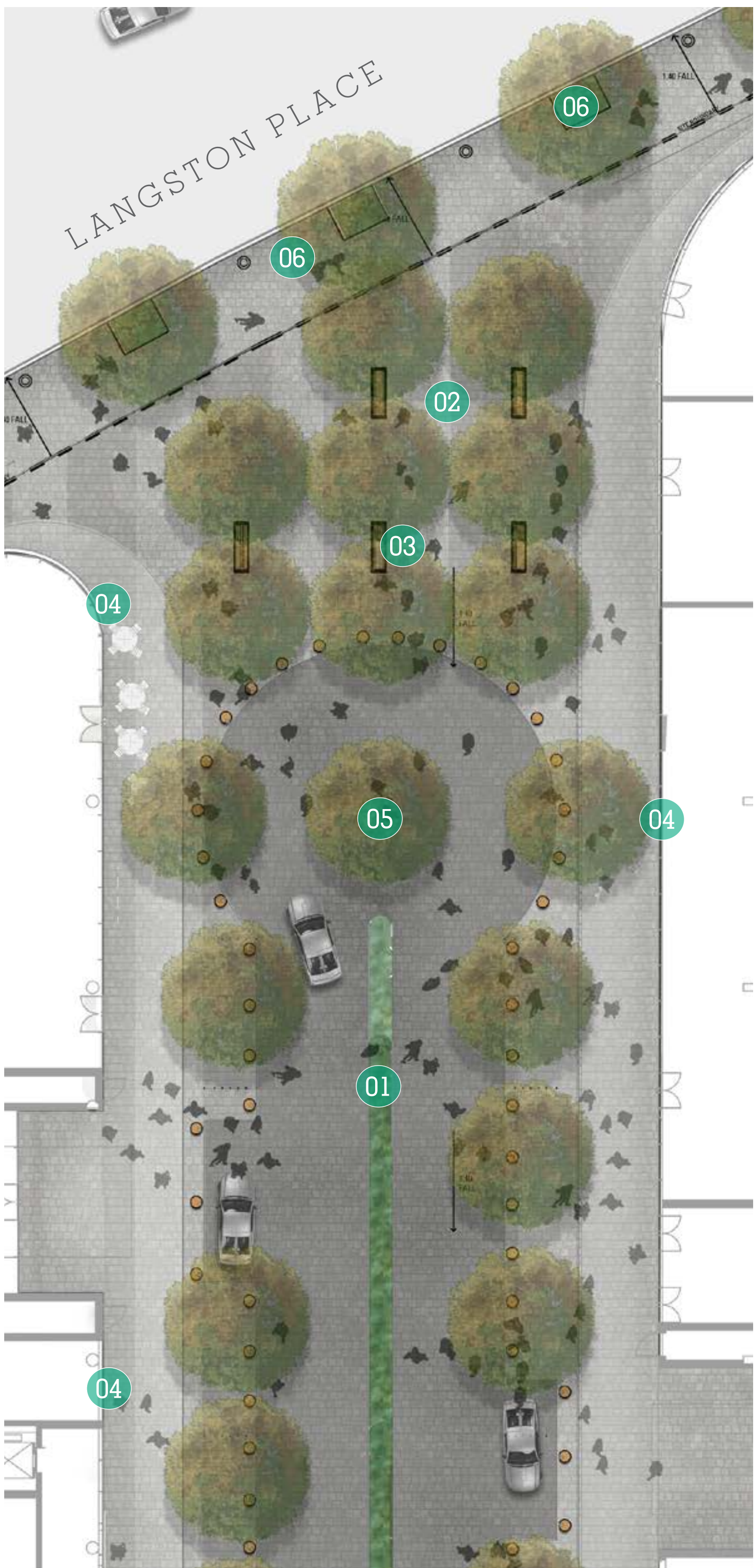


CHARACTER

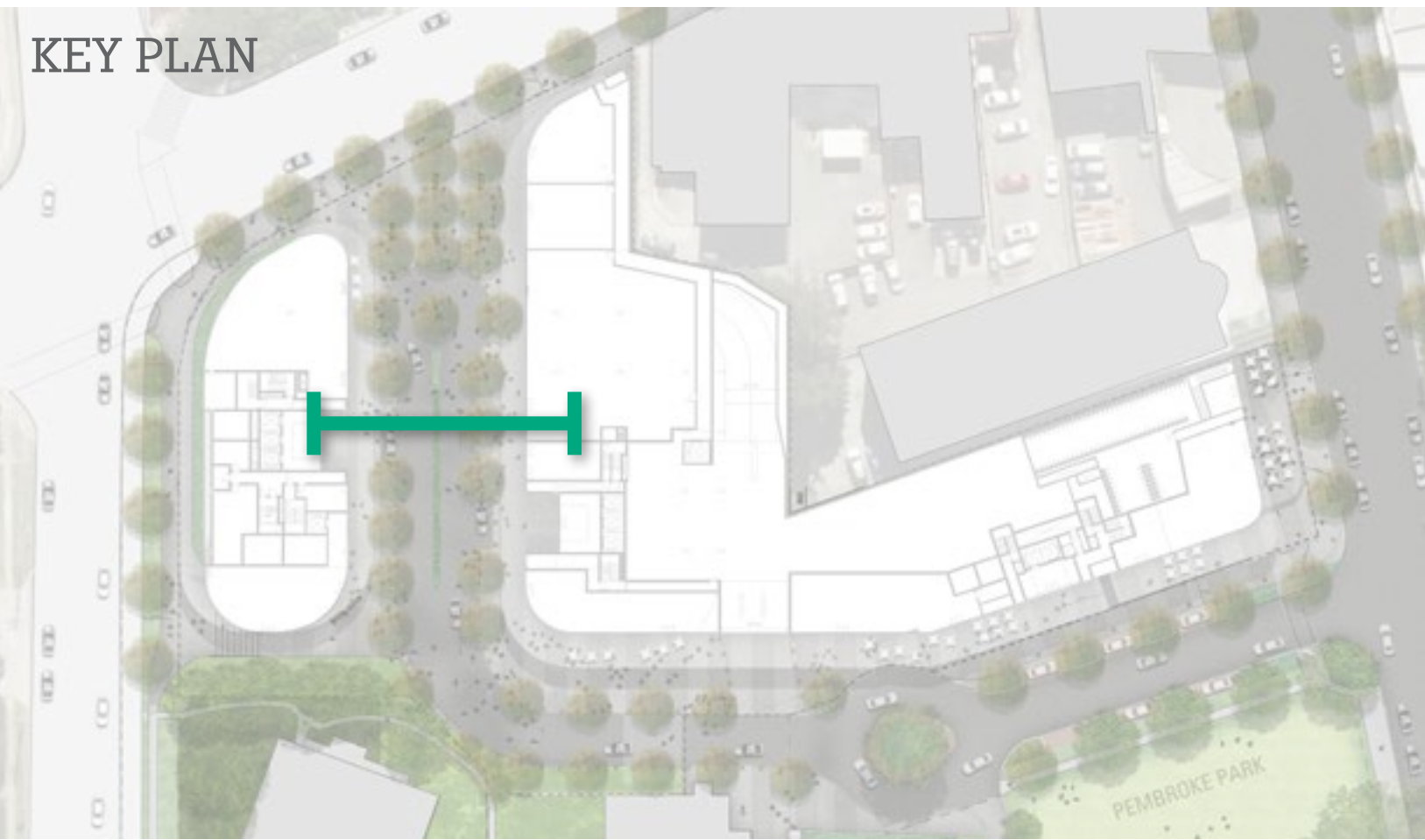


LEGEND

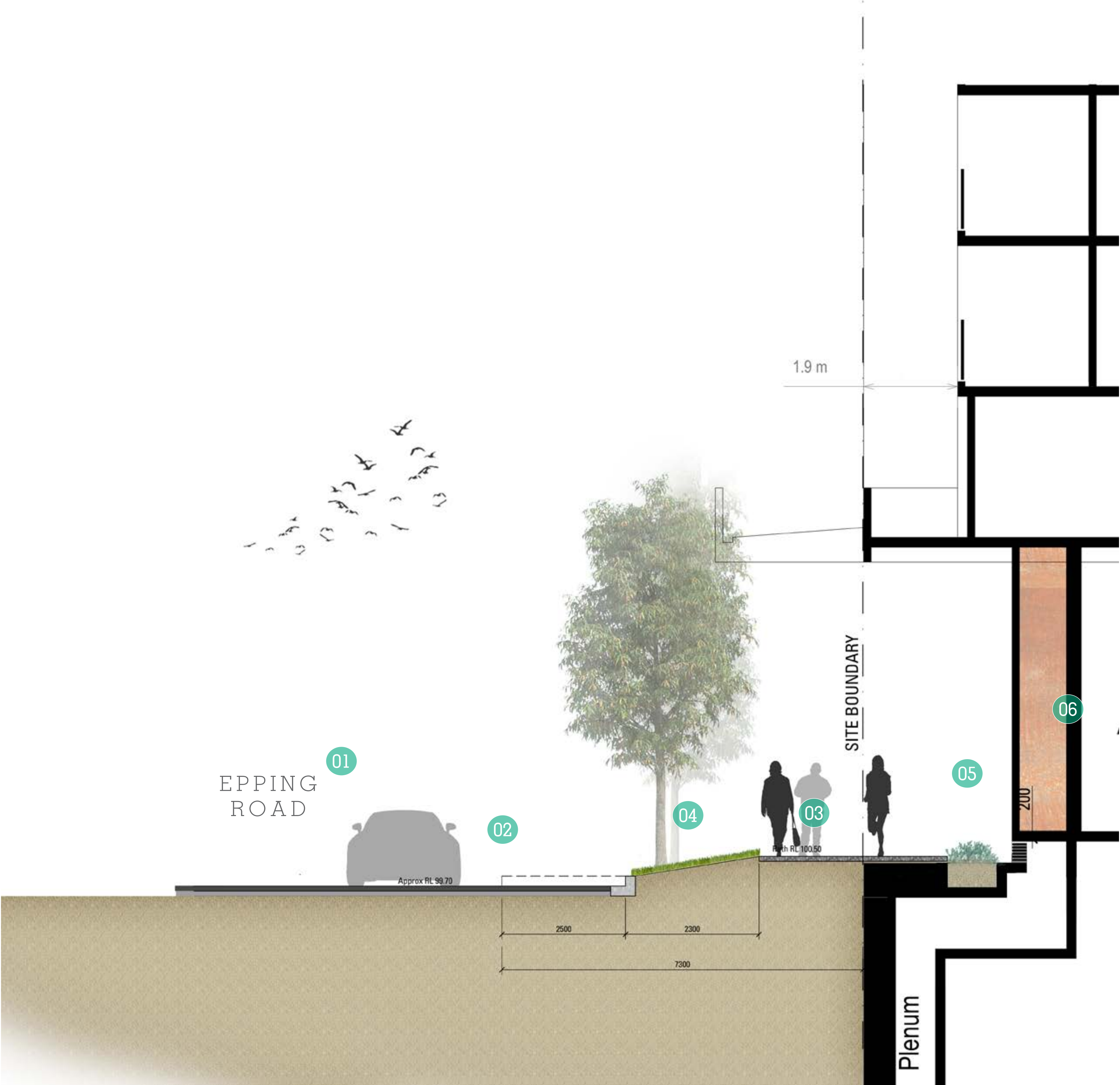
- 01/ Proposed shareway
- 02/ Feature paving treatment through shareway
- 03/ Timber bench seating
- 04/ Active retail frontages with loose furniture and continuous awning
- 05/ Proposed trees in shareway
- 06/ New street trees + public domain paving to Council approval



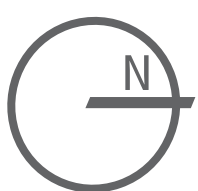
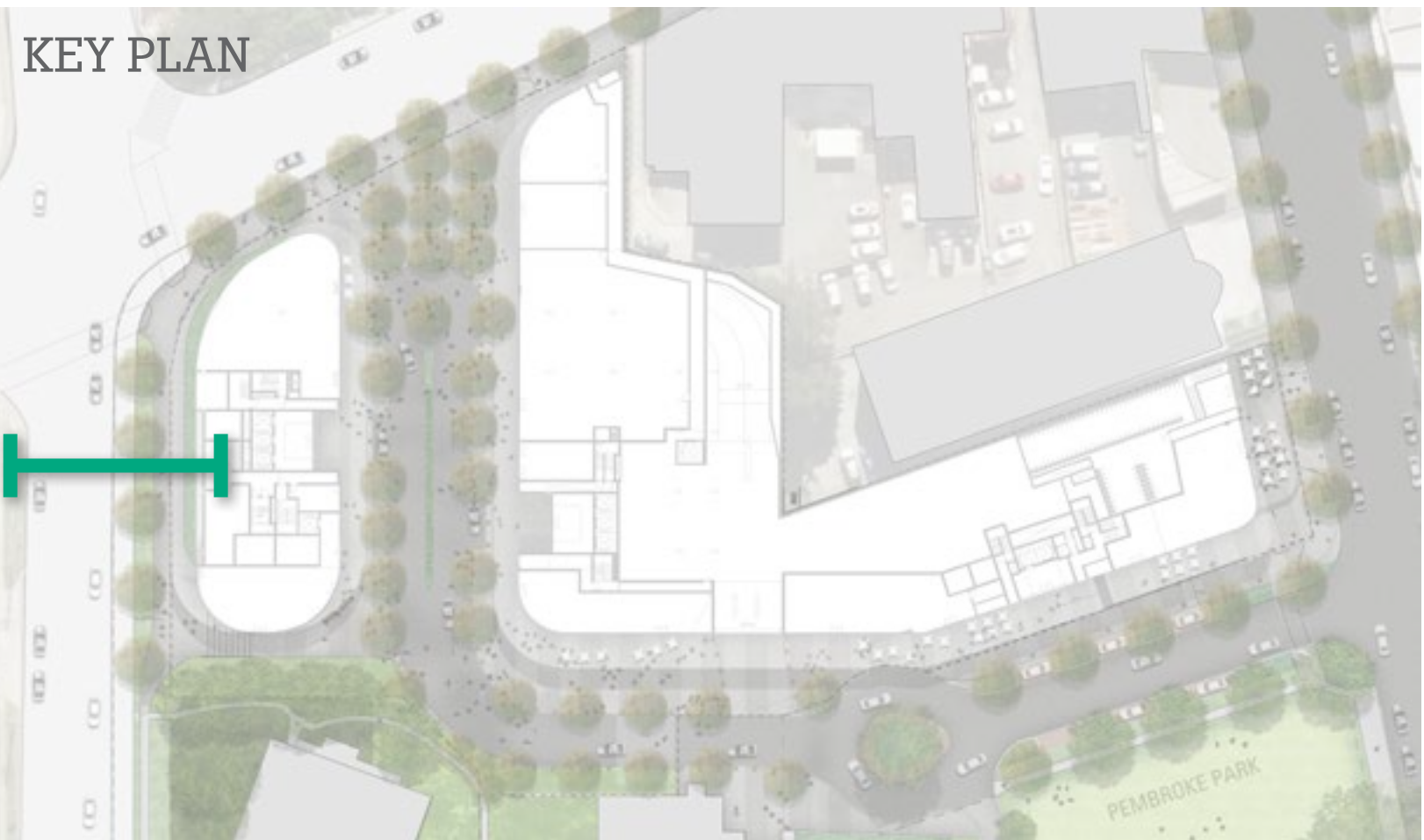
- LEGEND
- 01/ Proposed shareway
 - 02/ Feature paving treatment through shareway
 - 03/ Small deciduous trees along shareway. Planting area of 3.5x3.5x0.8m deep
 - 04/ Active retail frontages with loose furniture and continuous awning
 - 05/ Proposed bollards to line shareway



0 1 2 3 4 5m
SCALE 1:50 @ A1



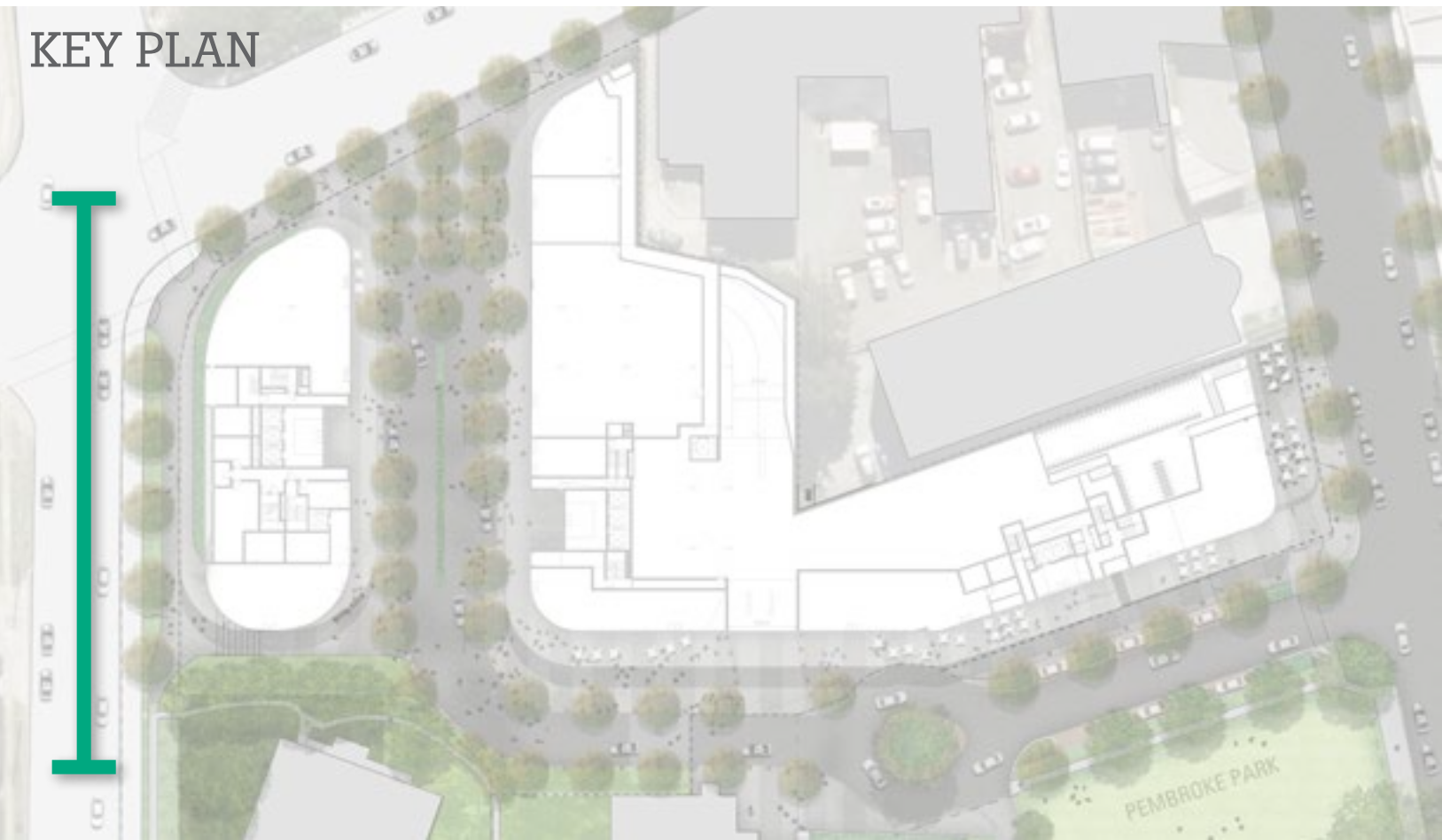
- LEGEND**
- 01/ Epping Road carriageway
 - 02/ Existing kerb moved for lane widening
 - 03/ Proposed footpath with granite flagstone paving to public domain
 - 04/ Turf verge
 - 05/ Layered low accent, and groundcover planting to conceal line of basement + carpark exhaust vents above existing ground levels
 - 06/ Proposed Art wall





LEGEND

- 01/ Granite flagstone paving to public domain
- 02/ Layered low accent, and groundcover planting
- 03/ Private balconies to podium residential units
- 04/ Wide entry stairs into plaza space
- 05/ Buffer planting + feature screen fence to boundary
- 06/ Existing trees retained in deep soil along boundary
- 07/ Possible Art Wall



EXPERIENCE

DESIGN PRINCIPLES

A planting buffer will be incorporated onto the eastern edge of the site accompanied by a timber screen fencing element for further screening.

Bench seating is provided in other areas of the shareway for smaller groups of people to gather.

ACTIVATION

use:	daily
hours of use:	8am - 7pm
main uses:	relaxation, gathering
adaptability:	high
ownership:	public with cafe spill out
dependency:	none
fixed features:	planters, seating
furniture:	movable seats, signage
surface:	paving
lighting:	accent, feature, safety

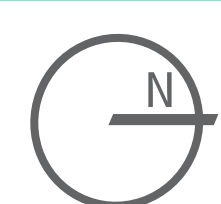
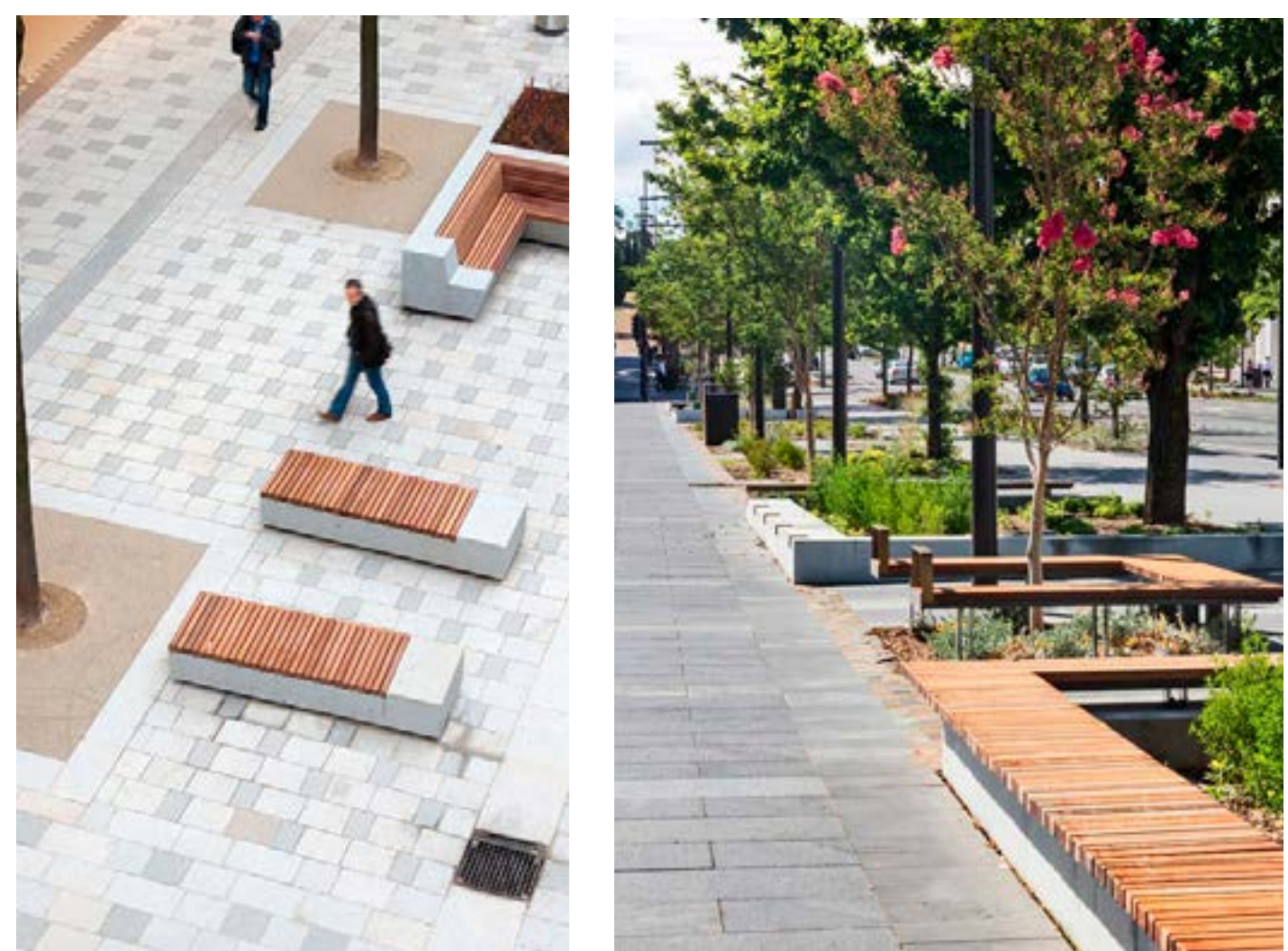
KEY PLAN

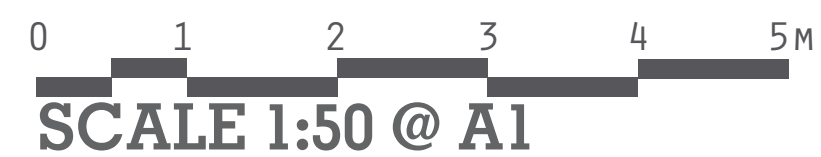
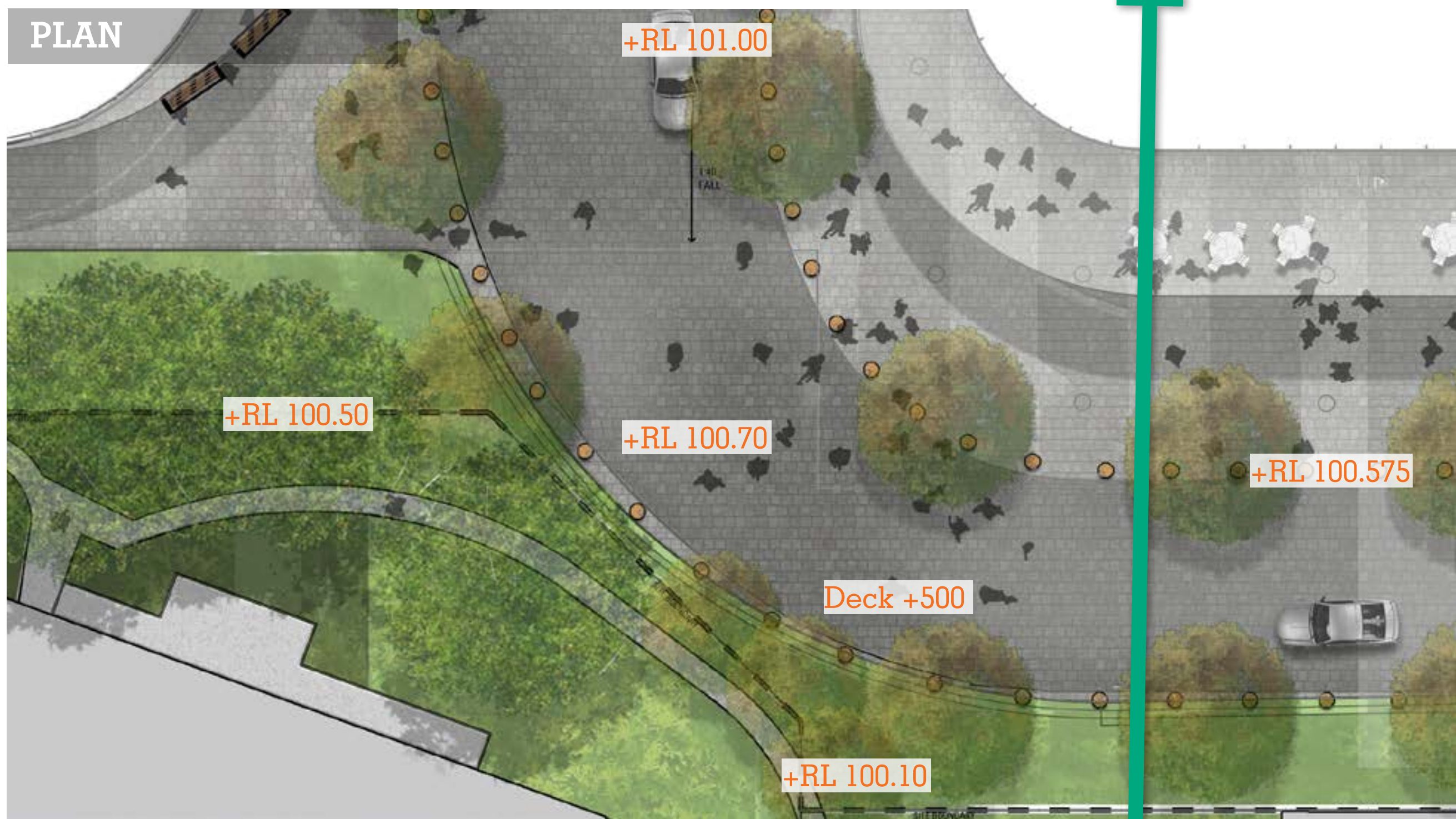


LEGEND

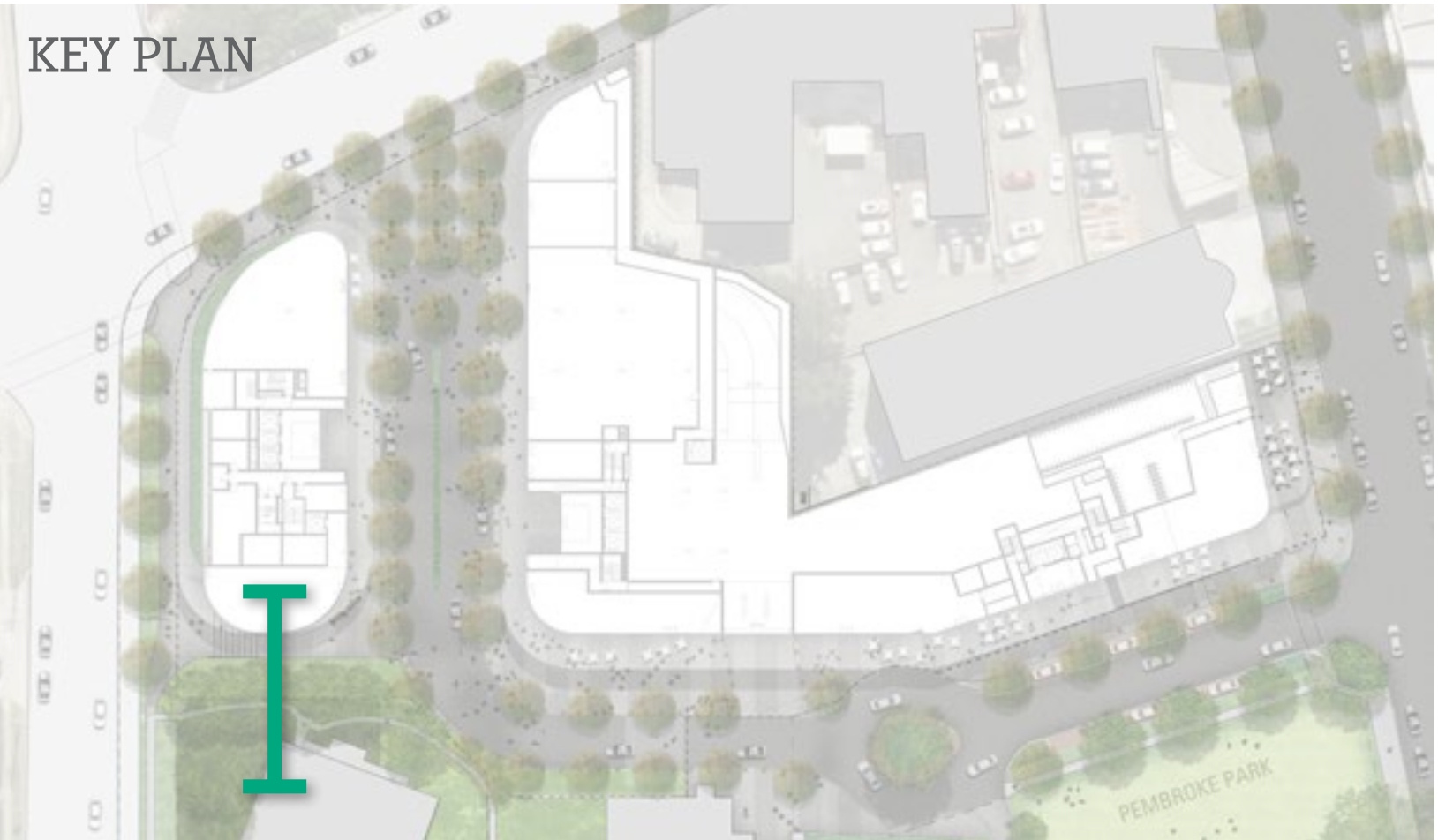
- 01/ Open public space with feature paving - supplementary retail breakout with loose furniture, community events
- 02/ Retail tenancy covered dining zone
- 03/ Proposed shareway
- 04/ Bollards and trees to edges of shareway
- 05/ Existing trees retained
- 06/ Planting buffer and timber screen to boundary
- 07/ Terraced steps up into space

CHARACTER

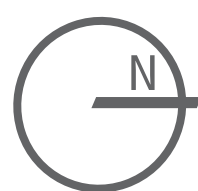




SECTION



- LEGEND**
- 01/ Existing trees along site boundary to be retained
 - 02/ Timber blade screen with low impact footings to protect TPZ
 - 03/ Landscaped setback with layered native shrub, accent, and groundcover planting
 - 04/ Active retail / cafe frontages with loose furniture



EXPERIENCE

DESIGN PRINCIPLES

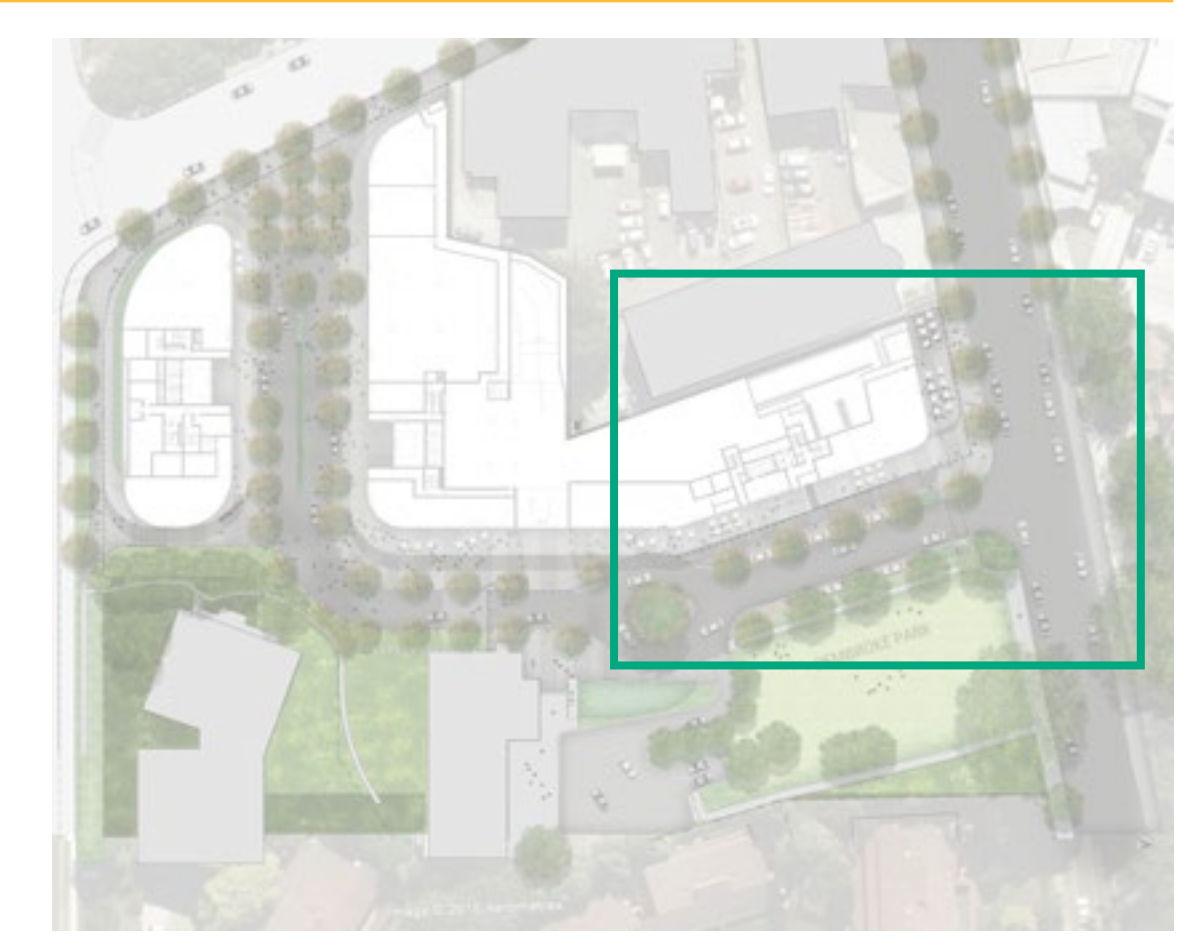
This retail forcourt provides a seamless junction between the streetscape and building edge. A similar paving surface linking the two spaces creates a flexible setting with opportunities for removable furniture and alfresco dining.

The space has been graded to create a flat surface and to tie in with surrounding local levels. A pedestrian egress borders the building edge, providing an undercover path of travel to the civic space.

ACTIVATION

use:	daily
hours of use:	7am - 10pm
main uses:	alfresco dining
adaptability:	low
ownership:	private
dependency:	retail activation
fixed features:	steps, retaining wall
furniture:	movable seats, signage
surface:	paving
lighting:	light poles, safety

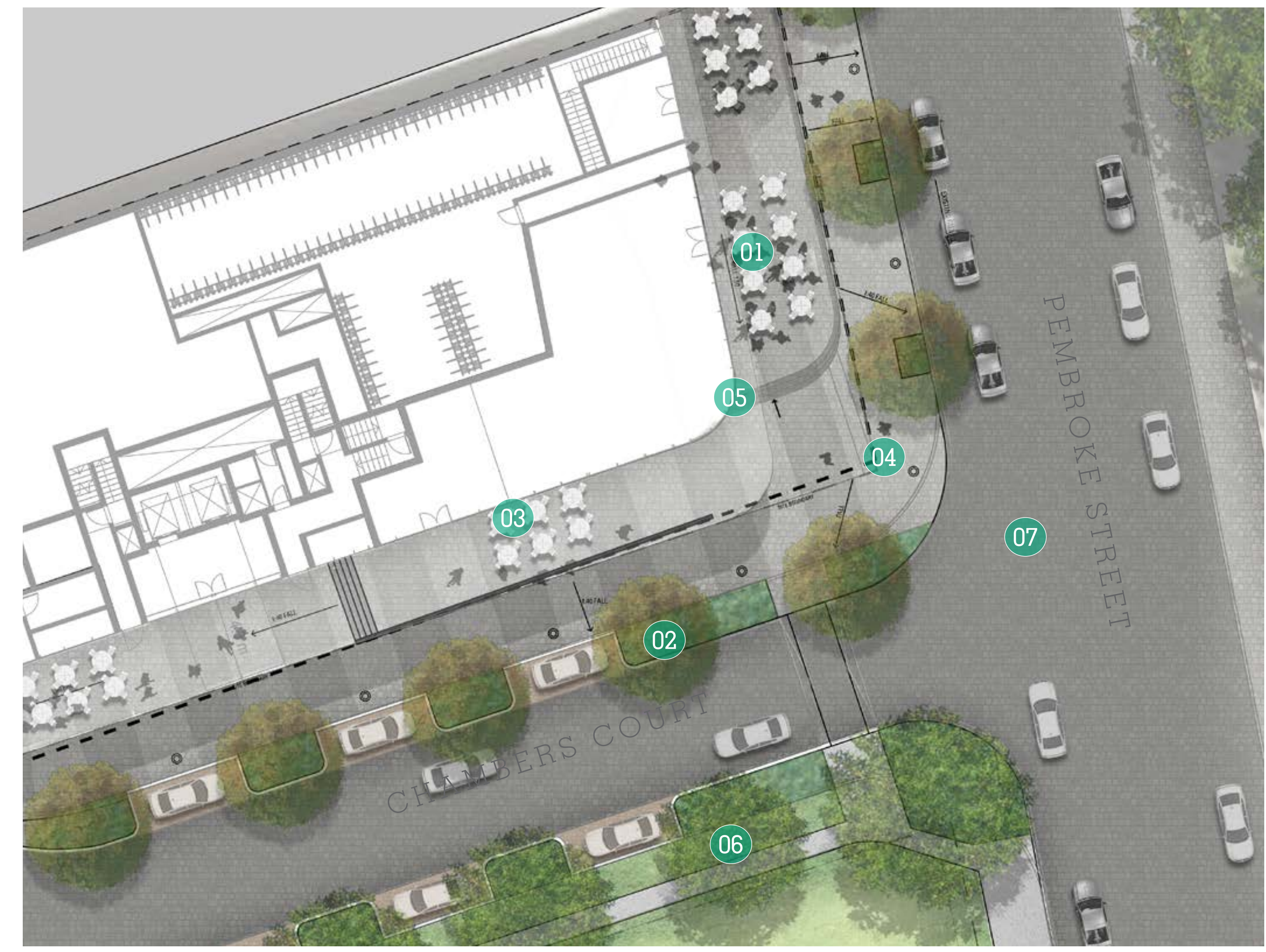
KEY PLAN

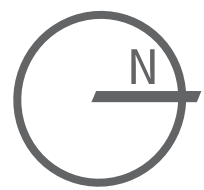
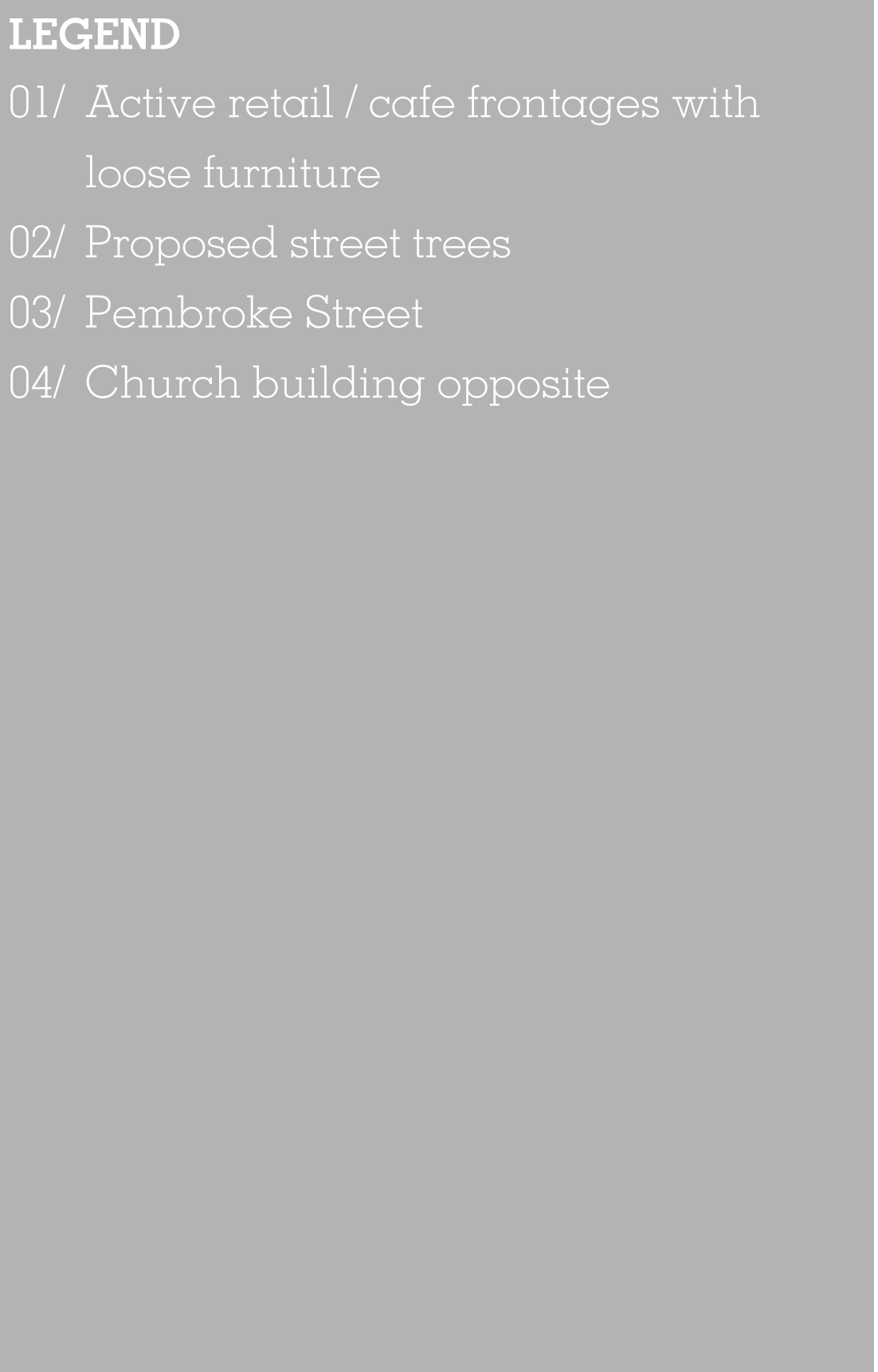
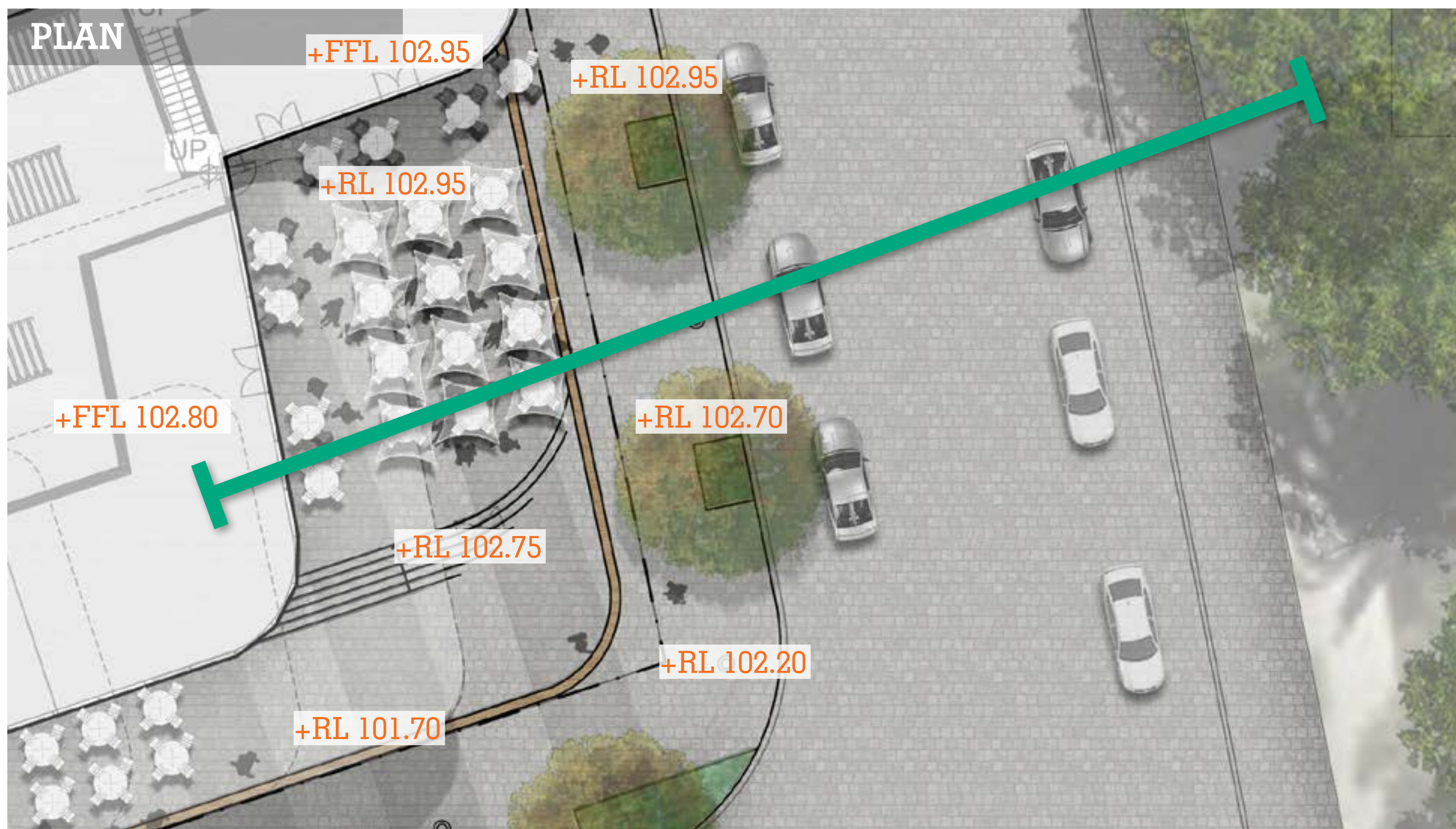


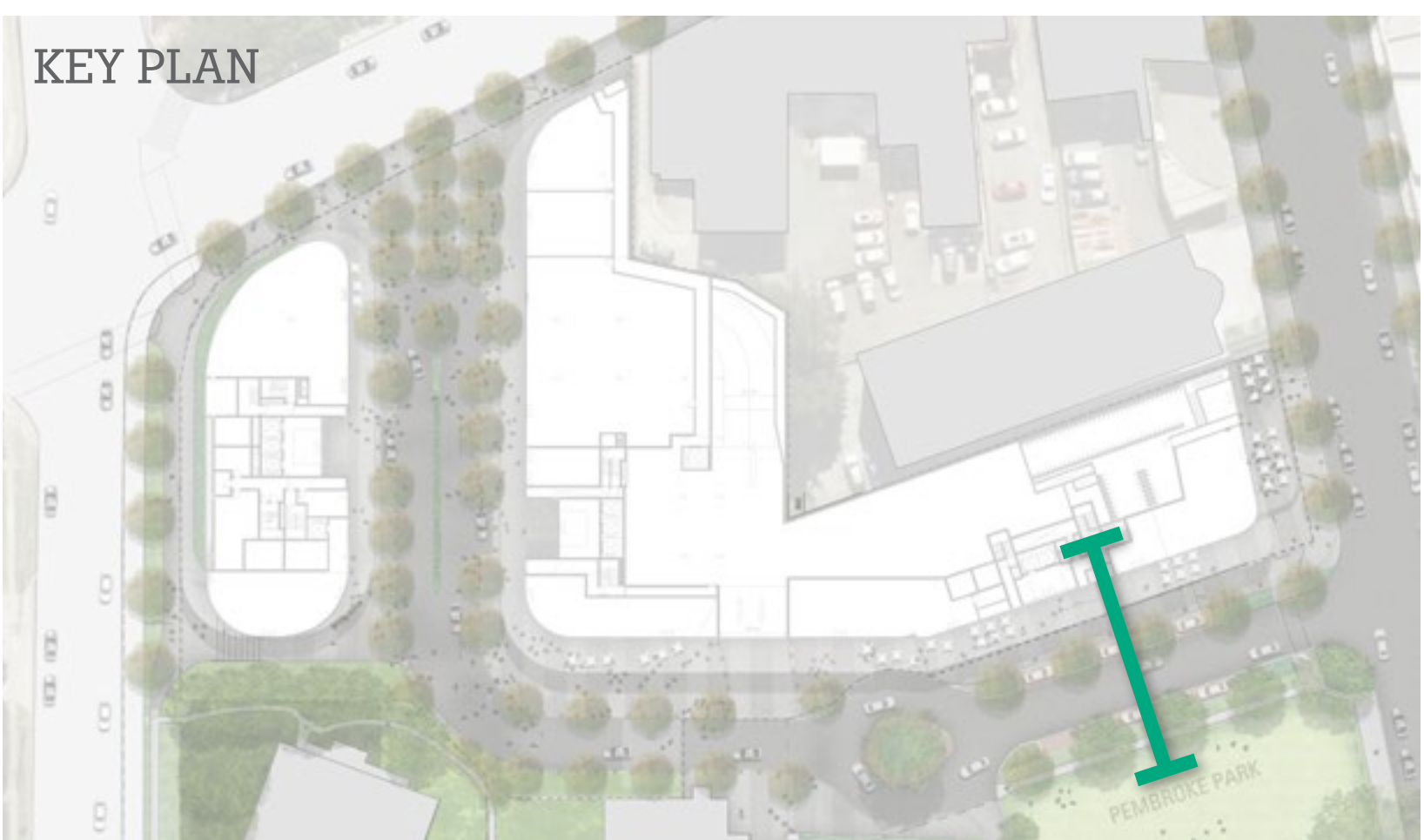
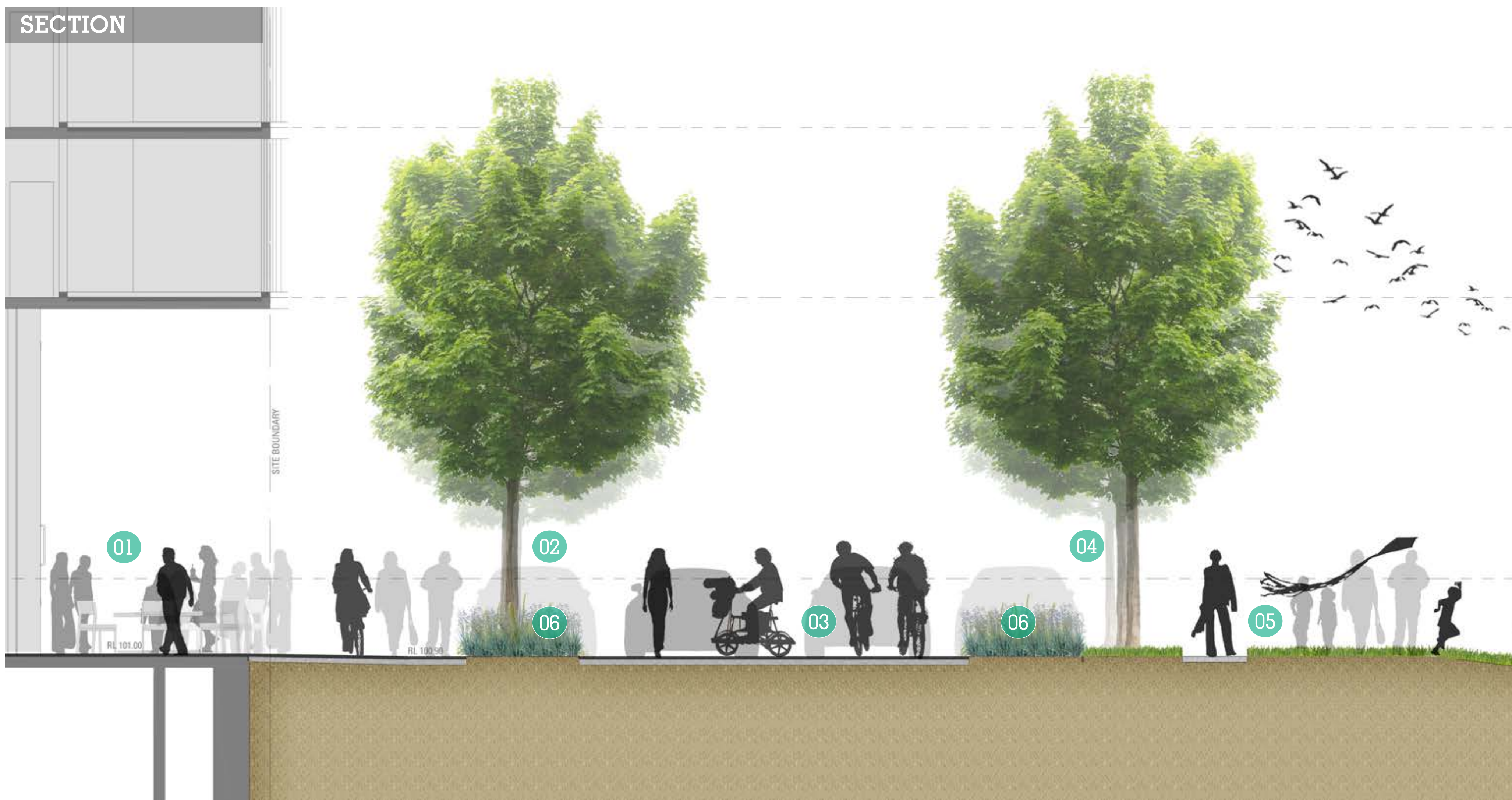
LEGEND

- 01/ Open public forecourt and retail space with potential for adaptable use with loose furniture
- 02/ New street tree planting in native grass garden bed
- 03/ Retail tenancy covered dining zone
- 04/ Granite flagstone paving to public domain + future shareway to Pembroke St and Chambers Court
- 05/ Stairs run into existing surrounding levels
- 06/ Existing trees retained to Pembroke Park
- 07/ Pembroke St

CHARACTER



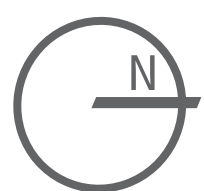


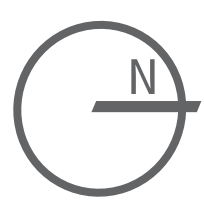


LEGEND

- 01/ Active retail frontage with paved connection to Pembroke Street and Chambers Court
- 02/ New street trees in garden bed with native grasses
- 03/ Chambers Court shareway with unit paver treatment
- 04/ Existing plane trees to edge of Pembroke Park to be retained in existing turf verge
- 05/ Pembroke Park
- 06/ Garden beds between defined carpark spaces

0 1 2 3 4 5 M
SCALE 1:50 @ A1





EXPERIENCE

DESIGN PRINCIPLES

Residents will have access to private communal courtyard spaces at the level one podium. This will offer residents a range of social spaces, large enough to accommodate group gatherings, and will assist in community interaction.

BBQs and a variety of fixed and loose furniture elements will provide alfresco dining amenity, complemented with a series of hard and soft landscape spaces, encapsulated by lush plantings and feature trees to provide shade in summer. The arrangement of the space ensures maximum solar amenity whilst respecting the privacy of the private courtyards adjacent. Equal access shall be provide to all spaces via 1:20 maximum grade footpaths.

ACTIVATION

use:	daily
hours of use:	8am-9pm,
main uses:	dining, rest, sun bathing
adaptability:	low
ownership:	private
dependency:	strata
fixed features:	seating, decking, bbq, tables, planters
furniture:	tables + chairs
surface:	paving, decking, turf
lighting:	accent, feature

KEY PLAN

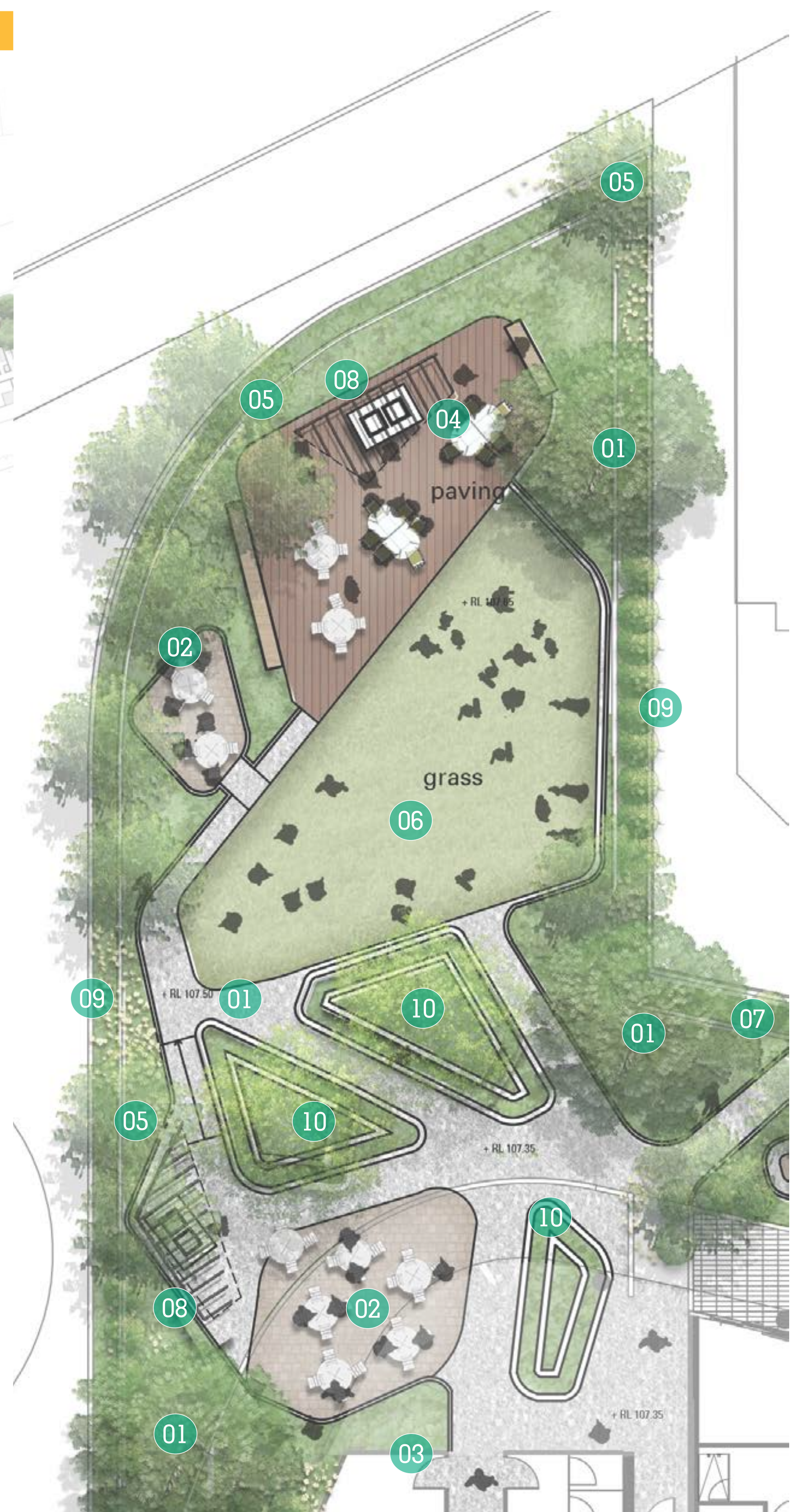


CHARACTER



LEGEND

- 01/ Large feature trees in enlarged planters
- 02/ Flexible paved area for alfresco dining and informal gatherings
- 03/ Communal amenities
- 04/ Passive deck area with moveable outdoor furniture
- 05/ Rich and varied palette of native and exotic sun-loving plants to form a buffer around periphery + ornamental trees
- 06/ Recreational turf space for yoga / pilates groups and other passive recreation
- 07/ Tall native hedge planting to ensure privacy to private courtyards
- 08/ Integrated outdoor kitchen facility with BBQ + pergola
- 09/ Balustrade to perimeter
- 10/ Raised terraced planters with feature tree planting



0 2 4 6 8 10M
SCALE 1:100 @ A1

LEGEND

- 01/ Rich and varied palette of native and exotic sun-loving plants + ornamental tree plantings to form a buffer around periphery
- 02/ Passive timber decking area with movable furniture
- 03/ Raised terraced planters with feature planting
- 04/ Paved courtyard for alfresco dining and informal gatherings
- 05/ Built-in BBQ with pergola structure
- 06/ Private courtyard with fence + screen planting for privacy
- 07/ Open turf space for passive recreation
- 08/ Soil mounded for larger trees to provide shade amenity
- 09/ Max 1:20 accessible pathways for equal access to all spaces

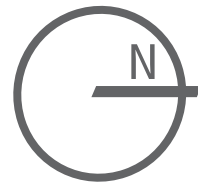
KEY PLAN

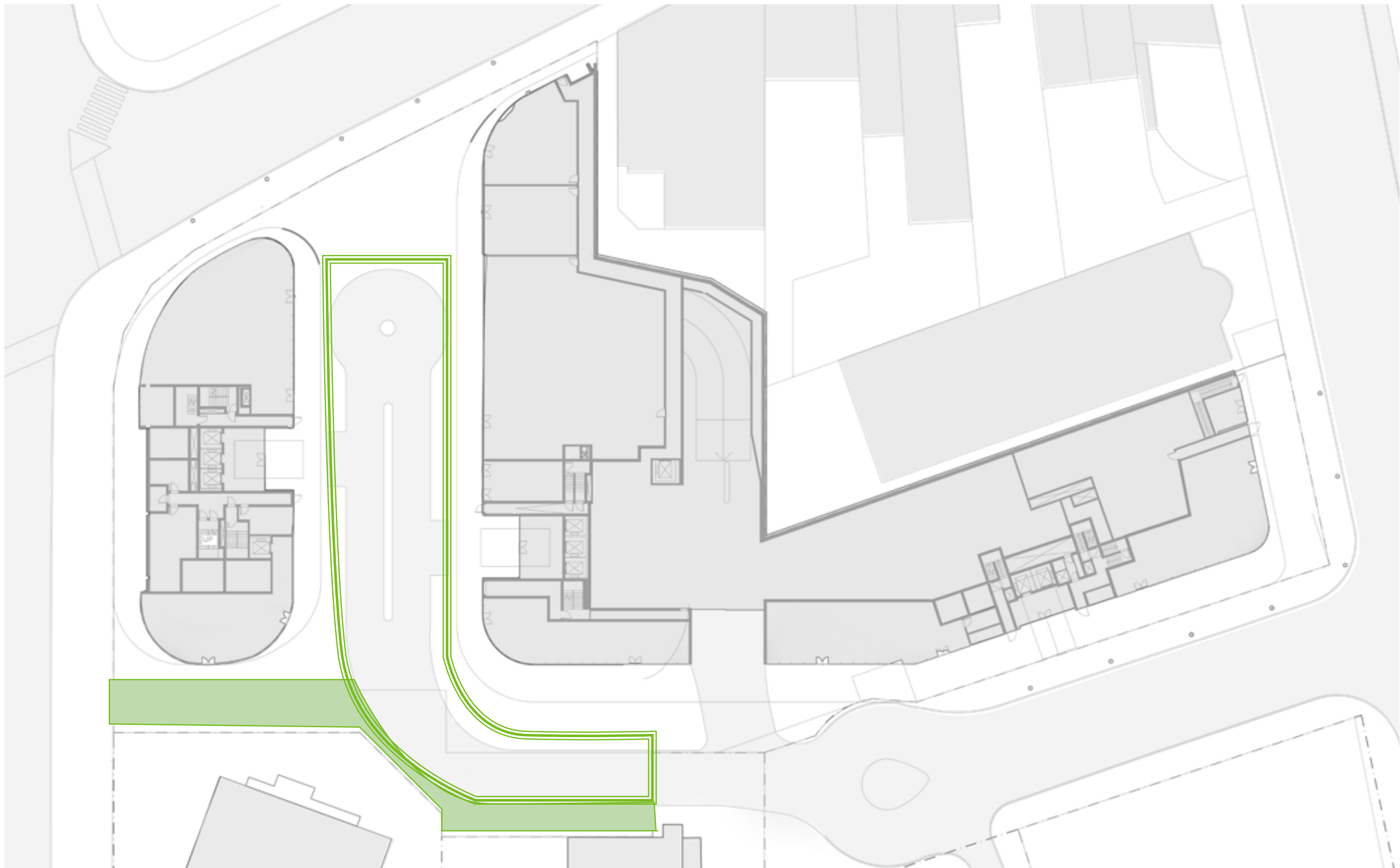


SECTION



0 1 2 3 4 5M
SCALE 1:50 @ A1





LEGEND



Minimum 800mm depth soil on podium for tree planting

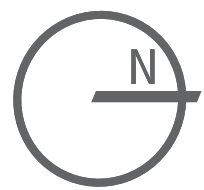


True deep soil planting
260m2 (3.0% of total site area)

True deep soil planting has been maintained to both western and eastern site boundaries. These zones will allow for retention of some existing specimens and for proposed street trees.

A setdown in the basement slab has been positioned beneath the civic plaza and public through-site link. This setdown in slab allows for small tree planting on podium that is flush with the pavement level.

TREE PLANTING APPROACH





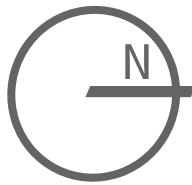
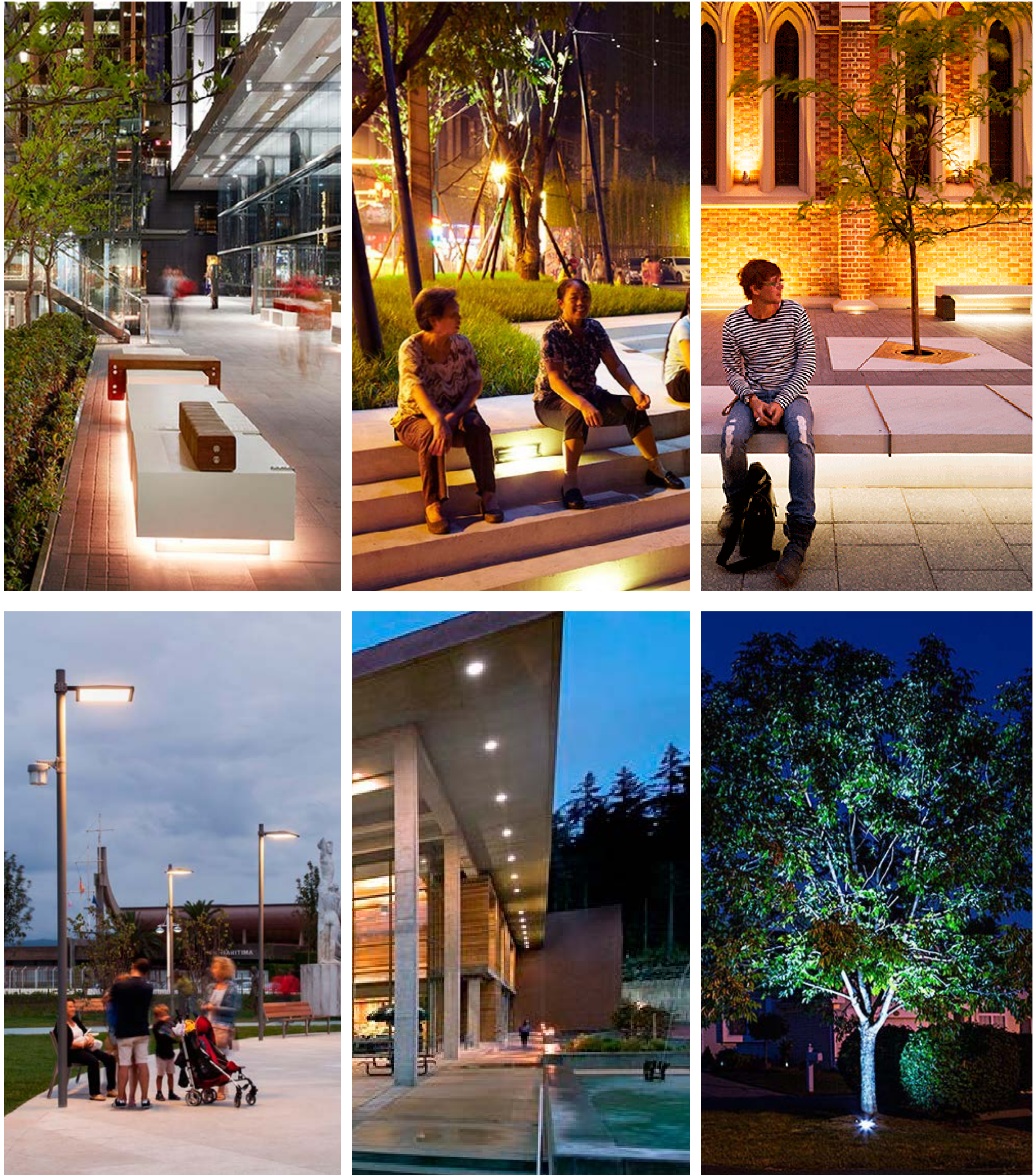
LEGEND

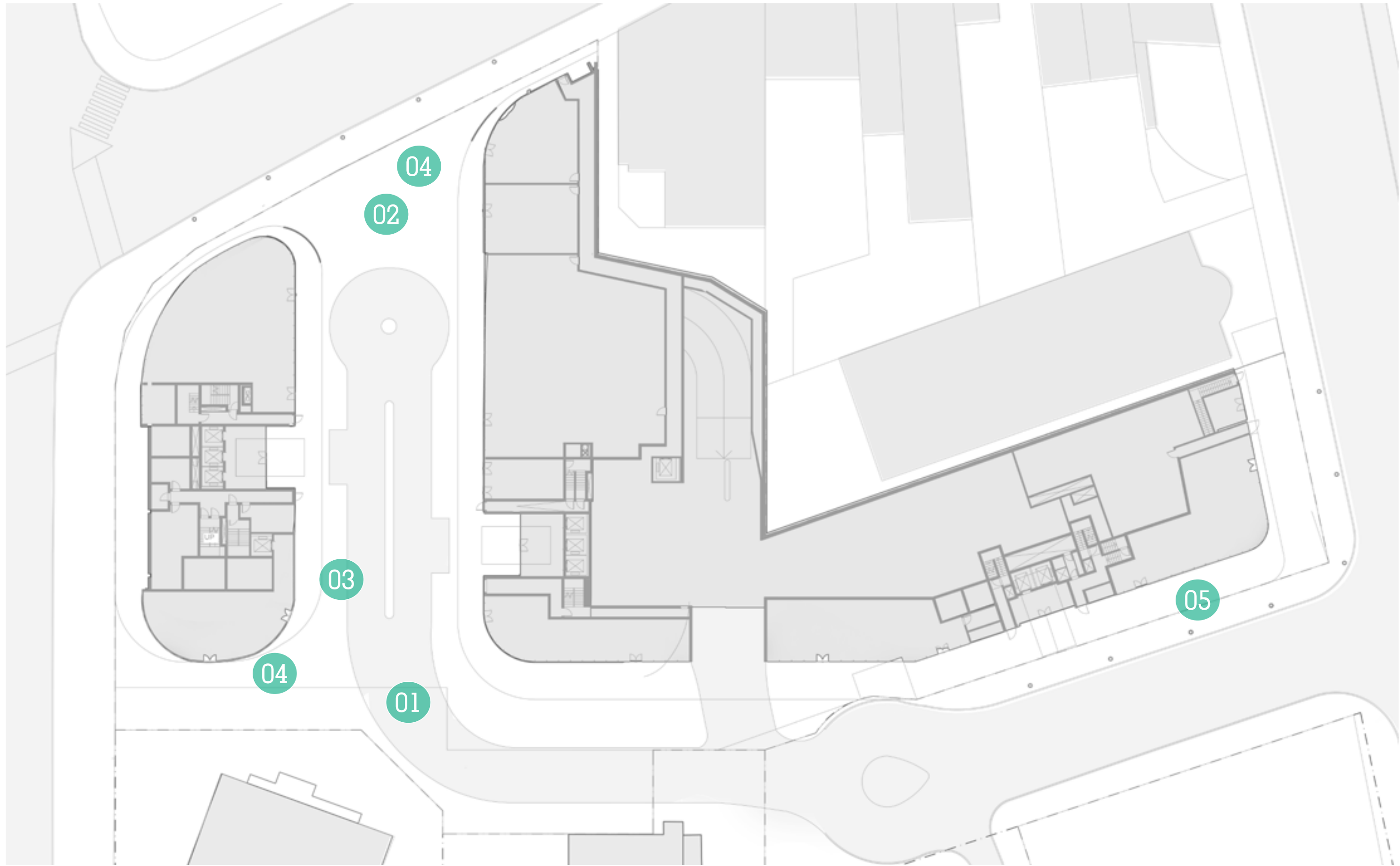
- ◇◇◇◇◇◇◇◇◇◇ Feature wall / play / stair lighting
- ● ● Pole top lighting + street lighting
- Architectural undercroft + facade lighting
- ☀ Tree uplighting

The indicative lighting scheme has been designed to create safety, wayfinding, and atmosphere at night.

Full height lighting columns/pole top lights, feature tree uplights, undercroft canopy lights and feature wall lights have been incorporated into the scheme to create a multi layered activity hub that is safe and functional at night time.

INDICATIVE LIGHTING PALETTE

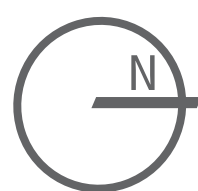




LEGEND

- 01 Paving to roadway
- 02 Paving to shareway - outside of roadway
- 03 Bollard options
- 04 Timber bench seats
- 05 Pedestrian lighting options

INDICATIVE MATERIALS PALETTE



GROUND LEVEL PLAZA

Westringia 'Jervis Gem'

Dianella 'Cassa Blue'

Dianella caerulea

Aspidistra elatior

Eucalyptus saligna

Platanus x acerifolia

Pistachia chinensis

Myoporum 'Yareena'

Banksia 'Birthday Candles'

Callistemon 'Slim'

Lomandra 'Tanika'

PRIVATE COMMUNAL COURTYARD

Westringia 'Aussie Box'

Agave attenuata

Euphorbia wulfenii

Sapium sebiferum

Magnolia 'Little Gem'

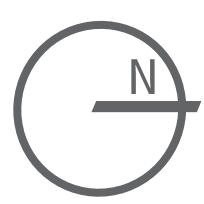
Westringia 'Naringa'

Dichondra 'Silver Falls'

Carpobrotus glaucescens

Echium candicans

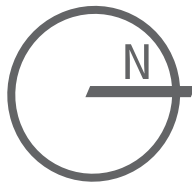
Teucrium fruticans

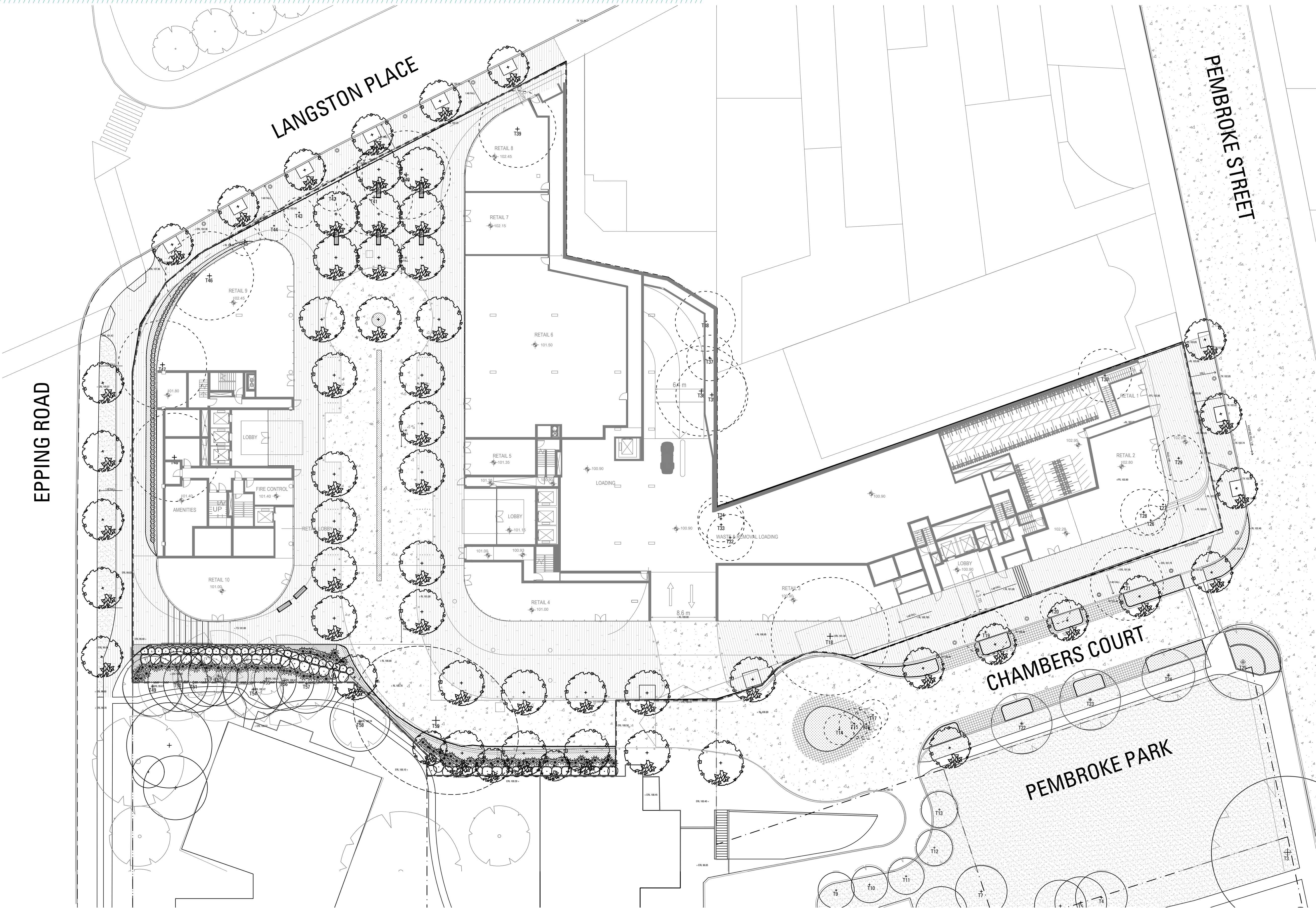


LANGSTON PLACE EPPING PLANT SCHEDULE

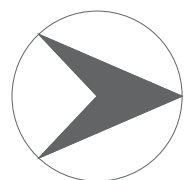
CODE	BOTANIC NAME	COMMON NAME	MATURE SIZE (h x w) (m)	PROPOSED POT SIZE	QUANTITY
GROUND LEVEL PLAZA					
TREES					
Ca	<i>Cupaniopsis anacardioides</i>	Tuckeroo	10 x 5	400L	18
CST	<i>Council Street Tree (Langston Place)</i>	To Council Selection	TBC	200L	11
MLG	<i>Magnolia 'Little Gem'</i>	Little Gem	6 x 4	200L	3
Pa	<i>Platanus acerifolia</i>	London Plane Tree	15 x 10	200L	3
Pc	<i>Pistachia chinensis</i>	Chinese Pistachio	8x6m	400L	32
SHRUBS & ACCENTS					
BBC	<i>Banksia 'Birthday Candles'</i>	Birthday Candles Banksia	0.5 x 1	200mm	85
CS	<i>Callistemon 'Slim' (Screening)</i>	Slim Bottlebrush	3 x 1.5	75L	42
DCB	<i>Dianella 'Cassa Blue'</i>	Cassa Blue Flax Lily	0.5 x 0.5	200mm	53
De	<i>Doryanthes excelsa</i>	Gymea Lily	2 x 1.5	45L	0
LT	<i>Lomandra 'Tanika'</i>	Tanika Mat Rush	1 x 1	200mm	150
WJG	<i>Westringia 'Jervis Gem'</i>	Coastal Rosemary	1.5 x 1	45L	14
FERNS & SHADE TOLERANT PLANTS					
Aa	<i>Asplenium australasicum</i>	Birds Nest Fern	1.5 x 1.5	45L	25
Ad	<i>Adiantum aethiopicum</i>	Maidenhair Fern	0.5 x 0.5	10L	195
Ae	<i>Aspidistra elatior</i>	Cast Iron Plant	0.5 x 1	25L	56
GROUNDCOVERS					
Dc	<i>Dianella caerulea</i>	Flax Lily	0.5 x 0.5	150mm	262
Lm	<i>Liriope muscari</i>	Lirope	0.15 x spreading	150mm	315
MY	<i>Myoporum 'Yareena'</i>	Creeping Boobialla			251

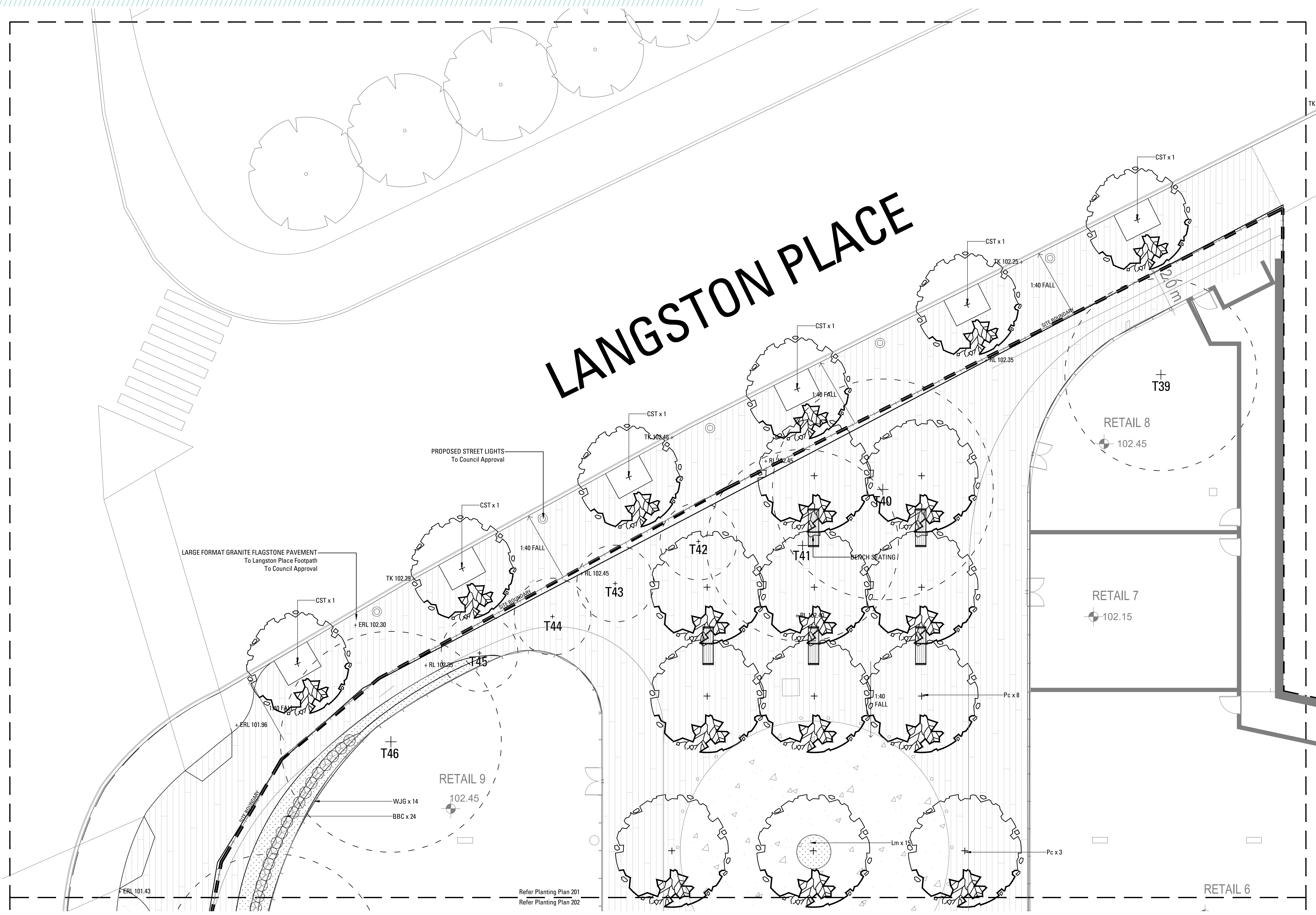
LEVEL ONE PRIVATE COMMUNAL COURTYARD					
TREES					
MLG	<i>Magnolia 'Little Gem'</i>	Little Gem	6 x 4	200L	35
TL	<i>Tristaniopsis 'Luscious'</i>	Luscious	8 x 4	200L	25
ZGV	<i>Zelkova 'Green Vase'</i>	Green Vase	10 x 5	400L	13
SHRUBS & ACCENTS					
Aa	<i>Asplenium australasicum</i>	Birds Nest Fern	1.5 x 1.5	45L	29
Ac	<i>Arthropodium cirratum</i>	Rock Lily	0.75 x 0.75	25L	73
Ag	<i>Agave attenuatta</i>	Lions Tail	1 x 1	25L	116
Cc	<i>Convolvulus cneorum</i>	Silver Bush	0.6 x 0.9	200mm	222
Ec	<i>Echium candicans</i>	Pride of Madeira	1 x 1	45L	206
Ew	<i>Euphorbia wulfenii</i>	Mediterranean Spurge	1 x 1	25L	203
HERBS	<i>Kitchen Garden Herbs (Various)</i>	N/A	N/A	N/A	36
Lm	<i>Liriope muscari</i>	Lilyturf	0.5 x 0.5	200mm	58
Mp	<i>Murraya paniculata</i>	Mock Orange	3 x 2	75L	16
PX	<i>Philodendron 'Xanadu'</i>	Xanadu	1 x 1	25L	99
STT	<i>Syzygium 'Tiny Trev'</i>	Tiny Trev	1 x 1	45L	113
Tf	<i>Teucrium fruticans</i>	Silver Germander	1 x 1	25L	296
WAB	<i>Westringia 'Aussie Box'</i>	Aussie Box	0.6 x 0.6	200mm	312
WN	<i>Westringia 'Naringa'</i>	Naringa	1 x 1	45L	147
GROUNDCOVERS					
CAR	<i>Carpobrotus 'Aussie Rambler'</i>	Aussie Rambler Pig Face	0.25 x spreading	150mm	633
DSF	<i>Dichondra 'Silver Falls'</i>	Silver Falls	0.15 x spreading	150mm	363
DU	<i>Dianella 'Utopia'</i>	Utopia	0.5 x 0.5	150mm	54
Tj	<i>Trachelospermum jasminoides</i>	Star Jasmine	0.5 x spreading	150mm	295





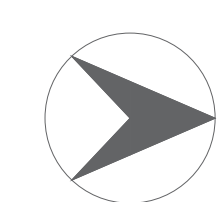
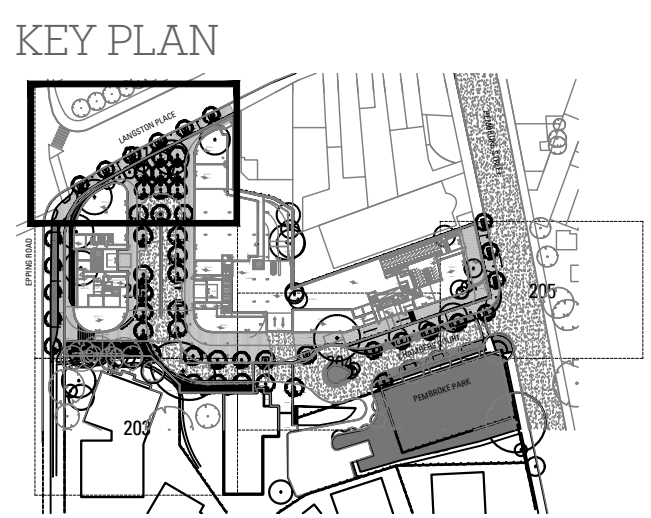
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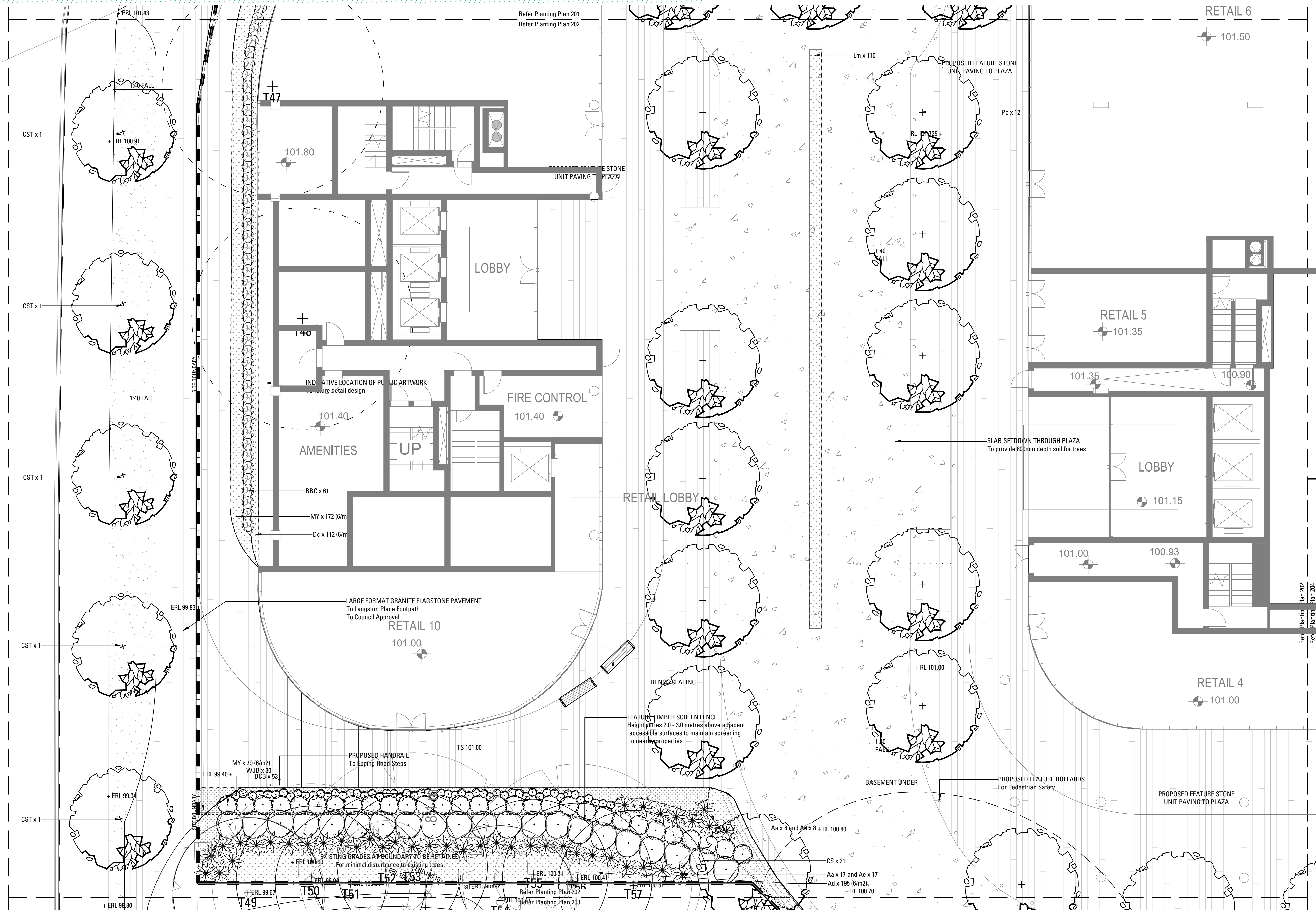




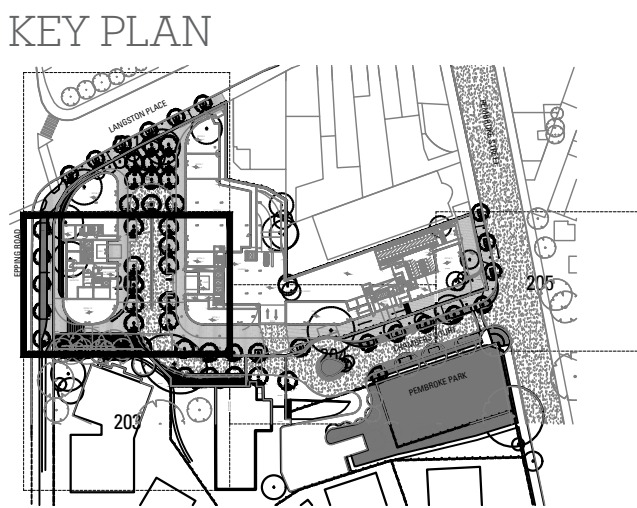
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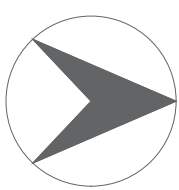


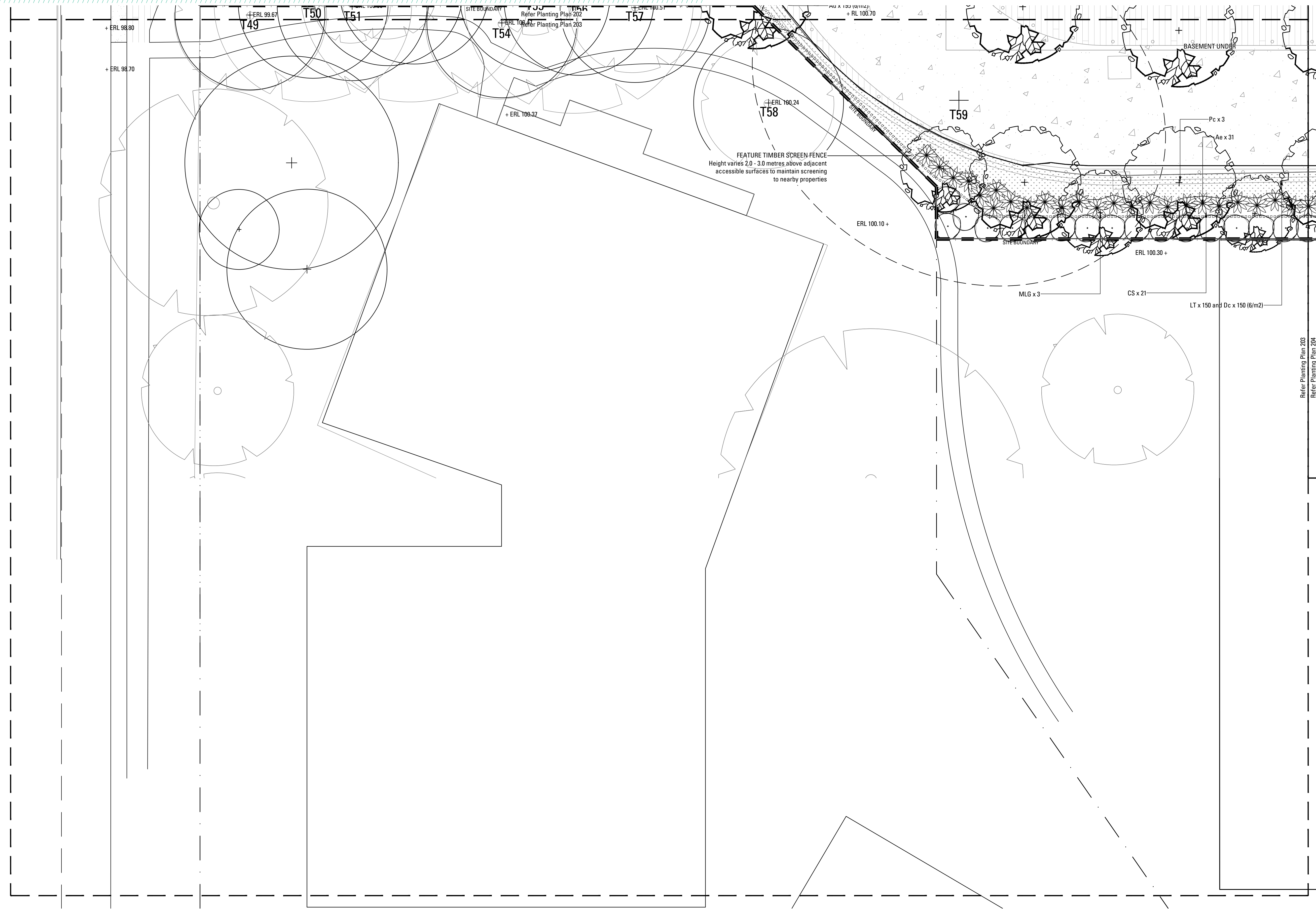


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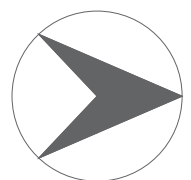
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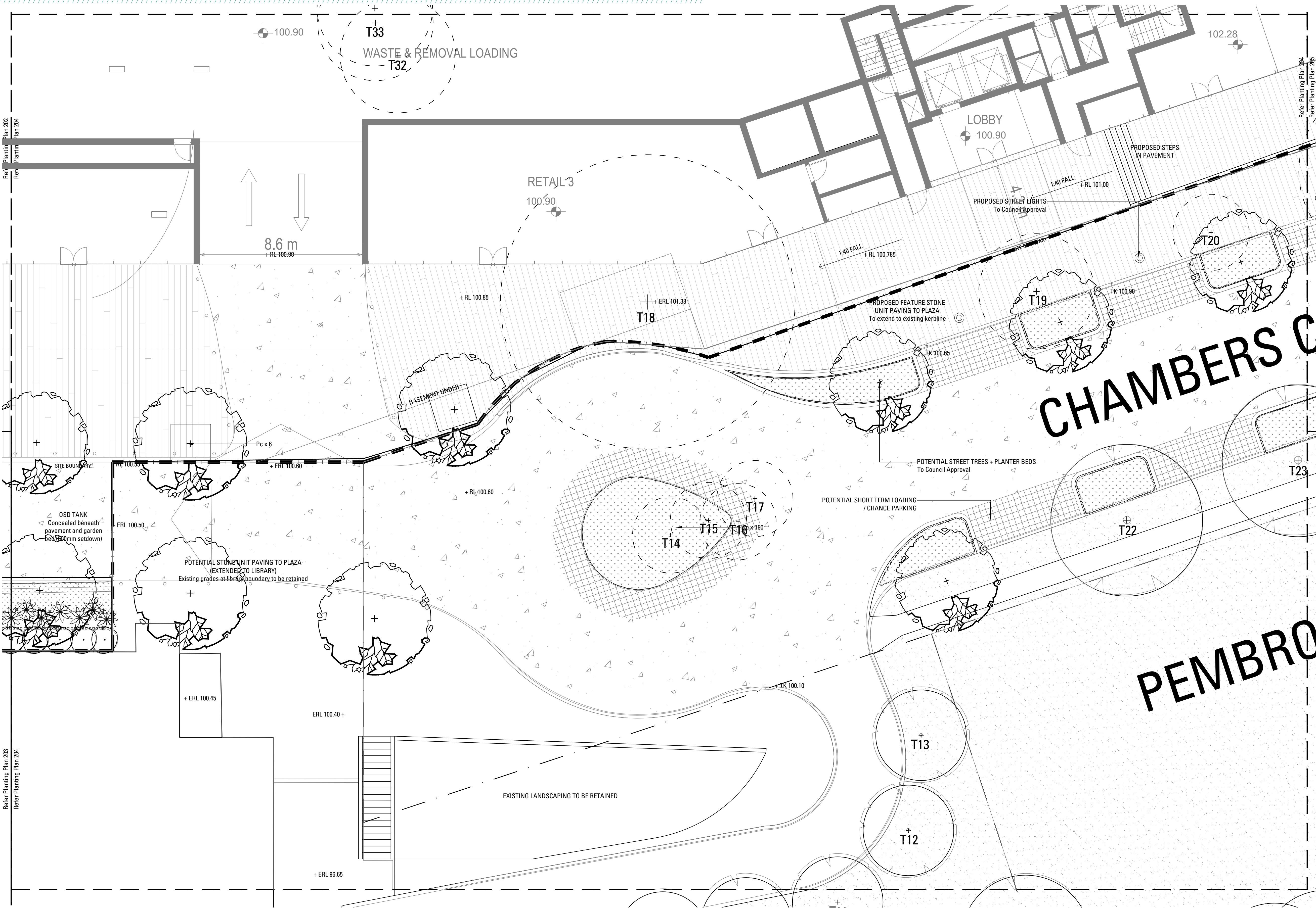
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Refer Planting Plan 203
Refer Planting Plan 204

KEY PLAN

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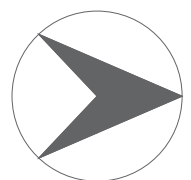
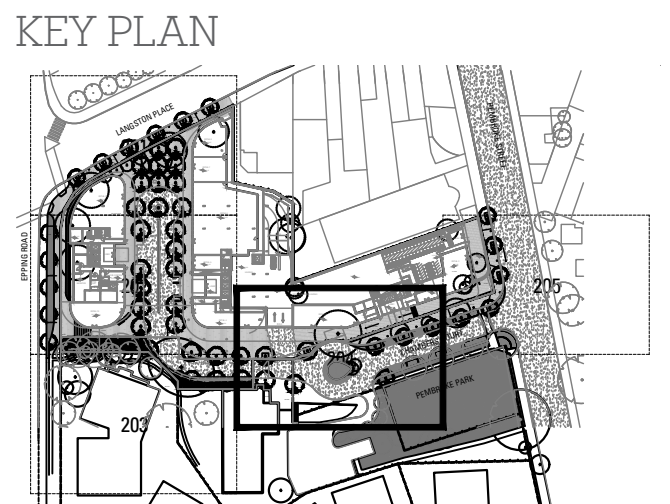
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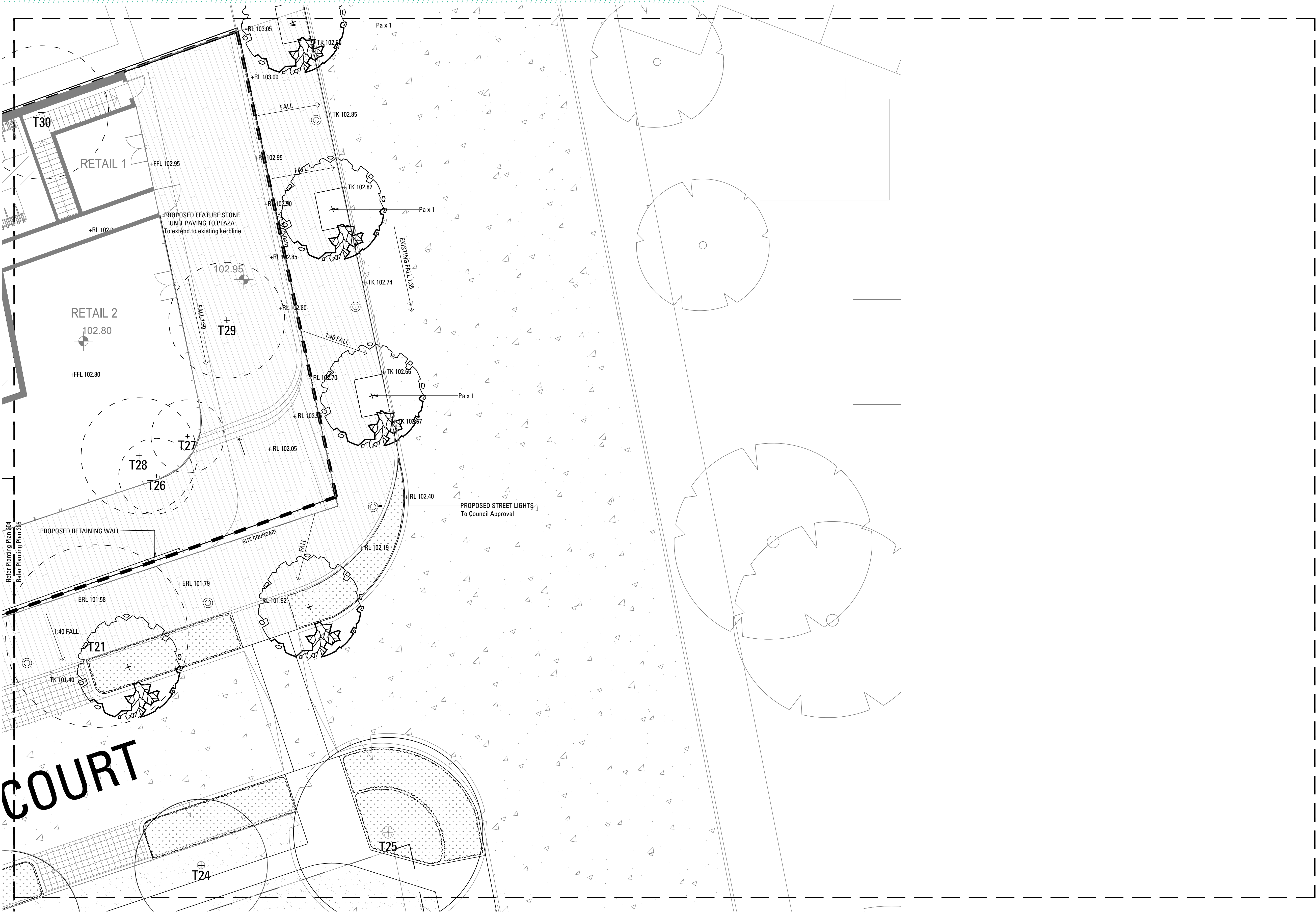
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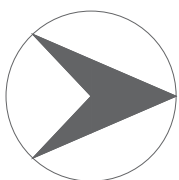
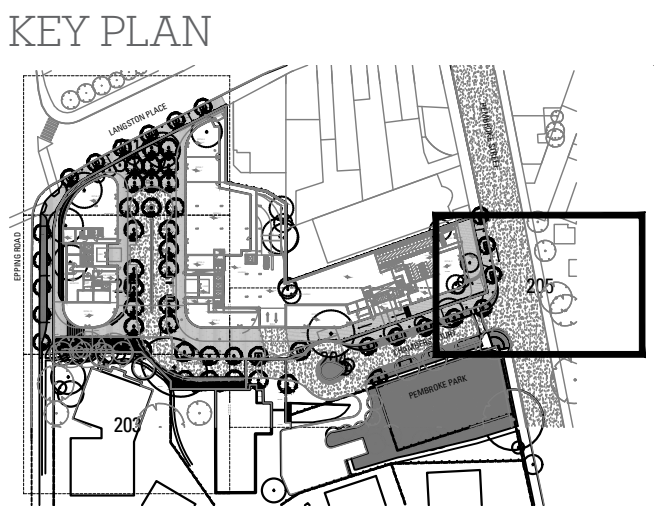
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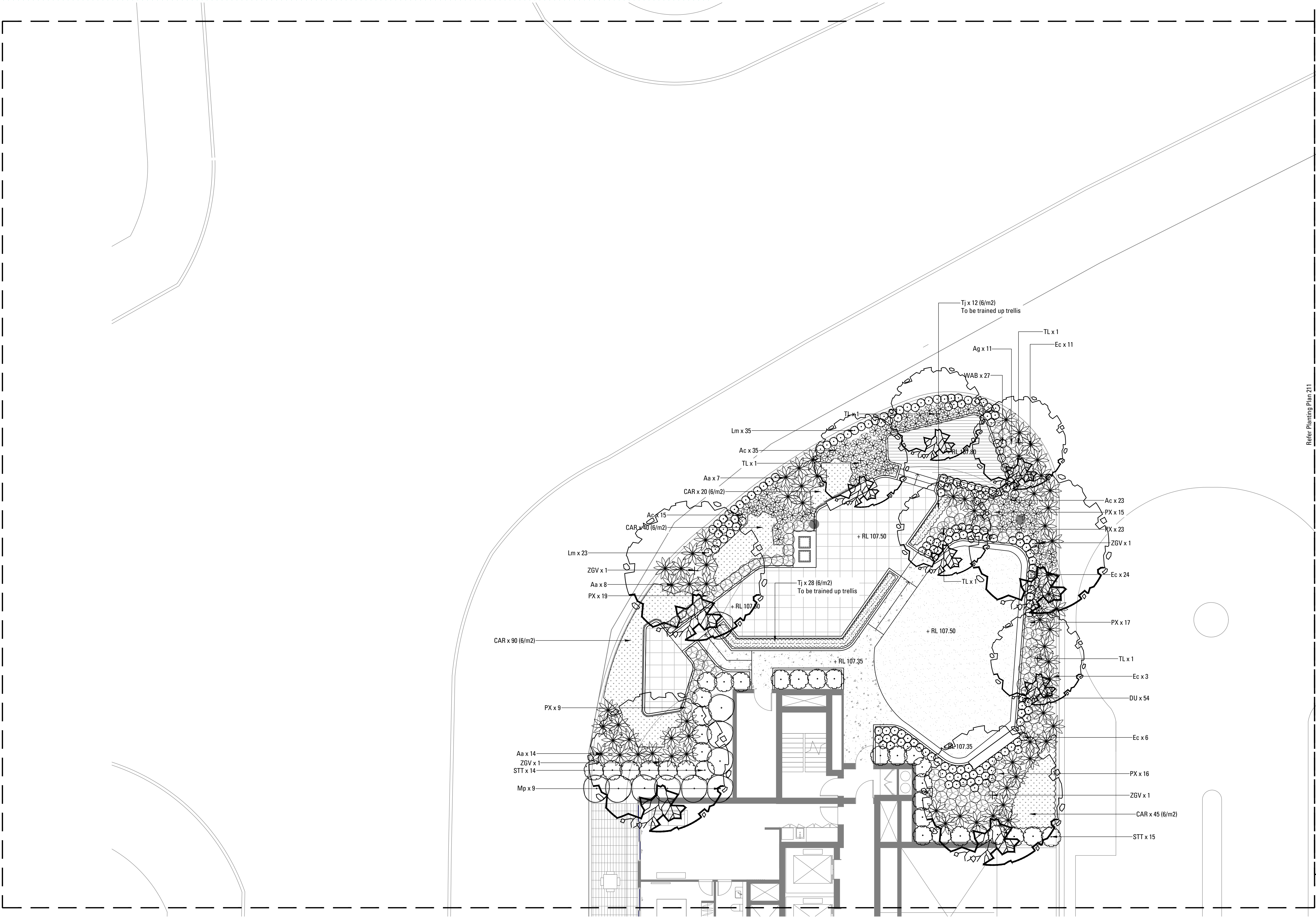
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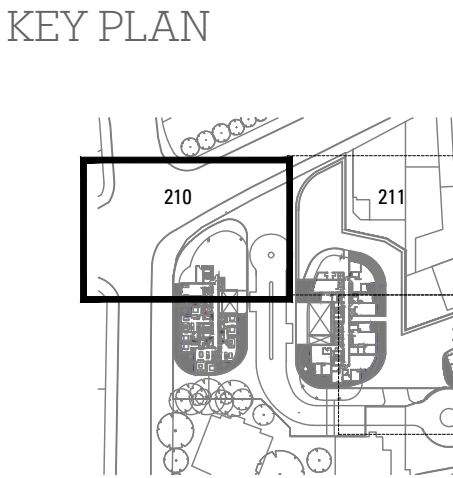
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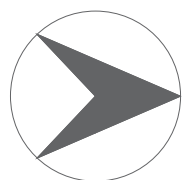


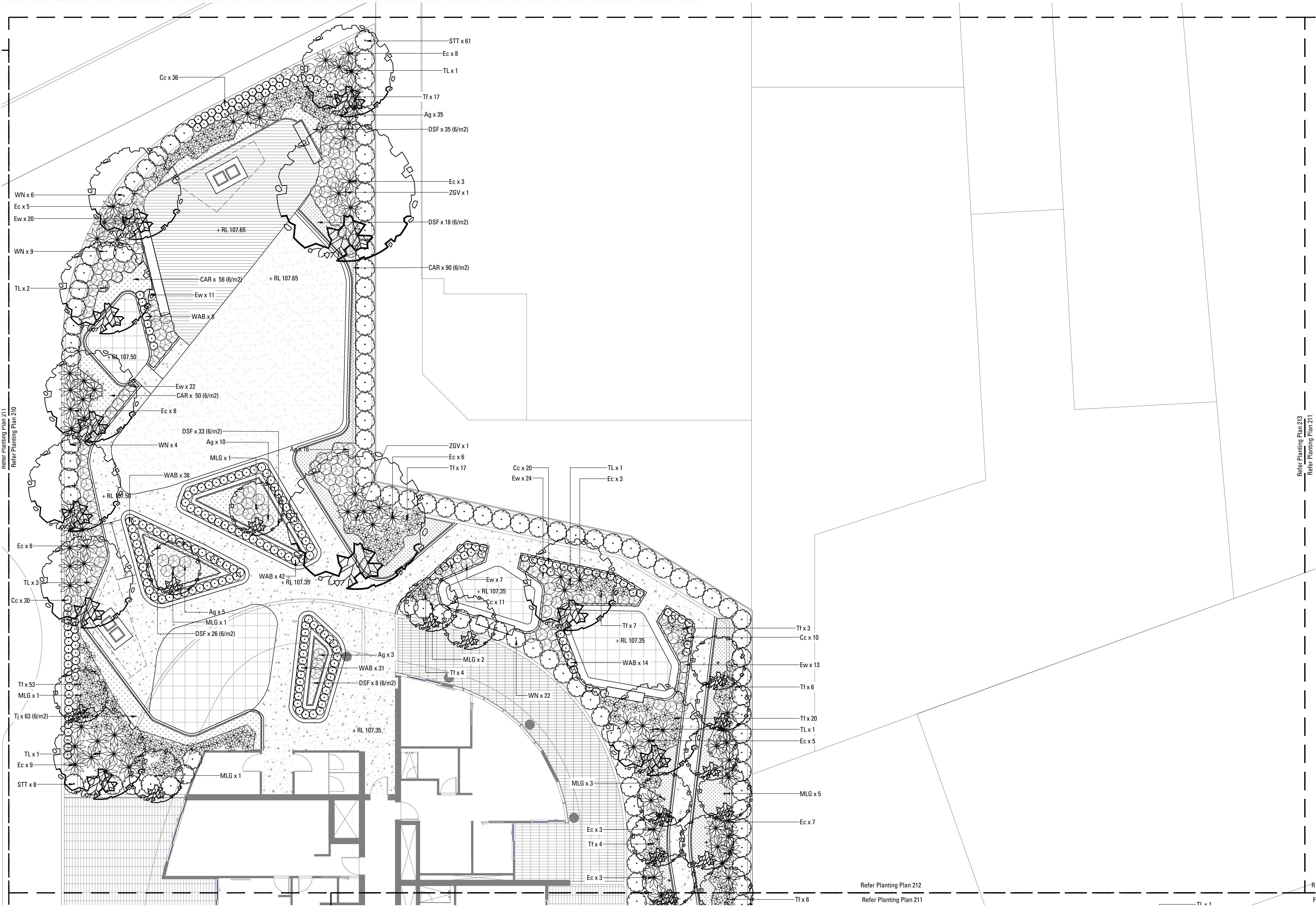
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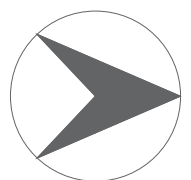
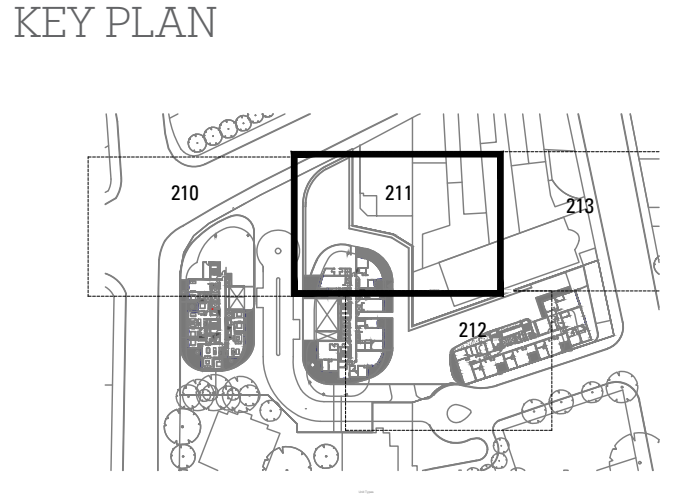


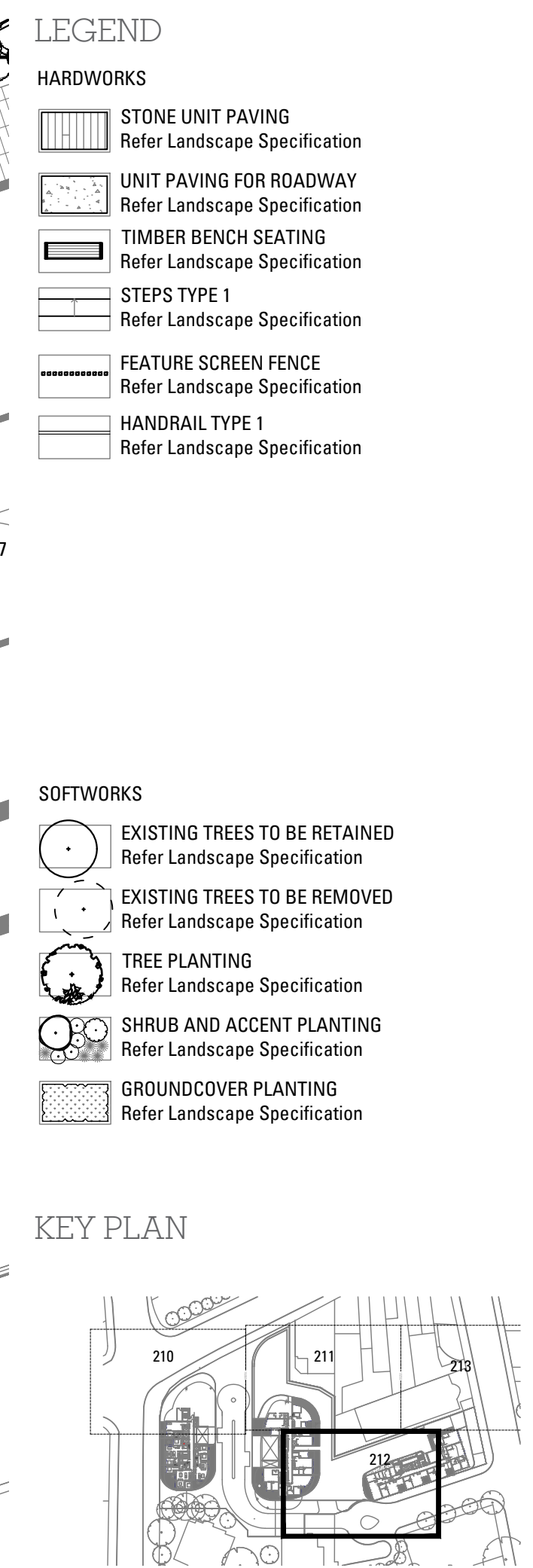
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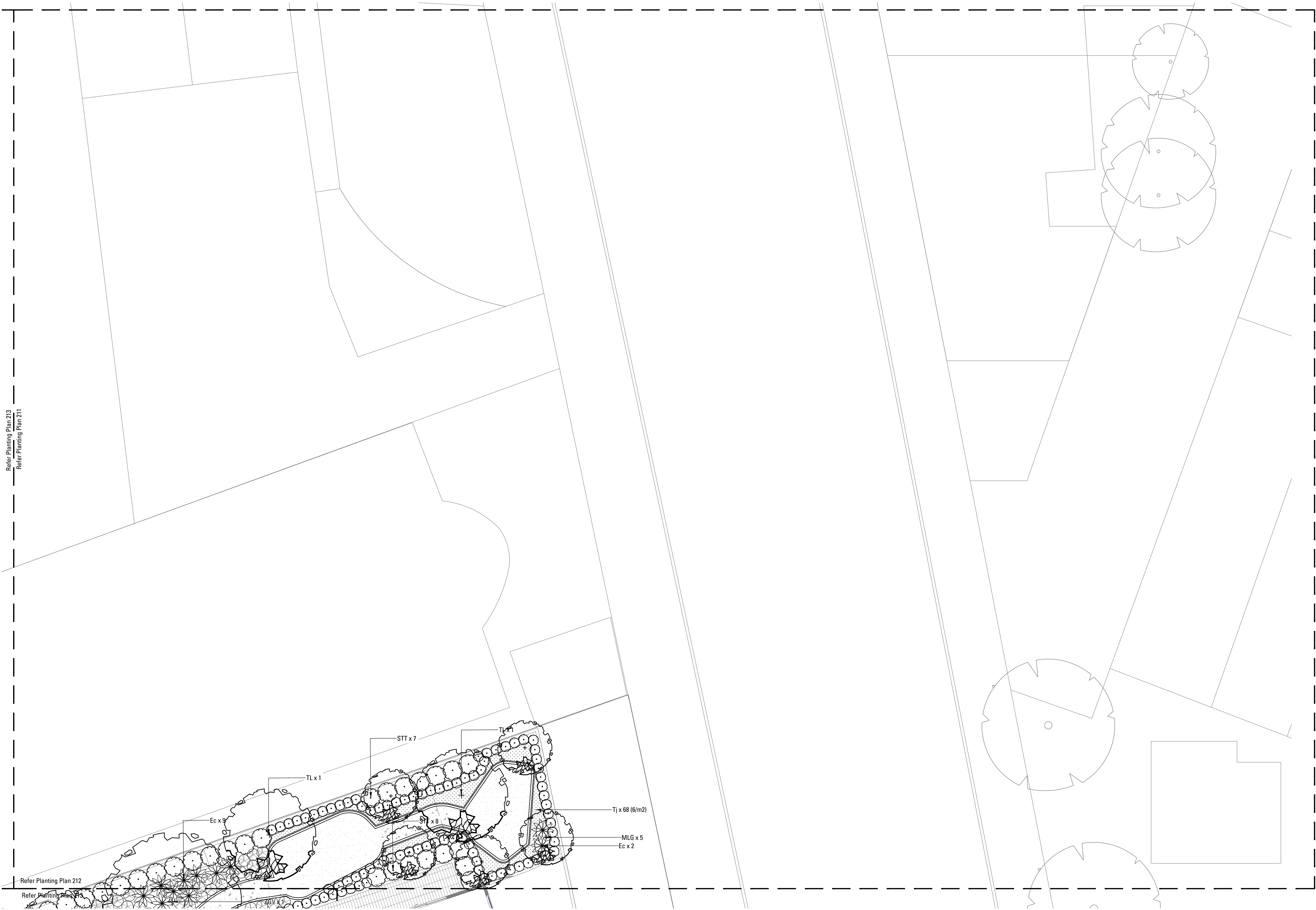


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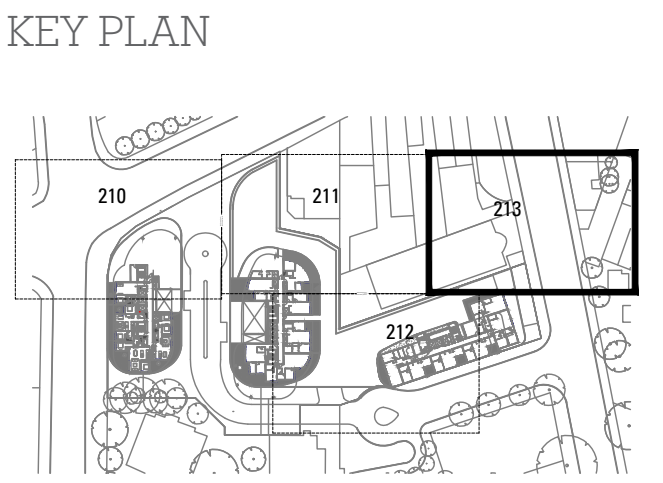
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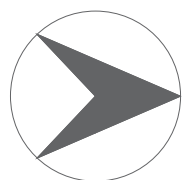
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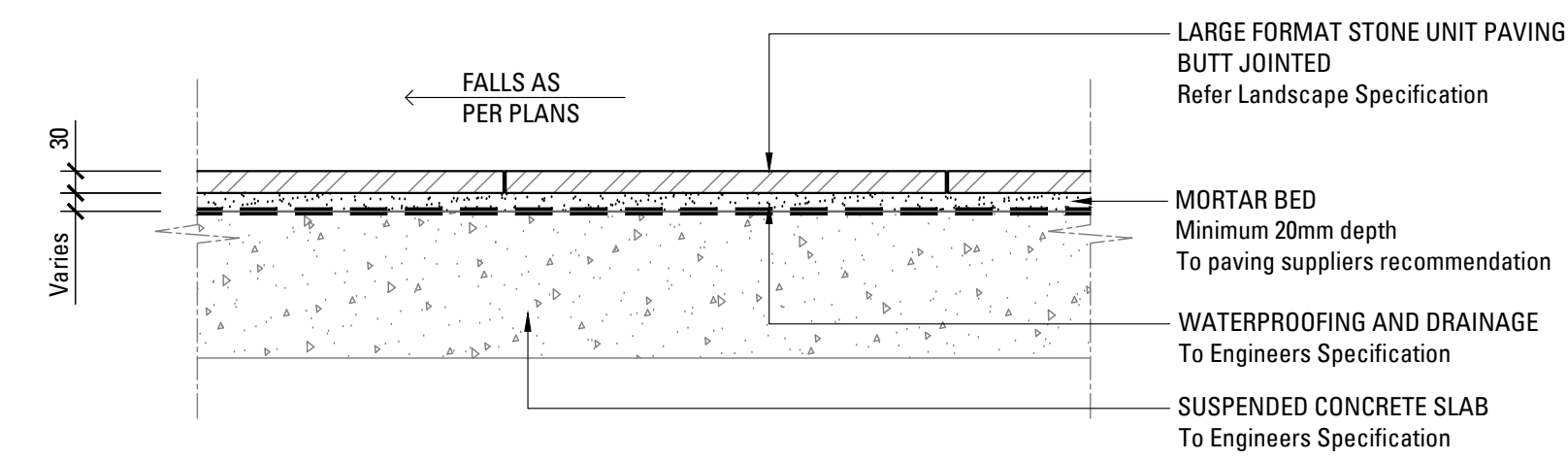
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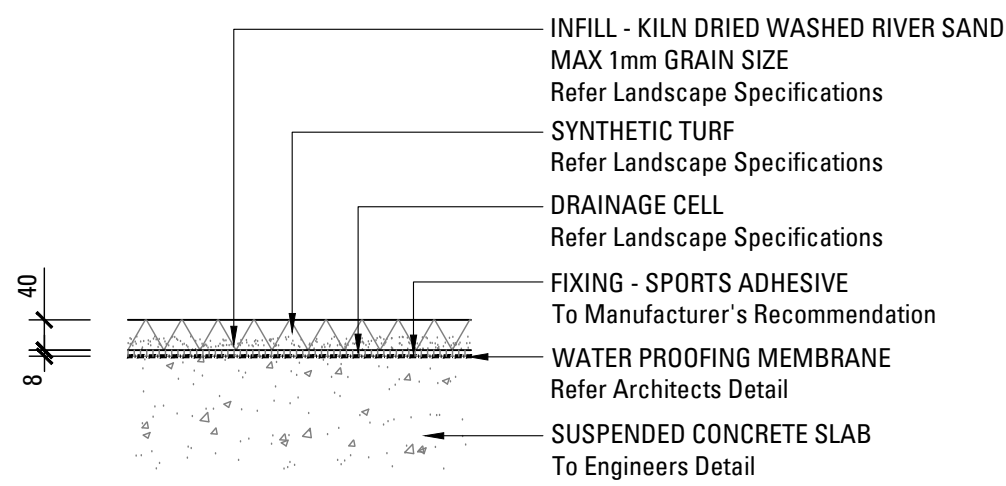


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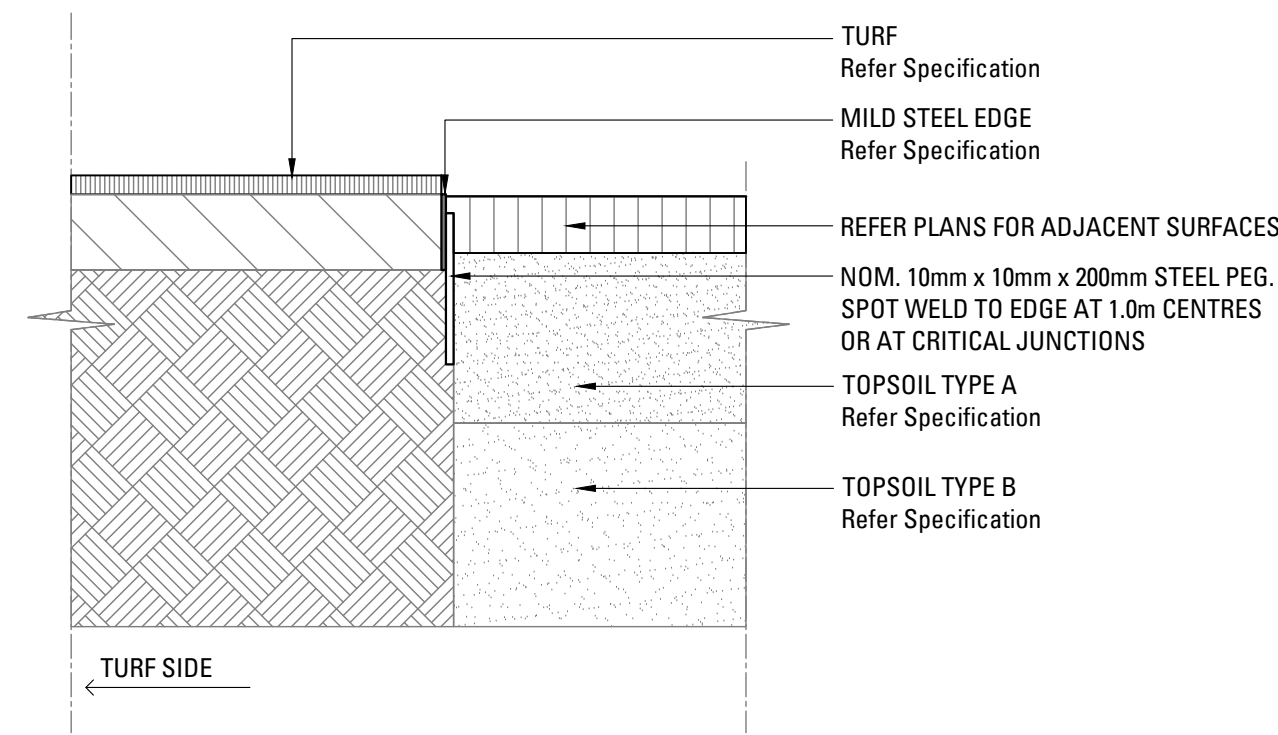




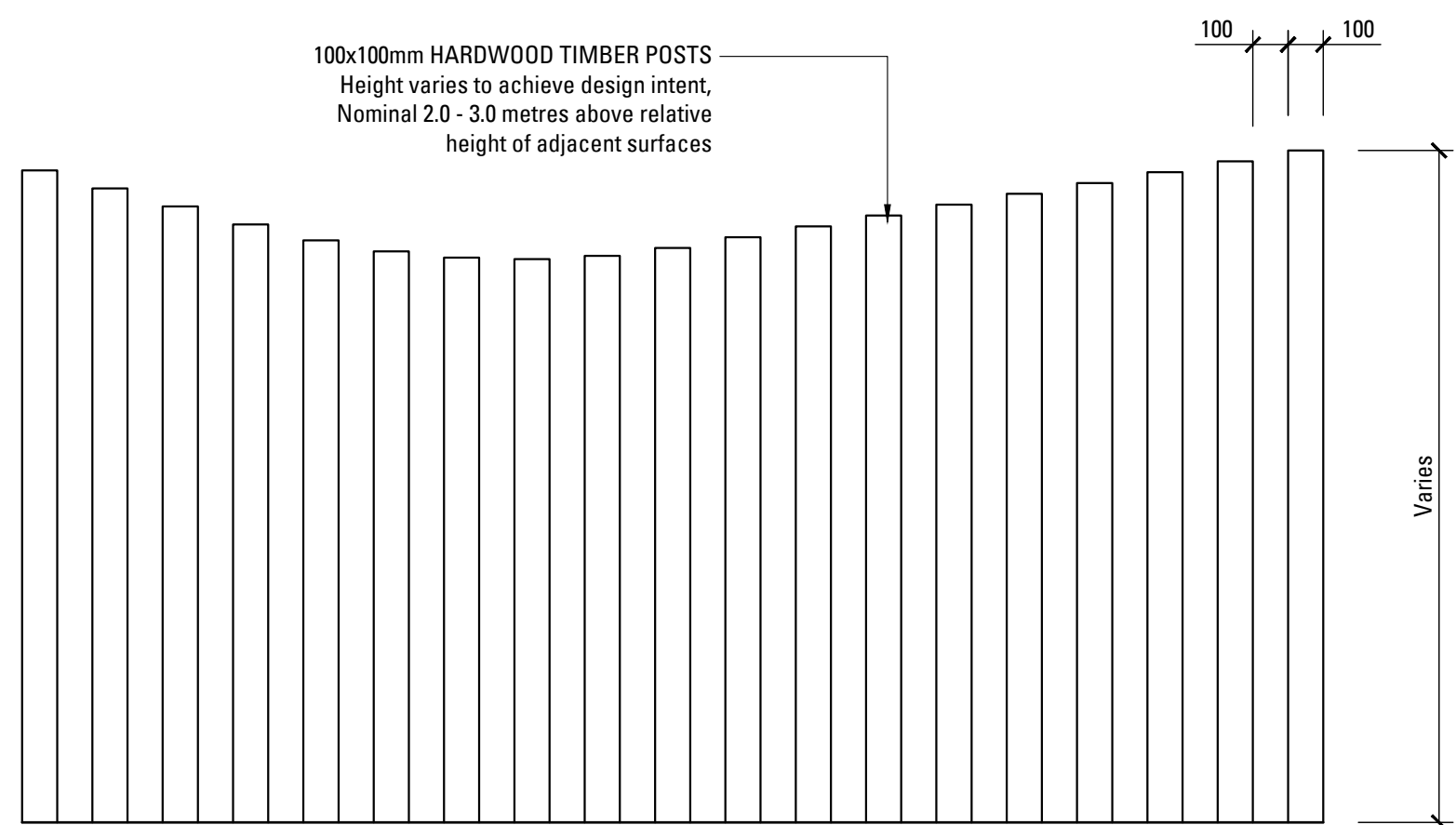
01 PAVING TYPE P1 - STONE UNIT PAVERS ON SUSPENDED SLAB
SCALE 1:10



02 PAVING TYPE P2 - SYNTHETIC TURF ON SLAB
SCALE 1:10

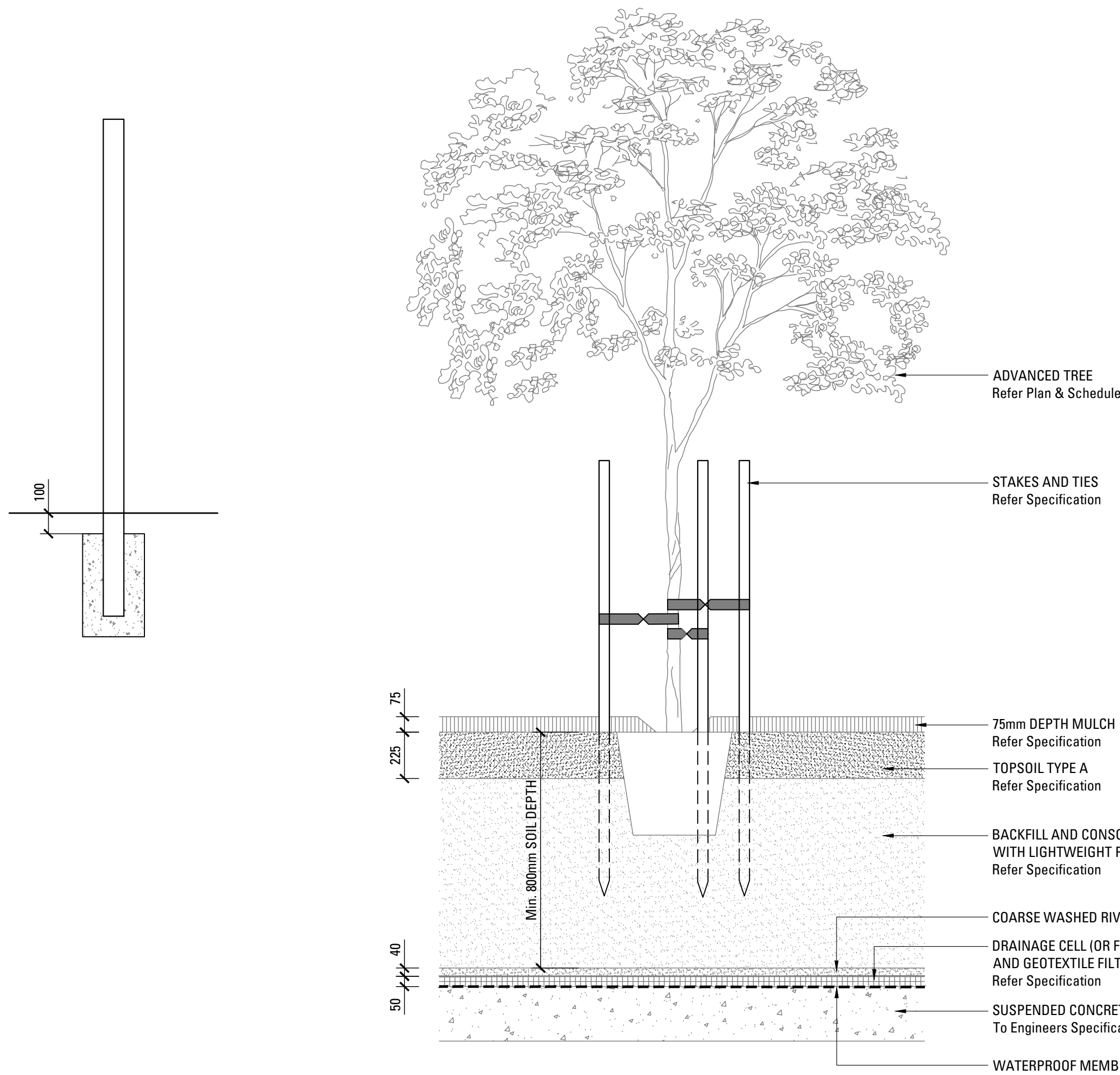


03 EDGE TYPE E1 - TYPICAL MILD STEEL EDGE
SCALE 1:10

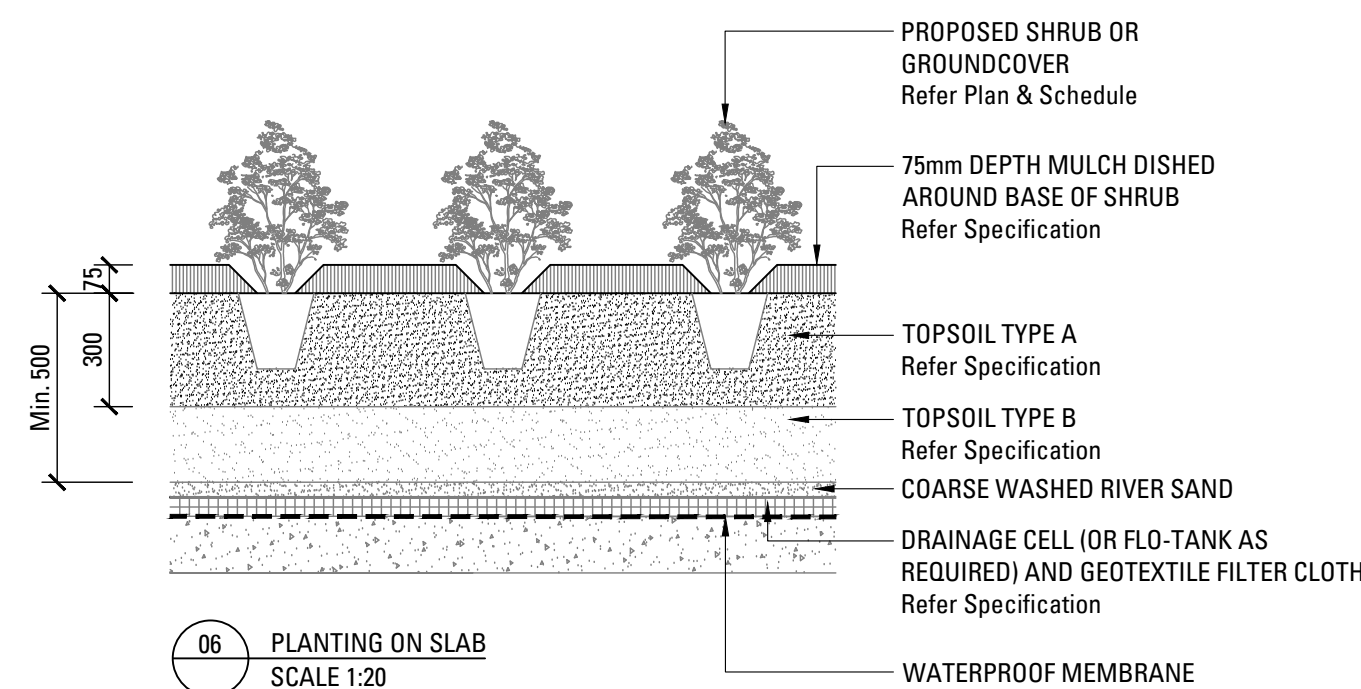


04 FEATURE SCREEN FENCE
SCALE 1:20

NOTE: SCREEN FENCE TO BE COMPLEMENTED WITH SIGNIFICANT SCREEN PLANTING TO ACHIEVE PRIVACY TO NEIGHBOURING PROPERTIES. INSTALLATION METHODOLOGY TO BE REVIEWED PRIOR TO CONSTRUCTION TO ENSURE MINIMAL DISTURBANCE TO EXISTING TREES ALONG SITE BOUNDARY.



05 TREE PLANTING ON SLAB 75-100L
SCALE 1:20



06 PLANTING ON SLAB
SCALE 1:20

LANDSCAPE SPECIFICATION NOTES

SERVICES
BEFORE LANDSCAPE WORK IS COMMENCED THE LANDSCAPE CONTRACTOR IS TO ESTABLISH THE POSITION OF ALL SERVICE LINES AND ENSURE TREE PLANTING IS CARRIED OUT AT LEAST 3 METRES AWAY FROM THESE SERVICES. SERVICE LIDS, VENTS AND HYDRANTS SHALL BE LEFT EXPOSED AND NOT COVERED BY ANY LANDSCAPE FINISHES (TURFING, PAVING, GARDEN BEDS ETC.) FINISH ADJOINING SURFACES FLUSH WITH PIT LIDS.

ARBORIST MANAGEMENT OF TREE PROTECTION
A QUALIFIED AND APPROVED ARBORIST IS TO BE CONTRACTED TO UNDERTAKE OR MANAGE THE INSTALLATION OF PROTECTIVE FENCING, AND TO UNDERTAKE SUCH MEASURES AS HE DEEMS APPROPRIATE TO PRESERVE THE SUBJECT TREES TO BE RETAINED. THE ARBORIST IS TO BE RETAINED FOR THE ENTIRE CONTRACT PERIOD TO UNDERTAKE ONGOING MANAGEMENT AND REVIEW OF THE TREES.

DRAINAGE CELL AND FILTER FABRIC
FOR ON-SLAB AREAS INSTALL AN APPROVED 'DRAINAGE CELL' PRODUCT TO COMPREHENSIVELY COVER THE BOTTOM OF ALL PLANTERS. OVER DRAINAGE CELL TO ON-SLAB AREAS, A POLYFELT GEOTEXTILE LINING (AS SUPPLIED BY 'POLYFELT TS' OR APPROVED EQUIVALENT) IS TO BE INSTALLED TO COVER THE BOTTOM OF ALL PLANTERS, TURNED UP 300MM AND TAPED TO THE PLANTER SIDES TO ENSURE SOIL MIX DOES NOT ESCAPE INTO DRAINAGE OUTLETS/HOLES. INSTALL MIN. 50MM COARSE RIVER SAND OVER ALL GEOTEXTILE LINING PRIOR TO INSTALLATION OF SOIL MIX.

PLANTING MIXTURE
SHALL BE HOMOGENOUS BLEND OF SOIL AND ADDITIVES IN THE FOLLOWING PROPORTIONS:
EXISTING SITE SOIL IF SUITABLE OR
IMPORTED TOPSOIL 50%
COMPOST 30%
D/W SAND 20%
SOIL TESTING OF EXISTING SITE SOIL IS TO BE UNDERTAKEN TO ASSESS SUITABILITY OF USE AS PLANTING TOPSOIL AND COMPLIANCE WITH AUSTRALIAN STANDARDS.

MULCH APPLICATION
PLACE MULCH TO THE REQUIRED DEPTH, (REFER TO DRAWINGS) CLEAR OF PLANT STEMS, AND RAKE TO AN EVEN SURFACE FINISHING 25MM BELOW ADJOINING LEVELS. ENSURE MULCH IS WATERED IN AND TAMPED DOWN DURING INSTALLATION.

MULCH TYPE
PINE BARK: FROM MATURE TREES, GRADED IN SIZE FROM 15MM TO 30MM, FREE FROM WOOD SLIVERS. DARK BROWN IN COLOUR AND TEXTURE.

COMPOST
SHALL BE WELL ROTTED VEGETATIVE MATERIAL OR ANIMAL MANURE, OR OTHER APPROVED MATERIAL, FREE FROM HARMFUL CHEMICALS, GRASS AND WEED GROWTH AND WITH NEUTRAL PH. PROVIDE A CERTIFICATE OF PROOF OF PH UPON REQUEST.

PLANT MATERIAL
ALL PLANTS SUPPLIED ARE TO CONFORM WITH THOSE SPECIES LISTED IN THE PLANT SCHEDULE ON THE DRAWINGS. GENERALLY PLANTS SHALL BE VIGOROUS, WELL ESTABLISHED, HARDENED OFF, OF GOOD FORM CONSISTENT WITH SPECIES OR VARIETY, NOT SOFT OR FORCED, FREE FROM DISEASE OR INSECT PESTS WITH LARGE HEALTHY ROOT SYSTEMS AND NO EVIDENCE OF HAVING BEEN RESTRICTED OR DAMAGED. TREES SHALL HAVE A LEADING SHOOT. IMMEDIATELY REJECT DRIED OUT, DAMAGED OR UNHEALTHY PLANT MATERIAL BEFORE PLANTING. ALL STOCK IS TO BE CONTAINER GROWN FOR A MINIMUM OF SIX (6) MONTHS PRIOR TO DELIVERY TO SITE

FERTILISER MASS PLANTING AREAS:
FERTILISER SHALL BE 'NUTRICOTE' OR APPROVED EQUIVALENT IN GRANULE FORM INTENDED FOR SLOW RELEASE OF PLANT NUTRIENTS OVER A PERIOD OF APPROXIMATELY NINE MONTHS. THOROUGHLY MIX FERTILISER WITH PLANTING MIXTURE AT THE RECOMMENDED RATE, PRIOR TO INSTALLING PLANTS.

TURF
SHALL BE SIR WALTER BUFFALO. SHIRLEYS NO. 17 OR APPROVED EQUAL LAWN FOOD SHALL BE THOROUGHLY MIXED INTO THE TOPSOIL PRIOR TO PLACING TURF.

TREES IN GRASS AND SUPER ADVANCED TREES:
PELLETS SHALL BE IN THE FORM INTENDED TO UNIFORMLY RELEASE PLANT FOOD ELEMENTS FOR A PERIOD OF APPROXIMATELY NINE MONTHS EQUAL TO SHIRLEYS KOKEI PELLETS, ANALYSIS 6.3:1.8:2.9. KOKEI PELLETS SHALL BE PLACED AT THE TIME OF PLANTING TO THE BASE OF THE PLANT, 50MM MINIMUM FROM THE ROOT BALL AT A RATE OF TWO PELLETS PER 300MM OF TOP GROWTH TO A MAXIMUM OF 8 PELLETS PER TREE.

STAKING AND TYING
STAKES SHALL BE STRAIGHT HARDWOOD, FREE FROM KNOTS AND TWISTS, POINTED AT ONE END AND

SIZED ACCORDING TO SIZE

OF PLANTS TO BE STAKED.
A. 5-15 LITRE SIZE PLANT 1X(1200X25X25MM)
B. 35-75 LITRE SIZE PLANT 2X(1500X38X38MM)
C. 100-GREATER THAN 200LITRE 3X(1800X50X50MM)
TIES SHALL BE 50MM WIDE HESSIAN WEBBING OR APPROVED EQUIVALENT NAILED OR STAPLED TO STAKE. DRIVE STAKES A MINIMUM ONE THIRD OF THEIR LENGTH, AVOIDING DAMAGE TO THE ROOT SYSTEM, ON THE WINDWARD SIDE OF THE PLANT.

IRRIGATION SYSTEM
SUPPLY AN AUTOMATIC WATERING SYSTEM USING 'TORO IRRIGATION SYSTEM' OR SIMILAR APPROVED, WITH MICRO-JET SPRINKLER HEADS AND LOW DENSITY, RUBBER MODIFIED POLYPROPYLENE RETICULATION, TO INCLUDE FILTERS, BENDS, JUNCTIONS, ENDS AND OTHER ANCILLARY EQUIPMENT. THE LANDSCAPER SHALL NOMINATE HIS SOURCE OF SUPPLY FOR THE WATERING SYSTEM AND OBTAIN APPROVAL FROM THE SUPERINTENDENT BEFORE PLACING ORDERS FOR EQUIPMENT OR SUPPLY.

A SCHEMATIC PLAN OF THE PROPOSED IRRIGATION SYSTEM IS TO BE PREPARED BY THE CONTRACTOR, SHOWING SOLENOIDS, PIPE DIAMETERS, AND ALL NOZZLE AND TRICKLE ATTACHMENT TYPES (INCLUDING SPRAY/HEAD ANGLE), FOR REVIEW BY THE SUPERINTENDENT PRIOR TO INSTALLATION

THE CONTRACTOR IS TO LIASE WITH THE HYDRAULIC ENGINEER AND COUNCIL AS NECESSARY, TO ENSURE THE THE IRRIGATION SYSTEM CONFORMS WITH ALL THE COUNCIL AND WATER BOARD CODES AND REQUIREMENTS.

PROVIDE AN AUTOMATIC CONTROLLER THAT PROVIDES FOR TWO WEEK SCHEDULING AND HOURLY MULTI-CYCLE OPERATION. THE CONTROLLER SHALL MANUAL OVERRIDE. PROGRAMMING SHALL BE UNDERTAKEN BY THE CONTRACTOR WHO SHALL ADVISE ON THE OPERATION OF THE SYSTEM.

PROVISION OF SECURE HOUSING FOR THE AUTOMATIC IRRIGATION CONTROLLER TO BE LOCATED IN ASSOCIATION WITH THE LANDSCAPE CONTRACTOR AND LOCATION CONFIRMED BY THE SUPERINTENDENT. WIRING TO CONNECT REMOTE SOLENOID LOCATIONS IS TO BE PROVIDED. THE CONTROLLER SHALL BE LOCATED IN A DRY PLACE, PROTECTED FROM THE WEATHER, AND ALL CABLE CONNECTIONS SHALL BE MADE WITH WATERPROOF CONNECTORS.

WATER SUPPLY POINTS TO BE SUPPLIED BY BUILDER.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE AND GUARANTEE SATISFACTORY OPERATION OF THE IRRIGATION SYSTEM.

AFTER THE SYSTEM HAS BEEN INSTALLED TO THE SATISFACTION OF THE SUPERINTENDENT, THE INSTALLATION SHALL BE TESTED UNDER KNOWN WORKING CONDITIONS. ACCEPTANCE OF THE INSTALLED PLANT AND EQUIPMENT SHALL BE SUBJECT TO THESE BEING SATISFACTORY.

TREATED PINE TIMBER EDGING
TIMBER EDGE: 100 X 25MM CCA TREATED RADIATA PINE TIMBER STAKES: 50 X 50 X 500MM CCA TREATED RADIATA PINE-SHARPENED AT ONE END. INSTALL IN LOCATIONS SHOWN ON THE DRAWINGS FLUSH TO FINISHED SURFACE LEVELS.

TURF
TURF ALL LANDSCAPE AREAS AS SHOWN ON THE LANDSCAPE DRAWINGS. TURF IS TO HAVE AN EVEN THICKNESS OF NOT LESS THAN 25MM. OBTAIN TURF FROM AN APPROVED GROWER. FURNISH A WARRANTY FROM THE GROWER THAT THE TURF IS FREE FROM WEEDS AND OTHER FOREIGN MATTER. DELIVER TURF TO THE SITE WITHIN 24 HOURS OF BEING CUT, AND LAY IT WITHIN 24 HOURS OF BEING DELIVERED.

TO PREPARE GRADED AREAS TO RECEIVE TURF, EXCAVATE THE AREA AND CULTIVATE SO AS TO ALLOW FOR IMPORTING OF 100MM OF TURF UNDERLAY SOIL. REMOVE ALL STONES OVER 50MM Ø AND REMOVE ALL WEEDS AND FOREIGN MATTER. SPREAD SOIL MIX A.B.S TO A DEPTH OF 100MM AND GRADE TO APPROPRIATE LEVELS TO ACHIEVE GENERAL EVEN GRADES TO DRAINAGE OUTLETS INSTALLED BY OTHERS.

LAY THE TURF ALONG THE LAND CONTOURS WITH STAGGERED, CLOSE BUTTED JOINTS, SO THAT THE FINISHED TURF SURFACE IS FLUSH WITH ADJACENT FINISHED SURFACES OF PAVING AND THE LIKE. AS SOON AS PRACTICABLE AFTER LAYING, ROLL THE TURF WITH A ROLLER WEIGHING NOT MORE THAN 90KG PER METRE OF WIDTH FOR SANDY OR LIGHT SOILS.

WATER AS NECESSARY TO KEEP THE SOIL MOIST TO A DEPTH OF 100MM. PROTECT NEWLY TURFED AREAS AGAINST TRAFFIC UNTIL GRASS IS ESTABLISHED. FERTILISE TWO WEEKS AFTER LAYING FERTILISE A.B.S

'TOP DRESS' THE TURF WHEN IT IS ESTABLISHED TO A DEPTH OF 10MM WITH COARSE WASHED RIVER SAND. RUB THE DRESSING WELL INTO THE JOINTS AND CORRECT ANY UNEVENNESS IN THE TURF SURFACES.

LANDSCAPE MAINTENANCE PROGRAM

MAINTENANCE SHALL MEAN THE CARE AND MAINTENANCE OF THE LANDSCAPE WORKS BY ACCEPTED HORTICULTURAL PRACTICE AS RECTIFYING ANY DEFECTS THAT BECOME APPARENT IN THE LANDSCAPE WORKS UNDER NORMAL USE. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, WATERING, MOWING, FERTILISING, RESEEDING, RETURFING, WEEDING, PEST AND DISEASE CONTROL, STAKING AND TYING, REPLANTING, CULTIVATION, PRUNING, AERATING, RENOVATING, TOP DRESSING, MAINTAINING THE SITE IN A NEAT AND TIDY CONDITION AS FOLLOWS:-

GENERAL
THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE WORKS FOR THE TERM OF THE MAINTENANCE (OR PLANT ESTABLISHMENT) PERIOD TO THE SATISFACTION OF THE COUNCIL. THE LANDSCAPE CONTRACTOR SHALL ATTEND TO THE SITE ON A WEEKLY BASIS. THE MAINTENANCE PERIOD SHALL COMMENCE AT PRACTICAL COMPLETION AND CONTINUE FOR A PERIOD OF TWENTY SIX (26) WEEKS.

WATERING
GRASS, TREES AND GARDEN AREAS SHALL BE WATERED REGULARLY SO AS TO ENSURE CONTINUOUS HEALTHY GROWTH.

RUBBISH REMOVAL
DURING THE TERM OF THE MAINTENANCE PERIOD THE LANDSCAPE CONTRACTOR SHALL REMOVE RUBBISH THAT MAY OCCUR AND REOCCUR THROUGHOUT THE MAINTENANCE PERIOD. THIS WORK SHALL BE CARRIED OUT REGULARLY SO THAT AT WEEKLY INTERVALS THE AREA MAY BE OBSERVED IN A COMPLETELY CLEAN AND TIDY CONDITION.

REPLACEMENTS
THE LANDSCAPE CONTRACTOR SHALL REPLACE ALL PLANTS THAT ARE MISSING, UNHEALTHY OR DEAD AT THE LANDSCAPE CONTRACTOR'S COST. REPLACEMENTS SHALL BE OF THE SAME SIZE, QUALITY AND SPECIES AS THE PLANT THAT HAS FAILED UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. REPLACEMENTS SHALL BE MADE ON A CONTINUING BASIS NOT EXCEEDING TWO (2) WEEKS AFTER THE PLANT HAS DIED OR IS SEEN TO BE MISSING.

STAKES AND TIES
THE LANDSCAPE CONTRACTOR SHALL REPLACE OR ADJUST PLANT STAKES, AND TREE GUARDS AS NECESSARY OR AS DIRECTED BY THE LANDSCAPE ARCHITECT. REMOVE STAKES AND TIES AT THE END OF THE MAINTENANCE PERIOD IF SO DIRECTED.

PRUNING
TREES AND SHRUBS SHALL BE PRUNED AS DIRECTED BY THE LANDSCAPE ARCHITECT. PRUNING WILL BE DIRECTED AT THE MAINTENANCE OF THE DENSE FOLIAGE OR MISCELLANEOUS PRUNING AND BENEFICIAL TO THE CONDITION OF THE PLANTS. ANY DAMAGED GROWTH SHALL BE PRUNED. ALL PRUNED MATERIAL SHALL BE REMOVED FROM THE SITE.

MULCHED SURFACES
ALL MULCHED SURFACES SHALL BE MAINTAINED IN A CLEAN AND TIDY CONDITION AND BE REINSTATED IF NECESSARY TO ENSURE THAT A DEPTH OF 75MM IS MAINTAINED. ENSURE MULCH IS KEPT CLEAR OF PLANT STEMS AT ALL TIMES.

PEST AND DISEASED CONTROL
THE LANDSCAPE CONTRACTOR SHALL SPRAY AGAINST INSECT AND FUNGUS INFESTATION WITH ALL SPRAYING TO BE CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. REPORT ALL INSTANCES OF PESTS AND DISEASES (IMMEDIATELY THAT THEY ARE DETECTED) TO THE LANDSCAPE ARCHITECT.

GRASS AND TURF AREAS
THE LANDSCAPE CONTRACTOR SHALL MAINTAIN ALL GRASS AND TURF AREAS BY WATERING, WEEDING, DRESSING, ROLLING, MOWING, TRIMMING OR OTHER OPERATIONS AS NECESSARY. SEED AND TURF SPECIES SHALL BE THE SAME AS THE ORIGINAL SPECIFIED MIXTURE. GRASS AND TURF AREAS SHALL BE SPRAYED WITH APPROVED SELECTIVE HERBICIDE AGAINST BROAD LEAFED WEEDS AS REQUIRED BY THE LANDSCAPE ARCHITECT AND IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. GRASS AND TURF AREAS SHALL BE FERTILISED ONCE A YEAR IN AUTUMN WITH 'DYNAMIC LIFTER' FOR LAWNS AT A RATE OF 20KG PER 100M2. FERTILISER SHALL BE WATERED IN IMMEDIATELY AFTER APPLICATION. IRREGULARITIES IN THE GRASS AND TURF SHALL BE WATERED IN IMMEDIATELY AFTER APPLICATION. GRASS AND TURF AREAS SHALL BE KEPT MOWN TO MAINTAIN A HEALTHY AND VIGOROUS SWARD. MOWING HEIGHT: 30-50MM.

WEED ERADICATION
ERADICATE WEEDS BY ENVIRONMENTALLY ACCEPTABLE METHODS USING A NON-RESIDUAL GLYPHOSATE HERBICIDE (EG. 'ROUNDUP') IN ANY OF ITS REGISTERED FORMULAE, AT THE RECOMMENDED MAXIMUM RATE. REGULARLY REMOVE BY HAND, WEED GROWTH THAT MAY OCCUR OR RECUR THROUGHOUT GRASSED, PLANTED AND MULCHED AREAS. REMOVE WEED GROWTH FROM AN AREA 750MM DIAMETER AROUND THE BASE OF TREES IN GRASSED AREAS. CONTINUE ERADICATION THROUGHOUT THE COURSE OF THE WORKS AND DURING THE MAINTENANCE PERIOD.

SOIL SUBSIDENCE
ANY SOIL SUBSIDENCE OR EROSION WHICH MAY OCCUR AFTER THE SOIL FILLING AND PREPARATION OPERATIONS SHALL BE MADE GOOD BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE CLIENT.