

PROPOSED DEVELOPMENT

321 LOWER HEIDELBERG ROAD, IVANHOE

LANDSCAPE WORKS FOR TOWN PLANNING ISSUE

Number	Title	Scale	Issue No.
L-TP00	COVER PAGE / DRAWING INDEX	NA @ A1	A
L-TP01	EXISTING VEGETATION PLAN	1:200 @ A1	A
L-TP02	OVERALL SITE PLAN	1:200 @ A1	A
L-TP03	TREE PLANTING PLAN	1:200 @ A1	A
L-TP04	DETAILED PLANTING PLAN - SOUTH	1:100 @ A0	A
L-TP05	DETAILED PLANTING PLAN - NORTH	1:100 @ A0	A
L-TP06	INDICATIVE LIGHTING PLAN	1:200 @ A1	A
L-TP07	TYPICAL DETAILS & SPECIFICATION NOTES	AS SHOWN @ A1	A
L-TP08	LANDSCAPE MAINTENANCE SCHEDULE	NA @ A1	A



TREE PROTECTION NOTES

Tree Protection measures are to be in accordance with Australian Standard AS 4970 - 2009 Protection of Trees on Development Sites

- All trees to be retained are to be identified and fenced off prior to demolition and construction works commencing, or any heavy machinery entering the site. Tree protection fencing is to be established to create an exclusion zone around the tree at the distance from the trunk specified as the Tree Protection Zone (TPZ) or as indicated on the Landscape Plan. Once erected, these areas are to be maintained as 'no go' zones to limit trafficking through the TPZs and avoid inadvertent mechanical damage by construction vehicles and equipment during construction. Fencing is to remain in place until soft landscaping works commence as part of the final stage of site works.
- If access or temporary relocation of protective fencing is required e.g. to allow for the demolition of existing structures, it must be with the approval and supervision of a Project Arborist. The appointed Project Arborist is to be an appropriately experienced and skilled professional with a minimum qualification of Certificate V (or equivalent) in Arboriculture.
- Tree Protection fencing is to be constructed of temporary security fencing (or similar) securely fixed to block bases. No holes are to be dug for fence construction unless outside the specified TPZ. Fencing is to be of a minimum height of 1.8m and is to be secure, so as to deter easy entry. At least one weatherproof sign per side is to be attached to each fenced TPZ and is to clearly state "TREE PROTECTION ZONE. ENTRY RESTRICTIONS APPLY. DO NOT REMOVE FENCE. CONTACT THE CONTRACTOR IF ENTRY IS REQUIRED. NO EXCAVATING OR TRENCHING, NO STORAGE OF MATERIALS OR WASTE" and is to have the Contractor's (or appointed site foreman) and Project Arborist's contact details.
- The ground within all TPZs within the site (both fenced and unfenced) and outside of the building footprints is to be maintained with a 50-100mm layer of coarse woodchips. Woodchips are to be well composted and are to be kept a minimum of 300mm back from the tree's trunk. The soil surface is to be thoroughly wet immediately prior to the installation of the mulch layer. Unless during water restrictions, irrigation is to be provided for each of the trees from December to March inclusive. A weed control program is to be implemented for mulched areas.
- Any root and branch pruning requirements are to be carried out by the appointed Project Arborist and be in accordance with Australian Standard AS 4373-2007 Pruning of Amenity Trees. Where a root diameter of 20mm or greater is encountered during site works, these shall be cleanly pruned by hand, and never torn from the ground by machinery.
- Throughout construction works the Project Arborist is to undertake regular inspections of trees and carry out remedial works as required to ensure trees retain good health and where necessary install additional trunk, branch or ground protection.
- These general protection requirements apply throughout the development process:
 - No heavy machinery is to enter the fenced areas of the TPZ without the express permission of the Project Arborist (emergency service vehicles excluded);
 - No trenching or removal of soil is to take place. Existing levels must be maintained. Garden beds must be constructed using existing site soil;
 - No fill to a depth greater than 100mm is to be installed;
 - Any vegetation located within Tree Protection Zones is to be removed by hand so that no heavy machinery enters into TPZ;
 - No trenching services are to pass through the TPZ. If services are required they are to be bored beneath the root zone to a depth approved by the Project Arborist, or non-destructively excavated, such as hydro excavation, to retain significant roots in situ;
 - No drainage or subsurface irrigation lines are to be installed;
 - No fuel, oil dumps or chemicals shall be allowed in or stored on the Tree Protection Zone. The servicing and refuelling of equipment and vehicles must be carried out away from the root zone;
 - No storage of materials, equipment or temporary buildings will take place over the root zone;
 - No fixtures of any sort shall be attached to the trees for any reason;
 - The Project Arborist is to be consulted prior to heavy machinery accessing any of the fenced TPZ;
 - All machinery is to be kept clear of the tree canopy to prevent impact damage.
 - If damage of any sort is to occur to any tree on site, the Project Arborist must be contacted to take immediate remedial action.
 - Any changes to the building/landscaping design which alter surface or below ground works within the fenced TPZ are to be subject to the approval of the Project Arborist prior to proceeding.

REVISION	DATE	BY
A To Council Request	12.04.2024	MGR

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PROJECT
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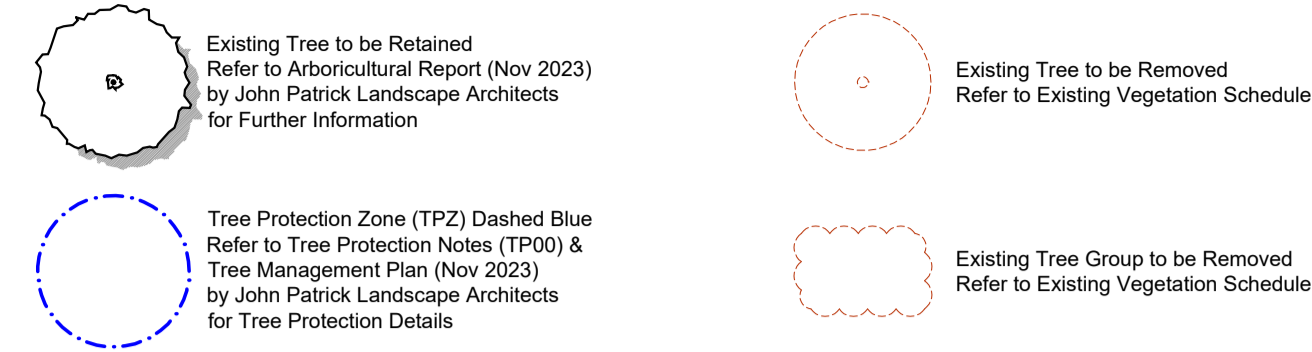
321 Lower Heidelberg Road, Ivanhoe East

DRAWING
Cover Page / Drawing Index
for Town Planning

SCALE	N/A @ A1
DATE	DEC 2023
DRAWN	MGR
CHECKED	JP
JOB NO	23-489
DWG NO	L-TP00
CAD FILE	23-489 L-TP Rev A.dwg

ADVERTISED PLAN
Application No. P12024
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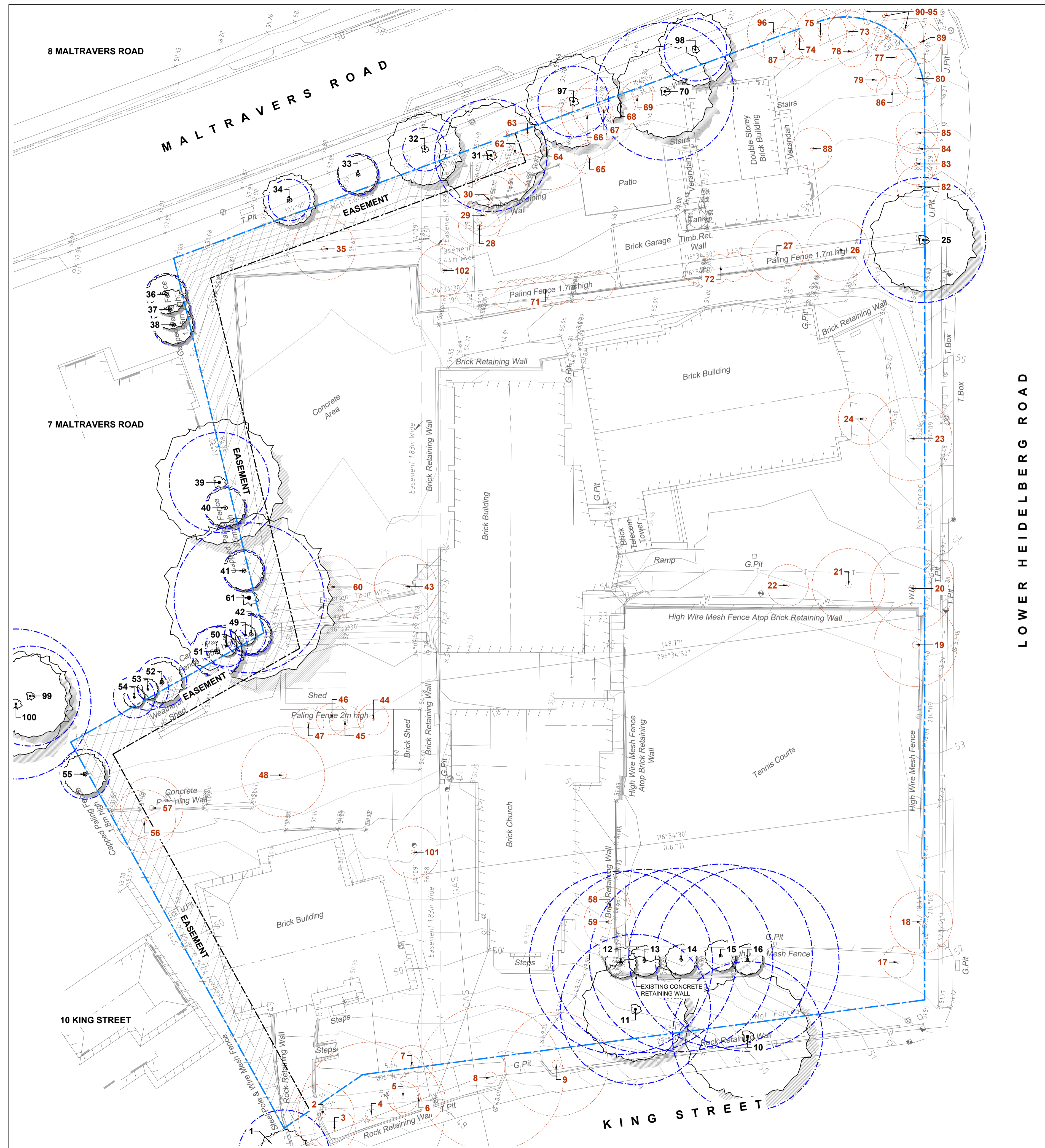
LEGEND



EXISTING VEGETATION SCHEDULE

No.	BOTANICAL NAME	COMMON NAME	HEIGHT (m)	SPREAD (m)	Tree Protection Zone (TPZ) Radius	RETAIN/REMOVE	COMMENTS
1	<i>Allocasuarina torulosa</i>	Forest Oak	11	5	4.4m	Retain	
2	<i>Melaleuca styphelioides</i>	Prickly-leaved Paperbark	7	6	-	Remove	
3	<i>Agonix flexuosa</i>	Willow Myrtle	4	4	-	Remove	
4	<i>Melia azedarach</i>	White Cedar	10	14	-	Remove	
5	<i>Callistemon salignus</i>	Willow Bottlebrush	4	3	-	Remove	
6	<i>Sophora microphylla</i>	Kowhai	6	5	-	Remove	
7	<i>Ligustrum lucidum</i>	Shining Privet	6	4	-	Remove	
8	<i>Fraxinus o. 'Raywood'</i>	Claret Ash	10	14	-	Remove	
9	<i>Fraxinus excelsior 'Aurea'</i>	Golden Ash	12	10	-	Remove	
10	<i>Melia azedarach</i>	White Cedar	9	12	7.2m	Retain	
11	<i>Cedrus deodara</i>	Deodar Cedar	15	10	7.2m	Retain	
12	<i>Cupressus sempervirens</i>	Italian Cypress	16	3	8.8m	Retain	
13	<i>Cupressus sempervirens</i>	Italian Cypress	16	3	8.8m	Retain	
14	<i>Cupressus sempervirens</i>	Italian Cypress	17	3	8.8m	Retain	
15	<i>Cupressus sempervirens</i>	Italian Cypress	14	3	8.8m	Retain	
16	<i>Cupressus sempervirens</i>	Italian Cypress	14	3	8.8m	Retain	
17	<i>Cupressus sempervirens</i>	Italian Cypress	17	3	-	Remove	
18	<i>Cotoneaster glaucophyllus</i>	Cotoneaster	4	6	-	Remove	
19	<i>Cotoneaster glaucophyllus</i>	Cotoneaster	4	8	-	Remove	
20	<i>Eucalyptus mannifera</i>	Red Spotted Gum	12	8	-	Remove	
21	<i>Callistemon viminalis</i>	Weeping Bottlebrush	6	7	-	Remove	
22	<i>Callistemon viminalis</i>	Weeping Bottlebrush	5	4	-	Remove	
23	<i>Fraxinus excelsior 'Aurea'</i>	Golden Ash	7	8	-	Remove	
24	<i>Grevillea sp.</i>	Grevillea	4	5	-	Remove	
25	<i>Koeleruteria paniculata</i>	Golden Rain Tree	7	10	6.0m	Retain	
26	<i>Koeleruteria paniculata</i>	Golden Rain Tree	5	6	-	Remove	
27	<i>Koeleruteria paniculata</i>	Golden Rain Tree	5	5	-	Remove	
28	<i>Koeleruteria paniculata</i>	Golden Rain Tree	4	4	-	Remove	
29	<i>Sophora microphylla</i>	Kowhai	6	4	-	Remove	
30	<i>Sophora microphylla</i>	Kowhai	8	5	-	Remove	
31	<i>Lophostemon confertus</i>	Brush Box	14	10	5.4m	Retain	
32	<i>Koeleruteria paniculata</i>	Golden Rain Tree	5	7	2.1m	Retain	
33	<i>Koeleruteria paniculata</i>	Golden Rain Tree	4	4	2.0m	Retain	
34	<i>Koeleruteria paniculata</i>	Golden Rain Tree	4	5	2.0m	Retain	
35	<i>Acacia melanoxylon</i>	Blackwood Wattle	6	6	-	Remove	
36	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	7	2	2.0m	Retain	
37	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	7	2	2.0m	Retain	
38	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	7	2	2.0m	Retain	
39	<i>Ulmus parvifolia</i>	Chinese Elm	9	12	4.8m	Retain	
40	<i>Lophostemon confertus</i>	Brush Box	7	4	2.0m	Retain	
41	<i>Eucalyptus mannifera</i>	Red Spotted Gum	6	4	2.0m	Retain	
42	<i>Eucalyptus cinerea</i>	Argyle Apple	7	4	2.0m	Retain	
43	<i>Ligustrum lucidum</i>	Shining Privet	6	6	-	Remove	
44	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	6	3	-	Remove	
45	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	6	3	-	Remove	
46	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	6	3	-	Remove	
47	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	6	3	-	Remove	
48	<i>Ficus carica</i>	Common Fig	5	8	-	Remove	
49	<i>Pittosporum e. 'Variegatum'</i>	Silver Tarata	6	5	2.4m	Retain	
50	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	4	2	2.0m	Retain	
51	<i>Callistemon sp.</i>	Bottlebrush	4	2	2.0m	Retain	
52	<i>Acacia pycnantha</i>	Golden Wattle	5	4	2.4m	Retain	
53	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	5	3	2.0m	Retain	
54	<i>Pittosporum tenuifolium cv.</i>	Kohuhu	5	2	2.0m	Retain	
55	<i>Eucalyptus leucoxylon</i>	Yellow Gum	5	4	2.4m	Retain	
56	<i>Ligustrum lucidum</i>	Shining Privet	8	6	-	Remove	
57	<i>Ligustrum lucidum</i>	Shining Privet	8	6	-	Remove	
58	<i>Melaleuca styphelioides</i>	Prickly-leaved Paperbark	8	4	-	Remove	
59	<i>Fraxinus a. ssp. angustifolia</i>	Desert Ash	9	5	-	Remove	
60	<i>Ligustrum lucidum</i>	Shining Privet	6	6	-	Remove	
61	<i>Eucalyptus botryoides</i>	Southern Mahogany	14	16	7.2m	Retain	
62	<i>Sophora microphylla</i>	Kowhai	4	3	-	Remove	
63	<i>Paulownia tomentosa</i>	Empress Tree	4.5	4	-	Remove	
64	<i>Paulownia tomentosa</i>	Empress Tree	8	8	-	Remove	
65	<i>Acer palmatum</i>	Japanese Maple	3	3	-	Remove	
66	<i>Koeleruteria paniculata</i>	Golden Rain Tree	5	5	-	Remove	
67	<i>Lophostemon confertus</i>	Brush Box	9	6	-	Remove	
68	<i>Lophostemon confertus</i>	Brush Box	5	3	-	Remove	
69	<i>Ligustrum lucidum</i>	Shining Privet	4	3	-	Remove	
70	<i>Koeleruteria paniculata</i>	Golden Rain Tree	7	9	6.6m	Retain	
71	<i>Pittosporum tenuifolium cv.</i>	Kohuhu (Hedge)	7	3	-	Remove	
72	<i>Pittosporum tenuifolium cv.</i>	Kohuhu (Hedge)	4	1	-	Remove	
73	<i>Ligustrum lucidum</i>	Shining Privet	5	3	-	Remove	
74	<i>Camellia sasanqua</i>	Sasanqua Camellia	5	4	-	Remove	
75	<i>Cotoneaster glaucophyllus</i>	Cotoneaster	4	5	-	Remove	
76	No Tree						
77	<i>Acer palmatum</i>	Japanese Maple	3	3	-	Remove	
78	<i>Melaleuca armillaris</i>	Bracelet Honey-myrtle	6	3	-	Remove	
79	<i>Acer palmatum</i>	Japanese Maple	3	2	-	Remove	
80	<i>Cotoneaster glaucophyllus</i>	Cotoneaster	4	4	-	Remove	
81	No Tree						
82	<i>Robinia p. 'Umbraculifera'</i>	Mop Top Robinia	4	4	-	Remove	
83	<i>Robinia p. 'Umbraculifera'</i>	Mop Top Robinia	4	4	-	Remove	
84	<i>Robinia p. 'Umbraculifera'</i>	Mop Top Robinia	4	4	-	Remove	
85	<i>Robinia p. 'Umbraculifera'</i>	Mop Top Robinia	4	4	-	Remove	
86	<i>Melaleuca armillaris</i>	Bracelet Honey-myrtle	4	4	-	Remove	
87	<i>Ligustrum lucidum</i>	Shining Privet	4	4	-	Remove	
88	<i>Viburnum Sp.</i>	Viburnum	4	4	-	Remove	
89	<i>Photinia serratifolia</i>	Christmas Berry	4	4	-	Remove	
90	<i>Photinia serratifolia</i>	Christmas Berry	4	4	-	Remove	
91	<i>Photinia serratifolia</i>	Christmas Berry	4	4	-	Remove	
92	<i>Photinia serratifolia</i>	Christmas Berry	4	4	-	Remove	
93	<i>Cupressus sempervirens</i>	Italian Cypress	5	3	-	Remove	
94	<i>Cupressus sempervirens</i>	Italian Cypress	8	3	-	Remove	
95	<i>Cupressus sempervirens</i>	Italian Cypress	6	3	-	Remove	
96	<i>Cotoneaster glaucophyllus</i>	Cotoneaster	4	5	-	Remove	
97	<i>Koeleruteria paniculata</i>	Golden Rain Tree	5	9	3.4m	Retain	
98	<i>Koeleruteria paniculata</i>	Golden Rain Tree	4	7	3.0m	Retain	
99	<i>Cupressus torulosa</i>	Bhutan Cypress	18	8	4.8m	Retain	
100	<i>Cupressus torulosa</i>	Bhutan Cypress	18	10	7.2m	Retain	
101	<i>Melia azedarach</i>	White Cedar	4	5	-	Remove	
102	<i>Pittosporum undulatum</i>	Sweet Pittosporum	5	5	-	Remove	

*Refer to Arborist Report by John Patrick Landscape Architects for Further Details



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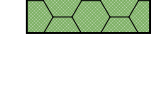

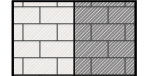






PROJECT
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321 Lower Heidelberg Road, Ivanhoe East

DRAWING
Existing Vegetation Plan
for Town Planning

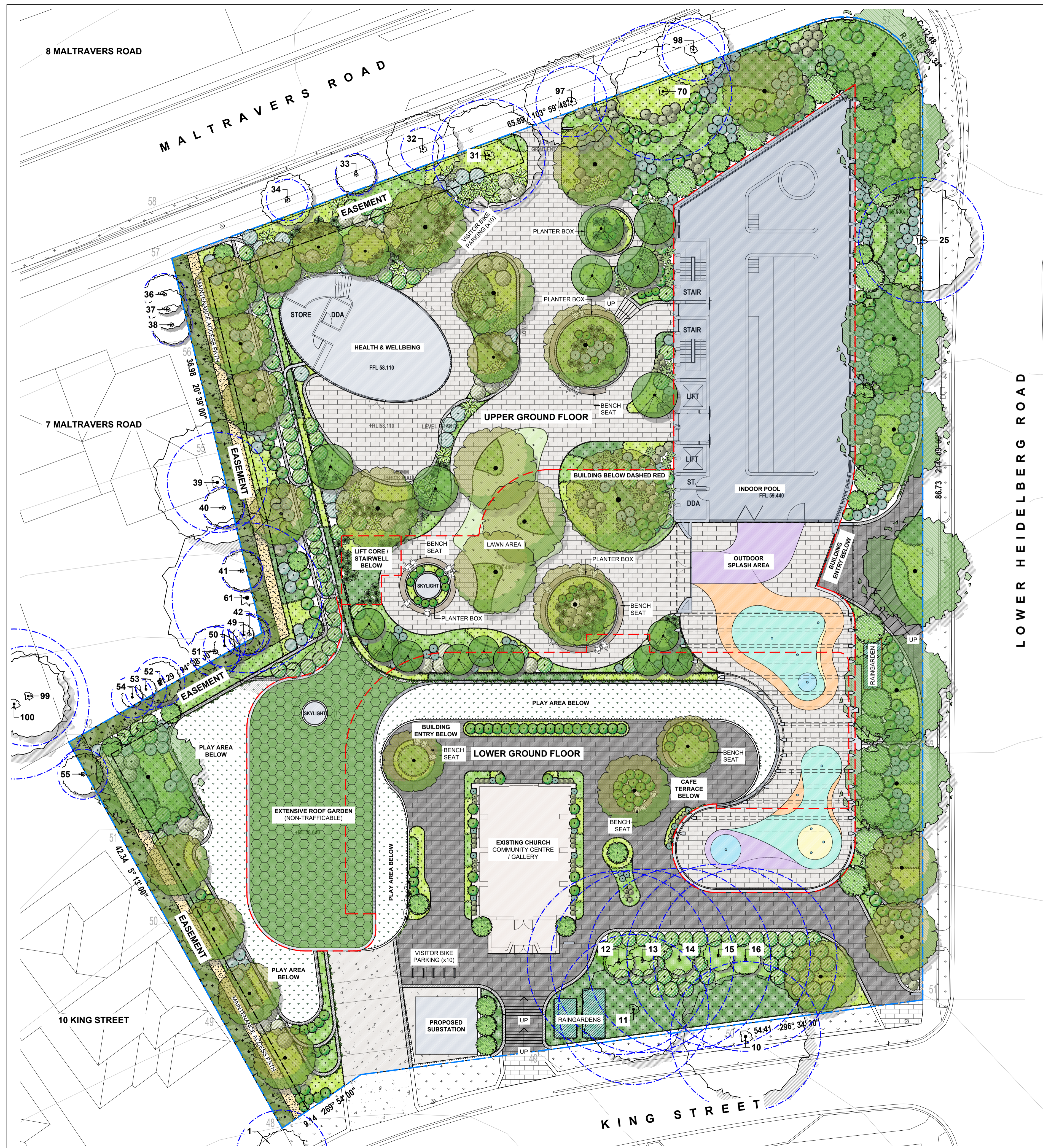
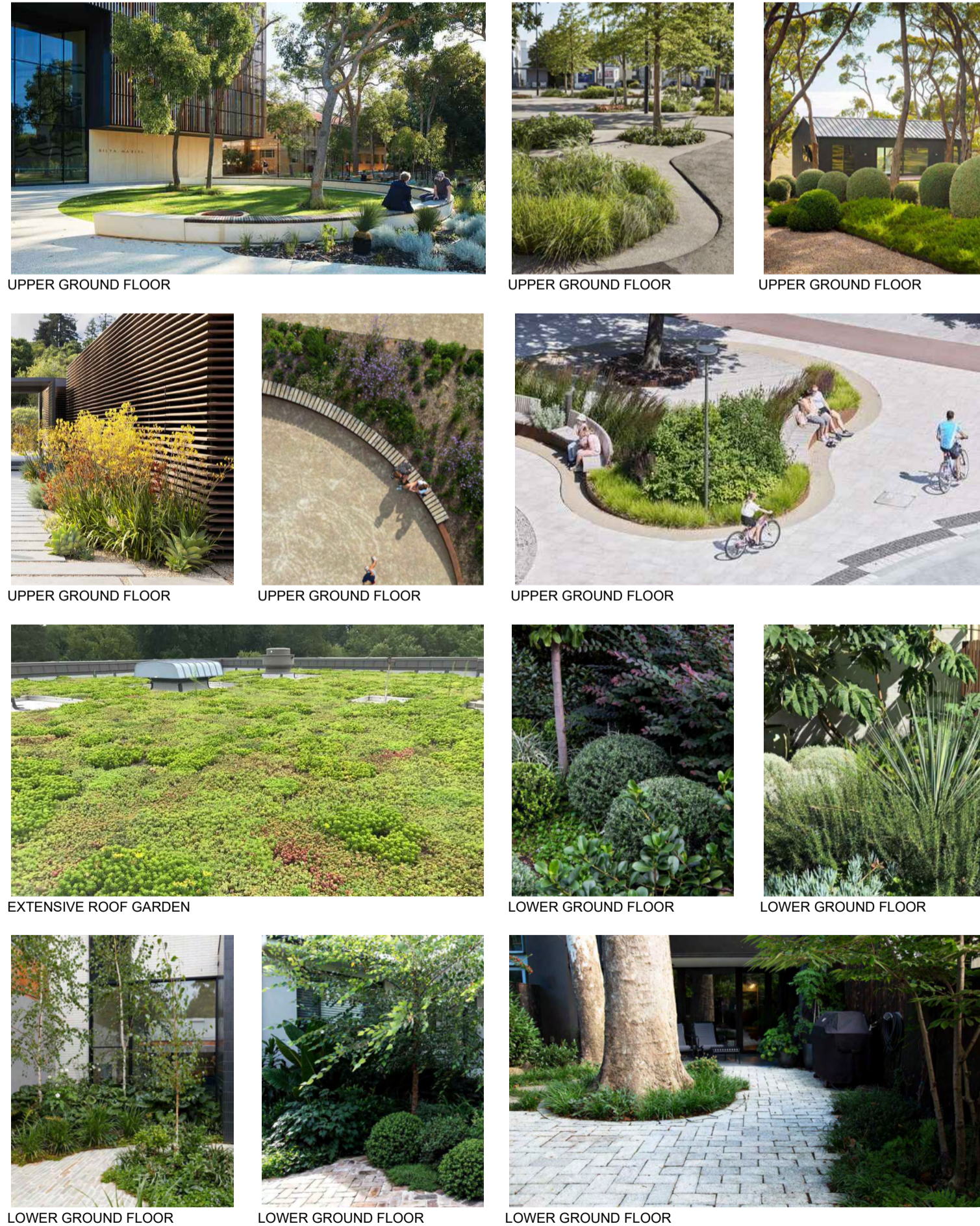
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DWG NO
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Application No. 17/24
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LEGEND

-  Existing Tree to be Retained
Refer to Arboricultural Report (Nov 2023)
by John Patrick Landscape Architects
for Further Information
-  Proposed New Lawn Area
Refer To Specification (TP07)
-  Tree Protection Zone (TPZ) Dashed Blue
Refer to Tree Protection Notes (TP00) &
Tree Management Plan (Nov 2023)
by John Patrick Landscape Architects
for Tree Protection Details
-  Proposed New Large Canopy Tree
Refer to Tree Planting Plan (TP03)
-  Proposed New Medium Canopy Tree
Refer to Tree Planting Plan (TP03)
-  Proposed New Small Canopy Tree
Refer to Tree Planting Plan (TP03)
-  Proposed New Screening Hedge
Refer to Detailed Planting Plans (TP04-05)
-  Proposed New Shrubs
Refer to Detailed Planting Plans (TP04-05)
-  Proposed New Groundcovers & Grasses
Refer to Detailed Planting Plans (TP04-05)
-  Proposed New Climbers
Refer to Detailed Planting Plans (TP04-05)
-  Proposed New Extensive Roof Garden
Refer to Detailed Planting Plans (TP04-05)
-  Proposed New Bench Seat
To Later Detail
-  Proposed New Paving
Refer to Architect's Plans & ESD Report for
Extent of Permeable Paving
-  Proposed New Feature Coloured Paving
To Later Detail
-  Proposed New Childcare Play Area
To Later Detail
-  Proposed New Concrete Driveway
To Later Detail
-  Proposed New Retaining Wall
To Engineer's Detail
-  Proposed New Raised Planter Box
Refer To Specification (TP07)
-  Reinstated/Repaired Naturestrip
Refer To Specification (TP07)

PRECEDENT IMAGES



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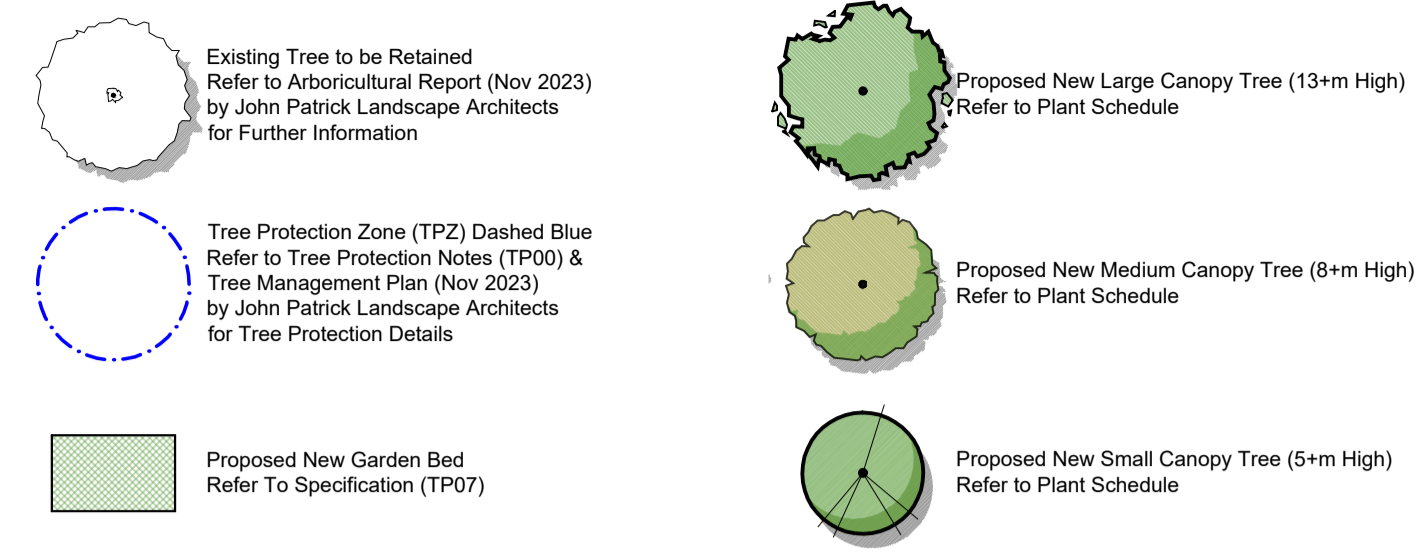
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DRAWING
Landscape Plan
for Town Planning

SCALE	1:200 @ A1
DATE	DEC 2023
DRAWN	MGR
CHECKED	JP
JOB NO	23-489
DWG NO	L-TP02
CAD FILE	23-489 L-TP Rev A.dwg

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LEGEND



TREE PLANT SCHEDULE - OVERALL

SYM	BOTANICAL NAME	COMMON NAME	DE NEX	HEIGHT X WIDTH AT MATURITY	MIN SUPPLY SIZE	QTY
LARGE CANOPY TREES						
Anc	<i>Angophora costata</i>	Smooth Bark Apple	E/N	15 x 10m	3.0mH	2
Cd	<i>Cedrus deodara</i>	Deodar Cedar	E/Ex	15 x 6m	3.0mH	6
TOTAL						8
MEDIUM CANOPY TREES						
AJAB	<i>Acer x freemanii</i> 'Jeffersred' Autumn Blaze	Autumn Blaze Red Maple	D/Ex	10 x 7m	3.0mH	1
CeN	<i>Corymbia eximia</i> 'Nana'	Dwarf Yellow Bloodwood	E/N	10 x 6m	2.5mH	7
Es	<i>Eucalyptus scoparia</i>	Wellangarra White Gum	E/N	10 x 7m	2.5mH	3
Jm	<i>Jacaranda mimosifolia</i>	Jacaranda	D/Ex	10 x 8m	2.5mH	6
LfF	<i>Lagerstroemia fauriei</i> 'Fantasy'	Fantasy Crepe Myrtle	D/Ex	9 x 8m	2.5mH	1
LxN	<i>Lagerstroemia indica</i> x <i>L. fauriei</i> 'Natchez'	Natchez Crepe Myrtle	D/Ex	8 x 5m	2.5mH	3
Maz	<i>Melia azedarach</i> 'Elite'	Low-fruited White Cedar	DN	10 x 10m	2.5mH	1
NsF	<i>Nyssa sylvatica</i> 'NKSXF' Forum	Forum Black Tupelo	D/Ex	10 x 5m	2.5mH	1
Pn	<i>Pyrus nivalis</i>	Snow Pear	D/Ex	8 x 6m	2.5mH	2
SfS	<i>Syzgium floribundum</i> 'Sw eeper'	Sw eeper Weeping Lilly-pilly	E/N	10 x 6m	2.5mH	1
ZsGV	<i>Zelkova serrata</i> 'Green Vase'	Japanese Elm	D/Ex	12 x 8m	2.5mH	3
TOTAL						29
SMALL CANOPY TREES						
CFP	<i>Cercis canadensis</i> 'Forest Pansy'	Eastern Redbud	D/Ex	5 x 4m	1.5mH	3
CfS	<i>Corymbia ficifolia</i> 'Snowflake'	Snowflake Flowering Gum	E/N	6 x 4m	1.5mH	4
OeTU	<i>Olea europaea</i> 'Tolley's Upright'	Upright Olive	E/Ex	5 x 3m	1.5mH	9
TOTAL						16

*DE = Deciduous/Evergreen NEX = Native/Exotic

TREE PALETTE



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PROJECT
TLC Ivanhoe

321 Lower Heidelberg Road, Ivanhoe East

DRAWING
Tree Planting Plan
for Town Planning

SCALE 1:200 @ A1
DATE DEC 2023
DRAWN MGR
CHECKED JP
JOB NO 23-489
DWG NO L-TP03
CAD FILE 23-489 L-TP Rev A.dwg

ADVERTISED PLAN
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LEGEND

- Existing Tree to be Retained Refer to Arboricultural Report (Nov 2023) by John Patrick Landscape Architects
- Proposed New Groundcovers & Grasses Refer to Plant Schedule
- Tree Protection Zone (TPZ) Dashed Blue Refer to Tree Protection Notes (TP05) & Tree Management Plan (Nov 2023) by John Patrick Landscape Architects for Tree Protection Details
- Proposed New Climbers Refer to Plant Schedule
- Proposed New Large Canopy Tree Refer to Tree Planting Plan (TP03)
- Proposed New Medium Canopy Tree Refer to Tree Planting Plan (TP03)
- Proposed New Small Canopy Tree Refer to Tree Planting Plan (TP03)
- Proposed New Screening Hedge Refer to Plant Schedule
- Proposed New Shrubs Refer to Plant Schedule
- Proposed New Extensive Roof Garden Refer to Plant Schedule
- Proposed New Rain Garden Refer to Plant Schedule
- Proposed New Retaining Wall To Engineer's Detail
- Proposed New Planted Box Refer to Specification (TP07)
- All landscape areas (excluding extensive roof garden) to be provided with drip irrigation system. Refer to irrigation Specification (TP08) for details.

PLANT SCHEDULE - SOUTH

SYM	BOTANICAL NAME	COMMON NAME	DE/NE*	HEIGHT X WIDTH AT MATURITY	MIN SUPPLY SIZE	QTY
SCREENING HEDGE						
SSN	<i>Stygium australe</i> 'Straight & Narrow'	Straight & Narrow Lily-illy	EN	6 x 1.5m	300mm pot	60
SHRUBS						
Bnj	<i>Buxus microphylla</i> var <i>japonica</i>	Japanese Box (Topiary Ball)	EBx	1m Topiary Ball	500mm pot	9
BsA	<i>Buxus sempervirens</i>	English Box (Topiary Ball)	EBx	500mm Topiary Ball	400mm pot	16
BsB	<i>Buxus sempervirens</i>	English Box (Topiary Ball)	EBx	400mm Topiary Ball	300mm pot	39
CGW	<i>Casuarina glauca</i> 'Green Wave'	Green Wave Casuarina	EN	1.5 x 1.5m	200mm pot	4
CGC	<i>Cotinus coccinea</i> 'Grace'	Grace Smoke Bush	DEx	4 x 2m (copied)	200mm pot	2
Ca	<i>Correa alba</i>	White Correa	EN	1 x 1.1-2m	200mm pot	2
Ch	<i>Correa baeuerlii</i>	Chief's Hat Correa	EN	1.5 x 1.5m	200mm pot	12
Cg	<i>Correa glabra</i>	Rock Correa	EN	1.2 x 1.2m	200mm pot	30
DMGS	<i>Dodonaea viscosa</i> 'M Green Sheen'	Sticky Hop-bush	EN	2 x 2m	200mm pot	5
Es	<i>Elaeagnus eumoides</i>	Spanish Quandong	EN	5 x 3m	300mm pot	9
EGD	<i>Elaeagnus reticulata</i> 'Green Dream'	Green Dream Blueberry Ash	EN	3 x 2m	300mm pot	3
Fj	<i>Fatsia japonica</i>	Japanese Aralia	EBx	3 x 2m	200mm pot	2
GC	<i>Gastrophysalis aristata</i>	Sea air River Flea	EN	0.8 x 1.8m	200mm pot	6
Go	<i>Goodenia ovata</i>	Hip Goodenia	EN	1 x 1.5m	200mm pot	8
GOV	<i>Grevillea rostrata</i> 'Ormon Villa'	Ormon Villa Grevillea	EN	0.8 x 0.8m	200mm pot	23
HGF	<i>Hydrangea 'Sunday Fringe'</i>	Sunday Fringe Hydrangea	DEx	1.2 x 1.2m	200mm pot	10
LJ	<i>Leptospermum laurum</i>	Slender Velvet-bush	EN	1.5 x 1.5m	200mm pot	11
LF	<i>Leptospermum laurum</i> 'Fore Shore'	Fore Shore Tree-fern	EN	0.5 x 0.8-1m	200mm pot	18
MM	<i>Mitrasacme tobira</i> 'Miss Muffet'	Miss Muffet Pittosporum	EBx	1.5 x 1m	200mm pot	27
PCP	<i>Rhaphiophloeos indica</i> 'Crested Heart'	Crested Heart Indica New Thorn	EBx	1.1 x 1m	200mm pot	22
Ru	<i>Rhapidochloa umbellata</i>	Yakoko New Thorn	EBx	1.5 x 1.5m	200mm pot	48
Sr	<i>Sarcococca ruscifolia</i>	Fragrant Sea-sell Box	EBx	1.5 x 1.5m	200mm pot	23
WBG	<i>Westringia frutescens</i> 'Blue Cent'	Blue Cent Coastal Rosemary	EN	1 x 1.2m	200mm pot	22
WES	<i>Westringia frutescens</i> 'Sunday'	Coastal Rosemary	EN	1 x 1.5m	200mm pot	4
TOTAL 343						

SYM	BOTANICAL NAME	COMMON NAME	DE/NE*	HEIGHT X WIDTH AT MATURITY	MIN SUPPLY SIZE	QTY
GROUNDCOVERS & GRASSES						
ABR	<i>Amorpha canescens</i> 'The Best'	Big Red Kangaroo Paw	EN	1 x 0.8m	140mm pot	24
AYG	<i>Amorpha canescens</i> 'Yellow Gent'	Yellow Glen Kangaroo Paw	EN	1 x 0.8m	140mm pot	31
AMB	<i>Antyrodium curvatum</i> 'Matapouri Bay'	Renga Lily	EBx	0.6 x 0.6m	140mm pot	12
CFE	<i>Carex subnana</i> 'Feather Falls'	Feather Falls Carex	EBx	0.3 x 0.5m	140mm pot	75
C	<i>Carolinotus rosei</i>	Korubala	EN	Spreading	140mm pot	18
Ca	<i>Convolvulus sabadus</i>	Moroccan Bellflower	EBx	0.3 x 1.5m	140mm pot	42
HMM	<i>Hardenbergia violacea</i> 'Meena'	Meena Purple Coral Pea	EN	0.3 x 1m	140mm pot	19
KSP	<i>Kniphofia 'Reyn's Prince'</i>	Reyn's Prince Torch Lily	EN	0.8 x 0.8m	200mm pot	33
LSN	<i>Leucosiphya brownii</i> 'Silver Nigger'	De-arl Cushion Bush	EN	0.5 x 0.5m	140mm pot	46
LEG	<i>Liriope gigantea</i> 'Evergreen Giant'	Evergreen Giant Lily-turf	EBx	0.6 x 0.6m	140mm pot	66
LEC	<i>Liriope muscari</i> 'Emerald Cascade'	Emerald Cascade Lily-turf	EBx	0.4 x 0.4m	140mm pot	30
LCS	<i>Lomandra confertifolia</i> ssp. r. 'Seascaper'	Seascaper Mat-rush	EN	0.5 x 0.7m	140mm pot	62
LIN	<i>Lomandra longifolia</i> 'Yallar'	Nyala Mat-rush	EN	0.8 x 0.6m	140mm pot	130
LIT	<i>Lomandra longifolia</i> 'Tinsel'	Tinsel Mat-rush	EN	0.6 x 0.6m	140mm pot	29
MyY	<i>Myoporum laetifolium</i> 'Yareena'	Creeping Boobialla Yareena	EN	0.1 x 1m	140mm pot	86
R	<i>Rhaphiostima terminalis</i>	Japanese Spurge	EBx	0.1 x 0.6m	140mm pot	91
Rh	<i>Rhododendron xanadu</i>	Xanadu	EBx	0.8 x 0.8m	200mm pot	49
RK	<i>Rua poliflora</i> 'Kingsdale'	Kingsdale Tussock Grass	EN	0.45 x 0.45m	140mm pot	188
RR	<i>Rosmarinus officinalis</i> 'Prostratus'	Prostrate Rosemary	EBx	0.5 x 1.5m	140mm pot	46
Rb	<i>Ruscus hypoglossum</i>	Butcher's Broom	EBx	0.5 x 0.6m	140mm pot	282
Tm	<i>Trachypogon mercurii</i>	Cal Thyme	EBx	0.3 x 0.45m	140mm pot	68
TM	<i>Trachelospermum asiaticum</i> 'Flat Mat'	Yellow Star Jasmine	EBx	0.4 x 3m	140mm pot	57
WMM	<i>Westringia frutescens</i> 'Mandi'	Mandi Coastal Rosemary	EN	0.4 x 1.5m	140mm pot	120
TOTAL 1772						

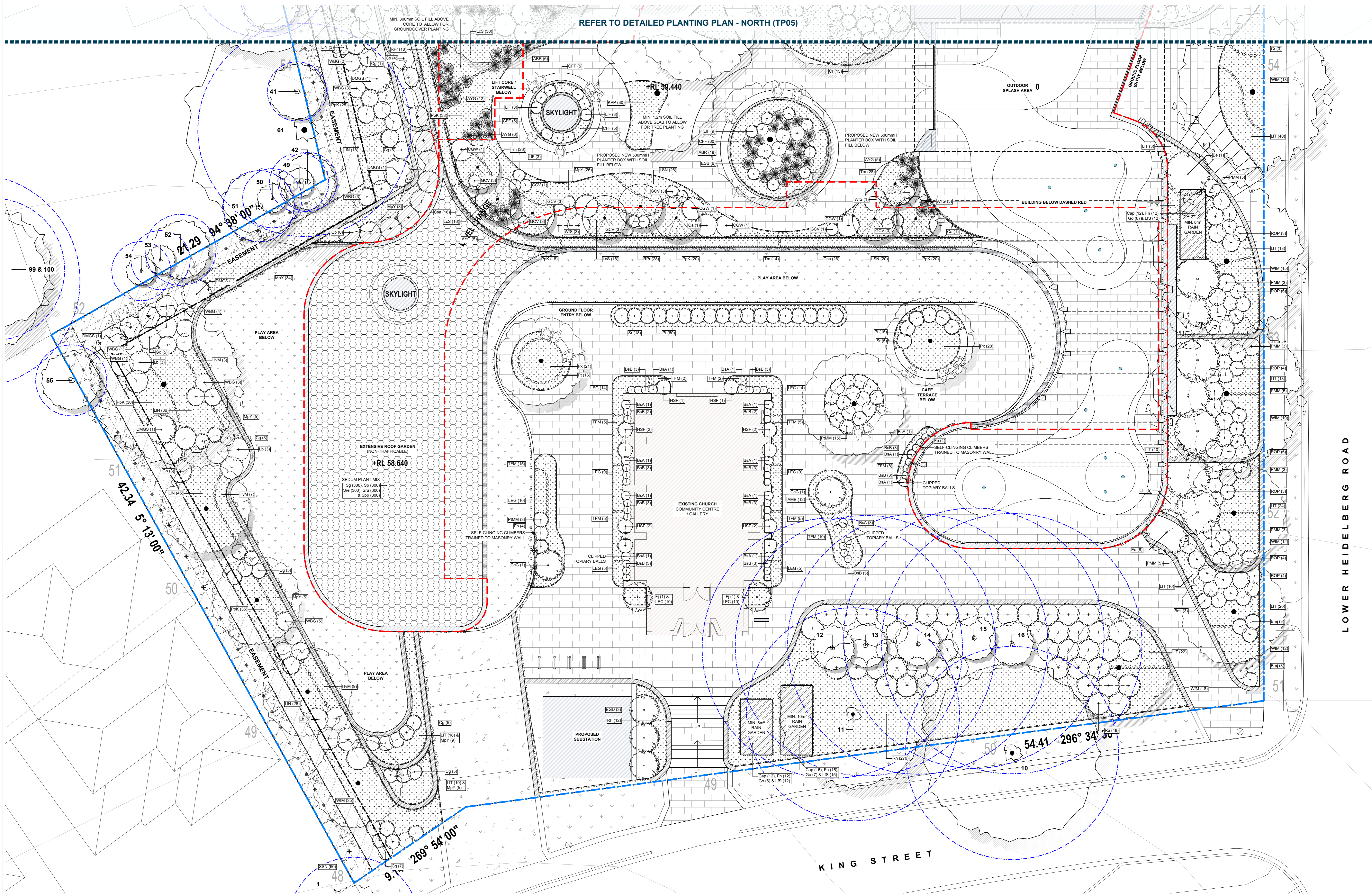
DE = Deciduous/Evergreen NE = Native/Ecotic

SYM	BOTANICAL NAME	COMMON NAME	DE/NE*	HEIGHT X WIDTH AT MATURITY	MIN SUPPLY SIZE	QTY
EXTENSIVE ROOF GARDEN						
Sg	<i>Sedum glaucophyllum</i>	Jeff Stonecrop	EBx	0.1 x 0.3m	50mm tube	300
Sp	<i>Sedum pachyphyllum</i>	Orly Bean Plant	EBx	0.1 x 0.3m	50mm tube	300
Sre	<i>Sedum reflexum</i>	Blue Stonecrop	EBx	0.1 x 0.5m	50mm tube	300
Sru	<i>Sedum rubrotinctum</i>	Jelly Bean Plant	EBx	0.1 x 0.5m	50mm tube	300
Spp	<i>Sedum spathulifolium</i> 'Purpure'	Purple Stonecrop	EBx	0.1 x 0.3m	50mm tube	300
TOTAL 1500						

DE = Deciduous/Evergreen NE = Native/Ecotic

SYM	BOTANICAL NAME	COMMON NAME	DE/NE*	HEIGHT X WIDTH AT MATURITY	MIN SUPPLY SIZE	QTY
RAIN GARDEN						
Cap	<i>Carex appressa</i>	Tall Sedge	EN	0.8 x 0.6m	140mm pot	39
Fs	<i>Ficinia nodosa</i>	Knobby Club-rush	EN	0.8 x 0.8m	140mm pot	39
Ca	<i>Goodenia ovata</i>	Hip Goodenia	EN	1 x 1.5m	140mm pot	59
LIS	<i>Lomandra fluviatilis</i> 'Shara'	Shara Mat-rush	EN	0.4 x 0.5m	140mm pot	39
TOTAL 136						

DE = Deciduous/Evergreen NE = Native/Ecotic



WESTERN BOUNDARY KING STREET EXISTING CHURCH, CHILDCARE ENTRY & CAFE TERRACE POOL TERRACE EXTENSIVE ROOF GARDEN RAIN GARDEN

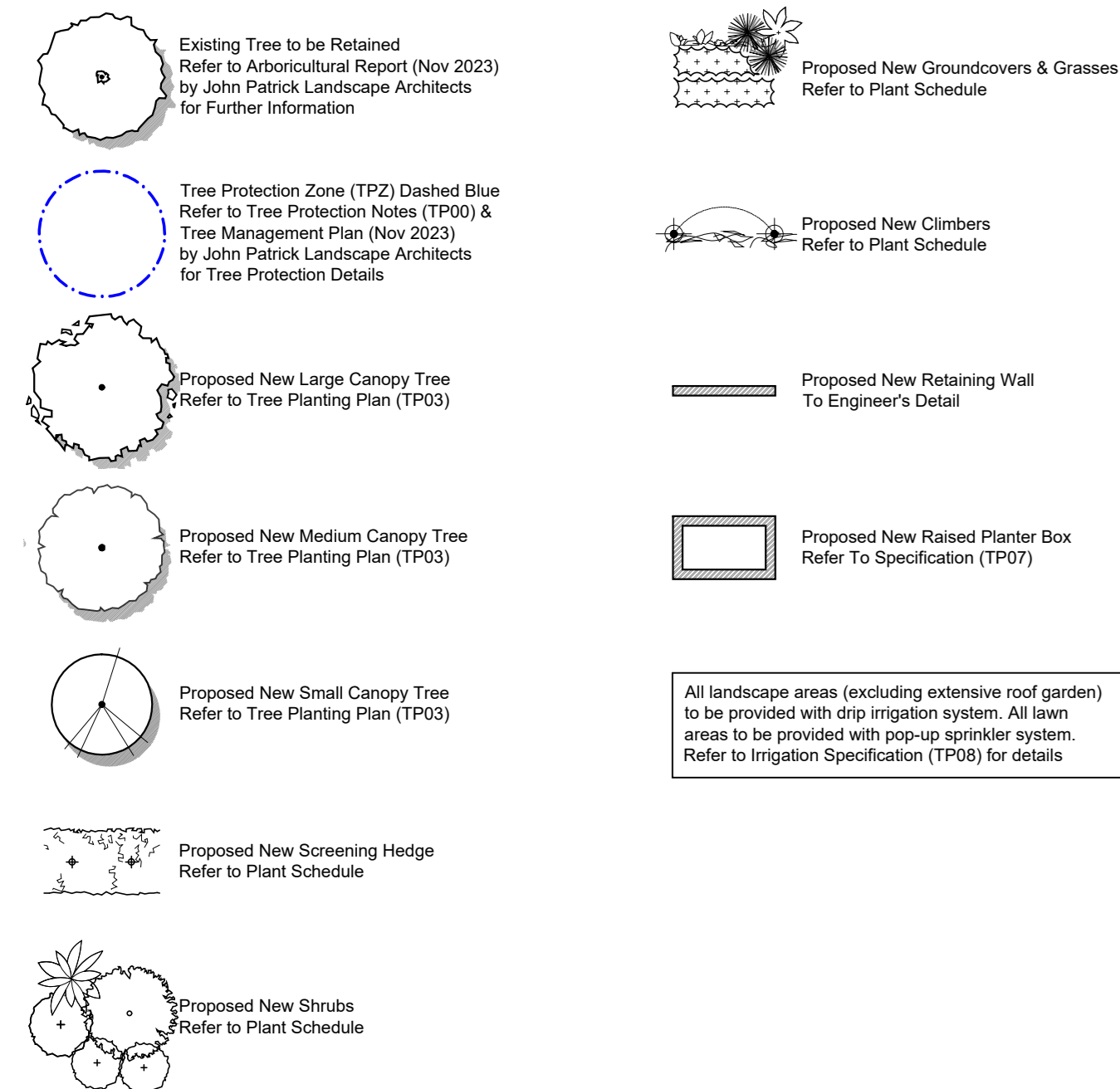
CLIENT: **TLC Melbourne Pty Ltd**
 PROJECT: **TLC Ivanhoe**
 321 Lower Heidelberg Road, Ivanhoe East

DATE: 08/12/2023
 DRAWN: MGR
 CHECKED: [Signature]
 SCALE: 1:100 @ A0

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LEGEND



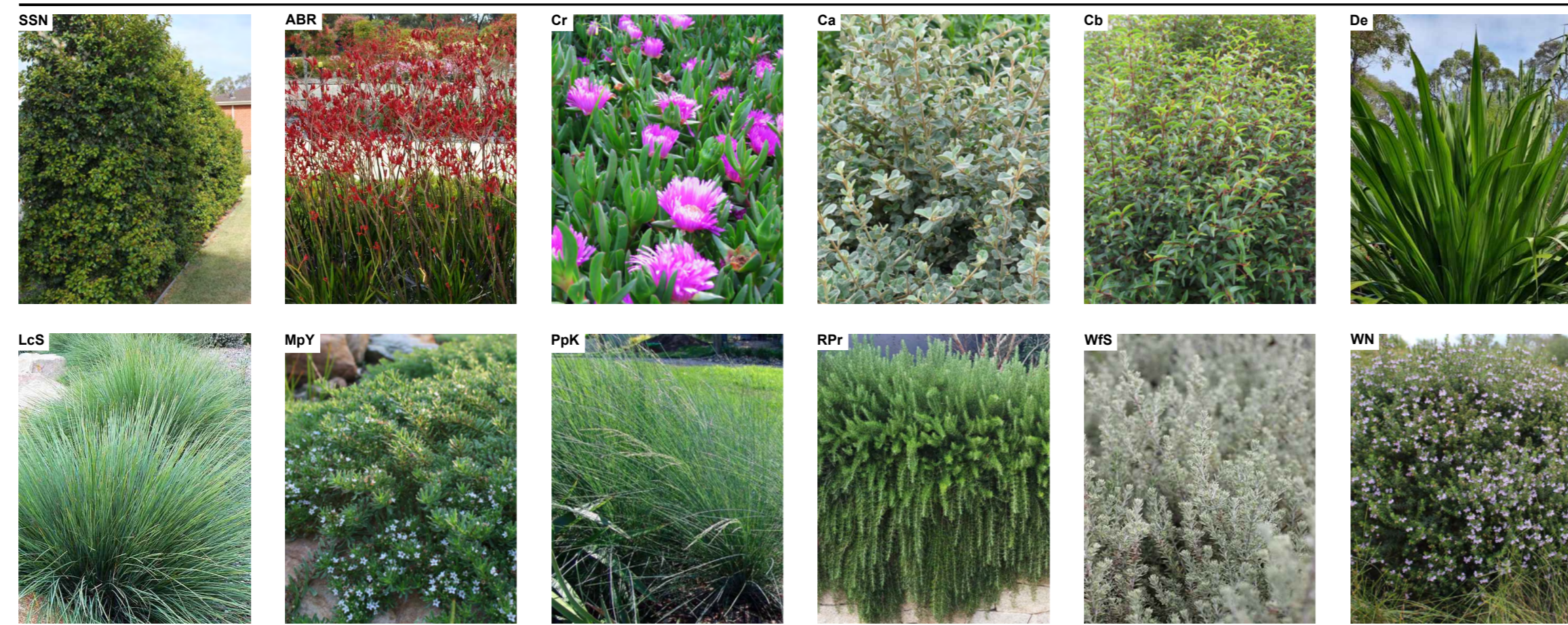
PLANT SCHEDULE - NORTH

SYM	BOTANICAL NAME	COMMON NAME	DE. HGT.	HEIGHT X WIDTH AT MATURITY	MIN SUPPLY SIZE	QTY
SCREENING HEDGE						
SSN	<i>Stygium australe</i> 'Straight & Narrow'	Straight & Narrow Lilly-illy	EN	6 x 1.5m	300mm pot	23
						TOTAL
						23
SHRUBS						
Ba	<i>Banksia ericifolia</i>	Heath Banksia	EN	3 x 3m	200mm pot	8
BMM	<i>Banksia marginata</i> 'Mini Marg'	Dee erf Silver Banksia	EN	0.6 x 1m	200mm pot	13
COW	<i>Casuarina glauca</i> 'Green Wave'	Green Wave Casuarina	EN	1.5 x 1.5m	200mm pot	8
Ca	<i>Correa alba</i>	White Correa	EN	1 x 1-1.2m	200mm pot	31
Cd	<i>Correa bakerianii</i>	Chef's Hat Correa	EN	1.5 x 1.5m	200mm pot	35
Cg	<i>Correa glabra</i>	Rock Correa	EN	1.2 x 1.2m	200mm pot	70
DNDE	<i>Dodonaea viscosa</i> 'Mr Green Sheen'	Sticky Hop-bush	EN	2 x 2m	200mm pot	4
De	<i>Doryanthes excelsa</i>	Gymea Lily	EN	2.5 x 1.5m	200mm pot	42
ESB	<i>Eremophila glabra</i> 'Silver Ball'	Silver Ball Eru Bush	EN	0.8 x 1m	200mm pot	51
Go	<i>Goodenia aestiva</i>	Hop Goodenia	EN	1 x 1.5m	200mm pot	38
GI	<i>Grevillea 'hambro'</i>	hambro Grevillea	EN	3 x 2m	200mm pot	6
GM	<i>Grevillea 'moonlight'</i>	Moonlight Grevillea	EN	3 x 2m	200mm pot	7
GCV	<i>Grevillea rostrata</i> 'Crimson Vase'	Crimson Vase Grevillea	EN	0.8 x 0.8m	200mm pot	8
LIF	<i>Leptospermum laevis</i> 'Flora Snow'	Flora Snow Tea-tree	EN	0.8 x 0.8-1m	200mm pot	65
RTB	<i>Rosastrum officinalis</i> 'Tuscan Blue'	Tuscan Blue Rosemary	EBx	1.2 x 1m	140mm pot	25
Sc	<i>Scabellima chamaecyparissus</i>	Cotton Lavender	EBx	0.4 x 0.4m	200mm pot	40
TBB	<i>Trochostema laevis</i> 'Burgundy Bush'	Dee erf Water Gum	EN	1.2 x 1.5m	200mm pot	17
WFS	<i>Westringia fruticosa</i> 'Smokely'	Coastal Rosemary	EN	1 x 1.5m	200mm pot	16
WGO	<i>Westringia fruticosa</i> 'Blue Gent'	Blue Gem Coastal Rosemary	EN	1 x 1.2m	200mm pot	47
WN	<i>Westringia 'nangai'</i>	Nangai Coastal Rosemary	EN	2 x 1.5m	200mm pot	12
						TOTAL
						444
GROUNDCOVERS & GRASSES						
Ag	<i>Agave geminiflora</i>	Agave	EBx	1.5 x 1m	200mm pot	20
Ag	<i>Agave salmiana</i>	Palmer's Agave	EBx	1 x 1.5m	200mm pot	10
ABR	<i>Argyrodia 'Big Red'</i>	Big Red Kangaroo Paw	EN	1 x 0.8m	140mm pot	46
AYO	<i>Argyrodia 'Yellow Gent'</i>	Yellow Gem Kangaroo Paw	EN	1 x 0.8m	140mm pot	45
CF	<i>Carex subulnosa</i> 'Feather Falls'	Feather Falls Carex	EBx	0.3 x 0.5m	140mm pot	88
C	<i>Carportus rostris</i>	Karulla	EN	Spreading	140mm pot	94
CgC	<i>Casuarina glauca</i> 'Cousin E'	Cousin E Groundcover	EN	0.1 x 1-1.5m	140mm pot	148
GOC	<i>Grevillea juniperina</i> 'Gold Cluster'	Gold Cluster Juniper Grevillea	EN	0.3 x 1m	140mm pot	84
KPP	<i>Kingsdale 'Percy's Prize'</i>	Percy's Prize Torch Lily	EBx	0.8 x 0.8m	200mm pot	39
LSN	<i>Leucophyta brownii</i> 'Silver Nugget'	Dee erf Cushion Bush	EN	0.5 x 0.5m	140mm pot	173
LCS	<i>Lomandra confertifolia</i> spp. r. 'Seascape'	Seascape Mat-rush	EN	0.5 x 0.75m	140mm pot	243
MY	<i>Mycopodium grandifolium</i> 'Yareena'	Creeping Bobbitia Yareena	EN	0.1 x 1m	140mm pot	179
RpK	<i>Poa polytricha</i> 'Kingsdale'	Kingsdale Tussock Grass	EN	0.45 x 0.45m	140mm pot	329
RFB	<i>Rhagodia spinosa</i> 'Flat Bush'	Flat Bush Creeper Saltbush	EN	0.4 x 1m	140mm pot	109
RP	<i>Rosastrum officinalis</i> 'Pinkbush'	Prostrate Rosemary	EBx	0.5 x 1.5m	140mm pot	11
XMW	<i>Xerochrysum bracteatum</i> 'Mikave White'	Mikave White Pepper Daisy	EN	0.4 x 0.4m	140mm pot	105
YI	<i>Yucca filamentosa</i>	Adam's Needle	EBx	1.5 x 1.5m	200mm pot	17
						TOTAL
						1729

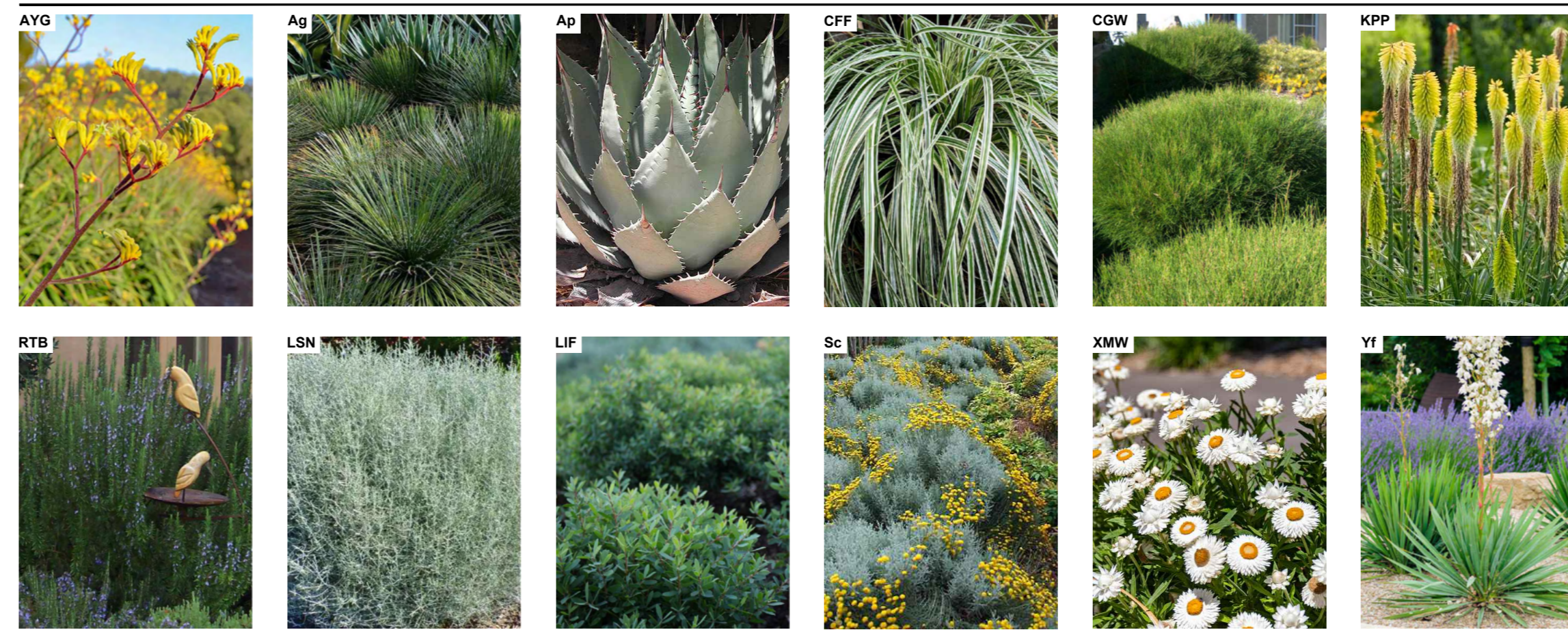
DE = Deciduous/Evergreen NEV = Native/Exotic



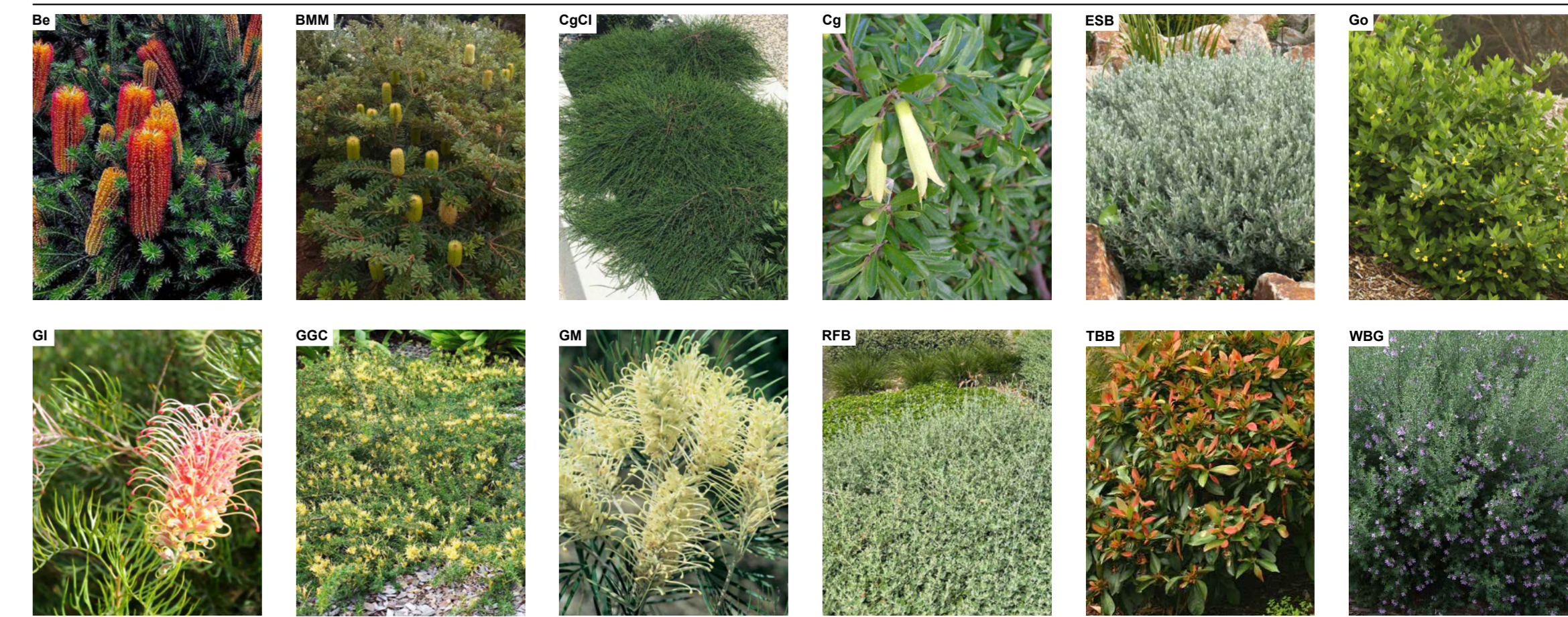
HEALTH & WELLBEING BUILDING







INDOOR POOL ENTRY



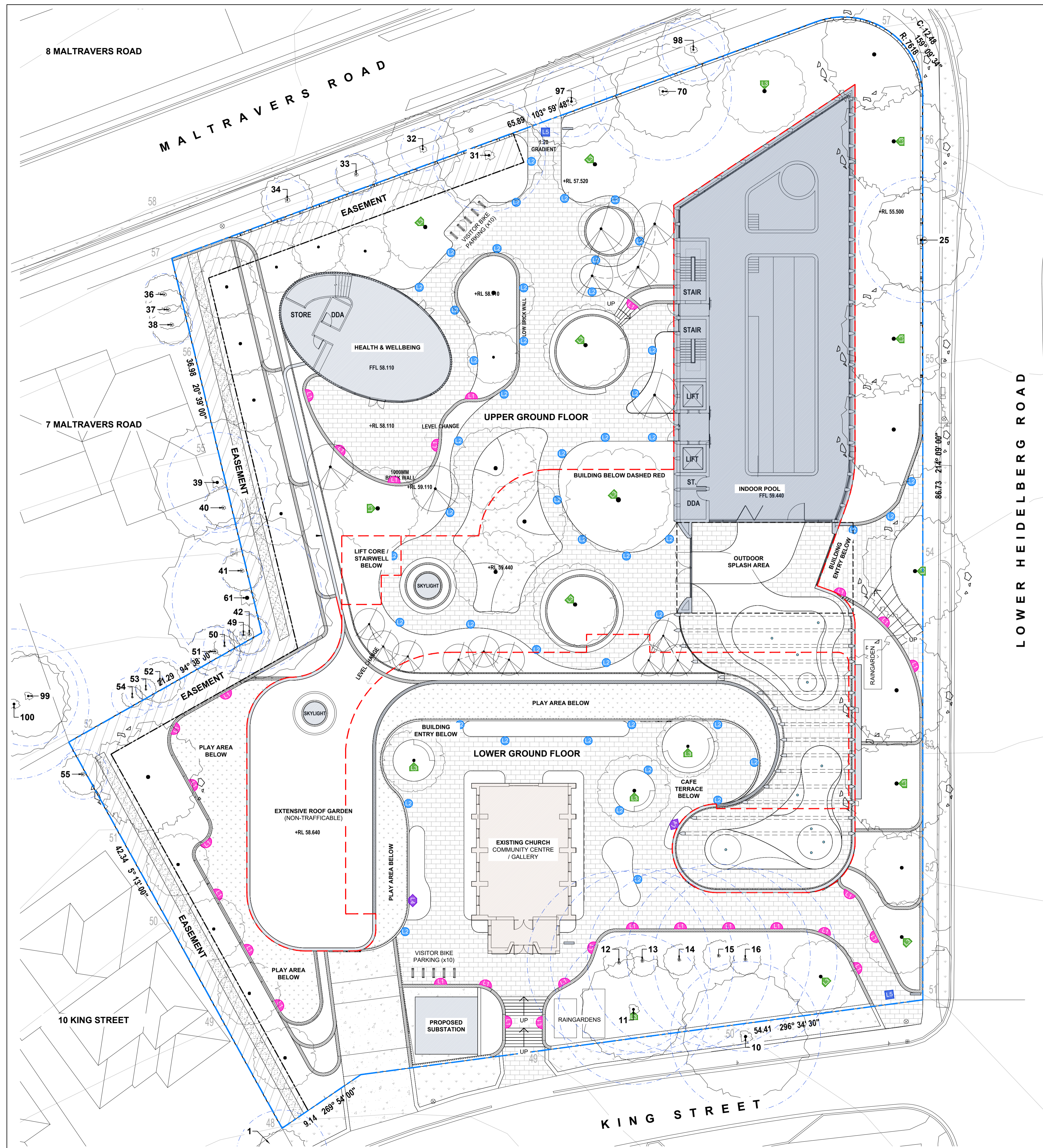
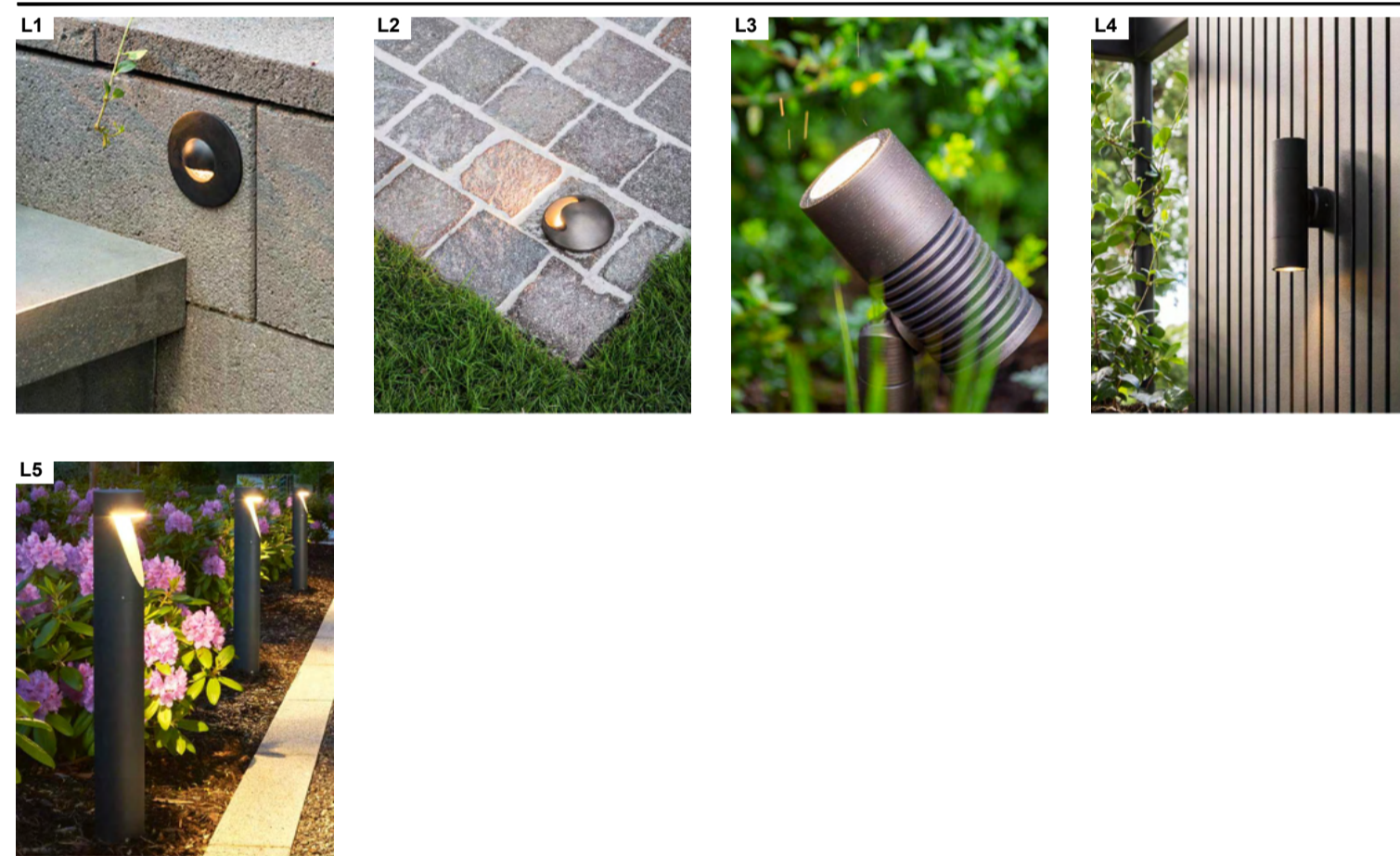
MALTRAVERS ROAD / LOWER HEIDELBERG ROAD



LEGEND

-  Existing Tree to be Retained
Refer to Arboricultural Report (Nov 2023)
by John Patrick Landscape Architects
for Further Information
-  Tree Protection Zone (TPZ) Dashed Blue
Refer to Tree Protection Notes (TP00) &
Tree Management Plan (Nov 2023)
by John Patrick Landscape Architects
for Tree Protection Details
-  Proposed New Large Canopy Tree
Refer to Tree Planting Plan (TP03)
-  Proposed New Medium Canopy Tree
Refer to Tree Planting Plan (TP03)
-  Proposed New Small Canopy Tree
Refer to Tree Planting Plan (TP03)
-  Proposed New Low Level LED
Recessed Wall / Step Light
To Later Detail
-  Proposed New LED In-ground Recessed Light
To Later Detail
-  Proposed New LED Feature Uplight
To Later Detail
-  Proposed New LED Wall Washing Light
To Later Detail
-  Proposed New LED Bollard Light
To Later Detail

INDICATIVE LIGHTING PALETTE



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A To Council Request	12.04.2024	MGR

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CLIENT
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PROJECT
TLC Ivanhoe

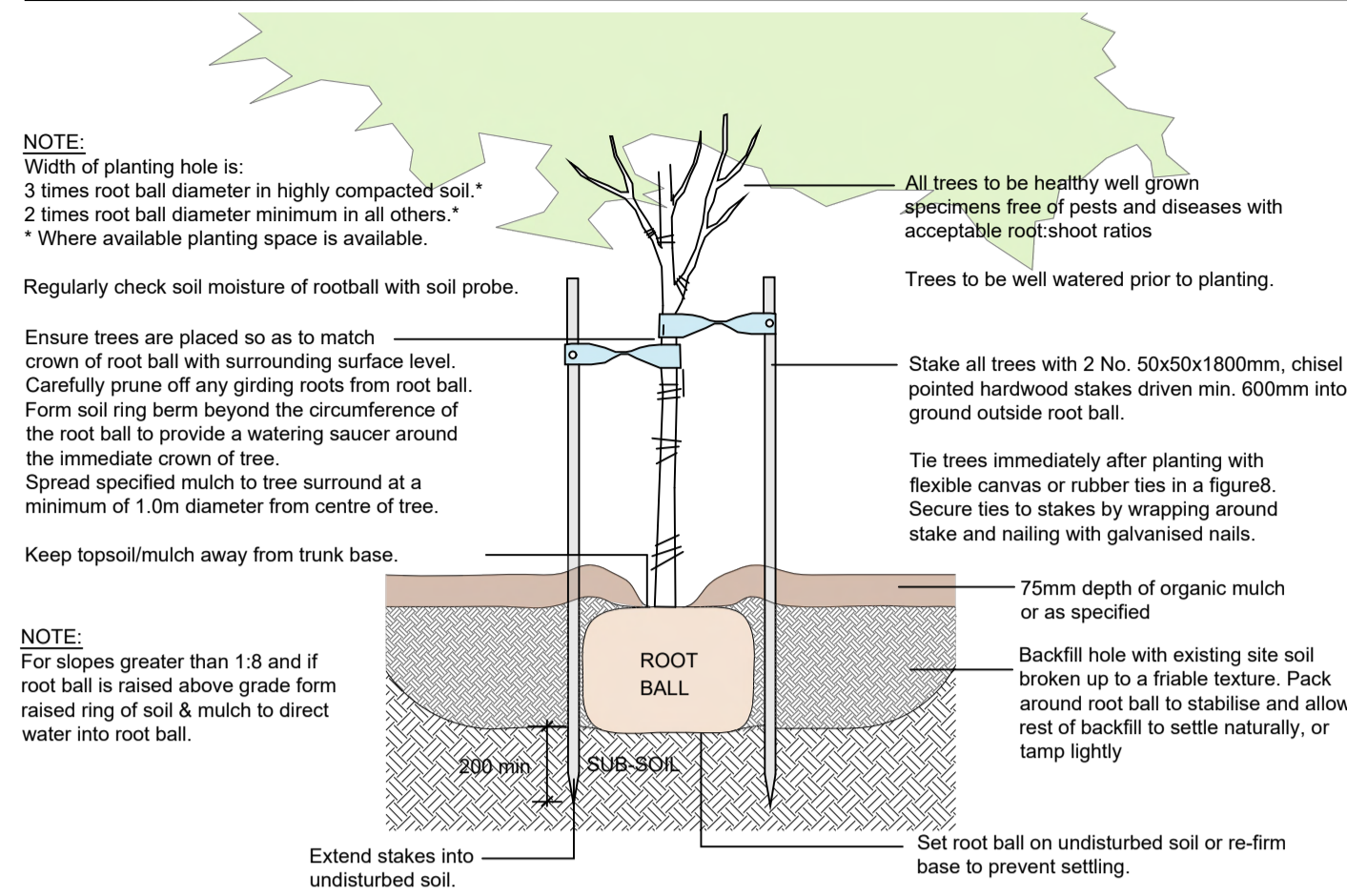
321 Lower Heidelberg Road, Ivanhoe East

DRAWING
Indicative Lighting Plan
for Town Planning

SCALE	1:200 @ A1
DATE	DEC 2023
DRAWN	MGR
CHECKED	JP
JOB NO	23-489
DWG NO	L-TP06
CAD FILE	23-489 L-TP Rev A.dwg

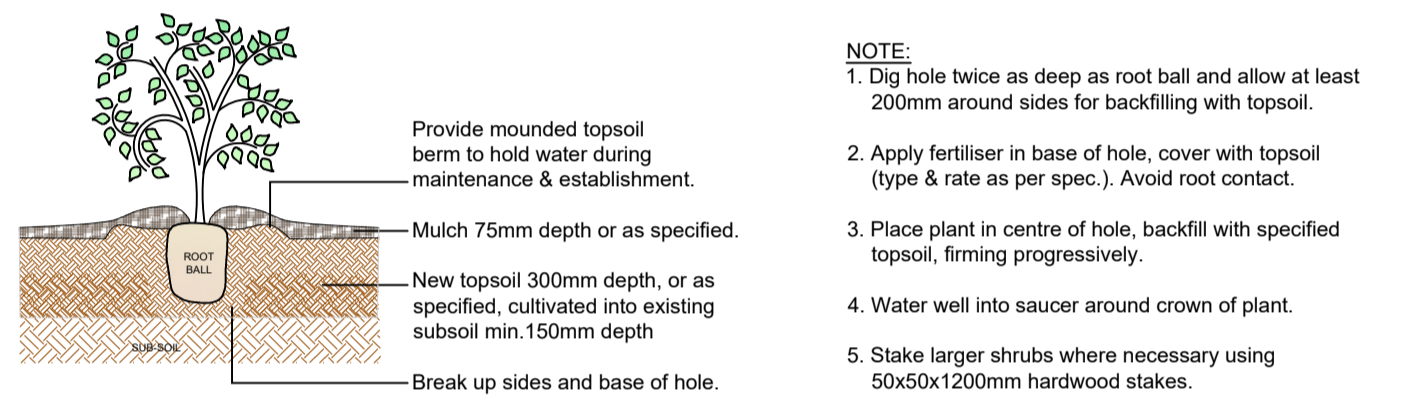
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Application No. P12024
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TYPICAL DETAILS



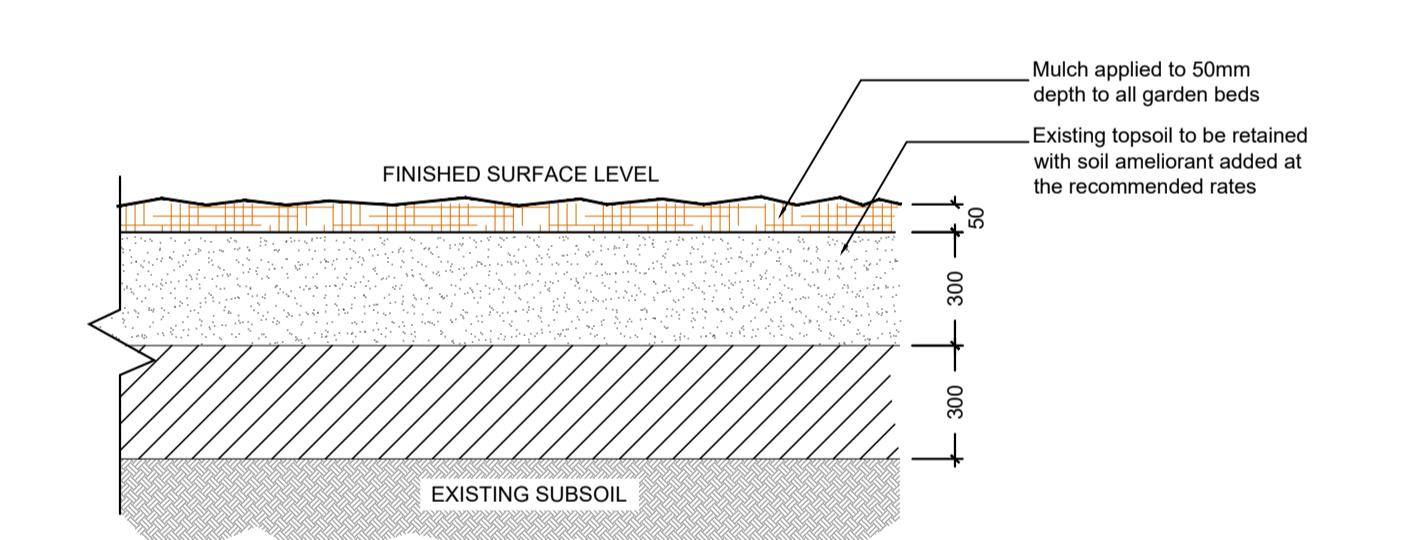
D1 TYPICAL TREE PLANTING DETAIL

Scale N.T.S.



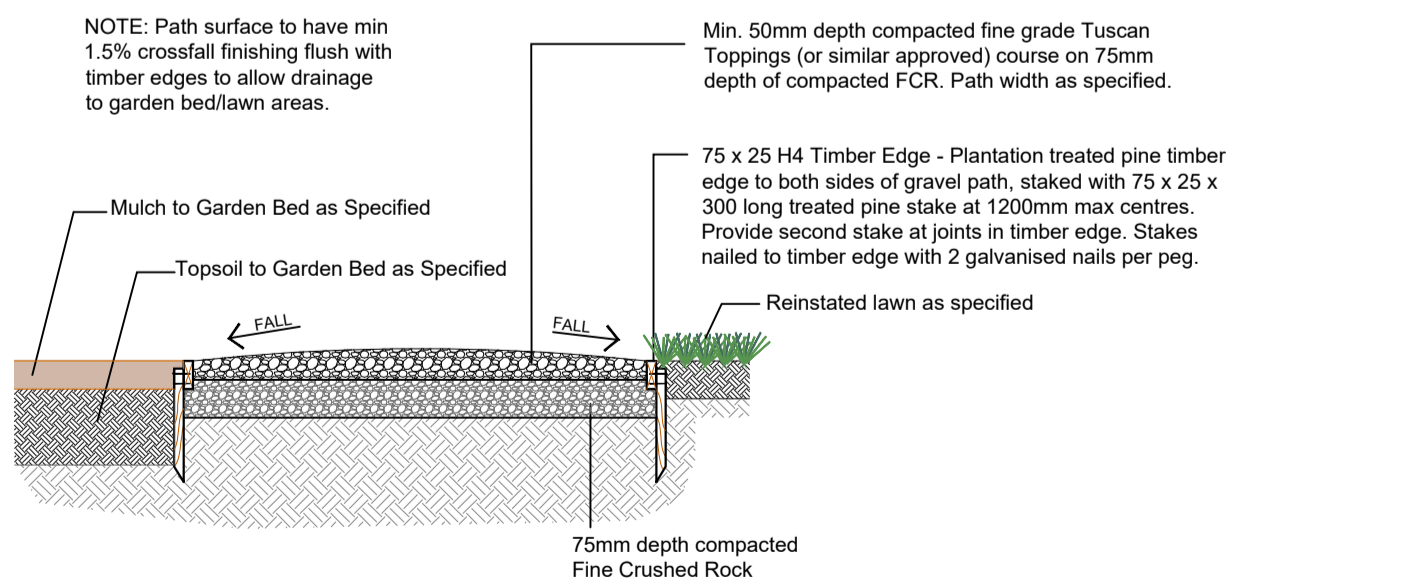
D2 TYPICAL SHRUB PLANTING DETAIL

Scale N.T.S.



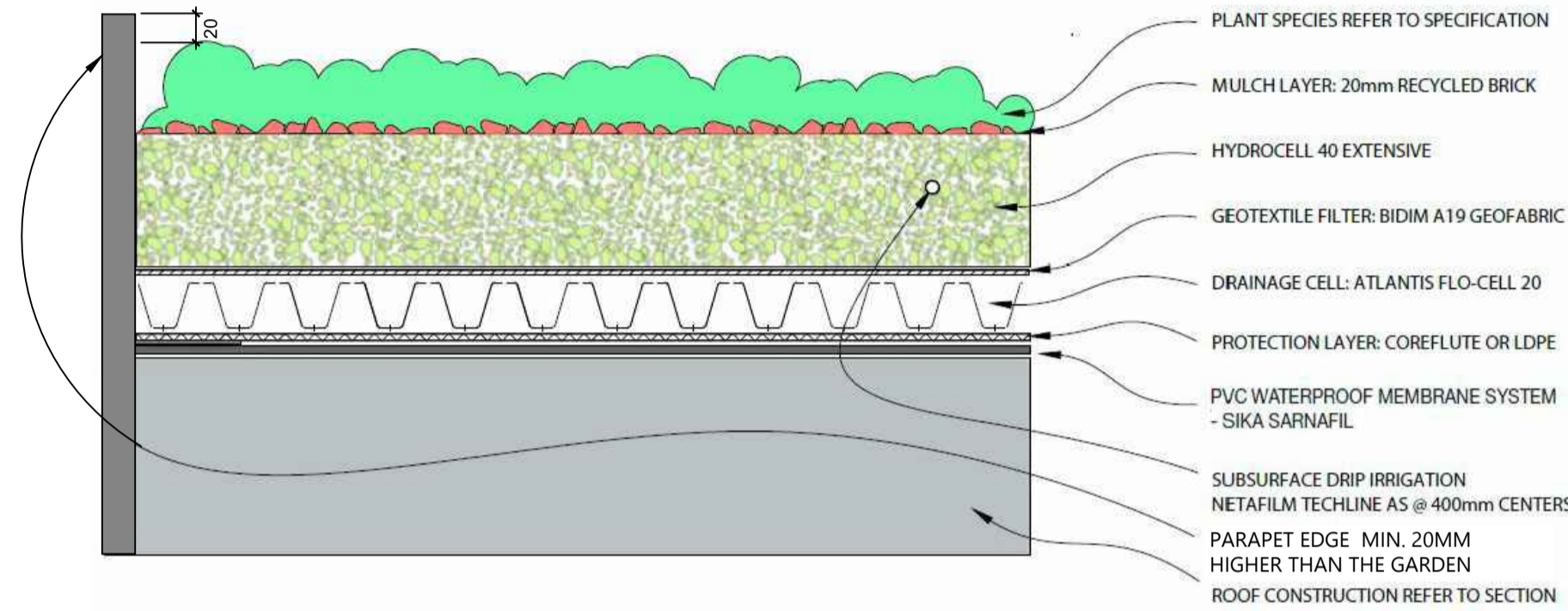
D3 TYPICAL GARDEN BED DETAIL

Scale 1:20



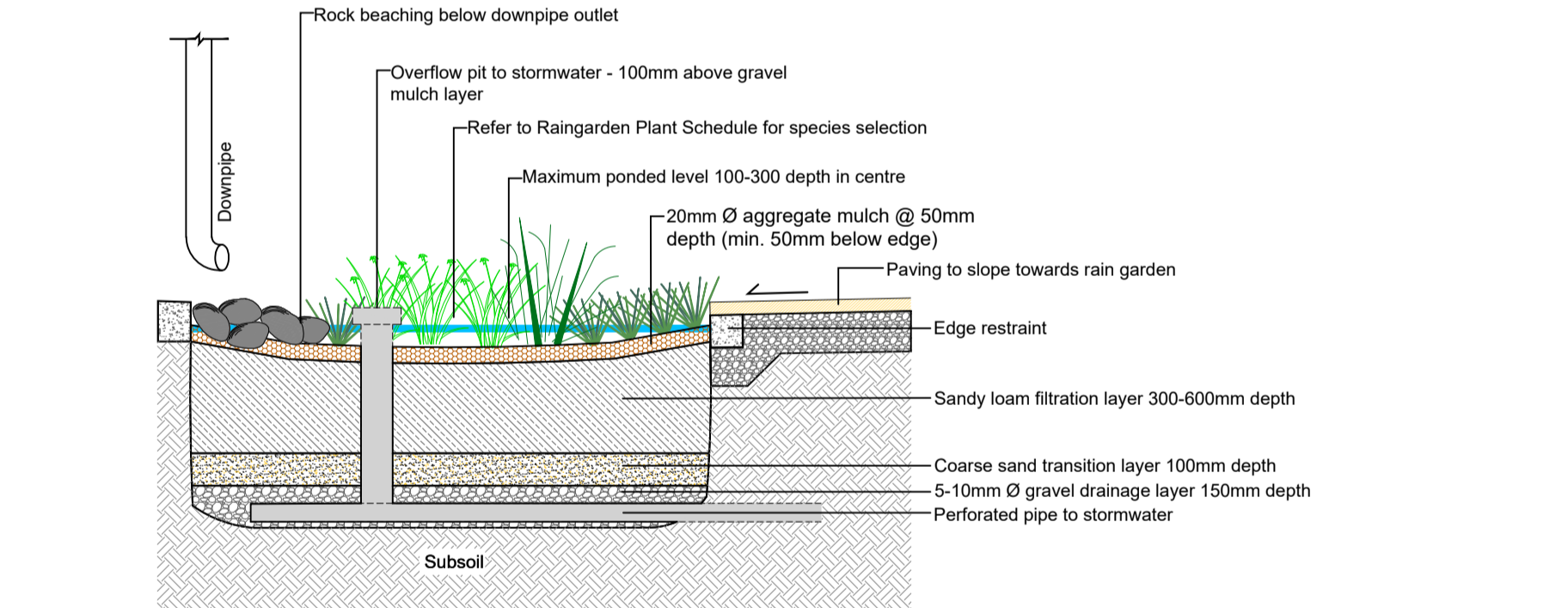
D4 TYPICAL GRAVEL PATH & TIMBER EDGING DETAIL

Scale 1:20



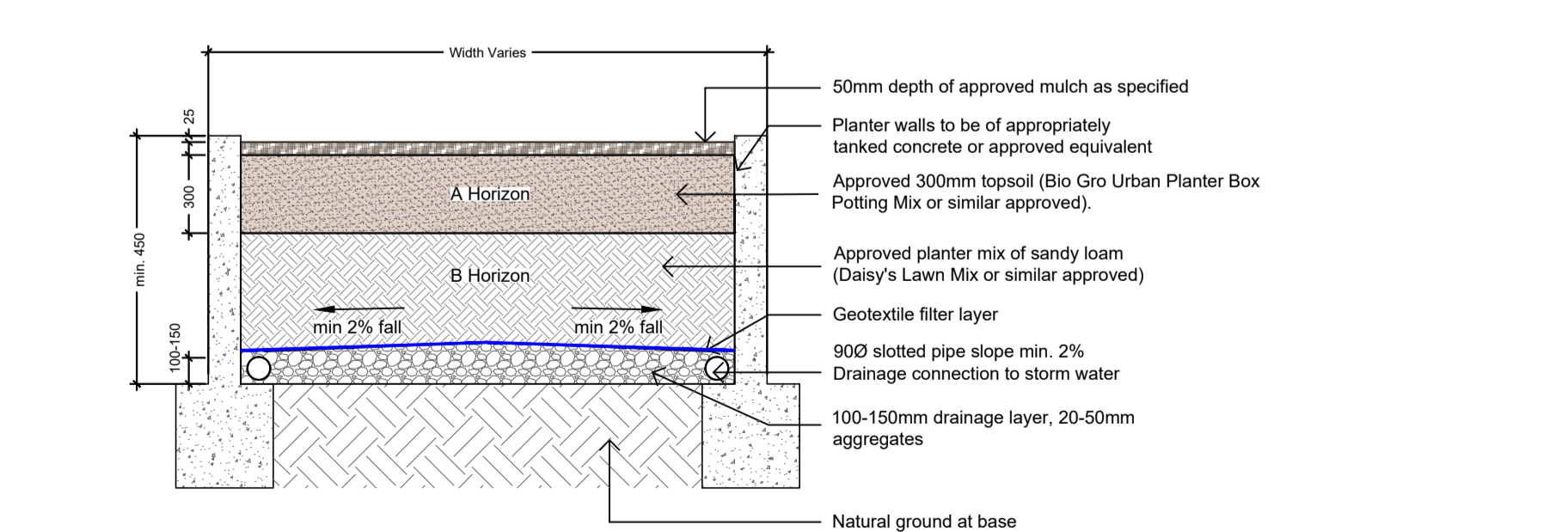
D5 TYPICAL EXTENSIVE ROOF GARDEN 140-200mm Profile (Upper Ground Floor)

Scale NTS



D6 TYPICAL RAIN GARDEN IN GROUND DETAIL - Refer to Civil Documentation

Scale 1:20



D7 TYPICAL RAISED GARDEN DETAIL - IN NATURAL GROUND

Scale 1:20

SPECIFICATION NOTES

Soil Preparation
Crushed rock, concrete spillage and any other material restrictive to plant growth (e.g. large rocks) shall be removed from the site of any planting beds and semi-advanced trees. All trees to be removed shall be stump ground and all rubbish/vegetative spoil is to be removed from site. Existing top soil in planting areas is to be preserved so that it does not receive additional compaction from site machinery and so that no rubble or building supplies are stored in these areas.

No imported top soil is to be used within the root zones of trees to be protected. Any preparation of existing soil for planting within these areas is to be done by hand only. Holes (e.g. as the result of plant removal) and uneven soil levels may be patched using topsoil as specified below.

Any imported topsoil is to be free of weeds, rubble and other materials damaging to plant growth and is to be of a medium texture (sandy loam) with a pH of 6.0-7.0. Top soil is to be laid over a prepared sub-base which has had any materials damaging to plant growth (e.g. rubble and large rocks) removed, spread to the appropriate depth and cultivated into the existing site soil to a minimum depth of 150mm.

Imported top soil is to be lightly and uniformly compacted in 150mm layers to a minimum depth of 100mm on lawn areas and 300mm on excavated planting beds.

Weed Removal
All weeds shall be thoroughly removed. All vegetative material, including roots and rhizomes of non-woody perennials and woody suckering weeds, is to be removed or appropriately controlled using chemical means. The stumps of non-suckering woody perennials are to be stump ground. All vegetative material shall be appropriately disposed of off site in a manner which will not allow their re-establishment elsewhere. Any chemical controls are to be used in accordance with manufacturer's instructions and standard occupational health and safety procedures.

Care must be taken to ensure that all trees to be retained are not damaged during weed removal. This also implies that any herbicides used are suitable for use around the vegetation to be retained.

Topsoil
Imported Topsoil for Garden Beds (excluding Raised Planter Boxes)
The use of imported topsoil for garden beds shall conform generally to the following criteria:

- Imported topsoil for garden beds is to be Medium Texture General Purpose Garden Soil, to comply with AS 4419-2003 Soils for landscaping and garden use, and as follows:
 - Free from perennial weeds and their roots, bulbs and rhizomes;
 - Free from building rubble, including bricks, concrete, or any other matter deleterious to plant growth;
 - Free from rocks or stones greater than 25mm in diameter, but in any case, to have less than 5% stone by dry weight;
 - PH to be 6.0 - 7.0;
 - Texture to be light to medium friable loam;
 - Free from silt material.

Imported topsoil for nature strip lawns shall also have the above characteristics, but shall be a free-draining sandy loam.

Lawn - Turf
Turf of Hybrid Bermuda' turf (or similar) is to be supplied to lawn areas as shown. Turf is to be supplied by a specialist grower and is not to be allowed to dry out between cutting and laying. Turf should be laid in a stretcher pattern so that joints are staggered and is to be lightly tamped following laying. All lawn areas are to be thoroughly watered following planting and fertilised with an appropriate lawn starter at the quantities recommended by the manufacturer.

Planting
Planting shall be carried out using accepted horticultural practices with all plants conforming to the species, size and quantities indicated on the Landscape Plan and Plant Schedule. Plants shall be thoroughly soaked through immersion in water prior to planting and if the planting soil is very dry then the planting hole is also to be filled with water and allowed to drain completely.

All plants shall be appropriately hardened off in the nursery. Use plants with the following characteristics: Large healthy root systems with no evidence of root rot or pot bound restriction or damage, vigorous, well established, free from disease and pests and of good form, consistent with the species or variety.

Planting holes for shrubs and groundcovers are to be of minimum size 75mm larger than the planting pot in all directions. Semi-advanced tree planting holes are to be the same depth as the rootball and 2-3 times its diameter, with the top of the rootball being at grade. A 75mm high berm is to be constructed at edge of root-ball to hold water. All plants are to be thoroughly watered after planting and slow release fertiliser added at the quantities specified by the manufacturer.

Mulch
Garden Beds
Mulch is to be supplied to all garden beds and is to be an organic type laid to a minimum depth of 50mm, consisting of fine dark coloured chipped or shredded pine bark or hardwood with not more than 5% fines content by volume (preferably zero fines). The average size of the woodchip must be approximately 10mm x 20mm x 5mm and the maximum length is not to exceed 30mm. Mulch shall be free of damaging matter such as soil, weeds and sticks and is to be stockpiled and thoroughly weathered prior to delivery. Mulch is to be kept back 100mm from the stems of all plants to prevent collar rot. For planter boxes, refer to Raised Planter Boxes Mulch specification note.

Raised Planters
Mulch is to be supplied to all raised planter box garden beds and is to be 'Water Saver Range' mulch from Bio Gro in small grade size. Allow for 50mm layer of specified mulch to top of beds and a finished level 25-50mm below the planter rim. Drip irrigation as specified is to be installed beneath the mulch layer.

Granitic Gravel Surface
Granitic gravel is to be installed where shown comprising of a 50mm layer of gravel (Tuscan Toppings or similar) over a base course of 75mm deep gently compacted Fine Crushed Rock. Each layer, including the subgrade is to be appropriately compacted.

Timber Edges
Provide 75 x 25mm treated pine edges to all borders between gravel mulch paths and garden beds using 75x25x300mm long treated pine stakes at 1200mm maximum centres. An additional stake is to be provided at joints in the plinth

Irrigation
Refer to Irrigation System Specification (TP08).

Drainage
Agricultural drains are to be installed to garden beds. Pipes shall be 90mm diameter slotted P.V.C. flexible coil laid with one line of perforations at the bottom. Trench floor is to be uniformly graded, with falls directed towards pits and bed pipes on a continuous 75mm layer of screenings. Tees, couplings or adapters suitable for the works required are to be used at the junctions of pipes with pipes to be surrounded with open graded crushed rock to 100mm with opened graded crushed rock to 100mm above pipes. Connect Agricultural drains to storm water.

Raised Planter Boxes
Raised planter construction is to include, but not necessarily be limited to, the supply and installation of agricultural drains, drainage cells at base, filter fabric, planting medium, mulch and irrigation. Planter boxes must be effectively tanked and lined with corefute to prevent leaking.

Drainage Detail
Each bed to be drained with Atlantis Flo-Cell® 30 mm installed according to the manufacturer's specification, with connection to the stormwater system.
Depth of cell system 30 mm, weight of cell system 33 kg/sq m saturated, depth of blinding sand layer above cell layer 25 mm, weight of sand layer saturated 50 kg/sq m. Total weight drainage layer 83 kg/sq m saturated.

Substrate Specification - (General)
Supply and spread evenly Bio Gro Planter Box Potting Mix (source Bio Gro Pty Ltd). Compact evenly in 150mm layers/lifts. Avoid differential subsidence and excess compaction and produce a finished surface that is graded evenly and ready for planting.

Substrate - Bio Gro Planter Box Potting Mix
This raised planter mix may be ordered and prepared as special batch by Bio Gro (Contact Michelle Torcasio 03 8788 1700). This medium will guarantee support for a long-term outcome to alleviate potential soil level dropping issues and compaction.

Substrate Composition
The nominated mix for raised planters shall conform to the following criteria

- Structure:
- 60% Composted Pine Bark
 - 25% Coco Peat
 - 25% Scoria

- Fertilisers:
- 2kg/m³ Osmocote Pro (12-14 month)
 - Osmocote NXT
 - Dolomite Lime
 - Granular RA - Wetting Agent
 - Ferrous Sulphate
 - Trace Elements
 - Gypsum Fine
 - Gypsum Coarse
 - Calcium Nitrate
 - Superphosphate
 - Copper Sulphate
 - Fine lime for pH adjustment
 - pH: 5.5 - 6.00

Substrate Properties
Bio Gro Planter Box Potting Mix to be tested by Bio Gro before supply. The following substrate properties are test results on a previous product, batched and dispatched.

- Dispatch estimated weight (per m³): 650-700kg
- Saturated bulk density (per m³): 850-900kg
- Air filled porosity (AFP): 11-13%
- Water-holding capacity (WHC): Supplied mix to be tested
- pH: 5.8 - 6.00
- Electrical conductivity (EC): 1.25
- Cation exchange capacity (CEC): NA (Requires external lab testing)
- Infiltration rate: Supplied mix to be tested
- Ammonium <20 - <20
- Nitrate <250: 62

Repair/Restoration of damaged Nature-strips
Nature strips are to be restored to current grades with any depressions filled with topsoil to specifications above and lightly compacted in 150mm layers. Areas are then to be re-seeded using an appropriate and matching turf type and the area fenced off to allow the re-establishment of lawn. Re-seeded areas are to be well irrigated and the area supplied with a slow release fertiliser at the quantities recommended by the manufacturer.

Any areas of lawn which have failed to germinate (achieve an evenly green 95% covering of a consistent height) are to be re-seeded within one month of original sowing date.

Plant Establishment Period
There shall be a 13 weeks Plant Establishment Period following the approval of Practical Completion by the responsible authority. During this period the landscape contractor shall make good all defects in his/her scope of works. Maintenance and Establishment means the care and maintenance of the contract area by accepted horticultural practices, as well as rectifying any defects that become apparent in the work under normal use. This shall include, but shall not be limited to watering, fertilising, weeding, pruning, pest and disease control, cultivation, re-staking and replacement of any plants that fail with plants of the same species and size.

REVISION	DATE	BY
A To Council Request	12.04.2024	MGR

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DRAWING
Typical Details & Specification Notes
for Town Planning

SCALE	AS SHOWN @ A1
DATE	DEC 2023
DRAWN	MGR
CHECKED	JP
JOB NO	23-489
DWG NO	L-TP07
CAD FILE	23-489 L-TP Rev A.dwg

ADVERTISED PLAN
Application No. P4/2024

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IRRIGATION SYSTEM SPECIFICATION

01 EXTENT OF WORKS

The landscape contractor is to design, supply and install a complete and effective automatic irrigation system to all garden beds and trees. This system is to be connected to a mains supply.

The landscape contractor is to submit 3 sets of irrigation design plans for approval at least 2 weeks prior to installation.

The Landscape Contractor shall allow for the supply and installation of a pump (if required), UPVC pipework, solenoid valves, filters, pressure regulators, automatic controller, integrated dripline, fittings and solenoid valve multicore wiring of sufficient length to reach the proposed automatic controller location.

The Landscape Contractor shall ensure that methods chosen, irrigation theory and practice applied, equipment selected, materials incorporated, installation techniques used and maintenance procedures adopted, shall provide the most appropriate, effective and robust system for the long-term maintenance of the new landscape.

Upon completion of the contract, the site shall be left in a tidy condition free from rubbish and surplus excavated materials, to the satisfaction of the Landscape Architect.

Scope: This guide is to be used in conjunction with standard Council Irrigation Specifications which usually do not provide any specific details regarding the installation of drip irrigation systems both under mulch or sub-surface. The information in this guide should be used when installing drip irrigation system in conjunction with further product details on the irrigation plan. Specification on the irrigation plan will always take precedent over the information in this guide. Under no circumstances are any variations to be made to the drip system design or installation without prior authorization from the site supervisor.

02 STANDARDS AND WORKMANSHIP

All work, materials, methods and testing shall conform to the requirements of the relevant Australian Standards and Codes. The most recent issue of the Standards shall apply.

03 WARRANTIES AND GUARANTEES

The Landscape Contractor shall warranty the entire system against faulty workmanship and materials during the Defects Liability Period - 52 weeks from the Date of Practical Completion. The Sub-contractor shall meet all the cost of repairing and making good defective work and replacement of components during the Defects Liability Period.

At Practical Completion the Irrigation Sub-contractor shall provide the Landscape Architect with an Operations and Instruction manual, which shall include a list of all components used in the system, together with their brand names and model numbers.

04 SOLENOID VALVE

Solenoid valve is to be installed to the main-line and housed in a lockable valve box (at least 250mm in diameter) that shall have sufficient room to access and maintain the valve. All wiring into the valve enclosure shall be looped to allow for expansion and contraction and servicing. Only one valve per valve box unless otherwise agreed with the site supervisor. All valve boxes shall be supported by bricks to ensure that the valve box does not come in direct contact with the pipe work. The contractor shall place gravel to a depth of 50mm in the bottom of the valve enclosure.

05 FILTERS

Arkal disc filter with a mesh size of 120 mesh (130 micron) shall be installed on all drip-lines either immediately downstream of the solenoid valve or at the head works. Ensure that the filter is fully installed prior to the flushing of any drip-lines or sub-mains. Filter shall be accessible for servicing and installed in an appropriately sized valve box which shall be free of any dirt or debris. The contractor shall place gravel to a depth of 50mm in the bottom of the valve enclosure.

06 TECHFILTER

Tech-filter is required wherever the drip-line is buried directly into the soil (SDI) and installed immediately downstream of the filter. Ensure that the Techfilter is installed prior to the installation of any drip-line. Tech-filter shall be accessible for servicing and installed in an appropriately sized valve box which shall be free of any dirt or debris. The contractor shall place gravel to a depth of 50mm in the bottom of the valve enclosure. The contractor shall also ensure that the appropriate back-flow device is used whenever a Tech-filter is used. The contractor shall also record the date that the Techfilter cartridge should be changed (normally every two (2) years) and fix this to the Techfilter body.

07 PRESSURE REDUCING VALVE

Pressure reducing valve is to be installed downstream of the Filter (or in SDI, Tech-filter). Ensure that the pressure reducing valve is accessible for adjustment (refer to flow & pressure data on plan) and servicing purposes and housed in an appropriately sized valve box which shall be free of dirt or debris. The contractor shall place gravel to a depth of 50mm in the bottom of the valve enclosure. Pressure regulators shall be adjusted to achieve a minimum of 120kPa at the furthest flush or vacuum air valve from the solenoid valve.

08 DRIP-LINE INSTALLATION

Drip-line will be installed in a grid formation. All lateral lines will be connected to a feed and collecting sub-main. All lateral lines are to be installed according to the plans provided ensuring that all laterals are laid uniformly, free of any kinks or restrictions and are staked down at regular intervals.

Unless otherwise specified on the irrigation plan all drip-line is to be installed to the recommendations listed below: (mm) surface (mm)

Soil Type	Drip Spacing	Lateral Spacing Min	Depth Below Surface
Light	300	300	50
Medium	400	400	100
Heavy	500	500	125

09 AIR/VACUUM RELEASE VALVES

Air/vacuum release valves are to be installed at the highest point on each drip station preferably at the highest point on all feed and collecting lines. Where headers / collectors are lower than the tube, a vacuum release header shall be installed, complete with extra AVR's as required. The contractor shall locate the air/vacuum release valves in consultation with the site supervisor prior to installing them in an appropriately sized valve box which shall be free of any dirt or debris. The contractor shall place gravel to a depth of 50mm in the bottom of the valve enclosure.

The contractor shall also allow for an additional 30% more AVR's to allow for site conditions. AVR's shall be installed at a minimum of 1 per 45pm of flow.

10 FLUSH VALVES

Flush valves shall be installed at either the lowest or furthest point on all feed/collecting sub-mains. The contractor shall locate the flush valve in consultation with the site supervisor prior to installing them in an appropriately sized valve box which shall be free of any dirt or debris. The contractor shall place gravel to a depth of 50mm in the bottom of the valve enclosure.

11 PRESSURE REDUCING VALVE

Ensure that the pressure reducing valve is functioning properly. Test the line pressure at the furthest point of the drip-line to ensure that correct operating pressures are maintained. Adjust the pressure reducing valve accordingly.

12 PUMP

The Landscape Contractor shall allow for the supply & installation of a pump to be connected to each Rainwater Tank. The pump will need to be a vertical multistage with variable frequency drive to cater for dripline.

13 INSTALLATION & HANDOVER

Thoroughly flush the drip-line out at least three times prior to checking the drip-line to ensure that there are no leaks from any fittings or any damage to the drip-line. Drip-line maximum run length shall not be exceeded (refer to plan). The contractor shall notify the supervisor 24 hours prior to testing and backfilling.

The contractor shall record the flow rate - after the pressure has stabilised - of each drip station for a minimum period of 10 minutes. These figures to be used in future testing/maintaining of the drip system. This data will be forwarded onto the site supervisor for future reference, and also recorded on the as constructed drawings.

Upon practical completion the contractor will handover the system to the site supervisor. Handover will include:

- Practical run down of the system installation & operation;
- Back-flow registration form;
- "As laid plan" of the irrigation system;
- Manufacturer's manuals;
- Drip station flow data, including pressure drop across the filters.

14 SYSTEM MAINTENANCE

System maintenance shall take place at the start, midway and end of the irrigation season.

15 AUTOMATIC CONTROLLER AND PROPOSED LOCATION

The location of the irrigation controller is to be placed externally at a suitable location to be determined by the Superintendent.

16 DRIPLINE IRRIGATION ZONES

All sub-surface Dripline shall be brown in colour with an outside diameter of 15.3mm and an inside diameter of 12.9mm and shall be connected to 25mm LDPE, sub-mains, using a NETAFIM L16SP-NG connector. All sub-surface Dripline shall be the following:

NETAFIM - Techline AS 15.3mmØ dripline with 1.6 LPH, self-cleaning, pressure compensating trickle emitters spaced at 0.3 metre centres.

17 COMMISSIONING

The Landscape Contractor shall be responsible for the testing and satisfactory performance of the complete irrigation system. The Landscape Contractor is to allow for onsite training in the operation of the automatic irrigation system.

18 MAINTENANCE & DEFECTS LIABILITY PERIOD

The Landscape Contractor shall maintain the completed and commissioned irrigation system for a period of 52 weeks after the Date of Practical Completion.

LANDSCAPE MAINTENANCE SCHEDULE

Maintenance Tasks	Aim	Inspection Method & Activity Frequency	Maintenance Method
Execute maintenance works in accordance with the Aims and to accord with the Performance Requirements listed below:			
Weed Control	To maintain garden beds - plantings free from weeds	Visual -monthly	No weed infestation in garden areas. Weed all soft landscape areas by appropriate techniques depending upon level of weed infestation and type of weed. Low level infestation of annual weeds can be removed by hand. Perennial weeds to be removed by appropriate techniques which may include localised use of herbicides. Undertake the required Safety Warnings and isolation to safeguard tenants. Faded plants replaced within three months of failure.
Plant Replacement	To maintain the garden beds free from failed plants	Visual - min. monthly, or as requested for urgent items	Replace plants that have died or been removed to ensure planting maintains density at establishment. Where a species shows losses that suggest it is inappropriate for the location. Establish new planting at a density appropriate for the mature growth of the plant. In the event of failure of plants details of an alternative treatment must be submitted to and approved by the responsible authority. The alternative treatment must be implemented within three months of approval at no cost to Council and to the satisfaction of the responsible authority.
Fertilising	To maintain plants (trees, shrubs & ground covers) in healthy growing conditions	Application as required during the growing maintenance period.	Apply appropriate slow release plant fertilizer to all planted areas at recommended rates prior to the application of mulch. Foliage healthy, with no symptoms of nutrient deficiencies. Plants showing signs of active growth, appropriate to the season.
Watering / Irrigation	To maintain active healthy growth of all plant materials and to maintain irrigation system in good working order. Irrigation clock to be accessible by Superintendent and appointed Gardener	Visual - monthly Annual inspection	No visible sign of wilting leaves or stems. All plants fully turgid at all times. No signs of over watering such as constantly wet soil, brown leaf margin, and stem rot or brown spots on foliage. Review performance of irrigation system checking for leaks throughout system and replacing fittings as required. Check performance of drippers and clean as required. Replace batteries in timers. Run the irrigation system for an extended period to allow inspection of all drippers.
Disease & Pest Control	To maintain plants free of pest and disease	Visual - monthly	No visible signs of pests or disease or effects thereof. Fortnightly rectification as necessary using IPM protocols. Plant replacement strategy in place if required.
Organic Mulch	To maintain a supply of mulch material to the soil. To reduce moisture loss from the soil. To maintain a high aesthetic quality to all garden beds.	Visual -monthly	Maintain mulch to specified depths and finishes (50-75mm). Re-distribute mulch to all garden bed areas by pulling mounds from the base of plants and raking to apply at nominal depth of 50mm. Use appropriate well-rotted organic mulch to match existing to make up shortfall in mulch depth throughout garden beds. Apply new mulch to existing mulched areas only after lifting areas of compacted mulch. Replenish well-rotted garden mulch with matching mulch. Maintain mulch neatly within garden bed. Minimum monthly tidy.

Maintenance Tasks	Aim	Inspection Method & Activity Frequency	Maintenance Method
Execute maintenance works in accordance with the Aims and to accord with the Performance Requirements listed below:			
Inspect trees	To maintain active plant health	Visual- monthly	Inspect trees including ties on all tree stakes and re-adjust as required to provide support and movement to newly established trees. Replace broken and lost stakes as required and undertake formative pruning, removing dead wood, crossing branches and shaping canopy as required for long term health and structure of trees. Check trees for evidence of insect damage undertaking control as required.
Staking	To maintain active plant health	Visual - monthly	Existing staking maintained until trees become self-supporting. Plant ties maintained sufficiently taut to support the plant while allowing a reasonable degree of movement and normal plant growth. Replacement plants staked and tied as scheduled. Stakes removed from trees when individual specimens show signs of having achieved good stability. Tree ties shall be loosened as required to allow for future growth and recognise the growth of the previous 6 months.
Pruning general	To maintain active plant health - remove dead, damaged and diseased plant parts	Visual - monthly	As required, to established / maintain landscape garden character and to maintain safe/clear access along pedestrian and vehicular access ways. Prune all shrubs, ground covers and grasses as required using appropriate pruning techniques for specific plant type and for intended landscape purpose. Remove dead wood, prune to shape and remove excessively woody & herbaceous growth to encourage the development of new shoots. Do not clip to a mound form, rather prune to reflect the natural shape and form of the plant.
Pruning hedges	To maintain active plant health	Three times per year during active growing period (Sept, Dec & April)	Prune hedges to top and sides to encourage appropriately dense growth.
Ornamental Native Grasses	To maintain active plant health and to maintain tidy appearance	Visual - annually	Tidy grasses and emergents by thinning and removing old growth to the base, do not prune by clipping to shape but retain the natural plant form by thinning in preference to cutting back.
Rubbish removal / litter	Maintain in tidy appearance	Visual - monthly	Keep raised planters tidy and in good health replenish mulch as necessary, in line with landscape vision Maintain as required if urgent.
Arboricultural monitor	To maintain active plant health	Annually or by appointment	Divide perennial plants as growth becomes over-mature to retain vigour and health of plants. Retain vigorous edge portions of plant and discard aged material re-planting at a density that reflects the ultimate size of the plant. Apply wetting agent (Saturaid or similar equivalent product) to all planted garden bed areas following the breaking up of compacted soil areas.
Training climbing plants	Training of climbers	Monthly	Assess all climbing and remove dead growth from within the plant mass to secure open healthy growth. Check operation of site lighting replacing broken parts as required. Replace all bulbs regardless of performance to secure appropriate performance through next twelve months.
Garden Lighting (recommended)	Maintain operation	Annual	Check on site furniture and fencing and repair/make good or replace as required.
Furniture & fencing	Maintain operation	Annual	

REVISION	DATE	BY
A To Council Request	12.04.2024	MGR

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DRAWING
Irrigation Specification &
Landscape Maintenance Schedule
for Town Planning

SCALE	N/A @ A1
DATE	DEC 2023
DRAWN	MGR
CHECKED	JP
JOB NO	23-489
DWG NO	L-TP08
CAD FILE	23-489-L-TP

ADVERTISED PLAN
Application No. P4/2024
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