### 7.0 | LANDSCAPE STRATEGIES 7.7 | HARD LANDSCAPE MATERIAL STRATEGY

A study of the existing tones and materials in both Oxford's historic city centre and at ARC Oxford has guided the proposed material palette.

The material strategy seeks to provide a cohesive and durable public realm that becomes part of the wider ARC Oxford campus, using high quality and hard-wearing materials. The primary surface material is a textured pre-cast block in a blend of buff and light grey tones. This material is consistent with other re-developed plots on the wider campus and also reflects the tones of hard landscape and architecture in Oxford's historic city centre.

### Site Boundary

### Campus Boundary

Block paviour to match existing to drop-off bay and new pavement

High quality block paving to plazas and building frontage Impermeable paved areas

Colour in pedestrian areas: Mix of 3 buff / grey tones in half-lapped staggered bond Colour in vehicular areas: Blend of two buff tones to match pedestrian surfaces with bay demarcation in colour : light grey

Permeable block paving to access routes and aisles Colour: Buff / grey block in herringbone bond

Permeable block paving to car bays Mid grey blocks in half-lapped staggered bond Colour: Light grey blocks to bay demarcation

Non-Permeable block paving to car bays in RPAS of existing trees

Mid grey blocks in half-lapped staggered bond Colour: Light grey blocks to bay demarcation

Permeable linear grass paving feature between car bays

1m wide gravel margin at roof level 20-40mm diameter rounded gravel

Porcelain paviour to roof terrace to match internal floor surface

Roof level maintenance path Concrete paving slabs forming 1.6m wide path Colour: Natural

Existing macadam to public footpath

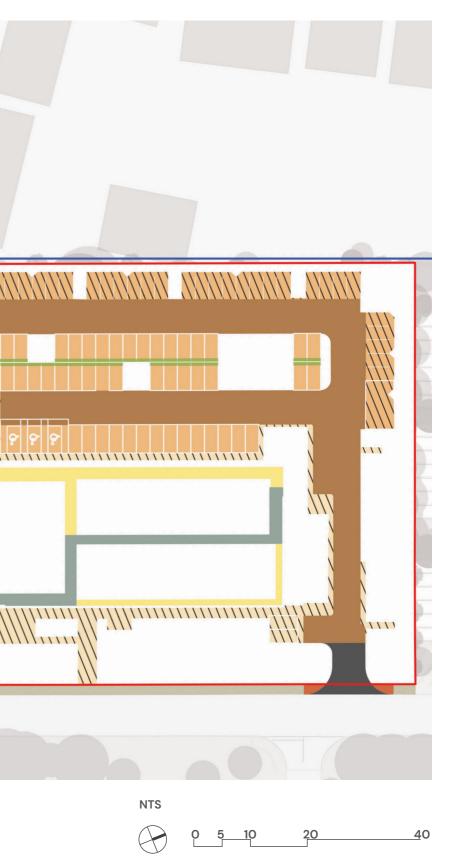
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Existing block paving to road side pavement



Macadam surfacing Plot entrances

Tactile units at road crossings Colour: Dark grey

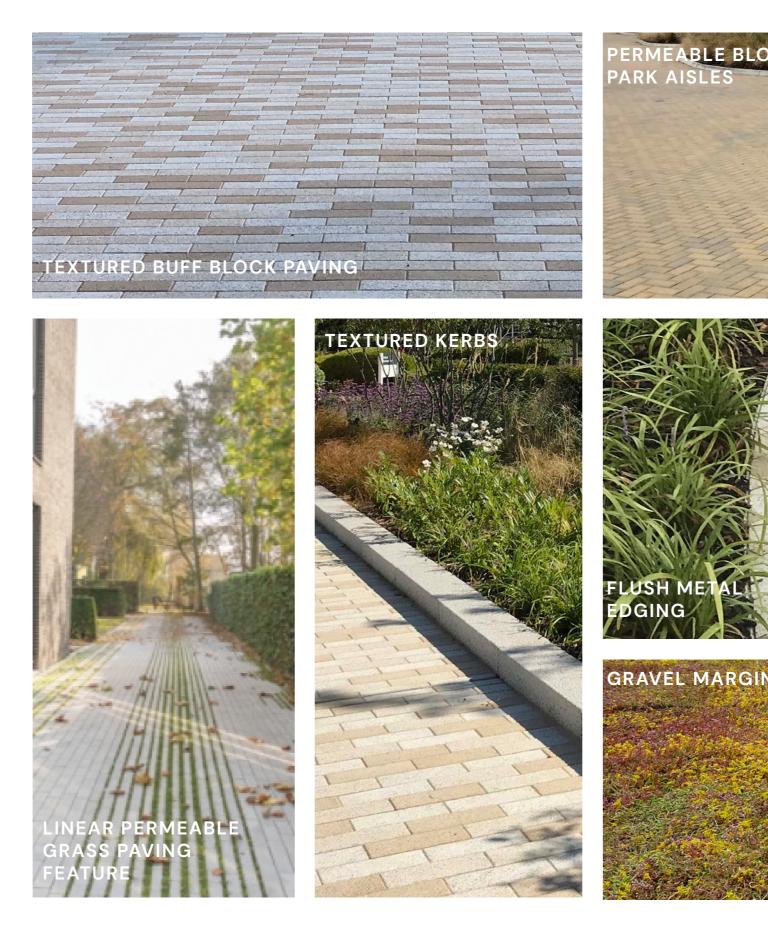


### 7.0 | LANDSCAPE STRATEGIES 7.7 | HARD LANDSCAPE MATERIAL STRATEGY

At ground level, a textured high quality concrete block pavior is proposed in a blend of three buff and light grey tones in key pedestrian spaces including plazas, building frontage and footpaths. Both reduced-carbon content and permeable versions of the block have been selected. This material ties into the wider landscape improvements throughout ARC Oxford. The textured block paving is manufactured less than 100km away in Cambridgeshire, resulting in low transport related emissions.

A large part of the rear car park is also surfaced with permeable concrete blocks, with a warm grey mix block in herringbone to the aisles and in staggered bond to the car bays. A permeable planted paving feature forms a linear strip through the central row of car bays, with grass joints allowing a visual transition from closed to an open paved surface.

On the roof, maintenance paths have been designed into the biodiversity roof including loose gravel paths bordering the roof edges and a wider paved path running the length of the roof from north to south.







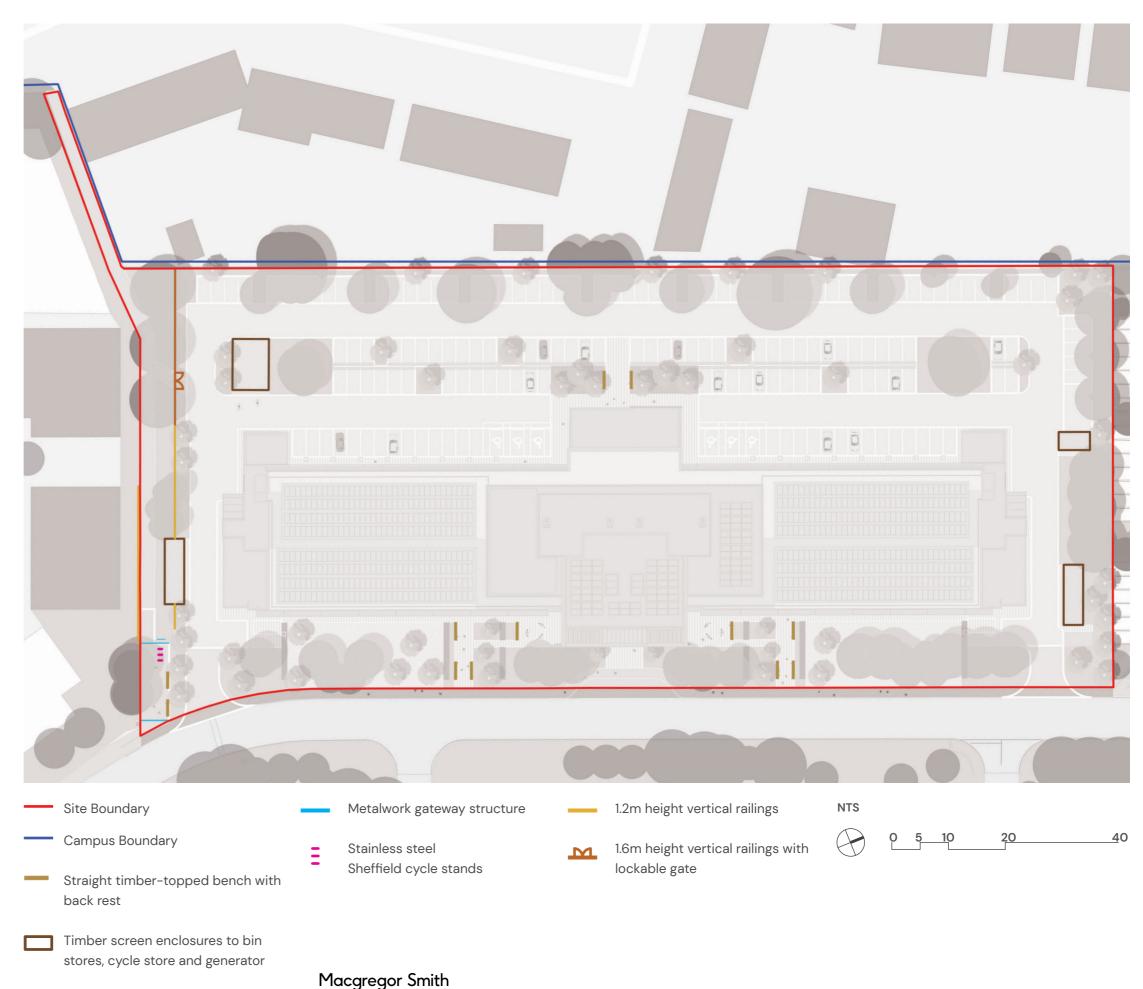


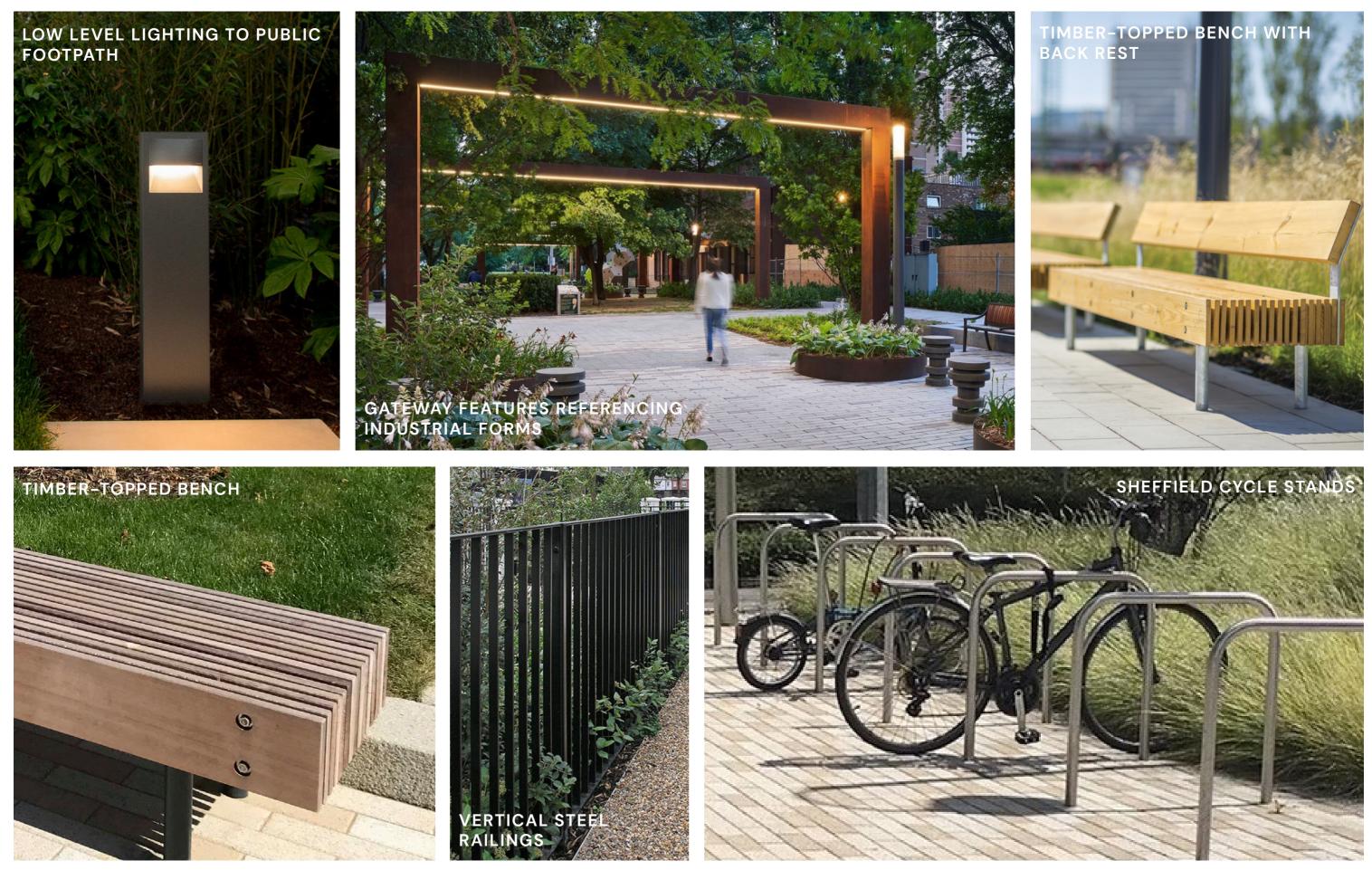
### 7.0 | LANDSCAPE STRATEGIES 7.8 | STREET FURNITURE

A range of high quality, robust street furniture has been selected to meet the future needs of the building users and to contribute to a cohesive public realm within ARC Oxford.

At ground level, timber topped benches are positioned within leafy, outdoor spaces in the front plaza area. This sunny location, outwardly facing the campus, provides a place for informal meetings, socialising and waiting spaces.

The new plaza at the eastern end of the existing footpath connecting Boswell Road with the campus is marked with metal gateway structures referencing the site's industrial past, and furnished with long, timber-topped benches with back rests. Stainless steel cycle stands provide parking for visiting cyclists. New bollard lighting along the footpath's length and replacement of the existing tall fencing with lower, vertical metal rail fencing set back within the planted borders provides more open character. A lockable gate provides direct access from the footpath to the western plot area.





### 7.0 | LANDSCAPE STRATEGIES 7.9 | LIGHTING STRATEGY

The external lighting strategy has been developed in coordination with Dalkia and Spratley & Partners and composes of a number of lighting layers integrated into the street furniture, landscape and built form.

The lighting strategy aims to highlight key routes, animate the external spaces and provide a safe level of lighting in car parking areas and along vehicular access routes. Lighting is focused on key areas to ensure areas of darkness for animals and insects, with a warm white selected which is preferable to wildlife and complements the building and landscape tones which are similarly warm. The key strategies include:

- Low-UV warm-white LED bulbs ensure areas of darkness for animals and insects
- Single and twin LED post-top luminaires to the parking areas and access roads, mounted on 4m height columns
- Directional, downward-facing and shielded luminaires to the western, tree-lined boundary ensuring dark spaces along the plot edge also preventing light spill on the neighbouring properties
- Column-mounted LED spotlights to illuminate the building plazas and entrances
- Single-sided bollard lighting with light shields to illuminate the enhanced footpath leading from Boswell Road
- LED strip lighting to the feature benches and frame lighting to the gateway structure in the southern plaza



### Site Boundary

- Campus Boundary
- Single and twin LED post-top luminaries mounted on 4m height columns
- Illuminated bollards, 1m height, single-sided with light shield
- LED downlights mounted on building soffit
- Emergency Bulkhead Light





### 7.0 | LANDSCAPE STRATEGIES 7.10 | ACCESS AND CIRCULATION

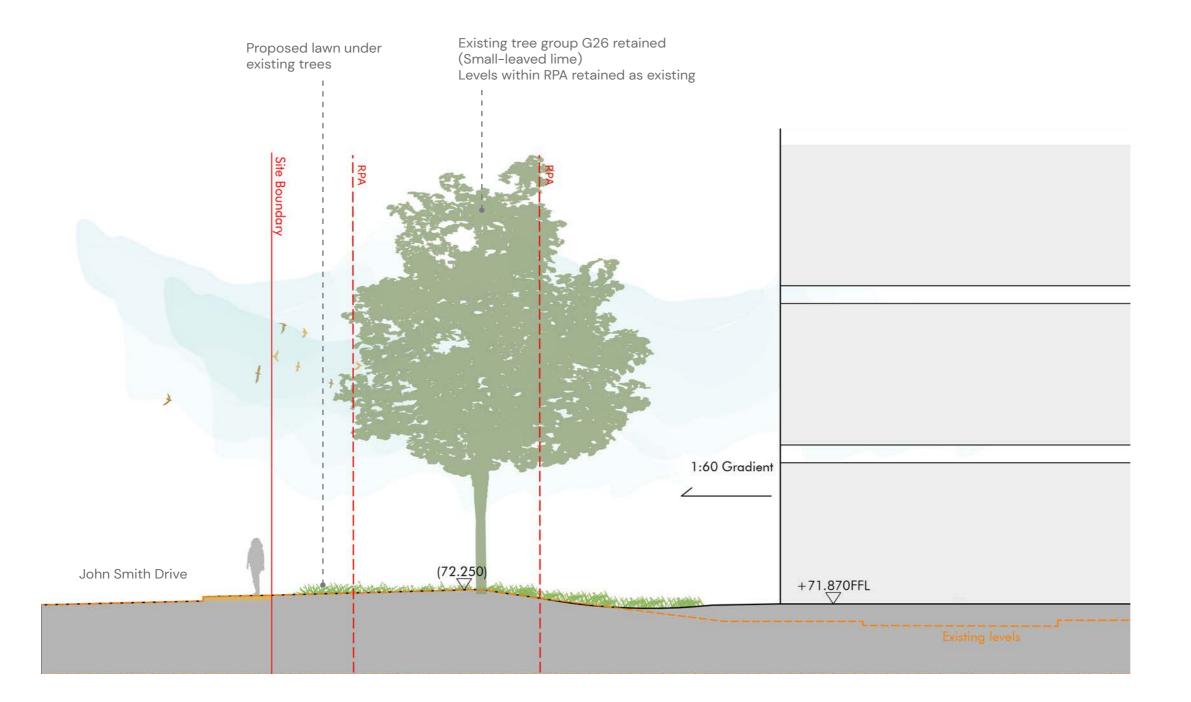
The site layout has been carefully designed to ensure comfort and accessibility for users and visitors to the building.

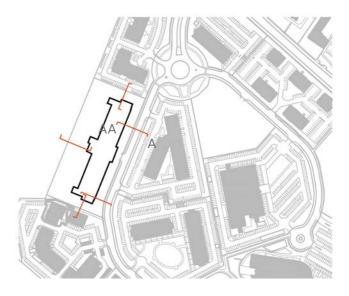
Key strategies include:

- Clear visual links from John Smith Drive to the main building entrance
- Safe pedestrian routes that are free from vehicular traffic
- A legible layout for visitors
- Level or gently sloped access throughout the site and to the primary entrances
- Suitable, non slip proposed surfaces
- Enhanced footpath / cycleway leading from Boswell Road into the campus, with 24-hour open access, new lighting and fencing together with a plaza marking arrival at the campus incorporating new benches and cycle stands
- A lockable gate leading from the existing footpath allowing access directly to the western side of Plot 4200



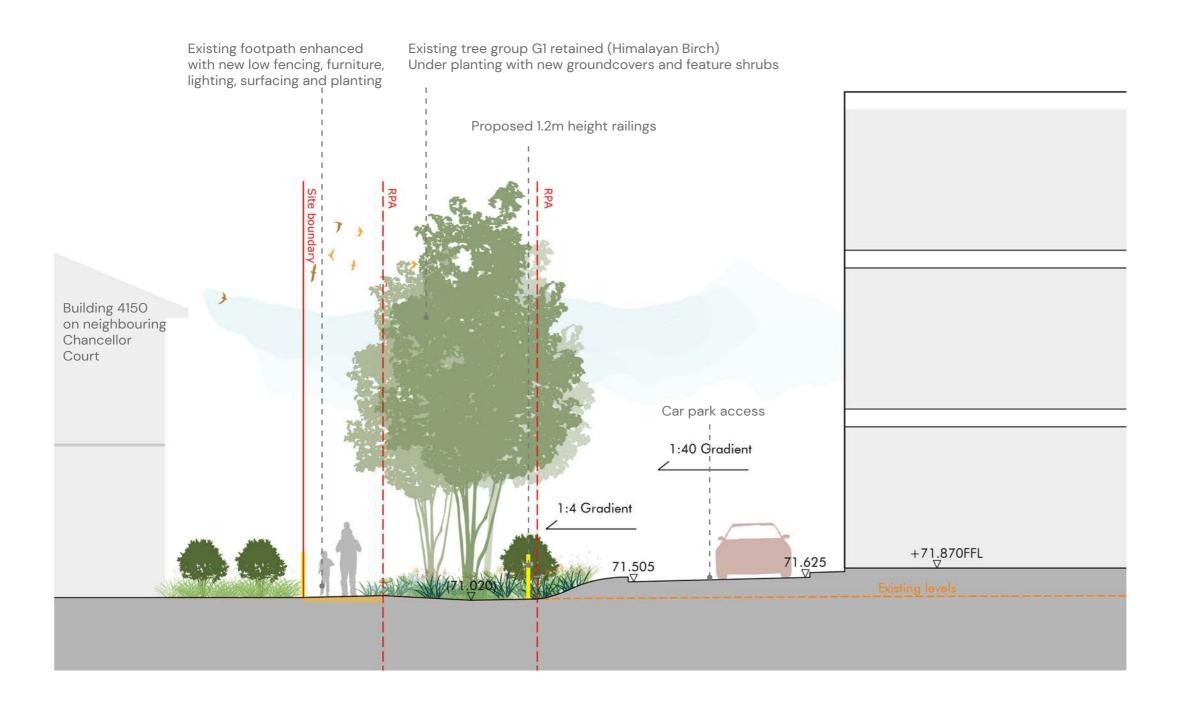
## 7.0 | LANDSCAPE STRATEGIES 7.11 | SITE BOUNDARY SECTIONS / ELEVATIONS – SECTION A-AA

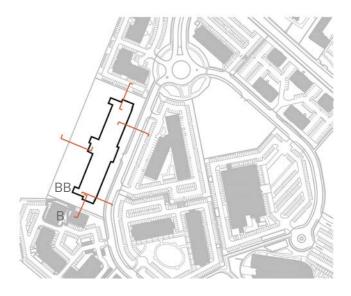




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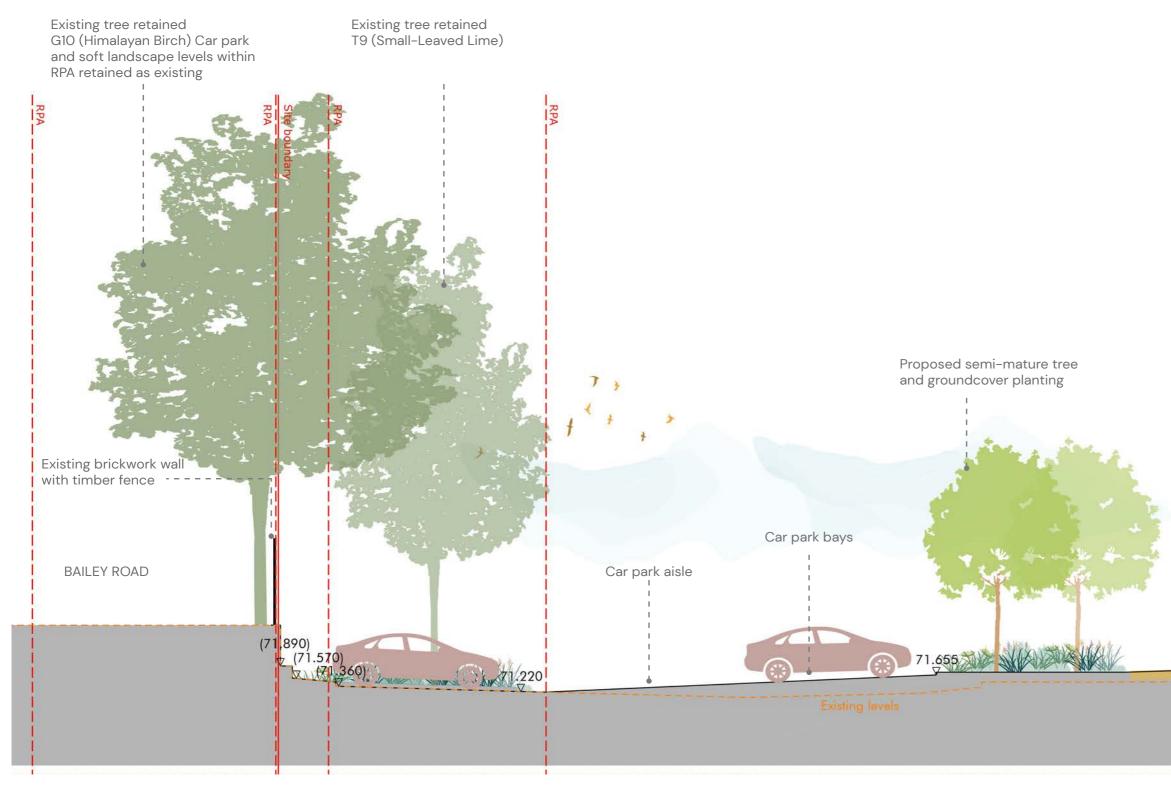
7.0 | LANDSCAPE STRATEGIES 7.11 | SITE BOUNDARY SECTIONS / ELEVATIONS – SECTION B-BB

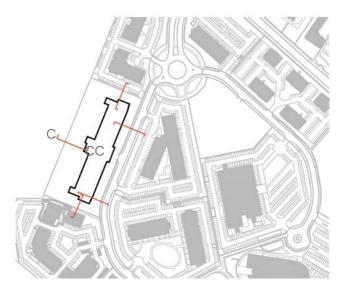




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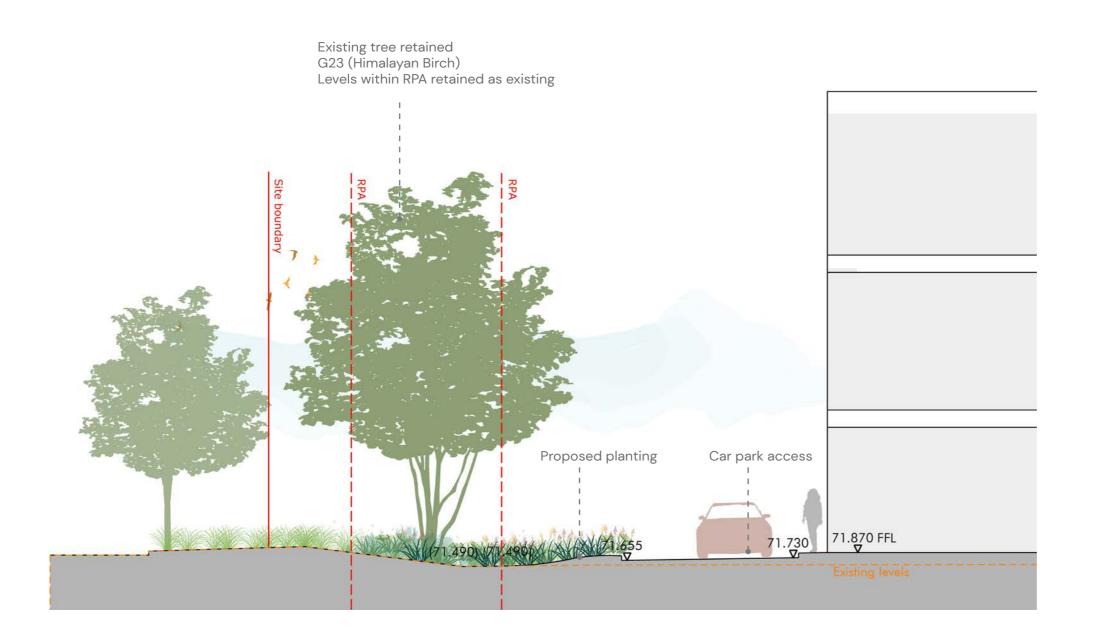
### 7.0 | LANDSCAPE STRATEGIES 7.11 | SITE BOUNDARY SECTIONS / ELEVATIONS - SECTION C-CC

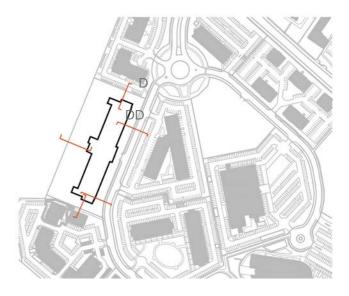




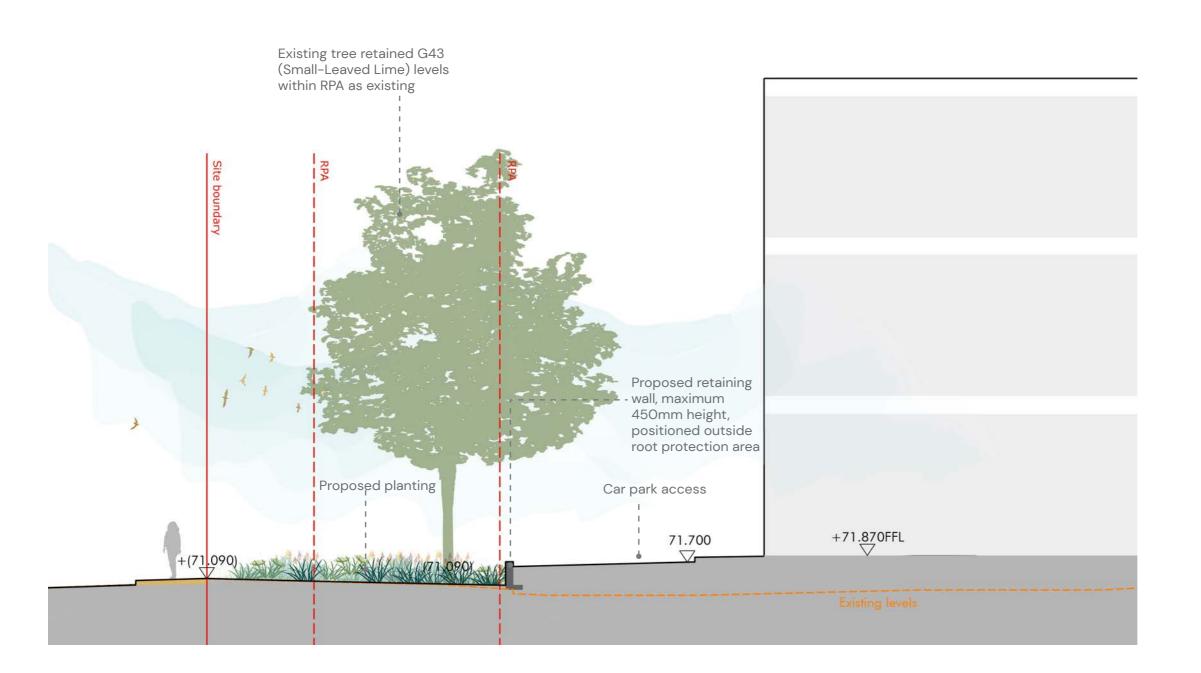


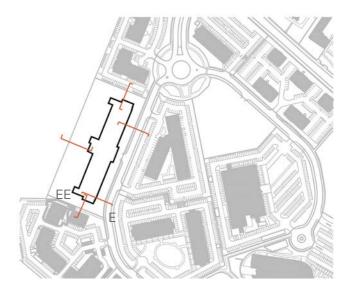
7.0 | LANDSCAPE STRATEGIES 7.11 | SITE BOUNDARY SECTIONS / ELEVATIONS – SECTION D-DD





7.0 | LANDSCAPE STRATEGIES 7.11 | SITE BOUNDARY SECTIONS / ELEVATIONS - SECTION E-EE

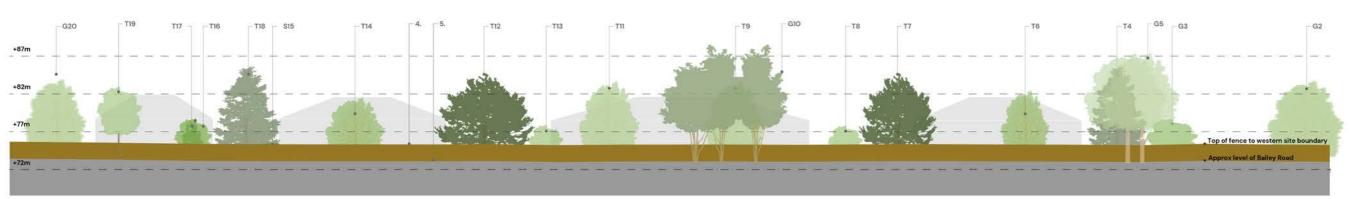




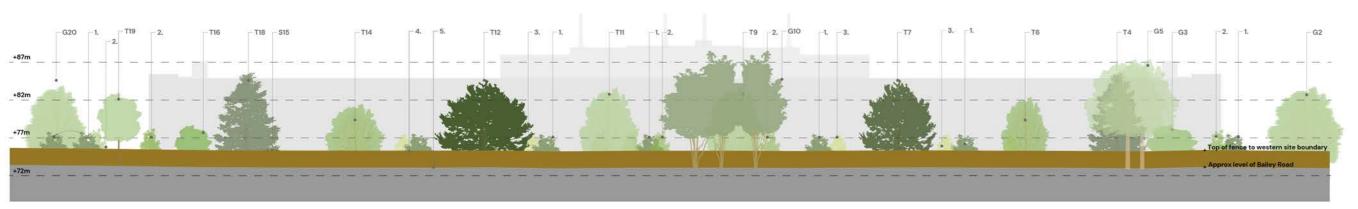
## 7.0 | LANDSCAPE STRATEGIES

7.11 | SITE BOUNDARY SECTIONS / ELEVATIONS | WESTERN SITE ELEVATION FROM BAILEY ROAD - EXISTING AND PROPOSED CONDITION

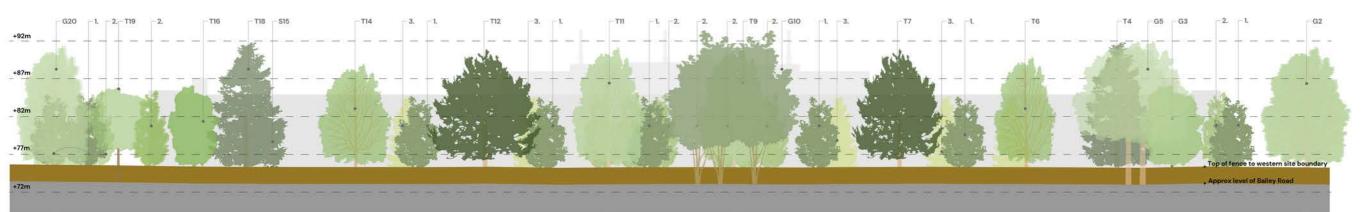
Original scale 1:250@A1



Existing Condition 1:250 @ A1



Proposed Scheme at Planting - Year O 1:250 @ A1



Proposed Scheme - Year 25 following planting

Arboricultural Survey Assessment Arboricultural Survey Assessment Existing tree species, heights and canopy spreads are based on Aspect Trees' Tree Survey Report and Tree Constraints Plan, dated May 2023: Tree Survey Report Ref: 05879 4200 TCP 19.05.23 Tree Constraints Plan Ref: 05879 4200 TCP 19.05.23

### Tree growth rates

Note:

Tree growth rates The tree heights shown at 7, 15 and 25 years are based on growth rates provided by Lorenz von Ehren Tree Nursery in Germany. While these rates are considered as average growth rates, it is understood other site and climatic conditions may affect growth rates so that future tree heights may be above or below those shown.

## diameter per year

Existing trees

Proposed trees

planting

first year

### Assumed tree growth rates

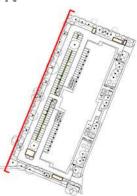
Assumed canopy spread increase of 15cm

Assumed height increase of 30cm per year

Assumed nearly no growth in first year after

Assumed canopy spread increase of 15cm diameter per year after first year

Assumed height increase of 30cm per year after



#### Existing trees

Tree Group G2 Small-leaved Lime Tilia cordata

Tree Group G3 Whitebeam Sorbus aria

Tree T4 Corsican Pine Pinus nigra 'maritima'

Tree T6 Small-leaved Lime Tilia cordata

Tree T7 Corsican Pine Pinus nigra 'maritima

Tree T8 Whitebeam Sorbus aria

Tree T9 Small-leaved Lime Tilia cordata

Tree T11 Small-leaved Lime Tilia cordata

Tree T12 Corsican Pine Pinus nigra 'maritima'

Tree T13 Whitebeam Sorbus aria

Tree TI4 Small-leaved Lime Tilia cordata

Shrub S15 Laurestine Viburnum Tinus

Tree T16 Whitebeam Sorbus aria

Tree T17 Pear (Pyrus species)

Tree T18 Corsican Pine Pinus nigra 'maritima'

Tree Group G20 Small-leaved Lime Tilia cordata

#### Proposed trees

- 1. Common Alder Alnus glutinosa
- 2. Silver Birch Betula pendula
- 3. Turkish Hazel, Corylus colurna

### Offsite

4. Existing fence-line on the western boundary of application site Top of fence is approximately 3.7m above plot

roun level Top of fence is approximately 2.3m above Bailey Road ground level

5. Ground level on Bailey Road Approximately 1.4m above plot ground level

Off-site tree group Tree Group GIO at southern end of Bailey Road next to application site boundary Himalayan Birch Betula utilis 14m height, 7.5m diameter canopy spread

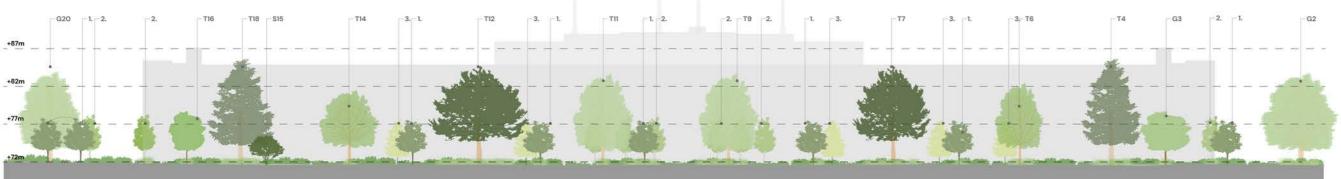
Off-site tree group Tree Group G5 in garden of 13 Frederick Road next to application site boundary Sycemore Acer pseudoplatanus 14m height, 7.5m diameter canopy spread

Off-site tree Off-site tree Tree TI9 in garden of 49 Phipps Road next to application site boundary Sycamore Acer pseudoplatanus 9m height, 4m diameter canopy spread

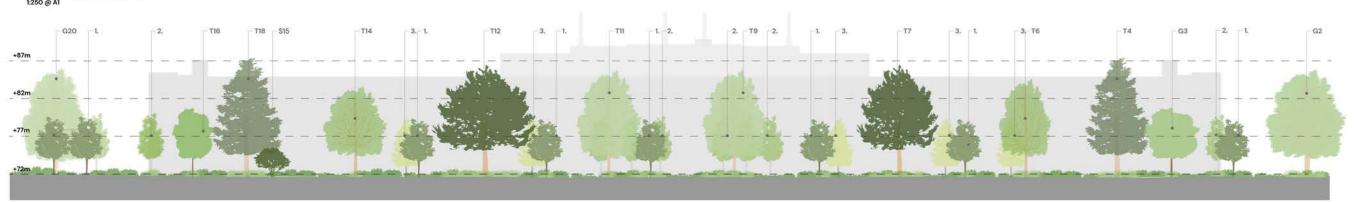
## 7.0 | LANDSCAPE STRATEGIES

7.11 | SITE BOUNDARY SECTIONS / ELEVATIONS | WESTERN SITE ELEVATIONS - PROPOSED CONDITION YEARS 0, 7, 15 & 25-01

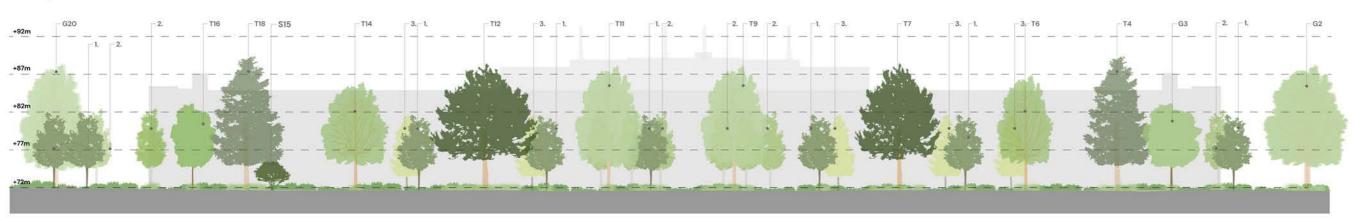


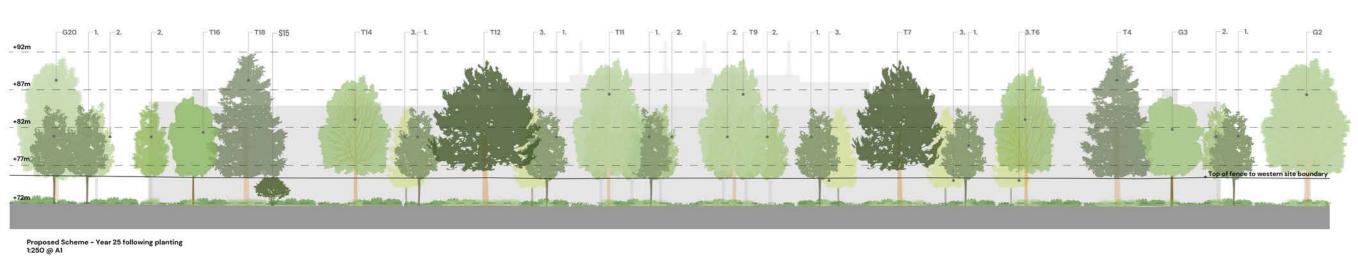


Proposed Scheme at Planting – Year O 1:250 @ A1



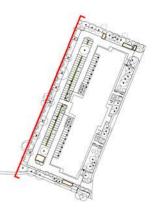
Proposed Scheme - Year 7 following planting 1:250 @ A1





Macgregor Smith

Proposed Scheme - Year 15 following planting 1:250 @ A1



### Existing trees

Tree Group G2 Small-leaved Lime Tilia cordata

Tree Group G3 Whitebeam Sorbus aria

Tree T4 Corsican Pine Pinus nigra 'maritima'

Tree T6 Small-leaved Lime Tilia cordata

Tree T7 Corsican Pine Pinus nigra 'maritima'

Tree T8 Whitebeam Sorbus aria

Tree T9 Small-leaved Lime Tilia cordata

Tree T11 Small-leaved Lime Tilia cordata

Tree T12 Corsican Pine Pinus nigra 'maritima

Tree T13 Whitebeam Sorbus aria

Tree T14 Small-leaved Lime Tilia cordata

Shrub S15 Laurestine Viburnum Tinus

Tree T16 Whitebeam Sorbus aria

Tree T17 Pear (Pyrus species)

Tree T18 Corsican Pine Pinus nigra 'maritima'

Tree Group G20 Small-leaved Lime Tilia cordata

### Proposed trees

1. Common Alder Alnus glutinosa

- 2. Silver Birch Betula pendula
- 3. Turkish Hazel, Corylus colurna

#### Assumed tree growth rates

### Existing trees

Assumed canopy spread increase of 15cm diameter per year

Assumed height increase of 30cm per year

#### Proposed trees

Assumed nearly no growth in first year after planting

Assumed canopy spread increase of 15cm diameter per year after first year

Assumed height increase of 30cm per year after first year

#### Note:

### Arboricultural Survey Assessment

Arborcultural survey Assessment Existing tree species, heights and canopy spreads are based on Aspect Trees' Tree Survey Report and Tree Constraints Plan, dated May 2023: Tree Survey Report Free Survey Report Ref: 05879 4200 TCP 19.05.23

Tree growth rates The tree heights shown at 7, 15 and 25 years are based on growth rates provided by Lorenz von Ehren Tree Nursery in Germany. While these rates are considered as average growth rates, it is understood other site and climatic conditions may affect growth rates so that future tree heights may be above or below those shown.

Off-site trees This elevation shows existing and proposed trees on Plot 4200 only. The elevations do not show any trees outside, but very close to, the western plot boundary which also contribute to the softening and screening effect of views into the plot. These off-site trees include a rown of three limpleum Birch Um bailent at the and a group of three Himalayan Birch, 14m height, at the end of Bailey Road which are positioned approximately 1.4m above the plot level and contribute to the layered effect of tree canopies softening and screening views into the plot from Bailey Road.

### 7.0 I LANDSCAPE STRATEGIES 7.12 | OUTLINE SPECIFICATION

#### 1.0 Site Preparation and Earthworks

1.1 Generally, all earthworks shall be executed in accordance with BS4428 'General Landscape Operations'.

Ground profiles to be left with smoothly flowing contours, free from localised depressions, high spots and abrupt angles.

- 1.3 Testing and analysis of existing site soils shall be undertaken to determine their suitability for re-use within the landscape scheme, and where possible, existing subsoil and topsoil shall be used. Should existing soils not be suitable for re-use horticulturally, subsoil and/or topsoil shall be imported, and shall comply with physical and chemical parameters set out in a separate, detailed specification.
- 1.4 A minimum depth of 600mm of viable rooting depth is required for trees, lawns and ornamental beds within all planting areas.

Within this, the depths of subsoil and topsoil layers should be as follows :

Type of Planting / Lawn	Topsoil Depth	Subsoil Depth
Tree pits	500mm	500mm
Shrub and	300mm	300mm
Amenity lawn areas	150mm	150mm

- 1.5 Cultivate topsoil to produce an even surface free from lumps and clods. Cultivation shall be to a minimum depth of:
  - Planted areas : 300mm
  - Amenity lawns :150mm
- The need for ameliorants and fertilisers shall be reviewed by appropriate soil testing, prior 1.6 to soil spreading or import.

#### 2.0 Planting

- 2.1 Handling and transportation of all plants shall be carried out in accordance with Horticultural Trade Association's 'Plant Handling' recommendation (1987).
- 2.2 All planting operations shall be carried out in accordance with BS5236:1975; BS4043:1989, and BS4428:1989. Advanced nursery stock to BS5236:1975.
- 2.3 Trees : All trees shall be supplied in accordance with the plant schedules by named nurseries.

Tree planting backfill shall contain:

<ul> <li>80% by volume</li> </ul>	:	Topsoil
<ul> <li>20% by volume</li> </ul>	:	Mushroom Compost
<ul> <li>3 kg/m<sup>3</sup></li> </ul>	:	Enmag Fertilizer
<ul> <li>1kg/m<sup>3</sup></li> </ul>	:	Water Retaining Polymer Gel

Underground Guying : All semi-mature and multi stemmed trees are to be anchored using "Duckbill" anchoring kit. Watering tubes shall be supplied for all semi-mature stock - to be 50mm diameter, black land flex perforated land drainage pipe with suitable rubber/plastic bung.

<u>Tree pits</u>: Tree pits should be excavated to the following dimensions:

- Semi mature trees 20-40cm girth • And coniferous trees Multi-stemmed trees
  - 1,500mm square x 1,100mm deep
- 2.3 Shrubs, ornamental grasses and herbaceous perennials : All ornamental plants shall be supplied in accordance with the Planting Plans by named nurseries. Planting pits to be excavated to allow a 75mm clearance around the edges of the root system. Sides and bottom of pits shall be loosened to relieve any compaction. Backfill for each plant to include 50g of SA1 Enmag.

Bark mulch shall consist of matured British conifer bark with an even particle size distribution between 5-35mm. The mulch to be Melcourt 'Ornamental Grade Bark Mulch' or similar approved, and a representative sample of the mulch shall be supplied for approval prior to delivery to site

- 2.4 Turfing : Turf to be Tillers "Arena", supplied to BS3969. Pre-turfing fertiliser to be Fisons 'PS5' applied at a rate of 70g/m<sup>2</sup>. The turves will be laid with half lapped joints and well butted up.
- 2.5 Biodiversity roof : Minimum 150mm depth substrate to be laid on top of Biodiversity roof build-up. Mix of 40% Sedum plugs and 60% wildflower plugs across the biodiversity roof area planted randomly into substrate at 20 no. plugs/ m<sup>2</sup>.

#### 3.0 Watering

All tree pits and shrub beds shall be thoroughly watered prior to application of mulch and subsequent maintained in a moist condition. Watering rates shall be as follows:

Advanced nursery stock trees	50 litres/tree
Shrub areas	30 litres/m²

#### Maintenance 4.0

All shrub / ornamental grasses / herbaceous perennials and lawn areas to be maintained under installing contract for 12 months post Practical Completion, and all semi mature trees to be maintained under installing contract for 24 months post Practical Completion, to provide optimum conditions for plant and grass growth and to present a clean and tidy appearance. All deaths and failures are to be replaced at the first horticulturally sound opportunity.

1,500mm square x 1,100mm deep

## Vegetation Maintenance and Management Schedule Over One Year

Onevetien	Annual						Мо	nth									
Operation	frequency of operation	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec				
Existing Trees																	
Ideally, tree works should occur in <b>September / October</b> , whi present. If the presence of bats / badgers / nesting birds etc apporpriate action taken.				-		-				-	-	-					
Remedial tree works to maintain trees in a safe condition	1X																
Dead wood removal (retained on site wherever possible)	1X																
Re-planting of trees if required	1X																
Newly planted trees							•										
Formative pruning	1X																
Adjust tree ties, replace as necessary	1X																
Weed control around base of trees	1X																
Apply fertiliser																	
Firming																	
Check guys and re-tighten	2X																
Watering as necessary	12X																
Tree replacements when required	1X																
Pest and disease control (when required)																	

Operation	Annual						Мо	nth					
Operation	frequency of operation	Jan	Feb	Mar	Apr	Мау	June	July	Aug	Sept	Oct	Nov	Dec
Newly planted shrubs and groundcovers													
Prune (exact timing dependent on species)	2X												
Pruning of herbaceous perennials	monthly												
Apply fertiliser	1X												
Weed control (spot treatment and / or hand weeding)	as required												
Re-mulch	1X												
Watering as necessary	as required												
Pest and disease control (when required)	as required												
Replacements where necessary	1X												
Thinning as necessary	1X												

	Annual						Мо	nth					
Operation	frequency of operation	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Amenity Lawn													
Mowing	20-24X												
Weed control (using approved herbicide)	as required												
Edging with edging shears to occur at each cut	20-24X												
Fertiliser	2X												
Aeration (every 3 years)													
Scarifying	2X												
Reinstatement as necessary	as required												
Biodiversity Roof													
Weed control - spot treatment and/or hand treatment	as required												
<u>1st year cut</u> : review establishment, cut in April/ May to 30– 50mm, remove arisings <u>2nd year cut</u> : 1st cut in April/ May to 30–50mm, remove arisings; 2nd cut in August/ September to 100mm, remove arisings	as required												
Removal of any self-seeded woody tree/ shrub species	as required												
Watering as necessary	as required												
Maintenance and fire margins to be kept clear of vegetation	2x												
Drainage outlets to be kept clear	12x												

	Annual						Мо	nth					
Operation	frequency of operation	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Ornamental herbaceous perennials and grasses													
Prune (exact timing dependent on species)	2x												
Apply fertlisers	1x												
Weed control (spot treatment and / or hand weeding)	as required												
Re-mulch	1x												
Watering as necessary	as required												
Pest and disease control	as required												
Prune deciduous grasses as necessary	1x												
Comb through evergreen grasses	1x												
Divide perennials as necessary	1x												
Replacements where necessary	1x												
Thinning as necessary	1x												
Hard Landscape				-									
Leaf/Blossom Sweeping	as required												
Weed Control	as required												
Litter picking - all areas	52x												
Check furniture - repair and replace as necessary	12x												
Check footpaths - repair and replace as necessary	12x												
Maintenance of bird boxes	1x												
Sweep bark mulch	12x												

## Vegetation Maintenance and Management Schedule Over 20 Years

Organistica										Ye	ear									
Operation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Existing Trees																				
Ideally, tree works should occur in <b>September / Octo</b> the presence of bats / badgers / watervoles / nesting apporpriate action taken.					-			-	-		-				-		-			. lf
Remedial tree works to maintain trees in a safe condition																				
Dead wood removal																				
Newly planted trees																				
Formative pruning																				
Adjust tree guys and replace as necessary																				
Weed control around base of trees																				
Apply fertiliser																				
Firming																				
Tree replacements as necessary																				
Watering as necessary																				
Pest and disease control																				

										Ye	ear									
Operation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Newly planted shrubs and groundcovers																				
Prune (exact timing dependent on species)																				
Application of fertiliser																				$\square$
Weed control (spot treatment)																				
Re-mulch																				
Watering as necessary																				
Pest and disease control																				
Thinning as necessary																				
Replacements as necessary																				
Amenity Lawn																				
Mowing																				
Weed control (using approved herbicide)																				
Strimming (to borders and road edges)																				
Fertiliser																				
Aeration																				
Scarifying																				
Replacement as necessary																				

On westing										Ye	ear									
Operation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Herbaceous and ornamental grasses planting																				
Prune (exact timing dependent on species)																				
Apply fertiliser																				
Weed control (spot treatment / hand weeding)																				
Re-mulch																				
Routine check of automatic irrigation system																				
Sub Dividing																				
Pest and disease control (when required)																				
Replacements where necessary																				
Thinning as necessary																				
Biodiversity Roofs																				
Weed control - spot treatment and/or hand treatment																				
<u>Ist year cut :</u> review establishment, cut in April/ May to 30-50mm, remove arisings <u>2nd year cut :</u> 1st cut in April/ May to 30-50mm, remove arisings; 2nd cut in August/ September to 100mm. remove arisings Removal of woody tree and shrub species																				
Watering as necessary																				
Maintenance & fire margins kept clear of vegetation																				
Drainage outlets to be kept clear																				
Bird boxes																				
Mainteance of bird boxes in October / November																				

# Macgregor Smith

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