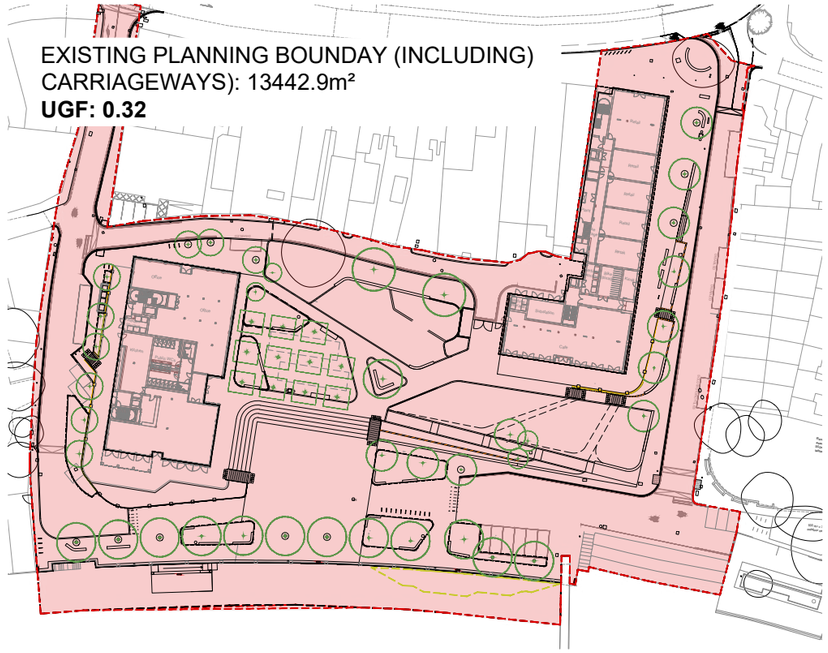
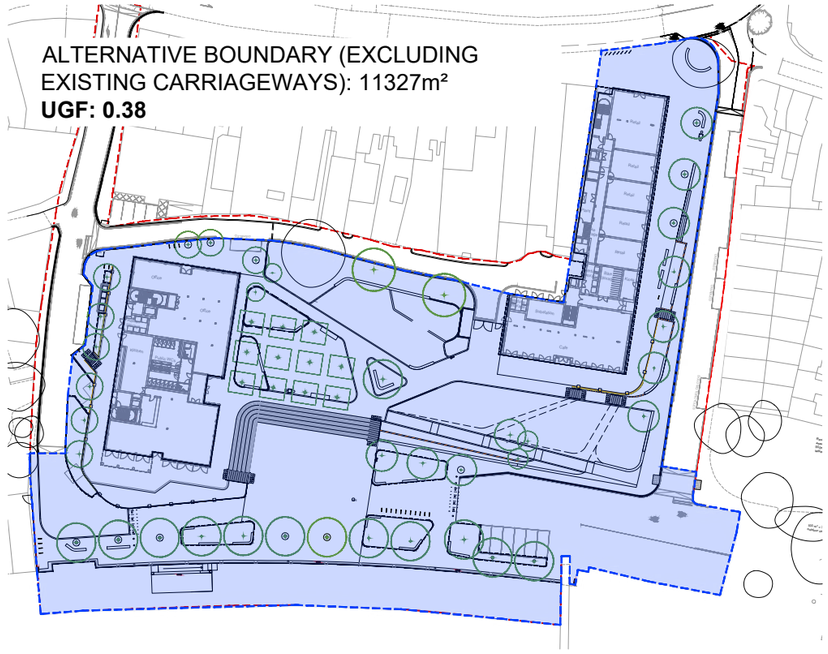
Strategies
Urban Greening Factor

The adjacent plan shows the different areas of greening within the site that correspond to the categories used to calculate the Urban Greening Factor. These areas are then used in the table on the next page to calculate the score of 0.32/ 0.38 depending on the site boundary that's used to make the calculation.

The guidelines recommend a score of 0.3 for commercial developments, and 0.4 for residential development, and as a mixed use development the proposal is achieving a score mid way between these.



Urban Greening Factor Calculator				
Surface Cover Type	**Factor**	**Area (m²)**	**Contribution**	**Notes**
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1	819.72	819.72	
Wetland or open water (semi-natural; not chlorinated) maintained or established on	1	1039.58	1039.58	
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm.	0.8		0	
Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree.	0.8	1451	1160.8	One tree added to square at 78m2
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014.	0.7	78.7	55.09	Garden Storage: 14.9m2 Water Lane: 23.4m2 Wharf Lane: 40.4m2
Flower-rich perennial planting.	0.7	930.23	651.161	
Rain gardens and other vegetated sustainable drainage elements.	0.7	66.12	46.284	
Hedges (line of mature shrubs one or two shrubs wide).	0.6	28.6	17.16	
Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree.	0.6		0	
Green wall –modular system or climbers rooted in soil.	0.6	400	240	
Groundcover planting.	0.5		0	
Amenity grassland (species-poor, regularly mown lawn).	0.4	564.71	225.884	
Extensive green roof of sedum mat or other lightweight systems that do not meet GRO Code 2014.	0.3		0	
Water features (chlorinated) or unplanted detention basins.	0.2		0	
Permeable paving.	0.1	1369	136.9	Resin Bound Gravel: 719m2 Rubber Play Surface: 252m2 Sand: 88.5m2 Self Binding Gravel (updated within calc as this is permeable) : 309m2
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0		0	
Total contribution			**4392.579**	
Total site area (m²)			13442.9	
Urban Greening Factor			**0.326758289**	



Urban Greening Factor Calculator -				
Surface Cover Type	**Factor**	**Area (m²)**	**Contribution**	**Notes**
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1	819.72	819.72	
Wetland or open water (semi-natural; not chlorinated) maintained or established on site.	1	1039.58	1039.58	
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm.	0.8	0	0	
Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree.	0.8	1451	1160.8	One tree added to square at 78m2
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014.	0.7	78.7	55.09	Garden Storage: 14.9m2 Water Lane: 23.4m2 Wharf Lane: 40.4m2
Flower-rich perennial planting.	0.7	930.23	651.161	
Rain gardens and other vegetated sustainable drainage elements.	0.7	66.12	46.284	
Hedges (line of mature shrubs one or two shrubs wide).	0.6	28.6	17.16	
Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree.	0.6	0	0	
Green wall –modular system or climbers rooted in soil.	0.6	400	240	
Groundcover planting.	0.5		0	
Amenity grassland (species-poor, regularly mown lawn).	0.4	564.71	225.884	
Extensive green roof of sedum mat or other lightweight systems that do not meet GRO Code 2014.	0.3	0	0	
Water features (chlorinated) or unplanted detention basins.	0.2	0	0	
Permeable paving.	0.1	1369	136.9	Resin Bound Gravel: 719m2 Rubber Play Surface: 252m2 Sand: 88.5m2 Self Binding Gravel (updated within calc as this is permeable) : 309m2
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0		0	
Total contribution			**4392.579**	
Total site area (m²)			11327	
Urban Greening Factor			**0.38779721**	

Strategies
Urban Greening Factor

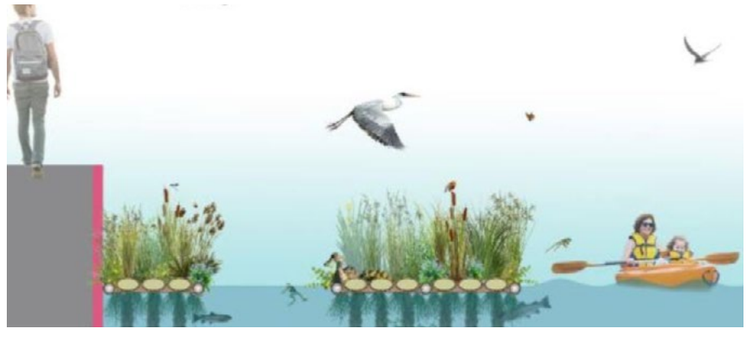
Strategies
Ecology & Net Gain Strategy

- REFER TO KEY AT BEGINNING OF DAS FOR CHANGES MADE SINCE 2021 SUBMISSION

The diagram opposite outlines the ecology strategy. The biodiverse planting palette seeks to provide a wide variety of habitat opportunities. Berry producing trees are proposed where appropriate to encourage bats and support birds. Bat and bird boxes and insect hotels are provided where suitable and appropriate. The existing insect hotels wihin the gardens to be re-located within the site.

There is also an opportunity to enhance the ecology along the river with floating ecosystems that are attached to the river wall. This proposal is being discussed with the Port of London Authority and the Environment Agency.

Example of Bio-diverse Floating Ecosystems



Illustrative Diagram of Floatiing Ecosystems

Key

- Rain Gardens
- Herbaceous Planting
- Woodland Planting
- Climbing Plants
- Lawn
- Floating Ecosystems
- Hedge
- Bat Boxes
- Existing Trees
- Generic Bird Boxes
- Proposed Trees
- Insect Hotels

Strategies
Heritage Elements - Existing and Proposed

There are a number of interesting and locally valued features within the site boundary that could be carefully removed before construction starts and then either re-located within the space, or to a location elsewhere to be agreed with both the Twickenham Riverside Trust and LBRuT.

The plans below show the existing features within the site, and the proposal for which can be integrated within the new gardens and public space. The re-location of the remaining features is to be discussed with LBRuT.

With regards re-location of the Black Poplar tree within the site, there are on-going discussions taking place with LBRuT to find out if a more suitable location can be found elsewhere.

1 Black Poplar Tree and Plaque

2 Diving Board

3 WWI Triptych

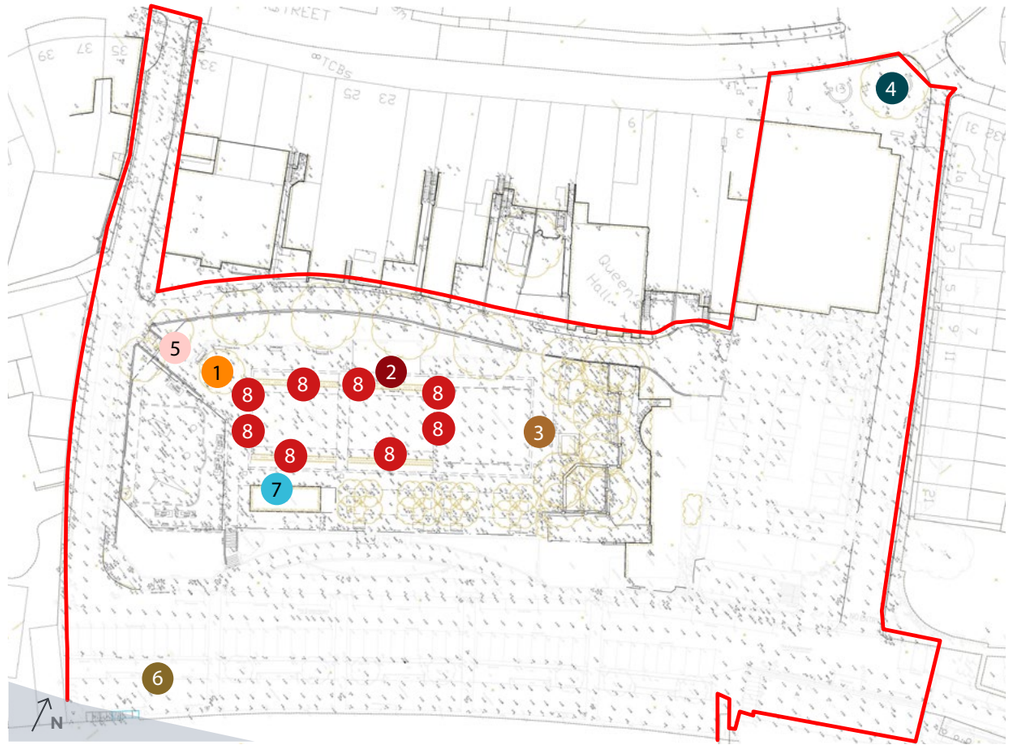
4 Location Map

5 Information board - Diamond Jubilee Gardens

6 Memorial Bench Plaque for Jim

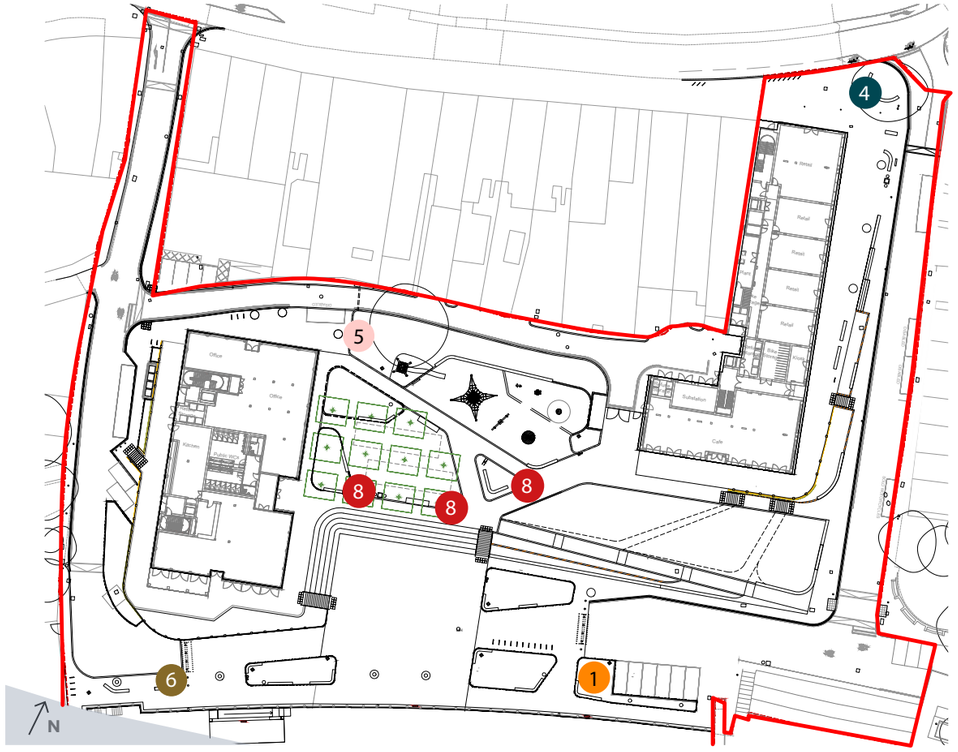
7 Art Work

8 Lido Pool Edge Tiles



Existing Plan

Planning Application Boundary



Proposed Plan

Planning Application Boundary

Strategies
Paving and Edges

Large stone - Town Square

Small stone - River Promenade, Wharf Lane and down Church Street

Engraved paving, small and medium stone paving - wayfinding

Recycled bricks - planters and retaining wall adjacent to service road

Recycled bricks - raised kerbs and retaining wall

Tree pit detail

Recycled timber - terraces and seats along promenade

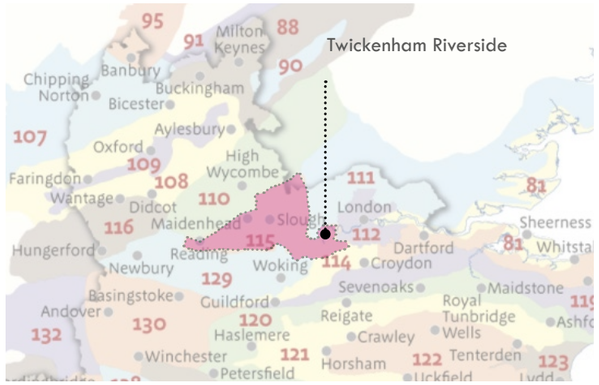
Self-binding gravels - petanque courts

Playground sand - children’s play area

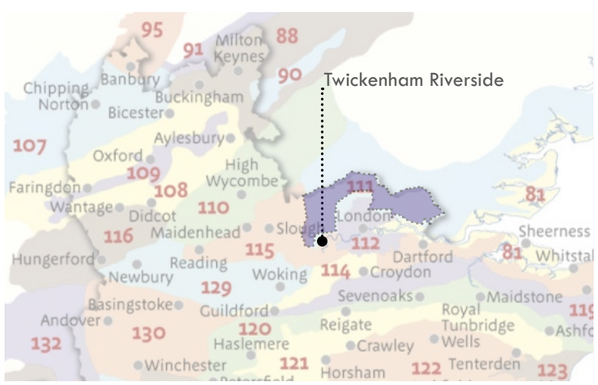
Strategies
Landscape Character Areas

The site sits on the edge of two national landscape character areas as defined by Natural England. The qualities of these two areas provide useful information and inspiration for the proposed trees and planting described in the following pages.

Thames Valley (115)
Geology dominated by London Clay; Flat and low lying, Hydrologic features; River Thames and tributaries, lakes, open bodies (gravel);
Pockets of woodland; open grassland parkland, wetlands and meadows
Woodlands in North-West edge; Formal historic designed landscapes - Hampton Court Palace and Kew Garden



Northern Thames Basin (111)
- Soil quality ranging from good to poor on London Clay ; Agriculture dominant ; Rich in geodiversity, archeology and history; Diverse landscapes
- wooded Hertfordshire plateaux & river valley to open landscape of predominantly arable in Essex heathlands ; Urban areas mixed throughout,urban expansion feature of area since 16th century

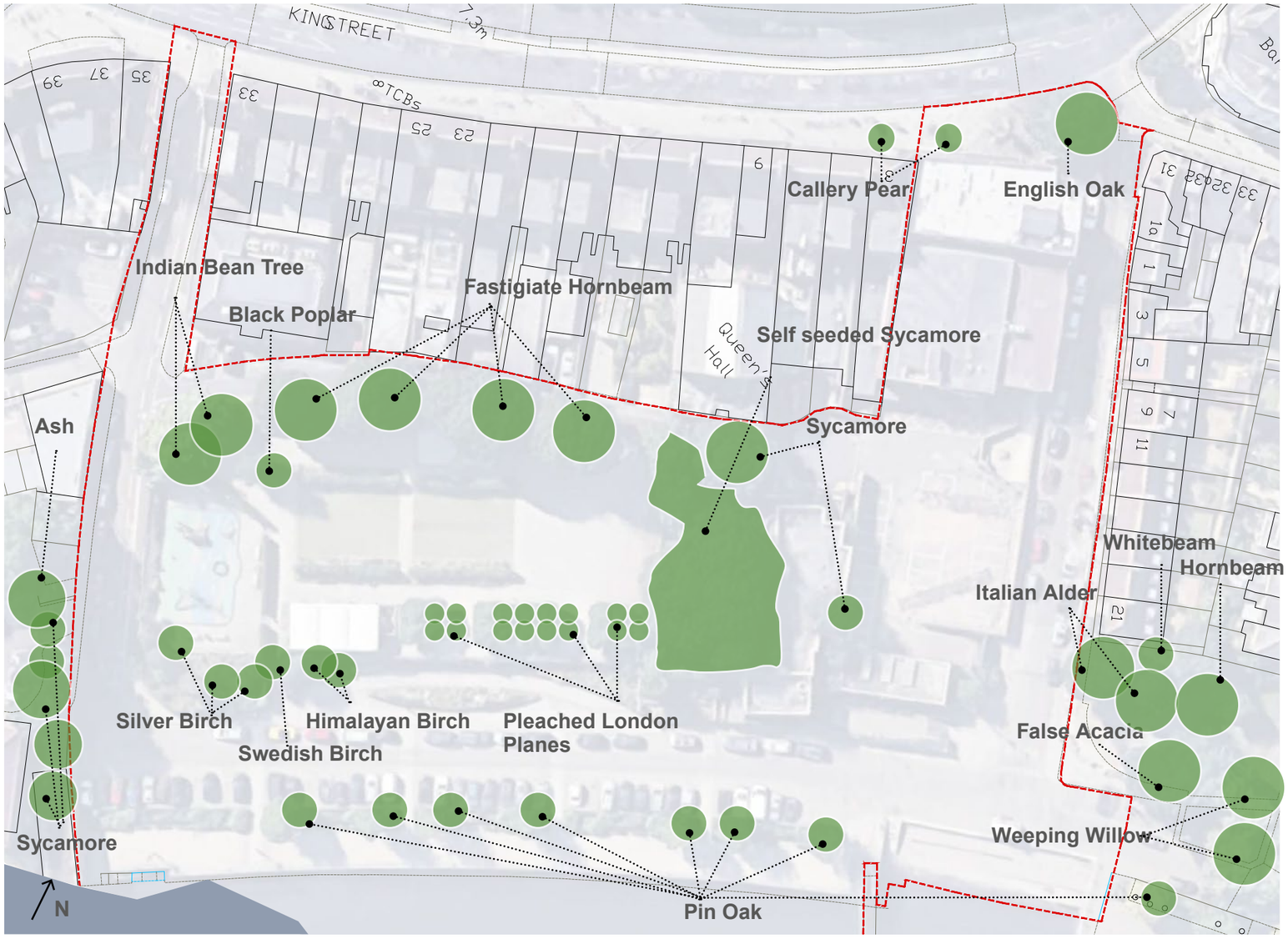


Strategies
Trees - Existing

The diagram opposite shows all existing trees currently on site. For information about the size, species, age, and condition of the trees refer to the tree survey in the Appendix.

Refer to Arboricultural Report for existing and proposed tree quantities.

- REFER TO KEY AT BEGINNING OF DAS FOR CHANGES MADE SINCE 2021 SUBMISSION



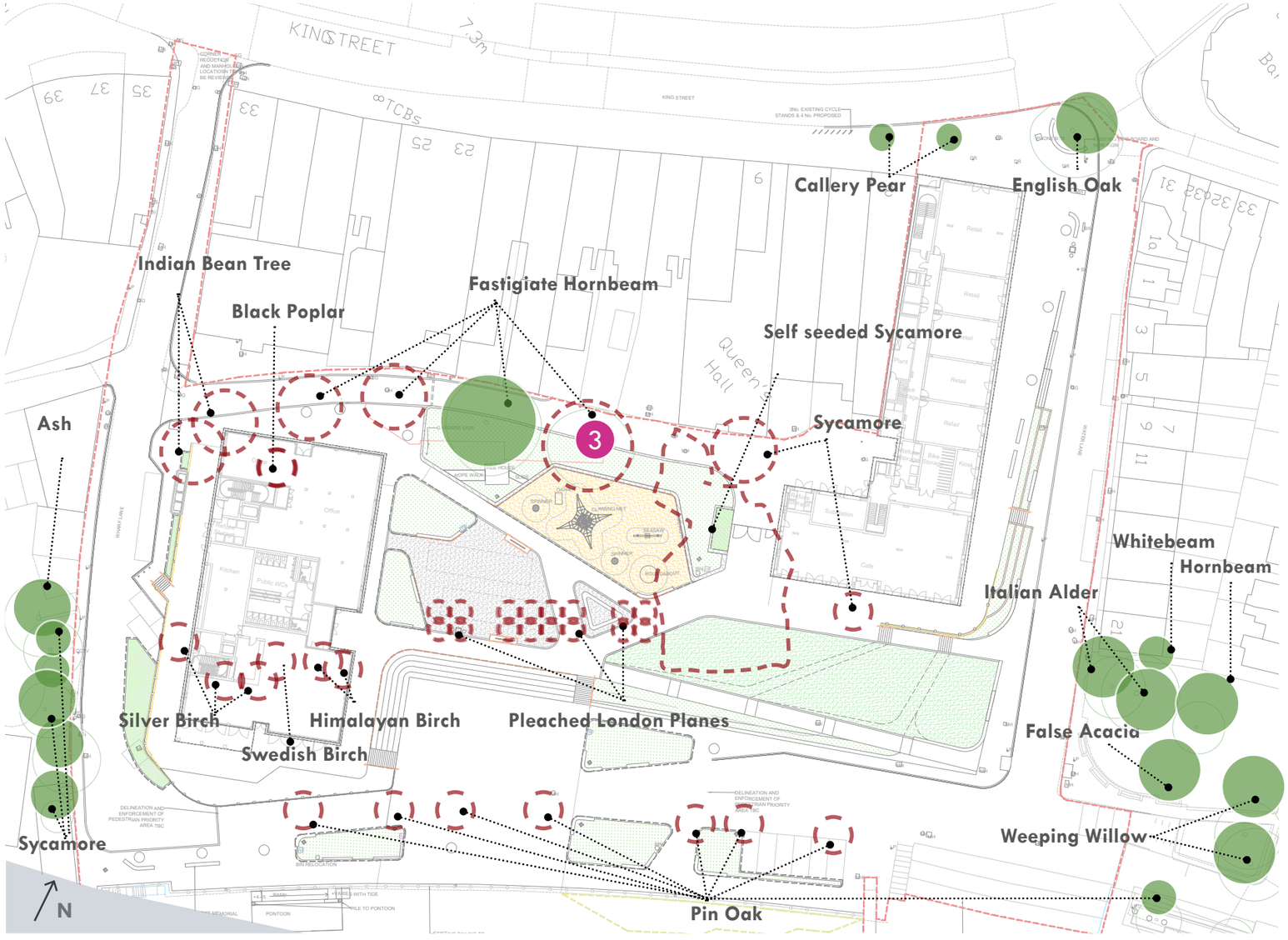
Key

Existing Trees on Site

Strategies
Trees - Existing removed

- REFER TO KEY AT BEGINNING OF DAS FOR CHANGES MADE SINCE 2021 SUBMISSION

Refer to Arboricultural Report for existing and proposed tree quantities.



Key

Existing trees to be retained on site

Existing trees to be removed

Strategies
Tree - Proposed Tree Species

The tree species have been carefully selected to be suited to the different environmental conditions around the site, and to provide a combination of aesthetic, amenity and ecological value.

Refer to Landscape Supporting Technical Drawings Rev F for proposed trees.

Strategies
Planting

FOR FINAL PLANTING LAYOUTS AND SCHEDULES REFER TO LANDSCAPE SUPPORTING TECHNICAL DRAWINGS REV F

There is a wide variety of different considerations and constaints that assist with the selection of plant species and mixes to the planting areas illustrated on the adjacent plan.

These include environmental factors such as whether in a flood-able area or shaded under trees - to aesthetic and architectural considerations, such as the desire for visual screening or open views over planting, and providing seasonal change and interest throughout the year.

The plans and plant images on the following pages describe the approach to planting in each of these different areas.

An automated irrigation system will be installed as part of the project to provide water to all the trees and plants.

Planting Strategy

Key

- Rain Garden
- Floating Ecosystems
- Climbing Plants
- Terraces
- River Gardens
- Upper Gardens
- Green Roof

Strategies
Planting - Terraces

FOR FINAL PLANTING LAYOUTS AND SCHEDULES REFER TO LANDSCAPE SUPPORTING TECHNICAL DRAWINGS REV F

The planting to the terraces and beds along Water Lane, Wharf Lane, and adjacent to the sloped path up to the gardens has been selected to be tough and hardy that can grow well next busy to paths and spaces.

A combination of perennial and herbaceous flowering plants will ensure that there is greenery all year round, and also that there are colourful flowers appearing at different times throughout the growing season.

The height of the plants has been carefully considered and will be positioned so that you can always see over the top to the view beyond, with taller plants in the lower terraces.

Strategies
Planting - Terraces

FOR FINAL PLANTING LAYOUTS AND SCHEDULES REFER TO LANDSCAPE SUPPORTING TECHNICAL DRAWINGS REV F

Emergent Subgroup

Blue oat grass

Angel's fishing rod

Pittosporum pom pom

Centranthus ruber

Red-hot poker 'Tawny King'

Mullein

Shorter Subgroup

Yarrow 'Moonshine'

Calico aster 'Lady in Blck'

Avens

Star of persia

Masterwort 'Claret'

Lamb's ear

Taller Subgroup

Feather reed grass

Oleaster 'Quicksilver'

Switchgrass

Black stem dogwood 'Kesselringii'

Eulia 'Ferner Osten'

Narrow-leaved olivewillow

Strategies
Planting - Upper Gardens

FOR FINAL PLANTING LAYOUTS AND SCHEDULES REFER TO LANDSCAPE SUPPORTING TECHNICAL DRAWINGS REV F

The planting under the existing Hornbeam tree next to the play area, and the proposed London Plane trees in the pétanque courts needs to be shade tolerant, and a mix of native perennial and herbaceous species will be planted as an under-storey to these trees.

Light Shade to Front

Yarrow
Achillea millefolium

Marguerite
Leucanthemum vulgare

Snowflake
Leucojum aestivum 'Gravetye Giant'

Wild daffodils
Narcissus pseudonarcissus

Primrose
Primula vulgaris

Red campion
Silene dioica

Dark mullein
Verbascum nigrum

Spiked speedwell
Veronica spicata

Spurge
Euphorbia amygdaloides var. robbiae

Purple moor-grass
Molinia 'Poul Petersen'

Tufted hair grass
Deschampsia cespitosa 'Goldtau'

Compact guelder rose
Viburnum opulus 'Compactum'

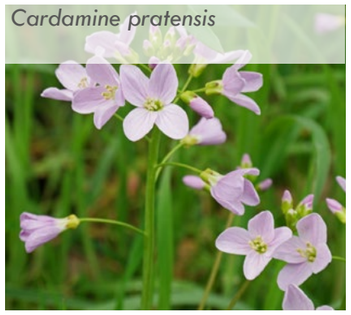
FOR FINAL PLANTING LAYOUTS AND SCHEDULES REFER TO LANDSCAPE SUPPORTING TECHNICAL DRAWINGS REV F

Shade at Rear

Bugle

Meadow geranium

Cuckooflower



Yellow archangel

Solomon's seal

Snowflake

Lungwort 'Bertram Anderson'

Cowslip

Hart's tongue fern

Spurge

Sedge

Knee holly

Strategies
Planting - River Garden

The lower level of the space next to the river floods occasionally and so trees and plants need to be tolerant of being inundated and wet conditions afterwards.

Aesthetically and ecologically the aspiration is to return some of the native river species to the site and give a less formal and more natural impression.

These constraints and aspirations have guided the plant selection with a mix that includes for example low shrubby willow species.

Planted floating ecosystems that would be attached to the river wall - and provide habitat for native flora and fauna.

FOR FINAL PLANTING LAYOUTS AND SCHEDULES REFER TO LANDSCAPE SUPPORTING TECHNICAL DRAWINGS REV F

Narrowleaf bluestar

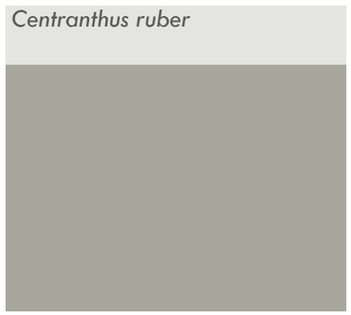
Amsonia hubrichtii

Tufted hair grass

Deschampsia cespitosa 'Goldtau'

Bowles' golden sedge

Carex elata 'Aurea'

Centranthus ruber

Centranthus ruber

Red valerian

Centranthus ruber 'Albus'

Bloodtwig dogwood

Cornus sanguinea 'Midwinter Fire'

Purple loosestrife

Lythrum salicaria

Siberian iris 'Sparkling Rose'

Iris 'Sparkling Rose'

Mexican daisy

Erigeron karvinskianus

Primrose

Primula vulgaris

Narrow-leaved olive willow

Salix elaeagnos subsp. angustifolia

Autumn moor-grass

Seslaria autumnalis

Strategies
Planting - Rain Garden and Climbers

FOR FINAL PLANTING LAYOUTS AND SCHEDULES REFER TO LANDSCAPE SUPPORTING TECHNICAL DRAWINGS REV F

The planting mix for the rain garden at the bottom of Wharf Lane would be similar to within the river garden planting beds, however the variation is that plants in this space can be selected to grow taller in order to screen the adjacent flood protection wall.

Climbers are to green up wires attached to the flood protection retaining wall, with species selected to ensure flowering at different times throughout the growing season.

Yarrow ‘Moonshine’

Star of persia

Joe-Pye weed

Globe thistle

Red-hot poker ‘Little Maid’

White guara

Culver’s root

Feather reed grass

Autumn moor-grass

Climbers

Evergreen clematis

Clematis ‘Freckles’

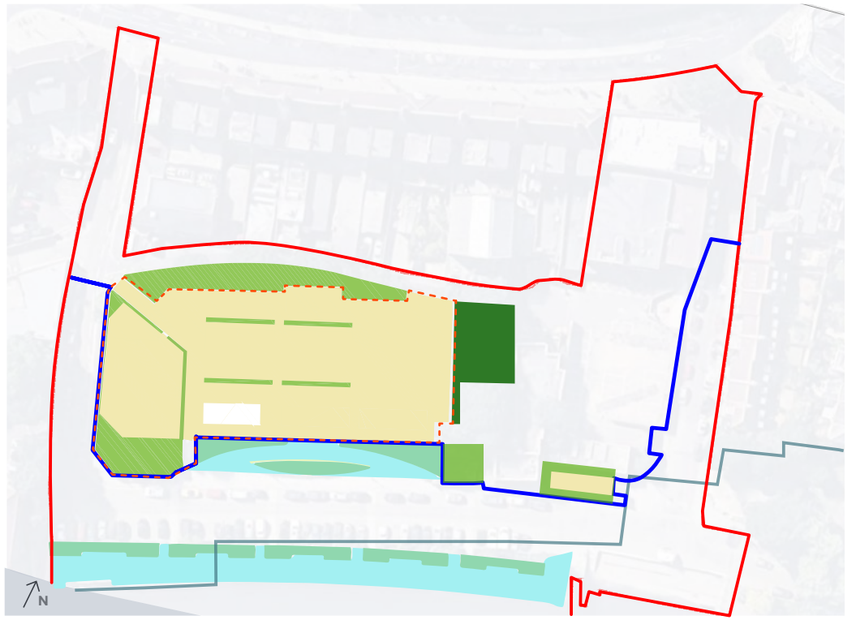
Star jasmine

Strategies
Open Space

The plans below show a comparison of the areas of open space* between the existing site and proposed layout and design. A breakdown is shown on the plans and tables below between hard (paved) and soft (planted) surfaces within these open spaces, both above and below the flood line. Boundaries are also shown on the plan for the planning application, the Diamond Jubilee Gardens Trust and the existing Metropolitan Open Space designated area within the site.

*The definition of open space used for these plans is all open space of public value which offer important opportunities for sport and recreation and can act as a visual amenity, and includes areas of public highway which have a public amenity function. This definition does not include areas where vehicles have priority over pedestrians, which is why the vehicle turning areas up to the bollards at the bottom of Water Lane and Wharf Lane have been excluded. This definition has been taken from both the National Planning Policy Framework and the London Plan, and adapted slightly to fit the context of this site.

Existing Open Space



HARD (Total: 3203 sqm)		SOFT (Total: 1074 sqm)		SOFT undefined - inaccessible/ non visible
Outside Floodable Area **2287**	Within Floodable Area **916**	Outside Floodable Area **629**	Within Floodable Area **445**	Outside Floodable area **186**
Outside Diamond Jubilee Garden **1207**	Within Diamond Jubilee Garden **1,996**	Outside Diamond Jubilee Garden **587**	Within Diamond Jubilee Garden **487**	

Total Site Area = 13414 sqm

Total Existing Open Space Area = 4265 sqm

Proposed Open Space

HARD undefined	HARD (Total: 4122 sqm)		SOFT (Total: 1520 sqm)	
Within Floodable Area **311**	Outside Floodable Area 2469	Within Floodable Area 1653	Outside Floodable Area 687	Within Floodable Area 833
	Outside Diamond Jubilee Garden 1597	Within Diamond Jubilee Garden 2525	Outside Diamond Jubilee Garden 410	Within Diamond Jubilee Garden 1110

Total Site Area = 13414 sqm

Total Proposed Open Space Area = 5642 sqm

Open Space Calculations

PUBLIC REALM OPEN SPACE CALCS - ALL FIGURES ARE IN m2

	EXISTING	PROPOSED
Total open space	**4265**	**5642**
Hard landscaped open space	**3203**	**4122**
Soft landscaped open space	**1062**	**1520**
Floodable open space	**1361**	**2486**
Openspace outside floodable areas	**2904**	**3156**

DIAMOND JUBILEE GARDENS (DJG) - ALL FIGURES ARE IN m2

	EXISTING	PROPOSED
Total public open space within DJG	**2471**	**3,635**
Hard landscaped	**1996**	**2525**
Soft landscaped	**475**	**1110**
Floodable	**0**	**1902**
Outside of floodable	**2471**	**1733**