RICHMOND UPON THAMES COLLEGE

LANDSCAPE MANAGEMENT PLAN

Version control

Date	Version	By
04.06.16	V1 Outline planning application	JB
07.07.16	V1.1 Reserved Matters application	ML
02.02.17	V2 Discharge of conditions	ML
24.03.17	V3 Reserved Matters application update	ML
18.05.17	V4 Reserved Matters Sports Building addendum	ML

LUC

MAY 2017

Version 4.0

BACKGROUND

INTRODUCTION

This document is prepared on behalf of Richmond Upon Thames College in support of the external hard and soft landscape proposals relating to the Main College Building (Phase 1) & the Sports Centre (Phase 2). The document will be used for reserved matters application pertaining to landscape management.

The landscape management boundary for the development is indicated in Figure 1 Landscape Management Plan Boundary.

The document sets out the guidelines for the first 7 years maintenance following installation of hard landscape, soft landscape and street furniture.

SCHEME DESCRIPTION

The development comprises the following management zones as shown on Figure 2 Landscape Management Zones:

- Clipped Hedges
- Hedgerow woodland understorey
- Amenity shrubs and ground cover
- Grass lawn area
- Allotments
- Hard surface
- Green roof

Further details can be found in LUC Hardworks and Softworks drawings (6377.201 & 6377.401 for Phase 1, and 6377.231 & 6377.431 for Phase 2) which are appended for reference.

All external areas will be lit and a separate watering ring main is installed with hose connection points around the site.

WATER SUPPLY

Irrigation will be carried out manually with hosepipe connection to the site watering ring main, connecting into hose valve boxes. All components, bar the hose are handed over to the developer by the contractor on completion of the development.

MANAGEMENT RESPONSIBILITIES AND STAFFING REGIMES

Management organisations, roles and responsibilities etc. will be set out in the operations & maintenance manual. Typically the grounds team have overall responsibility for the maintenance and management of the site on behalf of the college. The caretaking staffs, based on site will carry out basic maintenance as noted.

On completion of the development the external maintenance will be under the construction contractor's responsibility whilst the works are under the defects rectification period. This period will include replacements of defective planting at the Contractor's expense or replacement of vandalised planting at the developer's expense.

A maintenance activity schedule is provided later in this document outlining the required activities and approximate frequency of visits which will be resourced by the college.

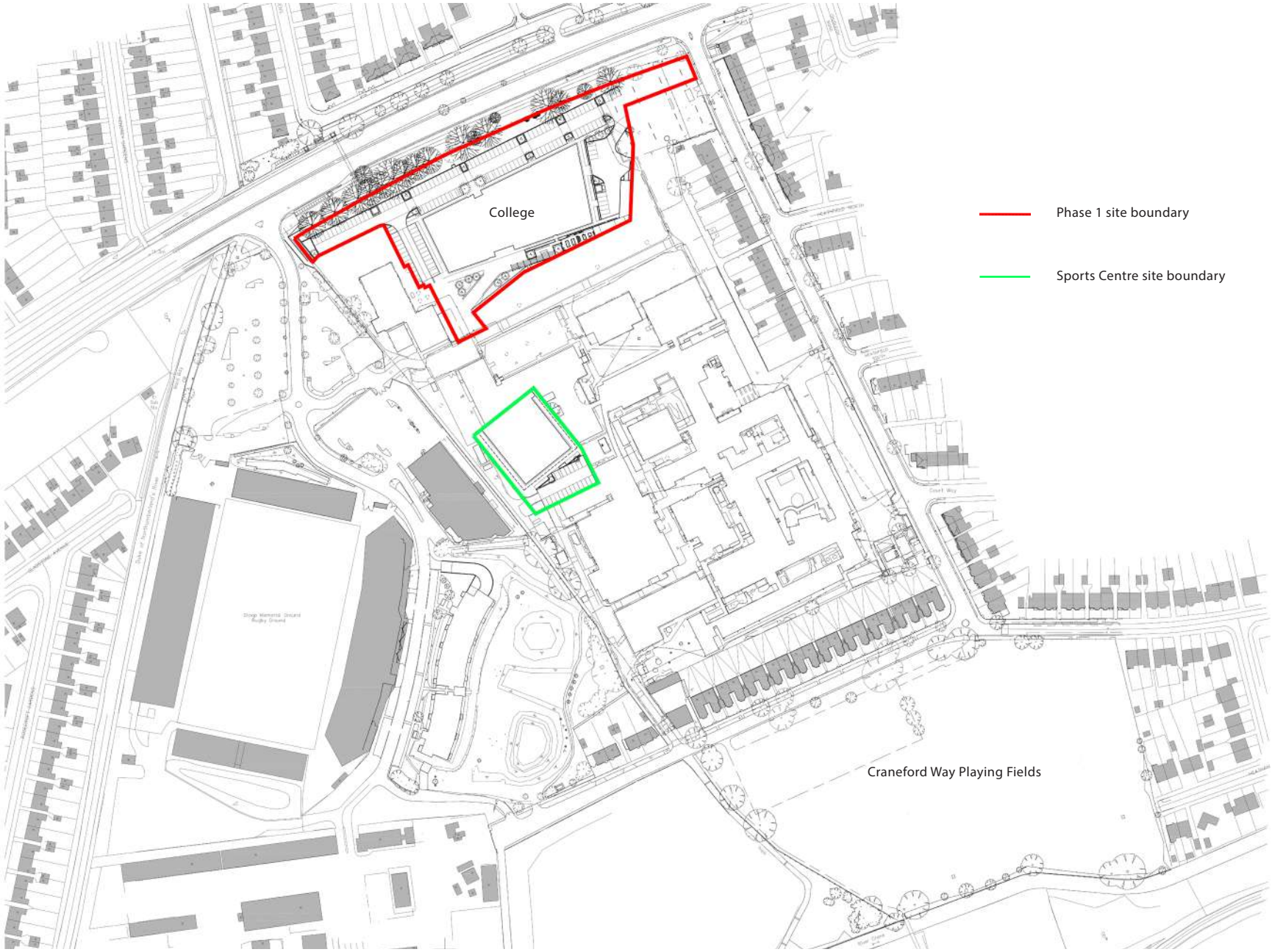


Figure 1 Landscape Management Plan Boundary

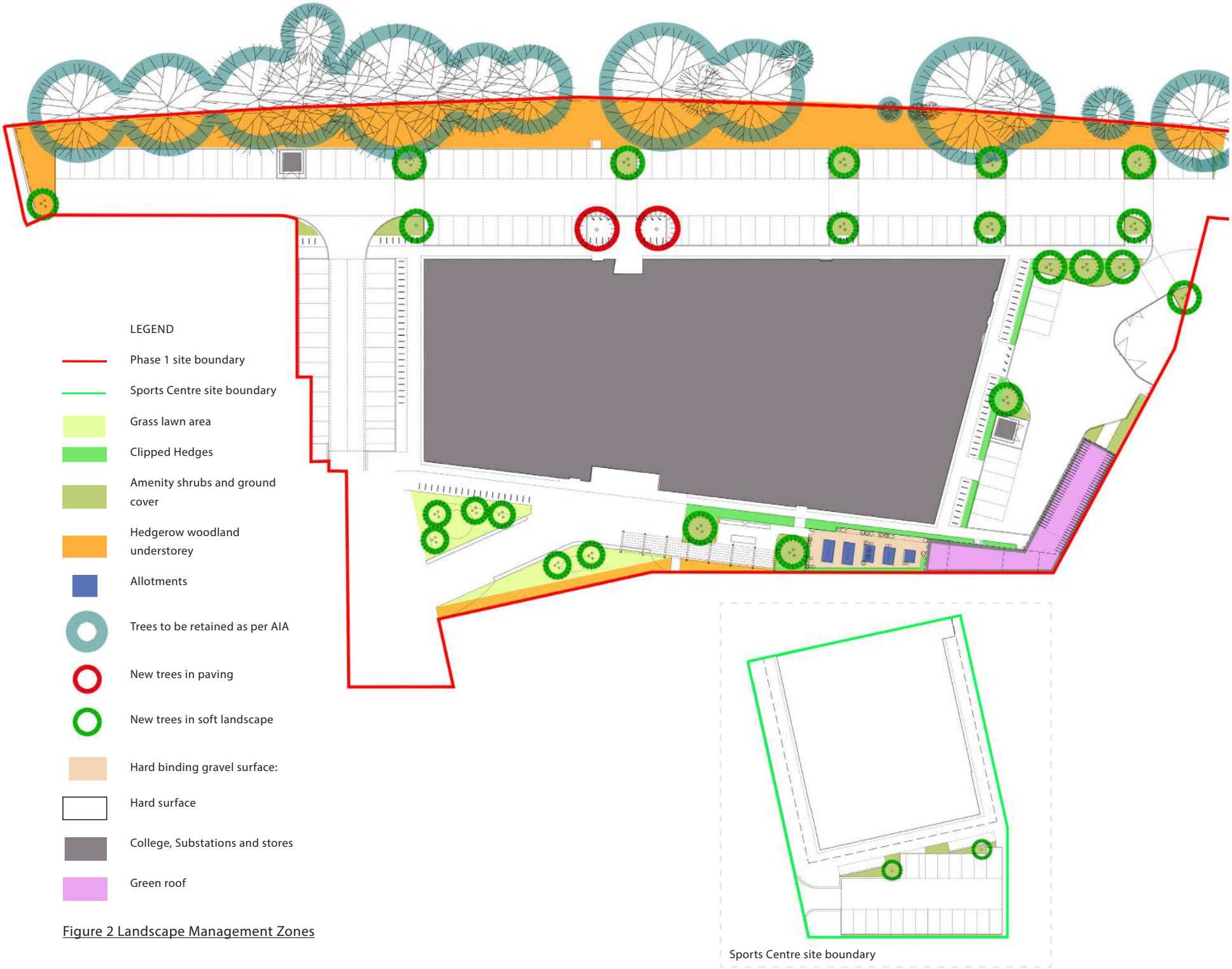


Figure 2 Landscape Management Zones

MANAGEMENT OBJECTIVES

The following summarises the key objectives for each of the management zones shown on Figure 2.

HEDGES

Hedges are used on site to create enclosure – to the supported learning garden and around the service yard. These are native, evergreen vegetation, providing ecological benefit whilst keeping clear views over the top. Hedges are managed to provide a dense, healthy screen throughout the year and requires annual trimming and removal / cutting back of top heavy stems, feeding and regular watering.

HEDGEROW WOODLAND UNDERSTOREY

The northern boundary of the site acts as a buffer, screening traffic noise from Chertsey Road. Existing mature trees are retained and underplanted en-masse with a native hedgerow woodland mix providing ecological benefit.

The planting will comprise of woodland plants (1+1), individually hand dug pit-planted with soil ameliorants added to backill soil, mulch mats and shelters as shown in the image below.

There are three groups: - Woodland; Woodland understorey; & Understorey edge. This method avoids wholesale cultivation within existing RPZs.

The boundary planting will be managed as a low-maintenance woodland edge. Thinning will be undertaken on a 3 year basis or as required. Strimming between tree shelters will be undertaken twice during the first three years of establishment. Thereafter a seasonal application of mulch will be carried out.

AMENITY SHRUBS AND GROUND COVER

Large blocks of planting creating boundaries between pedestrian and vehicular areas, between parking bays and providing moderate ornamental value. Planting is mixed evergreen / deciduous shrub and herbaceous and requires relatively intense horticultural management, particularly to ensure that perennial planting is kept vigorous and flowering abundantly by regular dividing, thinning, weeding and feeding.

GRASS LAWN AREA

The mounded lawn at the front plaza of the college is designed for sitting out and so needs regular mowing during the growing period as well as feeding, weeding and regular watering.

ALLOTMENTS

Timber allotment planters are provided empty for the college's use, and are not included in the regular maintenance activities. Weeding, feeding, watering etc. is the responsibility of the students and is part of the curriculum.

HARD BINDING GRAVEL

Self-compacting Breedon Gravel is applied to the semi-private allotment garden space. It should be maintained to a high quality, even surface finish. Regular inspection and sweeping will be required to maintain a clean, even surface with minimal obstruction to drainage outlets. Any depressions will require top-up from a suitable stockpile location.

HARD SURFACE

All hard surfaces are to be maintained as a safe and clean, high quality pavement. Paving should be checked during maintenance inspections for deviations and settlement. Drainage is direct to below-surface attenuation crates, therefore maintenance of drainage is limited to localised cleaning of outlet gullies, slot drains and Permavoid collection chambers.

Litter bins are provided across the site, both in public and private areas and are used collectively for all inorganic and organic waste. These will be emptied daily, or as required by the management company.

MANAGEMENT OBJECTIVES

GREEN ROOF

The sedum blanket roof on top of the pumphouse & cycle store requires maintenance of drainage outlets and edges at the perimeter for debris &/or litter. Plants should be checked for failure, replacement cuttings and substrate if required. Weed removal and fertiliser application should be undertaken.

Maintenance is relatively low - two visits in the first year, and one visit per year thereafter.

TREE PLANTING

Tree planting is illustrated in Figure 3 Tree Pit Detail in paving and Figure 4 Tree Pit Detail in Soft.

2No. Trees in paving are semi-mature specimens upwards of 50-60cm girth and therefore require close monitoring, particularly in the first years to prevent costly replacement.

Trees will be planted in compacted soil and regularly watered (watering / aeration pipe) and fed with liquid fertiliser as required.

Multi-stemmed silver birch will be planted at 4.5-5m in soft landscape. These will also require regular watering.

Tree planting is illustrated in Figure 3 Tree Pit Detail in paving and Figure 4 Tree Pit Detail in Soft.

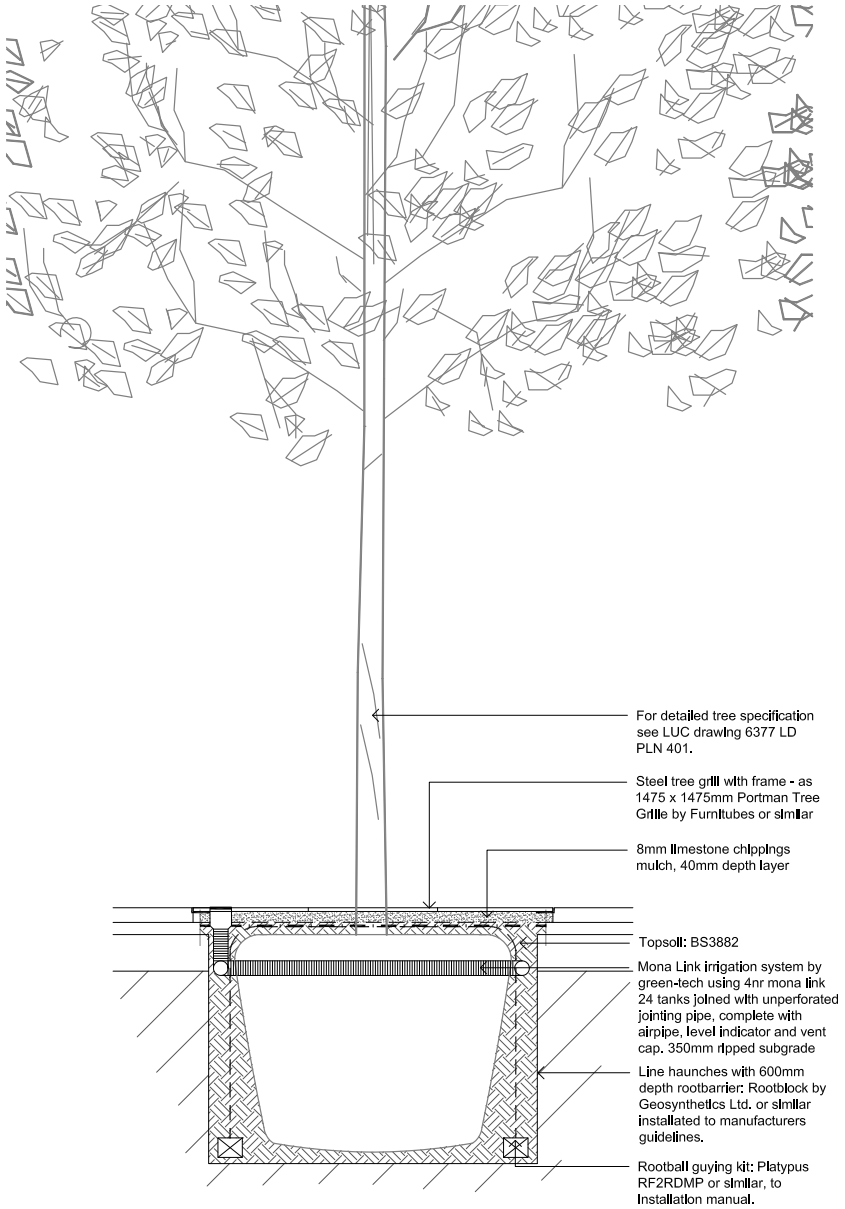


Figure 3 Tree Pit Detail in Paving

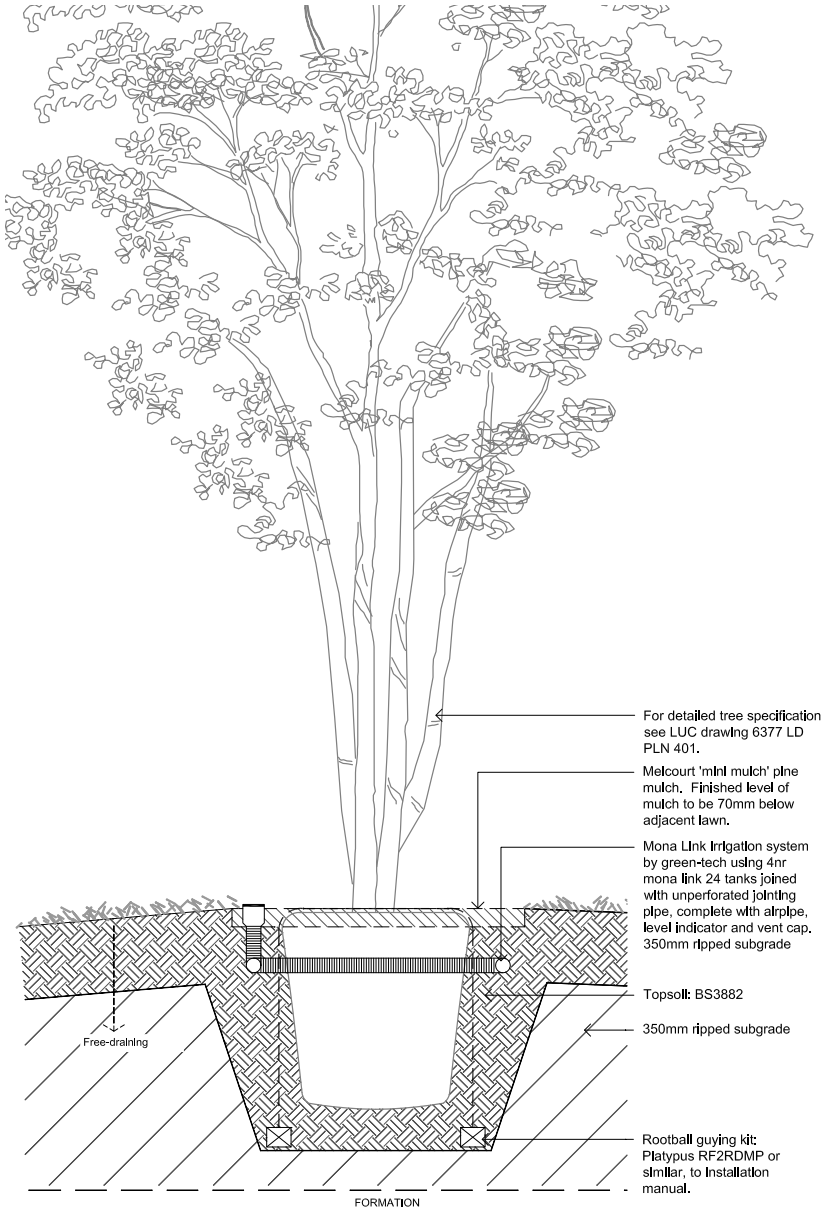


Figure 4 Tree Pit Detail in Soft

MAINTENANCE SCHEDULE

#	Item	Performance Standard	Freq	Nr	Unit
	SOFT LANDSCAPE				
A	Lawn			226	m^2
A1	Cut amenity grass	Maintain to max height 60mm throughout growing season - arisings remain.	20	226	m^2
A2	Trim edges	March - October throughout the growing season.	20	100	m
A3	Leaf clearance	October - January. Assume clearance necessary over 50%.	4	108	m^2
A4	Litter clearance	Collecting litter and disposing per week.	52	226	m^2
B	Bulbs			66	
B1	Cut bulbs	Maintain to max height 75mm during September, removing arisings.	1	66	m^2
B2	Litter clearance	Collecting litter and disposing.	52	66	m^2
C	Hedgerow woodland understory 50%			692	
C1	Strimming	March - September x 1 per month.	7	692	m^2
C2	Apply fertiliser	May/ June	1	692	m^2
C3	Cutting back to control growth out of beds	Nov	1	692	m^2
C4	Litter clearance	Collecting litter and disposing per week.	52	692	m^2
C5	Watering	March - September.	24	692	m^2
C6	Upkeep of tree guards & mats	As required. Check tree guards and refirm / replace if necessary.	1	692	m^2
C7	Beat-up	As required. Replace unsuccessful plants in September/ at the end of growing season in the first 3 years.	0.3	692	m^2
C8	Thinning & Coppicing	As required after the first 3 years of establishment.	1	692	m^2

#	Item	Performance Standard	Freq	Nr	Unit
D	Amenity Shrub & Ground Cover 50%			148	
D1	Hand weeding	March - September x 1 per month.	7	148	m^2
D2	Apply fertiliser	May - June	1	148	m^2
D3	Cutting back	Nov	1	148	m^2
D4	Split and replant, 20% per year	March	1	30	m^2
D5	Litter clearance	Collecting litter and disposing per week.	52	148	m^2
D6	Watering	March - September.	96	148	m^2
E	New Trees			25	
E1	Specimen trees in paving	Watering, pruning, checking and repair to accessories, ties etc.	1	2	nr
E2	Trees in landscape	Watering, pruning, checking and repair to accessories, ties etc.	1	25	nr
E3	Watering of young trees	As required, daily during establishment	365	27	nr
F	Clipped Hedges			87	
F1	Cut hedge by hand	October. Side faces vertical and top horizontal or parallel to the ground. Arisings removed.	1	87	m^2
F2	Maintain hedge base	May - September. Hand hoe to open hedge base where planted.	5	87	m^2
F3	Litter clearance	Collecting litter and disposing per week.	52	87	m^2

*All approximate figures

#	Item	Performance Standard	Freq	Nr	Unit
	HARD LANDSCAPE				
G	Paved areas			6063	
G1	Leaf clearance self-propelled motorised vacuum and disposal	October - January x 4 per month	16	6063	m^2
G2	Snow and ice clearance	Snow - 20 - 40mm deep, manual removal and then salt.	5	6063	m^2
G3	Litter clearance using self-propelled motorised vacuum or rotary brush sweeper	Collecting litter and disposing per week.	52	6063	m^2
G4	Herbicide application to weeds	May - September. Spot treatment.	3	6063	m^2
H	Self-binding gravel areas			70	
H1	Litter clearance	Collecting litter and disposing per week.	52	70	m^2
H2	Herbicide application to weeds	May - September. Spot treatment.	3	70	m^2

#	Item	Performance Standard	Freq	Nr	Unit
	SITE FIXTURES				
I	Benches			20	
I1	Clean and treat	Once every three years - provisional sum.	0.3	3	nr
J	Litter bins			6	
J1	Emptying, disposal and keep clean		364	0	nr
J2	Clean and treat	Once every three years - provisional sum.	0.3	0	nr
K	External Lighting			240	
K1	Inspection	Inspect for damage, once per month.	12	0	nr
K2	Clean and repair	As required	0.3	0	nr
L	Green Roof				
L1	Check drainage outlets / plant module structure	Remove debris, leaf litter etc. Two visits within first year (spring & autumn). One visit per year after.	2	212	m^2
L2	Replace area of settled substrate	Two visits within first year (spring & autumn). One visit per year after.	2	212	m^2
L3	Replace failed plants with sedum cuttings	Two visits within first year (spring & autumn). One visit per year after.	2	212	m^2
L4	Hand weeding	Two visits within first year (spring & autumn). One visit per year after.	2	212	m^2
L5	Fertiliser application	Two visits within first year (spring & autumn). One visit per year after.	2	212	m^2

*All approximate figures

APPENDICES

LUC DRAWINGS

To be read in conjunction with the following drawings:

- 6377-201 Phase 1 Hardworks
- 6377-401 Phase 1 Planting
- 6377-231 Sports Building Hardworks
- 6377-431 Sports Building Planting

NOT FOR CONSTRUCTION

Links into existing footpath

No-dig construction to car park surface where adjacent to tree roots

2.5m high timber & steel railing to substation & concrete surround. Refer to LUC drawing 6377-LD-DET-604.

Proposed SW pumpstation

Tree pit in hard landscape. Refer to LUC drawing 6377-LD-DET-610.

Existing fence replaced with 2m high black galvanised steel weldmesh fence offset 2.0m inboard of school boundary. Refer to LUC drawing 6377-LD-DET-605 for detail & 621 for sections.

Trees identified as in need of removal in AIA

Trees to be carefully retained on Chertsey Road boundary

Cycle stands. Refer to LUC drawing 6377-LD-DET-606.

Approximate location of water storage tanks.

Car parking to tie into school parking area.

Proposed 2m high black chainlink fence offset 0.6m from edge of path. Refer to LUC drawing 6377-LD-DET-605.

BA2 & BA4 paving (200x100x80) laid in herringbone pattern. 90° herringbone for parking bays, 45° herringbone for roadways.

Attenuation tank below paving

BP2 paving (200x100x80) laid in herringbone pattern. 90° herringbone for parking bays, 45° herringbone for roadways.

Refer to Detail 1

Refer to Detail 2

Design intent for accessible parking bay - refer to LUC-LD-PLN-011, Detail C & D.

COLLEGE

Future development site

Mounded Lawn

Refer to Detail 3

AREA FOR CONSTRUCTION ACCESS. TO BE COMPLETED IN PHASE 2

Bespoke pattern concrete bench. Refer to LUC drawing 6377-LD-DET-601.

BP1 & BA3 (150x100/150/250x80) laid in combined stretcher course

550mm building trim in BP3 (100x250/300/350x80), laid in combined stretcher course

Timber sleeper & wire allotment boundary. Refer to LUC drawing 6377-LD-DET-605.

Hard binding gravel surface to garden, Breedon or similar.

2.5m high timber & steel railing to substation. Refer to LUC drawing 6377-LD-DET-604.

College bin store:
- 1 x 16 yard skip
- 1 x 12 yard skip
- 8 x 1100 euro bins
- 2 x 750 bins
- 2 x metal cages.

Recycling units to be located:
- 6 x black metal recycle bins
- 3 x black plastic wheelie bins
- 2 x college food waste bins

Gas Int.

Sprinkler Pump

Theatre Store

Pedestrian gate to school

Pedestrian gate to school

School Site, by others

Boundary to school - welded mesh 2.5m tall - Refer to School's specification & drawings..

Steel pergola with integral seating and linear lighting. Refer to LUC drawing 6377-LD-DET-603.

2500x560mm picnic bench and 2500x914mm picnic bench. 'Tramet' by Escofet / Marshalls. Refer to LUC drawing 6377-LD-DET-607.

Raised allotment planters, timber sleeper construction, left empty for college use. Refer to LUC drawing 6377-LD-DET-602.

4 x 3m proprietary greenhouse with 2no. water butts on PC1 base

Enclosure to sprinkler pump theatre store and cycle store to Architect's detail and specification

Underground sprinkler tanks

Josta 2-tier cycle parking by Cycle-Works.

2.5m high timber & steel railing to bin store. Refer to LUC drawing 6377-LD-DET-604.

N

LEGEND

- Phasing Boundary
- ACO — Aco multidrain MD sloping channel 100mm, Brickslot grating. Refer to engineers specification.
- BP1 — Block paving (impermeable) Ecogranite combined block paving by Formpave in 'Cornish' to BS7533/2 . 80mm thick mix of sizes: 150x100/150/250mm.
- BP2 — Block paving (impermeable) Formpave Ecogranite in 'Cornish' by Formpave to BS7533/2. Vehicle loading, 100x200x80mm. Formpave Royall Forest (yellow) used to delineate parking bays. Build ups to engineers specification.
- BP3 — Block paving (impermeable) Formpave Ecogranite longsetts by Formpave in 'Cornish' to BS7533/2. 80mm thick mix of sizes: 100x250/300/350mm. Build ups to engineers specification.
- BA1 — Permeable block paving Aquassett Ecogranite in 'Cornish' by Formpave to BS7533/2. Vehicle loading, 80mm thick mix of sizes: 150x100/150/250. Build ups to engineers specification.
- BA2 — Permeable block paving Aquaflow Ecogranite 'Cornish' by Formpave to BS7533/2. Vehicle loading, 200x100x80mm. Aquaflow blocks (yellow) used to delineate parking bays. Build ups to engineers specification.
- BA2(B) — Permeable block paving Aquaflow Ecogranite 'Balmoral' (dark grey) by Formpave to BS7533/2. Vehicle loading, 200x100x80mm. Build ups to engineers specification.
- BA3 — Permeable block paving Aquassett Ecogranite in 'Cornish' by Formpave to BS7533/2. Light loading, 80mm thick mix of sizes: 150x100/150/250. Build ups to engineers specification.
- BA4 — Permeable block paving Aquaflow Ecogranite 'Cornish' by Formpave to BS7533/2. Light loading, 200x100x80mm. Aquaflow blocks (yellow) used to delineate parking bays. Build ups to engineers specification.
- BM — Bituminous macadam. Build ups to engineers specification.
- PC1 — Textured concrete flag paving, Marshalls 'Saxon' 600x900x60mm to BS7533/2. Build ups to engineers specification.
- HG1 — Hard-binding gravel, Breedon. Build ups to engineers specification.
- 2m high black galvanised steel weldmesh fence
- Sheffield cycle stands. 800 x 715mm, 305 grade stainless steel, on concrete pad foundations. Refer to LUC drawing 6377-LD-DET-606.
- WP — External watering valve pit
- Bollards (1.2m spacing), Removable.
- Lighting column, pole mounted luminare. 6m height CHS posts RAL 9007 with denver hokophane luminare (or similar). Lighting locations are indicative. Refer to external lighting layout ATK-MB-XX-DR-E-3203 for lighting positions and specification.
- Recessed or spike mount uplight. Lighting locations are indicative. Refer to external lighting layout ATK-MB-XX-DR-E-3203 for lighting positions and specification.

BP2 100x200x80mm Laid in herringbone pattern. 90° herringbone for parking bays, 45° herringbone for roadways.

BP3 Long setts 100 x 250/300/350mm x 80mm Laid in combined stretcher course pattern

BP1 150 x 100x150x250mm x 80mm Laid in combined stretcher course pattern

BP3 Long setts 100 x 250/300/350mm x 80mm Laid in combined stretcher course pattern

1 Detail 1
Scale 1:25@A1

BA2 100x200x80mm Laid in herringbone pattern. 90° herringbone for parking bays, 45° herringbone for roadways.

BA1 150 x 100x150x250mm x 80mm Laid in combined stretcher course pattern

2 Detail 2
Scale 1:25@A1

BP1 150 x 100x150x250mm x 80mm Laid in combined stretcher course pattern

BA3 150 x 100x150x250mm x 80mm Laid in combined stretcher course pattern

3 Detail 3
Scale 1:25@A1

D	22.03.17	Planning - parking update	ML	EP	EP
C	24.02.17	Planning	ML	EP	EP
B	23.01.17	Planning	ML	EP	EP
A	14.12.16	Planning	ML	EP	EP
Iss	Date	Issue Notes	Drwn	Chkd	Apprd

LUC
43 Chalton Street
London, NW1 1JD
T: 020 7383 5784
F: 020 7383 4798
london@landuse.co.uk
www.landuse.co.uk

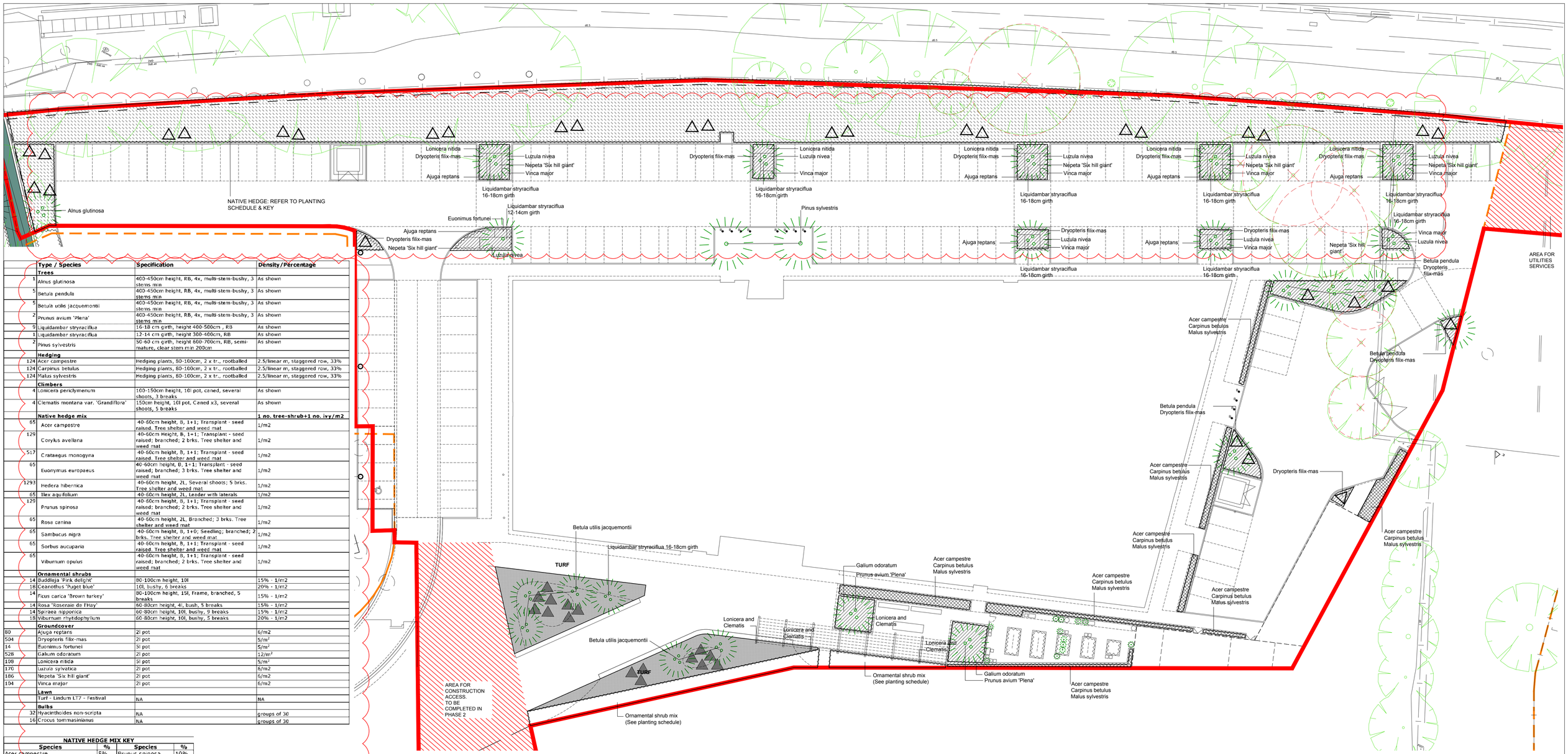
Project
Richmond Upon Thames College

Client
Atkins

Title
College, Parking & Plaza
Hardworks Plan

Scale	Status
1:250@A1	for Planning

Job No.	Drawing No.	Issue
6377	201	D



	Type / Species	Specification	Density/Percentage
	Trees		
1	Alnus glutinosa	400-450cm height, RB, 4x, multi-stem-bushy, 3 stems min	As shown
5	Betula pendula	400-450cm height, RB, 4x, multi-stem-bushy, 3 stems min	As shown
5	Betula utilis jacquemontii	400-450cm height, RB, 4x, multi-stem-bushy, 3 stems min	As shown
2	Prunus avium 'Plena'	400-450cm height, RB, 4x, multi-stem-bushy, 3 stems min	As shown
9	Liquidamber stryraciflua	16-18 cm girth, height 400-500cm , RB	As shown
1	Liquidamber stryraciflua	12-14 cm girth, height 300-400cm, RB	As shown
7	Pinus sylvestris	50-60 cm girth, height 600-700cm, RB, semi-mature, clear stem min 200cm	As shown
	Hedging		
124	Acer campestre	Hedging plants, 80-100cm, 2 x tr., rootballed	2.5/linear m, staggered row, 33%
124	Carpinus betulus	Hedging plants, 80-100cm, 2 x tr., rootballed	2.5/linear m, staggered row, 33%
124	Malus sylvestris	Hedging plants, 80-100cm, 2 x tr., rootballed	2.5/linear m, staggered row, 33%
	Climbers		
4	Lonicera periclymenum	100-150cm height, 10l pot, caned, several shoots, 3 breaks	As shown
4	Clematis montana var. 'Grandiflora'	150cm height, 10l pot, Caned x3, several shoots, 5 breaks	As shown
	Native hedge mix		**1 no. tree-shrub+1 no. ivy/m2**
65	Acer campestre	40-60cm height, B, 1+1; Transplant - seed raised. Tree shelter and weed mat	1/m2
129	Corylus avellana	40-60cm height, B, 1+1; Transplant - seed raised; branched; 2 brks. Tree shelter and weed mat	1/m2
517	Crataegus monogyna	40-60cm height, B, 1+1; Transplant - seed raised. Tree shelter and weed mat	1/m2
65	Euonymus europaeus	40-60cm height, B, 1+1; Transplant - seed raised; branched; 3 brks. Tree shelter and weed mat	1/m2
1293	Hedera hibernica	40-60cm height, 2L, Several shoots; 5 brks. Tree shelter and weed mat	1/m2
65	Ilex aquifolium	40-60cm height, 2L, Leader with laterals	1/m2
129	Prunus spinosa	40-60cm height, B, 1+1; Transplant - seed raised; branched; 2 brks. Tree shelter and weed mat	1/m2
65	Rosa canina	40-60cm height, 2L, Branched; 3 brks. Tree shelter and weed mat	1/m2
65	Sambucus nigra	40-60cm height, B, 1+0; Seedling; branched; 2 brks. Tree shelter and weed mat	1/m2
65	Sorbus aucuparia	40-60cm height, B, 1+1; Transplant - seed raised. Tree shelter and weed mat	1/m2
65	Viburnum opulus	40-60cm height, B, 1+1; Transplant - seed raised; branched; 2 brks. Tree shelter and weed mat	1/m2
	Ornamental shrubs		
14	Buddleja 'Pink delight'	90-100cm height, 10l	15% - 1/m2
18	Ceanothus 'Puget blue'	10l, bushy, 6 breaks	20% - 1/m2
14	Ficus carica 'Brown turkey'	90-100cm height, 15l, Frame, branched, 5 breaks	15% - 1/m2
14	Rosa 'Roseraie de l'Hay'	60-80cm height, 4l, bush, 5 breaks	15% - 1/m2
14	Spiraea nipponica	60-80cm height, 10l, bushy, 9 breaks	15% - 1/m2
18	Viburnum rhytidophyllum	60-80cm height, 10l, bushy, 5 breaks	20% - 1/m2
	Groundcover		
80	Ajuga reptans	2l pot	6/m2
504	Dryopteris filix-mas	2l pot	5/m^2
14	Euonimus fortunei	5l pot	5/m^2
528	Galium odoratum	2l pot	12/m^2
108	Lonicera nitida	5l pot	5/m^2
170	Luzula sylvatica	2l pot	6/m2
186	Nepeta 'Six hill giant'	2l pot	6/m2
104	Vinca major	2l pot	6/m2
	Lawn		
	Turf - Lindum LT7 - Festival	NA	NA
	Bulbs		
32	Hyacinthoides non-scripta	NA	groups of 30
16	Crocus tommasinianus	NA	groups of 30

NATIVE HEDGE MIX KEY

Species	%	Species	%
Acer campestre	5%	Prunus spinosa	10%
Corylus avellana	10%	Rosa canina	5%
Crataegus monogyna	40%	Sambucus nigra	5%
Euonymus europaeus	5%	Sorbus aucuparia	5%
Hedera hibernica (total number @ 1/m2	100%	Taxus baccata	5%
Ilex aquifolium	5%	Viburnum opulus	5%

LEGEND

- **Phase 1 Boundary**
- **Existing trees retained**
- **Existing trees removed**
- **Proposed trees** Refer to LUC tree pit details 6377_LD_DET_610
- **Proposed multistem trees** Refer to LUC tree pit details 6377_LD_DET_610
- **Proposed hedges**
- **Proposed climbers** Geotextile fabric and natural stone chipping mulch
- **Proposed native hedge mix** 1 tree-shrub and 1 ivy / m2, pits 450x450x450mm with mulch mat and tree tube shleters
- **Proposed groundcover** Geotextile fabric and bark mulch
- TURF **Proposed turf**
- **Proposed bulbs (Hyacinthoides)**
- **Proposed bulbs (Crocus)**

OUTLINE SPECIFICATION NOTES

GENERAL

All supply, planting and other landscape works to be in accordance with relevant British Standards and Codes of Practice. Works to be undertaken by a competent and accredited landscape contractor with 12months Defects Liability/ in contract maintenance. Following that maintenance works shall be undertaken in accordance with the Landscape Management Plan, LUC 2016.

PLANTING METHODOLOGY

Soil

Soil to be free of pests, disease, fungus and foreign matter.
Do not use topsoil contaminated with subsoil, rubbish or other materials that are corrosive, explosive, flammable, hazardous to human or animal life or detrimental to healthy plant growth.
The Contractor shall appoint a suitably qualified and approved, independent Soil Scientist to undertake the sampling and testing of the soil materials considered for importation.
An approved Soil Scientist is: Tim O'Hare Associates LLP, Howbery Park, Wallingford, Oxon, OX10 8BA, Tel: 01491 822653, www.toha.co.uk
Subsoil to be in accordance with BS 3882 'Specification for topsoil'.
For trees planted in hard landscape a load bearing growing medium will be necessary. This will be Urban tree planting medium, Grade: 0.6-2 mm.
Green compost for soil amelioration to be incorporated into soil for tree and shrub planting to be in accordance with BSi PAS 100:2011 or current revision and sourced from a PAS 100 compliant facility.
Fertilizer to be incorporated into soil for tree and shrub planting: Scotts Enmag CRF (11%N:22%P2O5:9%K2O:6%MgO).
Prepare undisturbed topsoil in accordance with BS 4428 'Code of Practice for general landscape operations': Break up hard ground thoroughly, remove visible roots and large stones with a diameter greater than 50 mm, dig areas covered with turf over to full depth of topsoil and treat weeds at appropriate times with a suitable translocated non-residual herbicide.
Prepare subsoil by excavating/placing fill to the required profiles, loosening thoroughly when ground conditions are reasonably dry to a depth of 450mm and removing stones larger than 50mm, arisings, contaminants, debris and builders' rubble.
Spread topsoil in layers of layers of 150 mm maximum depth and gently firm each layer before spreading the next.
After spreading topsoil, when weather and ground conditions are suitably dry and non-plastic, the soil profile shall be ripped at 300mm centres to a minimum depth of 300mm (grass areas) or 600mm (shrub beds, hedges) to decompact the soils and key in the topsoil and subsoil layers. Any large, compacted lumps of soil shall be broken down by further appropriate cultivation (in accordance with BS 4428) to produce a fine tilth suitable for planting (<30mm), turfing and seeding (<10mm). Cultivations shall ensure that the topsoil is fully aerated.
In order to avoid physical degradation to the soil during all phases of soil handling (e.g. spreading, cultivation, amelioration, planting, turfing and seeding), soil handling operations shall be carried out when soil is non-plastic (friable) in consistency (i.e. at least 5% below the soil's lower plastic limit). Soil shall not be unnecessarily compacted by trampling or trafficking by site machinery or handled when frozen or during and after heavy rainfall.

Timing

- Deciduous trees and shrubs: Late October to late March. Field-grown trees and shrubs planted out of season to be spring-ringed at nursery.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants: September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable. Provide watering and weed control as necessary.
- Dried bulbs, corms and tubers: September/ October.

Standard

All planting to be carried out in accordance with BS 4428 and during suitable weather conditions. Do not use mechanical tools within 100 mm of tree and plant stems. Water as necessary to ensure establishment and continued thriving of planting.
Plants to be materially undamaged, sturdy, healthy and vigorous specimen, of good shape and without elongated shoots, grown in a suitable environment and hardened off and free from pests, diseases, discoloration, weeds and physiological disorders. Plant standard to
BS 3936 'Nursery stock'. Name, forms, dimensions, provenance and other criteria as scheduled and defined in the National Plant Specification. Plant handling shall be in accordance with HTA 'Handling and establishing landscape plants'.

Turf

Turf to be healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease to BS 3969 'Recommendations for Turf for general purposes'. Turf shall be laid in accordance with BS 4428 'Code of Practice for general landscape operations'.

Groundcover

Geotextile fabric to all beds to be laid before planting. Cut flaps neatly for planting and refit closely around plant stems. Mulch with Melcourt Mini Pine Mulch, 60mm depth. Finished level of mulch to be 30 mm below adjacent grassed or paved areas.

Hedges

Planting bed depth to be 450mm minimum. Geotextile fabric to all hedges beds to be laid before planting. Cut flaps neatly for planting and refit closely around plant stems. Mulch with Melcourt Mini Pine Mulch, 60mm depth.
Finished level of mulch to be 30 mm below adjacent grassed or paved areas.

Native hedge

All native hedge planting to be undertaken in accordance with BS 8545 'Trees from nursery to independence in the landscape. Recommendations'.
Tree pits to be excavated in grass to be 450x450x450mm. Backfill with ameliorant (1 m³ per 10 m³ of topsoil) and fertilizer as specified.
All plants to be protected with Tubex, Shrubshelter and Treeshelter, 60cm high with single timber stakes. Ensure that protection methods do not impede natural movement of trees and shrubs or restrict growth.
Tubex 500x500mm biodegradable hessian mulch mats to be installed to each pit with galvanised steel pegs.

Climbers and ornamental shrubs

Planting bed depth to be 450mm minimum. Geotextile fabric to all hedges beds to be laid before planting. Cut flaps neatly for planting and refit closely around plant stems. Mulch with Melcourt Mini Pine Mulch, 60mm depth. Finished level of mulch to be 30 mm below adjacent grassed area. Shrubs to be grouped by 3 to form irregular 'natural' layout.

Trees

All tree planting to be undertaken in accordance with BS 5837 'Trees in relation to design, demolition and construction. Recommendations' and BS 8545 'Trees from nursery to independence in the landscape. Recommendations'.
For detail of tree pit including root barrier, guying system and aeration and irrigation pipe refer to LUC drawing 6377-LD-DET-610. Trees in hard landscape to be planted in load bearing growing medium as specified with tree grilles (Furnitubes - Portman steel).
Semimature trees to be root prepared and transplanted to BS 4043 'Recommendations for transplanting root-balled trees'.
All standard trees to be secured with 2 no. stake. Stakes to be 50mm diameter softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end with nails to BS 1202.
All multistem tree to be secured using Platypus rootball anchoring kits.
Backfill with ameliorant (1 m³ per 10 m³ of topsoil) and fertilizer as specified.
Mulch with Melcourt Mini Pine mulch. Finished level of mulch to be 70 mm below adjacent grassed or paved areas.

MAINTENANCE

For general soft landscape maintenance - including native hedge, hedges, groundcover, climbers and lawn - refer to LUC Landscape Management Plan.

Trees

Newly planted trees across the site will need to be watered regularly by hand during establishment i.e. for 3 years after planting.
Soil around the base of trees in grass will be kept clear of weeds.
Stakes/ties/ guys will be inspected and maintained in good order, adjusted and repaired where necessary to prevent rubbing of bark and removed when no longer required.
Trees will be visually inspected on routine maintenance visits for damage and general safety and security issues. Damaged branches will be removed from both tree and ground promptly to minimise damage to the tree and danger/obstruction to users of the site.
For newly planted trees formative pruning work will be carried out as required and as appropriate for the species to remove branches overhanging or obstructing access and to maintain the form and health of the tree. All pruning to be carried out by a Member of the Arboricultural Association and in accordance with BS 7370 'Grounds maintenance. Recommendations for maintenance of soft landscape'.


Native hedge tree shelters and weed mat

	Date	Description			
I	22.03.17	Planning	ML	JB	EP
H	07.02.17	Planning	ML	JB	EP
G	02.02.17	Planning	ML	JB	EP
F	09.12.16	Planning	ML	JB	EP
E	08.08.16	Update to planting schedule	ML	JB	EP
D	21.07.16	Update to planting schedule	AS	JB	EP
C	14.07.16	Update to notes		JB	JB	EP
B	05.07.16	Pergola amended, ornamental shrub planting added	AS	JB	EP
A	15.06.16	First issue	AS	JB	EP
Iss	Date	Issue Notes	Drn	Chk	Apv

LUC
43 Chalton Street
London, NW1 1JD
T: 020 7383 5784
F: 020 7383 4798
london@landuse.co.uk
www.landuse.co.uk

Project
Richmond Upon Thames College
Phase 1

Client
Atkins

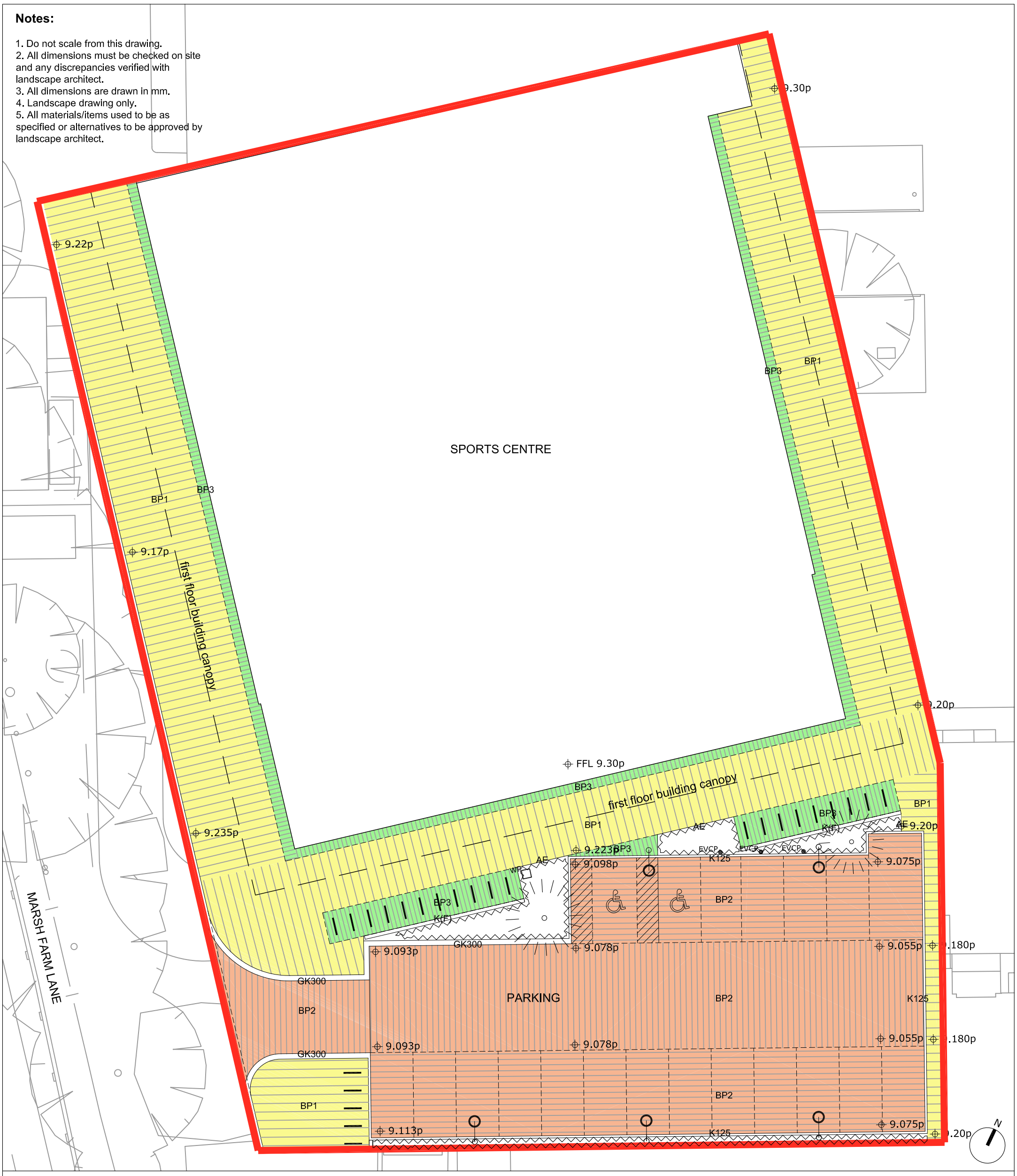
Title
Soft Landscape

Scale	Status
1:250 @ A1	for Planning

Job No.	Drawing No.	Issue
6377	LD PLN 401	I

Notes:

1. Do not scale from this drawing.
2. All dimensions must be checked on site and any discrepancies verified with landscape architect.
3. All dimensions are drawn in mm.
4. Landscape drawing only.
5. All materials/items used to be as specified or alternatives to be approved by landscape architect.



Sports Centre Boundary

BP1 — Block paving (Impermeable)
Ecogranite combined block paving by Formpave in 'Cornish' to BS7533/2 .
80mm thick mix of sizes;
150x100/150/250mm.

BP2 — Block paving (impermeable)
Formpave Ecogranite In 'Cornish' by Formpave to BS7533/2. Vehicle loading, 100x200x80mm. Formpave Royal Forest (yellow) used to delineate parking bays. Build ups to engineers specification.

BP3 — Block paving (impermeable)
Formpave Ecogranite longsetts by Formpave In 'Cornish' to BS7533/2.
80mm thick mix of sizes;
100x250/300/350mm. Build ups to engineers specification.

GK300

GK300 -
50mm upstand Stone kerb.
300 x 225 x 915mm.
Please refer to LUC drawing 6377-LD-DET-631.
Build ups to engineers specification.

K125

K125 -
125mm upstand PCC kerb. 915 x 125 x 255mm.
Please refer to LUC drawing 6377-LD-DET-631.
Build ups to engineers specification.

K(F)

K(F) -
Standard PCC channel, as above, flush with paving.
Please refer to LUC drawing 6377-LD-DET-631.
Build ups to engineers specification.

AE

AE -
Aluminium edging 120x70x7mm, By Kinley Systems 'AluExcel 120mm Flexible' with 400mm anchor pins.
Please refer to LUC drawing 6377-LD-DET-631.
Build ups to engineers specification.

Sheffield cycle stands. 800 x 715mm. 305 grade stainless steel, on concrete pad foundations.

EVCP — Electric Vehicle Charging Points (EVCP)

WP — Irrigation point

Lighting column, pole mounted luminare. 6m height CHS posts RAL 9007 with denver holophane luminare (or similar). Lighting locations are indicative. Refer to engineers detail & specification.

Iss	Date	Issue Notes	Drawn By	Checked By	Approved By
A	18.05.17	First Issue	ML	EP	EP

LUC
43 Chalton Street
London, NW1 1JD
T: 020 7383 5784
F: 020 7383 4798
london@landuse.co.uk
www.landuse.co.uk

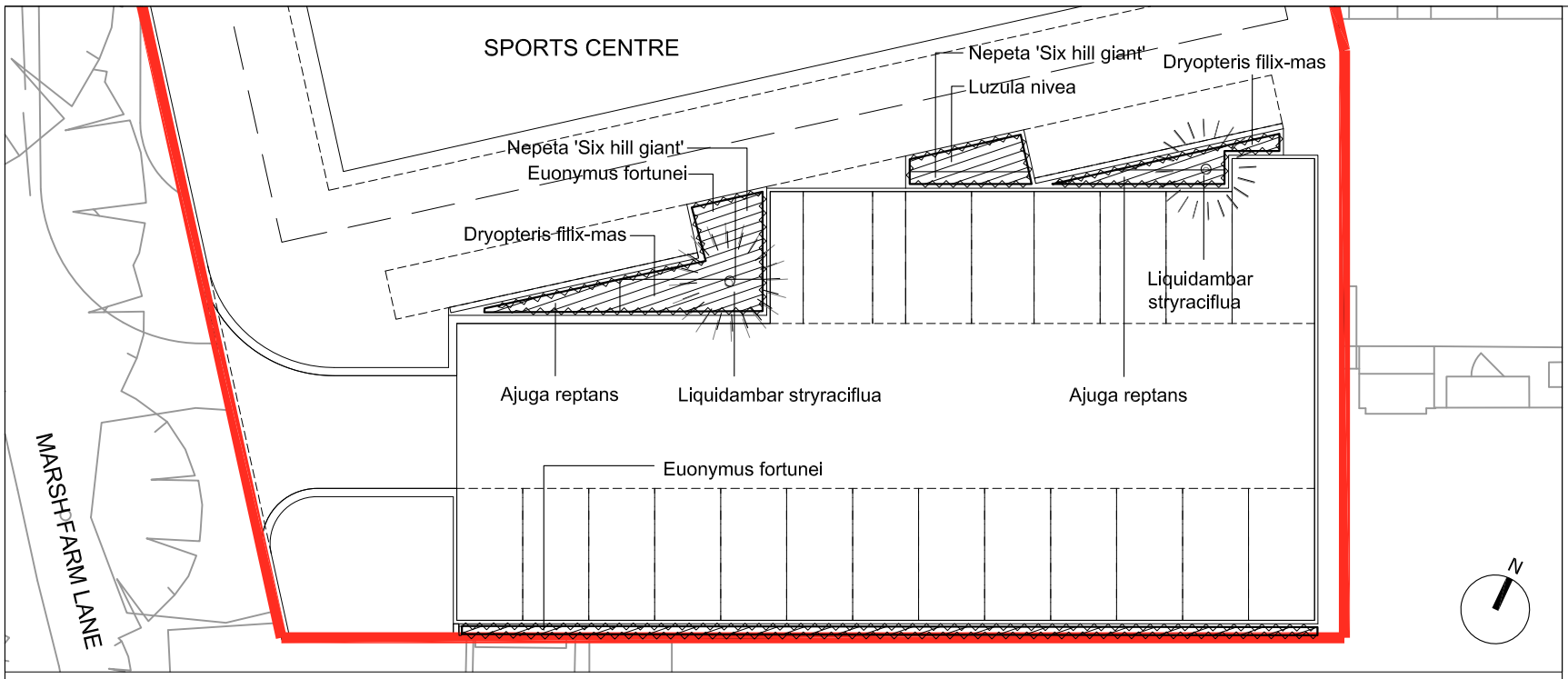
Project
Richmond Upon Thames College
Sports Centre

Client
Atkins

Title
Hardworks Plan

Scale	Status
1:200 @ A3	for Planning

Job No.	Drawing No.	Issue
6377	LD PLN 231	A



Legend:

- **Sports Centre Boundary**
- **Proposed trees**
  Refer to LUC tree pit detail 6377_LD_DET_634
- **Proposed groundcover**
  Geotextile fabric and bark mulch

SCHEDULE

	Type / Species	Specification	Density/Percentage
	Trees		
2	Liquidambar stryraciflua	12-14 cm girth, height 300-400cm, RB	As shown
	Groundcover		
35	Ajuga reptans	2l pot	6/m2
43	Dryopteris filix-mas	2l pot	5/m^2
23	Euonimus fortunei	5l pot	8/m^2
90	Hedera cholchica	1L pot	10/m2
23	Luzula sylvatica	2l pot	8/m2
30	Nepeta 'Six hill giant'	2l pot	8/m2

OUTLINE SPECIFICATION NOTES

GENERAL
All supply, planting and other landscape works to be in accordance with relevant British Standards and Codes of Practice. Works to be undertaken by a competent and accredited landscape contractor with 12months Defects Liability/ in contract maintenance. Following that maintenance works shall be undertaken in accordance with the Landscape Management Plan, LUC 2016.

PLANTING METHODOLOGY
Soil
Soil to be free of pests, disease, fungus and foreign matter.
Do not use topsoil contaminated with subsoil, rubbish or other materials that are corrosive, explosive, flammable, hazardous to human or animal life or detrimental to healthy plant growth.
The Contractor shall appoint a suitably qualified and approved, independent Soil Scientist to undertake the sampling and testing of the soil materials considered for importation.
An approved Soil Scientist is: Tim O'Hare Associates LLP, Howbery Park, Wallingford, Oxon, OX10 8BA, Tel: 01491 822653, www.toha.co.uk
Subsoil to be in accordance with BS 3882 'Specification for topsoil'.
For trees planted in hard landscape a load bearing growing medium will be necessary. This will be Urban tree planting medium, Grade: 0.6-2 mm.
Green compost for soil amelioration to be incorporated into soil for tree and shrub planting to be in accordance with BSi PAS 100:2011 or current revision and sourced from a PAS 100 compliant facility.
Fertilizer to be incorporated into soil for tree and shrub planting: Scotts Enmag CRF (11%N:22%P2O5:9%K2O:6%MgO).
Prepare undisturbed topsoil in accordance with BS 4428 'Code of Practice for general landscape operations': Break up hard ground thoroughly, remove visible roots and large stones with a diameter greater than 50 mm, dig areas covered with turf over to full depth of topsoil and treat weeds at appropriate times with a suitable translocated non-residual herbicide.
Prepare subsoil by excavating/placing fill to the required profiles, loosening thoroughly when ground conditions are reasonably dry to a depth of 450mm and removing stones larger than 50mm, arisings, contaminants, debris and builders' rubble.
Spread topsoil in layers of layers of 150 mm maximum depth and gently firm each layer before spreading the next.
After spreading topsoil, when weather and ground conditions are suitably dry and non-plastic, the soil profile shall be ripped at 300mm centres to a minimum depth of 300mm (grass areas) or 600mm (shrub beds, hedges) to decompact the soils and key in the topsoil and subsoil layers. Any large, compacted lumps of soil shall be broken down by further appropriate cultivation (in accordance with BS 4428) to produce a fine tilth suitable for planting (<30mm), turfing and seeding (<10mm). Cultivations shall ensure that the topsoil is fully aerated.
In order to avoid physical degradation to the soil during all phases of soil handling (e.g. spreading, cultivation, amelioration, planting, turfing and seeding), soil handling operations shall be carried out when soil is non-plastic (friable) in consistency (i.e. at least 5% below the soil's lower plastic limit). Soil shall not be unnecessarily compacted by trampling or trafficking by site machinery or handled when frozen or during and after heavy rainfall.

Timing
- Deciduous trees and shrubs: Late October to late March. Field-grown trees and shrubs planted out of season to be spring-ringed at nursery.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants: September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable. Provide watering and weed control as necessary.
- Dried bulbs, corms and tubers: September/ October.

Standard
All planting to be carried out in accordance with BS 4428 and during suitable weather conditions. Do not use mechanical tools within 100 mm of tree and plant stems. Water as necessary to ensure establishment and continued thriving of planting.
Plants to be materially undamaged, sturdy, healthy and vigorous specimen, of good shape and without elongated shoots, grown in a suitable environment and hardened off and free from pests, diseases, discoloration, weeds and physiological disorders. Plant standard to
BS 3936 'Nursery stock'. Name, forms, dimensions, provenance and other criteria as scheduled and defined in the National Plant Specification. Plant handling shall be in accordance with HTA 'Handling and establishing landscape plants'.

Groundcover
Geotextile fabric to all beds to be laid before planting. Cut flaps neatly for planting and refit closely around plant stems. Mulch with Melcourt Mini Pine Mulch, 60mm depth. Finished level of mulch to be 30 mm below adjacent grassed or paved areas.

Climbers and ornamental shrubs
Planting bed depth to be 450mm minimum. Geotextile fabric to all hedges beds to be laid before planting. Cut flaps neatly for planting and refit closely around plant stems. Mulch with Melcourt Mini Pine Mulch, 60mm depth. Finished level of mulch to be 30 mm below adjacent grassed area. Shrubs to be grouped by 3 to form irregular 'natural' layout.

Trees
All tree planting to be undertaken in accordance with BS 5837 'Trees in relation to design, demolition and construction. Recommendations' and BS 8545 'Trees from nursery to independence in the landscape. Recommendations'.
For detail of tree pit including root barrier, guying system and aeration and irrigation pipe refer to LUC drawing 6377-LD-DET-634. Semimature trees to be root prepared and transplanted to BS 4043 'Recommendations for transplanting root-balled trees'.
All standard trees to be secured with 2 no. stake. Stakes to be 50mm diameter softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end with nails to BS 1202.
Backfill with amellorant (1 m^3 per 10 m^3 of topsoil) and fertilizer as specified.
Mulch with Melcourt Mini Pine mulch. Finished level of mulch to be 70 mm below adjacent grassed or paved areas.

MAINTENANCE
For general soft landscape maintenance - including native hedge, hedges, groundcover, climbers and lawn - refer to LUC Landscape Management Plan.

Trees
Newly planted trees across the site will need to be watered regularly by hand during
establishment i.e. for 3 years after planting.
Soil around the base of trees in grass will be kept clear of weeds.
Stakes/ties/ guys will be inspected and maintained in good order, adjusted and repaired where necessary to prevent rubbing of bark and removed when no longer required.
Trees will be visually inspected on routine maintenance visits for damage and general safety and security issues. Damaged branches will be removed from both tree and ground promptly to minimise damage to the tree and danger/obstruction to users of the site.
For newly planted trees formative pruning work will be carried out as required and as appropriate for the species to remove branches overhanging or obstructing access and to maintain the form and health of the tree. All pruning to be carried out by a Member of the Arboricultural Association and in accordance with BS 7370 'Grounds maintenance. Recommendations for maintenance of soft landscape'.

Notes:

1. Do not scale from this drawing.
2. All dimensions must be checked on site and any discrepancies verified with landscape architect.
3. All dimensions are drawn in mm.
4. Landscape drawing only.
5. All materials/items used to be as specified or alternatives to be approved by landscape architect.

Iss	Date	Issue Notes	Drawn By	Checked By	Approved By
A	18.05.17	First Issue	ML	EP	EP

LUC
43 Chalton Street
London, NW1 1JD
T: 020 7383 5784
F: 020 7383 4798
london@landuse.co.uk
www.landuse.co.uk

Project
Richmond Upon Thames College
Sports Centre

Client
Atkins

Title
Soft Landscape

Scale	Status
1:250 @ A3	for Planning

Job No.	Drawing No.	Issue
6377	LD PLN 431	A