

RICHMOND EDUCATION AND ENTERPRISE CAMPUS

LANDSCAPE STRATEGY

PREPARED BY LUC

2018.06.13

SUBMISSION OF THE LANDSCAPE STRATEGY IN RELATION TO THE RICHMOND COLLEGE SECTION 106 AGREEMENT

The section 106 agreement defines the Landscape Strategy as:

“A strategy for the landscaping to be delivered on the Site including the planting of not less than 300 (three hundred) trees approved pursuant to a condition U08049 to the draft Planning Permission at Schedule 1 of this Agreement.”

CONTENTS

Landscape strategy & reference plan

Proposed trees plan

Drawings:

- LUC 6377-LD-PLN-401 College Phase 1 Soft Landscape
- LUC 6377-LD-PLN-431 Sports Building Soft Landscape
- Terrafirma C1521-PL-25 Schools Planting Plan North
- Terrafirma C1521-PL-26 Schools Planting Plan South
- Terrafirma C1521-PL-27 Schools Planting Plan West

The landscape strategy encourages a selection of trees and plants appropriate to setting, function and quality of spaces throughout the campus, whilst providing ecological benefit. It is important to characterise areas, create spatial hierarchy and therefore navigate users around the site.

Roads and pedestrian areas shall comprise of 2m clear stem trees with uniformed crowns, equidistantly positioned, to provide legibility and keep visibility free at eye level for pedestrians & drivers (ie. Liquidamber styraciflua). These trees are planted within mid to low level amenity shrub & ground cover (ie. Dryopteris filix-mas, Nepeta 'Six hill giant'). Feature trees of varying shape and character are to be used to denote entrances to buildings and/ or focal points.*

Trees and planting should emphasise the difference in spaces designed for social use, whether it be open and manageable (amenity lawn & bulb drifts) or wholly intimate and natural (low level shrubs and climbers). Multi-stem ornamental trees can provide amenity in both the public and semi-private domain (ie. Betula jacquemontii, Prunus avium).*

Boundaries should serve as natural enclosures, comprising of mixed native trees (ie. Betula pendula, Alnus glutinosa), hedges and ground cover (ie. Cratagus monogyna, Hedera hibernica). Mixed native species should also be used as linear hedging to define space and form partitions, whilst keeping views open (ie. Carpinus betulus, Acer campestre).*








GENERAL NOTES

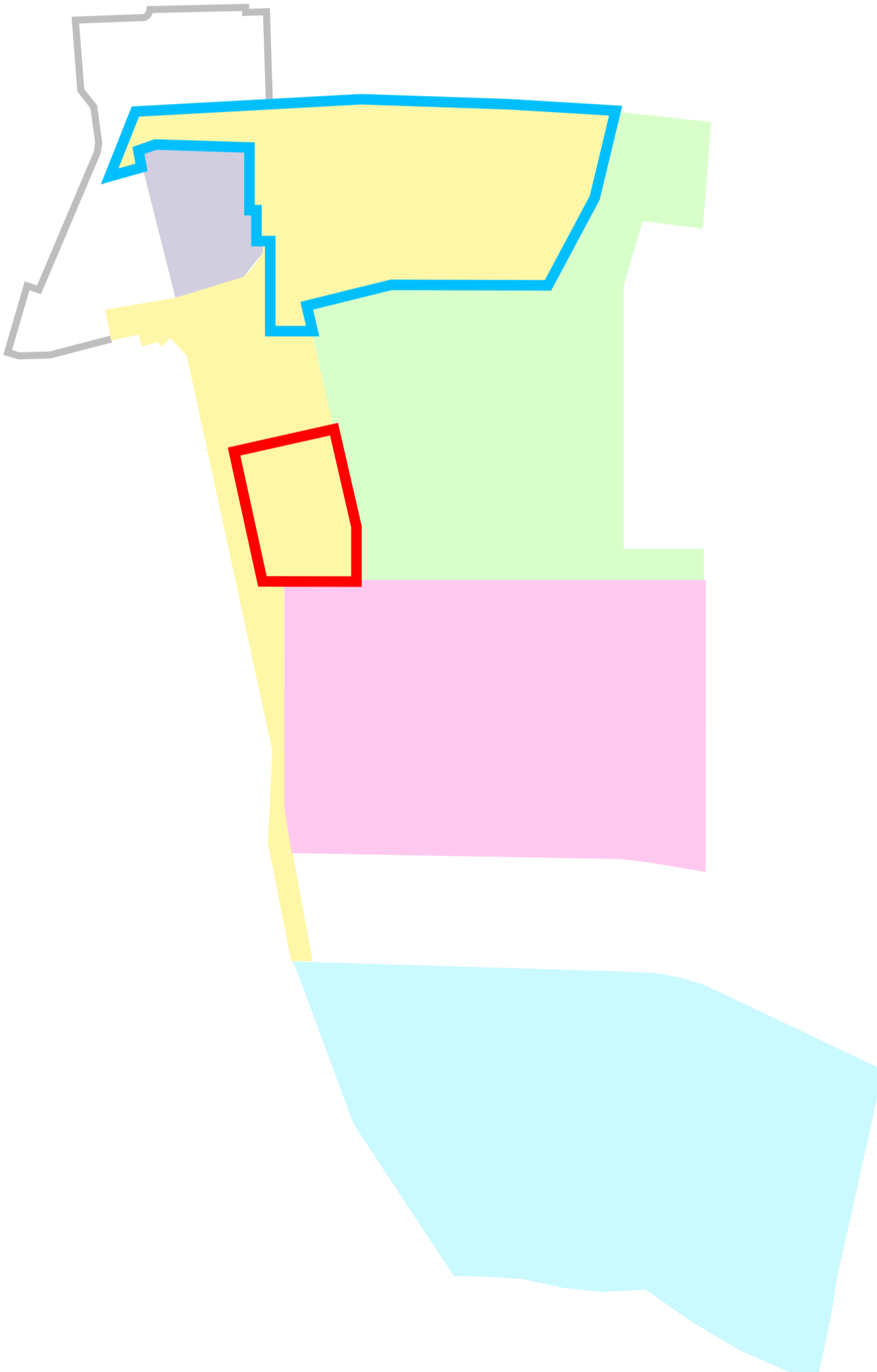
- preference for native species
- avoid invasive species
- avoid Oak (Quercus) species
- all new trees & plants to be installed to best practice and in accordance with a landscape management plan

* Examples of proposed species from detailed planting plans, for guidance

** Refer to detailed planting plans (submitted to & approved by the Local Planning Authority) for guidance.

DEVELOPMENT ZONES:

-  COLLEGE
 -  Phase 1
 Refer to LUC drawing '6377-LD-PLN-401' for detailed planting plan.**
 -  Sports Centre
 Refer to LUC drawing '6377-LD-PLN-431' for detailed planting plan.**
-  TECH HUB
 Refer to Landscape Strategy
-  SCHOOL
 Refer to Terrafirma drawings 'C1521-PL-26, C1521-PL-27, C1521-PL-27' for detailed planting plans.**
-  RESIDENTIAL
 Refer to Landscape Strategy
-  COLLEGE PLAYING FIELDS
 Refer to Landscape Strategy



The Landscape strategy shall provide planting of not less than 300 trees in accordance with condition U08049. The following figures show proposed trees (submitted to and approved by the Local Planning Authority) and remaining provision of trees.

	Tree numbers
College Development Zone	25
School Development Zone	70
Sports Development Zone	3
Total	98
Remaining provision of trees (minimum)	(300-98)=
Refer to NOTE 1.	202

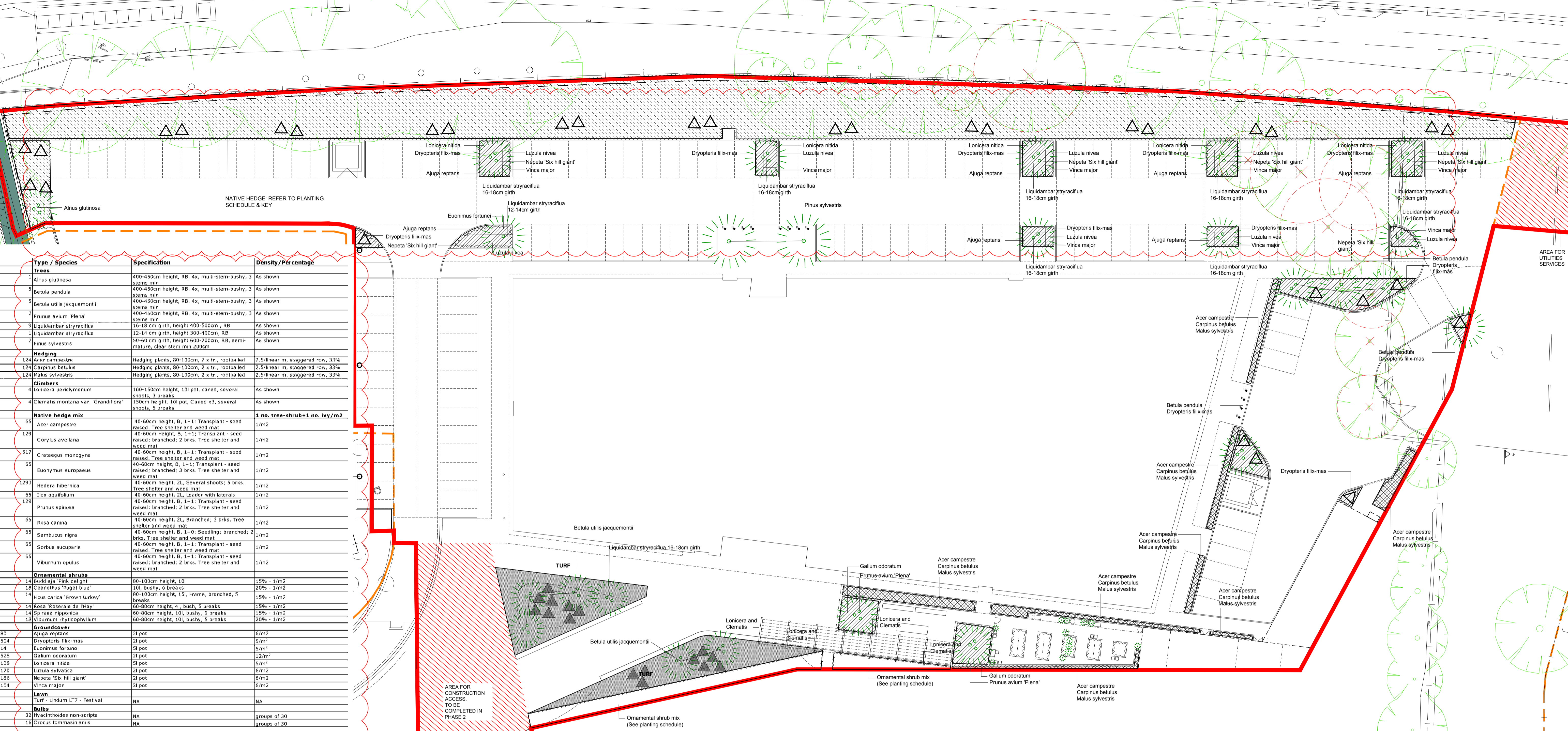
NOTE 1.

Final allocation across the site will be determined as the detailed design / Reserved Matters applications come forward for the latter phases.



DEVELOPMENT ZONES:

- COLLEGE
- Phase 1
Refer to LUC drawing '6377-LD-PLN-401' for detailed planting plan.
- Sports Centre
Refer to LUC drawing '6377-LD-PLN-431' for detailed planting plan.
- Refer to NOTE 1.
- TECH HUB
Refer to NOTE 1.
- SCHOOL
Refer to Terrafirma drawings 'C1521-PL-26, C1521-PL-27, C1521-PL-27' for detailed planting plans.
- RESIDENTIAL
Refer to NOTE 1.
- COLLEGE PLAYING FIELDS
Refer to NOTE 1.



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
9 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
1 Liquidambar styraciflua	16-18 cm girth, height 400-500cm, RB	As shown
1 Liquidambar styraciflua	12-14 cm girth, height 300-400cm, RB	As shown
2 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		
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; branched; 3 brks. 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
63 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; Seeding; branched; 2 brks. Tree shelter and weed mat	1/m2
65 Sorbus aucuparia	40-60cm height, B, 1+1; Transplant - seed raised; branched; 2 brks. 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'	80-100cm height, 10l	15% 1/m2
18 Ceanothus 'Pugot blue'	10l, bushy, 6 breaks	20% 1/m2
19 Ficus carica 'Brown turkey'	80-100cm 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/m2
14 Euonymus fortunei	5l pot	5/m2
528 Galium odoratum	2l pot	12/m2
108 Lonicera nitida	5l pot	5/m2
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
Bulbs		
32 Hyacinthoides non-scripta	NA	groups of 30
16 Crocus tommasinianus	NA	groups of 30

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%

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 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 3682 '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 BS1 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 (shrubs 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). Semitree 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, pointed 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 trees 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

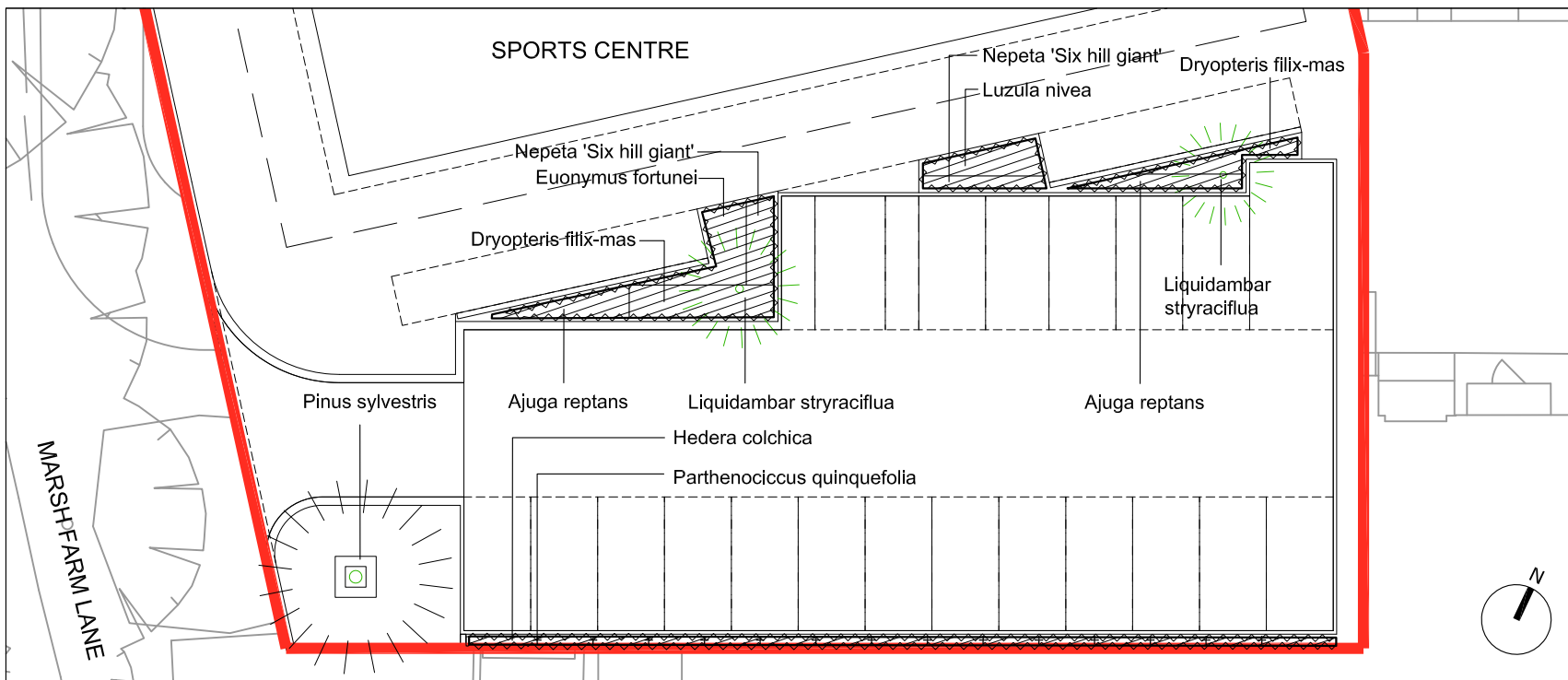
J	09.06.17	Planning	ML	JR	EP
I	22.03.17	Planning	ML	JR	EP
H	07.02.17	Planning	ML	JR	EP
G	02.02.17	Planning	ML	JR	EP
F	09.12.16	Planning	ML	JR	EP
E	08.08.16	Update to planting schedule	ML	JR	EP
D	21.07.16	Update to planting schedule	AS	JR	EP
C	14.07.16	Update to notes	AS	JR	EP
B	05.07.16	Pergola amended, ornamental shrub planting added	AS	JR	EP
A	15.06.16	First issued	AS	JR	EP
Iss	Date	Issue Notes	Drn	Chk	Appv

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Project
Richmond Upon Thames College
Phase 1
Client
Atkins
Title
Soft Landscape

Scale
1:250 @ A1 for Planning
Status
J
Job No.
6377
Drawing No.
LD-PLN 401
Issue
J

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- 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 styraciflua	12-14 cm girth, height 300-400cm, RB	As shown
1	Pinus sylvestris	50-60 cm girth, height 600-700cm, RB, semi-mature, clear stem min 200cm	As shown
Climbers			
14	Parthenococcus quinquefolia	5l pot, caned, several shoots, 3 breaks	As shown
Groundcover			
35	Ajuga reptans	2l pot	6/m2
43	Dryopteris filix-mas	2l pot	5/m ²
23	Euonimus fortunei	5l pot	5/m ²
90	Hedera colchica	1L pot	10/m2
23	Luzula nivea	2l pot	6/m2
30	Nepeta 'Six hill giant'	2l pot	6/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 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'.

Notes:

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

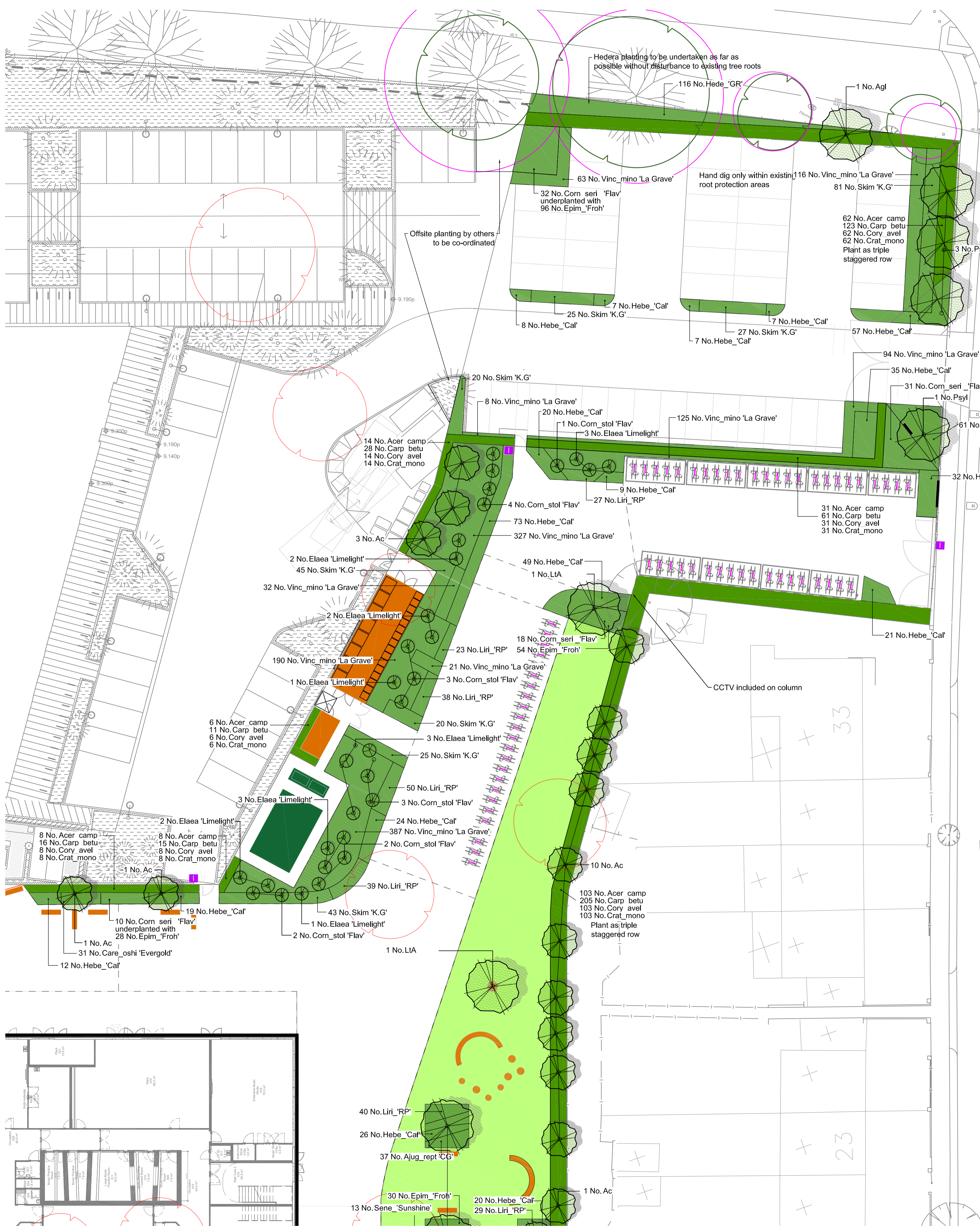
Rev	Date	Issue Notes	By	Check
C	29.01.18	Planning - amended planting	HL	EP
B	08.11.17	Planting - added tree	HL	EP
A	18.05.17	First Issue	HL	EP

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Project
Richmond Upon Thames College
Sports Centre
Client
Atkins
Title
Soft Landscape

Scale	Status
1:250 @ A3	for Planning
Job No. 6377	Drawing No. LD PLN 431
	Issue C

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SPECIFICATION NOTES

- General**
This plan to be read in conjunction with the following documents:
- Landscape drawings by terra firma
- Arboricultural report by Lockhart Garratt Ltd
- General landscaping**
i. Existing levels to be preserved around retained existing trees and vegetation. Existing trees and vegetation to be retained area to be protected in accordance with BS5837: 2012 during construction or as detailed in Tree Protection Plan.
ii. All landscaping works to be undertaken by competent persons, with appropriate training and equipment.
iii. All arisings to be removed from site at contractor's expense unless noted otherwise. (e.g. woodchip, gravel, topsoil).
- Services**
The contractor must ascertain for himself/herself the exact location of underground services before commencing work.
- Soil Materials Generally**
i. Purity: Soils shall be free from roots, stolons, rhizomes, propagules of perennial or invasive weeds couch grass, bindweed, docks, Japanese knotweed, giant hogweed and horsetail/marestail (Equisetum arvense).
ii. Foreign matter: On visual inspection, free from non-soil material, brick and other building materials and wastes, sharps, and any other foreign matter or material or substance that would render the soil or soil amendment unsuitable for use.
iii. Contamination: Do not use topsoil, subsoil, sand or compost contaminated with rubbish or other materials that are:
- Corrosive, explosive or flammable;
- Hazardous to human or animal life;
- Detrimental to healthy plant growth.
iv. Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil, subsoil, sand or compost or other planting media to be used.

- Soil testing**
Each soil source (imported and site-won subsoil and topsoil - see items 6-8 and 10 below) shall be analysed by Tim O'Hare Associates, Howbery Park, Wallingford, Oxon OX10 8BA, Tel: 01491 822653, Email: info@toha.co.uk, www.toha.co.uk (or equivalent approved).
- Subsoil for general planting areas (sample of site-won and/or imported subsoil to be sent for testing to check compliance with parameters below)**
Provide subsoil as necessary to make up deficiency on site. Natural or manufactured subsoil (from approved source) will be acceptable (within parameters given below). Subsoil to be tested to determine suitability for proposed use for planting; test report to be submitted for approval and to enable amelioration recommendations. Subsoil should be free from commonly tested contaminants, including asbestos. Subsoil parameters to be within the following:

Parameter	Unit	Lower	Limit	Upper	Limit
Clay (<0.002mm)	%	5		35	
Silt (0.002-0.05mm)	%	0		35	
Sand (0.05-2.0mm)	%				
Of which at least 40% shall fall into fine to medium sand range	%	50		90	
Stones (2-50mm)	% DW			50	
Stones (>50mm)	% DW			0	
pH Value	Unit	5.5		8.5	
Electrical Conductivity (1:2.5 water extract)	µS/cm			1500	
Electrical Conductivity (CaSO4 extract)	µS/cm			15	
Exchangeable Sodium Percentage	%			15	
Organic Matter	%			1.5	

- IF AN ACIDIC SITE RANGE SHOULD BE 4.5-6.5 IF ALKALINE 7.5-8.5**
- Subsoil for tree pits (sample of site-won and/or imported subsoil to be sent for testing to check compliance with parameters below)**
Provide subsoil as necessary to make up deficiency on site. Natural or manufactured subsoil (from approved source) will be acceptable (within parameters given below). Subsoil to be tested to determine suitability for proposed use; test report to be submitted for approval and to enable amelioration recommendations. Subsoil should be free from commonly tested contaminants, including asbestos. Subsoil parameters to be within the following:

Parameter	Unit	Lower	Limit	Upper	Limit
Clay (<0.002mm)	%	5		18	
Silt (0.002-0.05mm)	%	0		25	
Sand (0.05-2.0mm)	%				
Of which at least 40% shall fall into fine to medium sand range	%	50		90	
Stones (2-50mm)	% DW			50	
Stones (>50mm)	% DW			0	
pH Value	Unit	5.5		8.5	
Electrical Conductivity (1:2.5 water extract)	µS/cm			1500	
Electrical Conductivity (CaSO4 extract)	µS/cm			2800	
Exchangeable Sodium Percentage	%			15	
Organic Matter	%			1.5	

- IF AN ACIDIC SITE RANGE SHOULD BE 4.5-6.5 IF ALKALINE 7.5-8.5**
- Topsoil for general landscapes (sample of site-won and/or imported topsoil to be sent for testing to check compliance with parameters below and to inform any necessary amelioration - see 10 below)**
Existing topsoil to be stripped and re-used, provided soil is within parameters given below when analysed. Imported topsoil to be good quality sandy loam or manufactured topsoil (from approved source, meeting parameters given below). Topsoil (site-won or imported) is to be tested to determine suitability for proposed use and should be free from commonly tested contaminants, including asbestos; test report to be submitted to Landscape Architect for approval and to enable amelioration recommendations to be made:

Parameter	Unit	Lower	Limit	Upper	Limit
Clay (<0.002mm)	%	5		18	
Silt (0.002-0.05mm)	%	0		35	
Sand (0.05-2.0mm)	%				
Of which at least 40% shall fall into fine to medium sand range	%	50		85	
Stones (2-20mm)	% dry wt.			0.20	
Stones (20-50mm)	% dry wt.			0.15	
Stones (>50mm)	% dry wt.			0	
pH Value	Unit	5.5		8.5	
Electrical Conductivity (1:2.5 water extract)	µS/cm			1500	
Electrical Conductivity (CaSO4 extract)	µS/cm			2800	
Exchangeable Sodium Percentage	%			15	
Organic Matter	%			4.0	
Total Nitrogen	%			0.15	
Carbon: Nitrogen Ratio				20:1	
Extractable Phosphorus	mg/l			26	
Extractable Potassium	mg/l			240	
Extractable Magnesium	mg/l			50	
				600	

- IF AN ACIDIC SITE RANGE SHOULD BE 4.5-6.5 IF ALKALINE 7.5-8.5**
- Ameliorant: fertilizer and compost (contractor is responsible for submitting a sample of imported or site-won topsoil (to inform requirements).**
Topsoil amelioration to be determined by analysis. Once amelioration requirements ascertained as required, approved (paid free) composts to PAS100 and/or fertilizers to be incorporated during cultivation at required rate to full depth of growing medium.

- Soil handling and depths**
i. Topsoil and subsoil to be handled (ie. excavated and/or imported, stored, spread, cultivated) in accordance with method agreed in writing by Landscape Architect prior to work commencing. All topsoil and subsoil areas shall be thoroughly cultivated by hand or suitable machinery to the full depth of the topsoil layer, incorporating ameliorants as required. If compaction is suspected in sub-grade, subsoil or topsoil surfaces, these should be tipped as necessary to decompact and ensure adequate drainage.
ii. Hand cultivations shall be carried out to achieve the required finish on areas where machine cultivation is impossible ie adjacent to kerbs, manholes and footpath junctions, around retained trees etc. Surplus plant matter, rubbish and surface stones having any dimension greater than 25 mm shall be collected and removed from the site. Topsoil and subsoil is to be stored in heaps, maximum of 2m in height, providing soil is reasonably dry and friable during stripping and handling - using a tracked excavator. To protect from wet weather once final height is achieved, an excavator should regrade the sides and top of stockpile to firm surface by tracking across it to form a smooth gradient.
iii. Final topsoil depth (allowing for settlement) to be 300mm for tree pits and general planting areas and 150mm for grass. Finished soil levels to be 25mm above/below adjoining paving or kerbs; not less than 150mm below dpc of adjoining buildings; shrub areas to be higher than adjoining grass areas by 25 mm.

- Plant handling and establishment**
Plant handling shall be in accordance with 'Handling and establishing landscape plants', published by the CPSE through the JCLI. (http://www.gohellos.co.uk/nps/handling_establishment.aspx). The contractor shall comply with Part 3: Recommendations for plant handling from delivery to site to ensure successful establishment.

- General planting notes**
Details for tree, hedge and general planting to be finalised once final site conditions are known (ie compaction and permeability of ground). General plant stock to conform to BS 3936 (parts 1 and 4), advanced nursery stock to BS 8545, and planting to BS 4428. Plants shall be first class examples of their species or variety, free from all pests and diseases, with good fibrous root systems and materially ungnawed. All plants to be in general compliance with BS4428: 'Code of Practice for general landscape operations'. Only carry out all planting while soil and weather conditions are suitable:
- Do not plant during periods of frost or strong winds. Plant only during the following periods:
- Deciduous & Conifer trees: Late October to late March (rootball and bare root)
- Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering is provided.
Setting out of planting beds to be approved by Landscape Architect before work commences. Ensure that plant beds are neatly defined, and rise from adjacent paved areas as specified above. All tree pits, tree circles in lawn and planting beds are to be mulched with approved bark mulch to 75mm depth after planting.

- Tree planting**
Any proposed substitutions of species shown on plan to be approved by landscape architect prior to planting. Details for tree planting to comply with BS8545. As a guide all trees to be planted in square pits with base undisturbed unless drainage / compaction problems known. Plant at a depth where the root flare is clearly visible at the soil surface. Where trees have been supplied with the root flare too deep excess soil or fibrous root growth should be removed before planting. All trees to have 'Puddle' tree irrigation/aeration system installed as supplied by Platipus 01737 762300 www.platipus-anchors.com or approved equivalent. Water-in heavily after planting and mulch surface, ensuring mulch is not in contact with trunk of tree. Tree support to comply with BS 8545: RB or CG trees to have double stake and bridge with adjustable tie; multi stemmed trees to have angled single stake with adjustable tie; tree stakes to be stained black. Trees in grass to be set within a 1m diameter circle cut out of the turf and mulched to 75mm depth. Any necessary remedial tree works are to be carried out by an approved tree surgeon to BS 3996.
i. **Trees up to 20cm girth.**
Depth of tree pits to be the same as the rootball and with overall width to be 150mm wider than the diameter of the rootball (75mm min. from rootball edge to tree pit side).
For trees 8-10cm girth: 550mm x 550mm x depth of rootball
For trees 14-16cm girth: 750mm x 750mm x depth of rootball
For trees 16-18 cm girth: 750mm x 750mm x depth of rootball
Pits to be backfilled with 300mm depth of specified topsoil over subsoil as per spec.

- Native hedges and buffer planting**
Species to be spaced as per schedule and randomly mixed for natural effect, and planted in groups of 3-5 plants of any one species. Depth of planting trench to be same as root system, overall width space 150mm wider than root system (75mm min. from root system edge to sides of trench). Trench to be backfilled with 300mm depth of specified topsoil over subsoil as per spec. Hedges to be planted in a double staggered row with exception of those marked as triple staggered row on plans. Provide and install each plant with an appropriate sized recyclable staked green shrub shelter (available from Tubex Ltd, phone 01621 674201 or similar approved). Position shelter stake on windward side of plant, drive vertically into bottom of pit before planting, to a min. depth of 300mm and consolidate backfill material around stake; attach shelter to stake with a minimum of two ties.

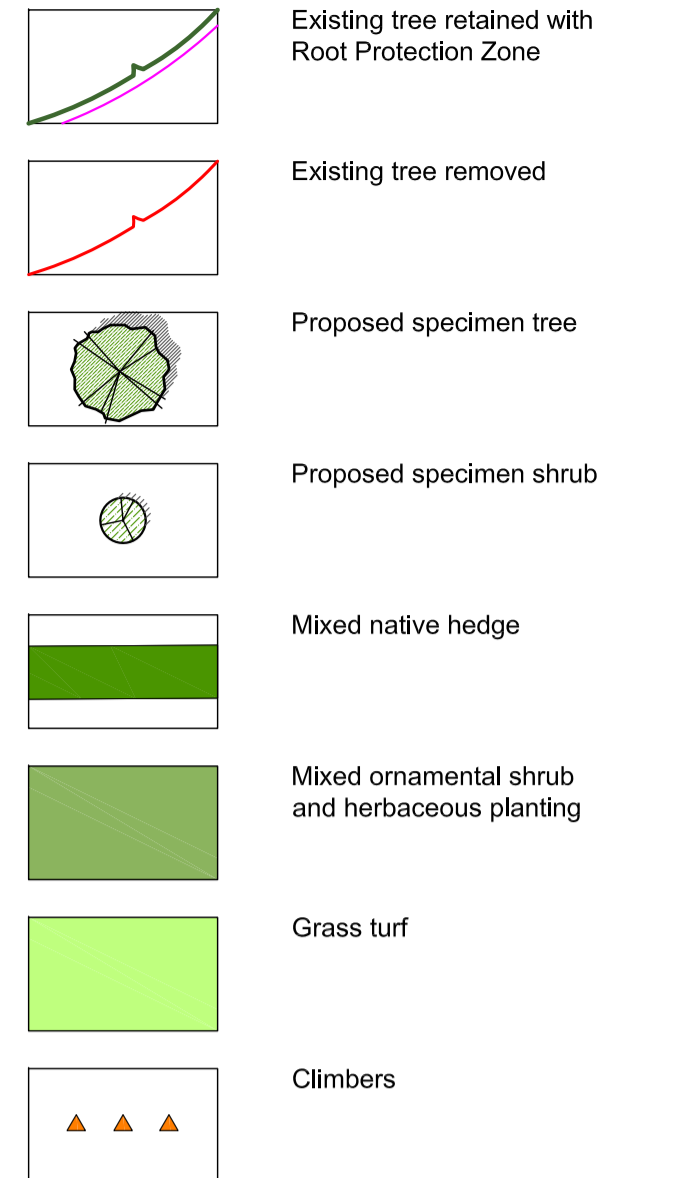
- Specimen Shrubs**
Depth of planting pit to be same as rootball, overall width space 100mm wider than rootball (50mm min. from rootball edge to sides of pit). Pit to be backfilled with 300mm depth of specified topsoil over subsoil as per spec.

- Shrub and Ground Cover Planting**
All plants to be planted into cultivated planting beds (with 300mm depth specified topsoil) at densities shown in plant schedule, backfilled with same topsoil.

- Climbers**
All climbers to be planted as 18, above and provided with steel line wires attached to the adjacent structure/wall/fence (min 3 no.) at 300mm vertical spacing with climbers spread out and tied to wires using appropriate horticultural ties.

- Grass**
Turfing or seeding shall be carried out only during appropriate seasons and while soil and weather conditions are suitable for the relevant operations. Only machinery and tools suitable for the site conditions and the work to be carried out shall be used. Hand tools shall be used around trees, plants and in confined spaces where it is impractical to use machinery. The soil shall be weed free prior to turfing and seeding. Contact herbicide as specified should be applied to all areas of weed growth 4-6 weeks before grassing and repeated if necessary to maintain a weed free bed. Where deep rooted weeds are present (docks, thistles etc.) approved Glyphosate based herbicide should be applied as a spot treatment. Turf or seed shall be laid on prepared, levelled soil (minimum 150mm depth) in the areas indicated on the drawings in accordance with BS 4428:1989 'Code of practice for general landscape operations'. All grass areas to be approved landscape quality turf for general amenity areas or lawn turf for garden areas, or equivalent seed.

- Maintenance**
Establishment maintenance for all planting for 5 years from Practical Completion to include mowing weed control, hedge cutting, pruning, edging, checking of supports, watering and replacement of failures to original specification in the planting season following failure.



BREEAM
Irrigation - External landscaping and planting to rely solely on precipitation, during all seasons of the year.
For plant schedule refer to drawing C1521-PL-26
Lighting not indicated on planting plans

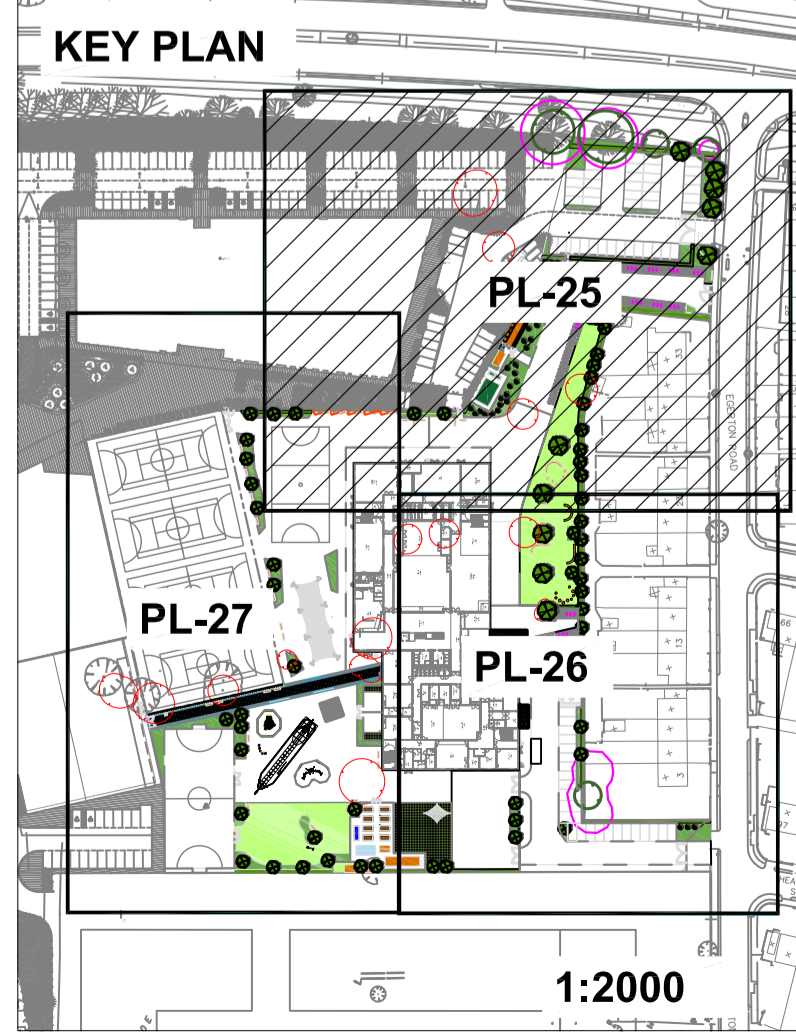
no.	date	by	chk	notes
11	10.10.2016	WJ	RB	Planting amended to reflect latest northern carpark layout
10	06.10.2016	PS	RB	Tree species revised.
09	23.09.2016	WJ	RB	Planting bed amendments further to access changes
08	19.07.2016	WJ	RB	Planting bed added to northern entrance
07	04.05.2016	WJ	RB	Tree removed and replaced with specimen shrubs to allow CCTV visibility
06	29.04.2016	WJ	RB	Revisions to accommodate changes to delivery link path and cycle shelter layout
05	22.04.2016	WJ	RB	Revised in line with latest layout
04	18.03.2016	WJ	RB	Hedge planting amended
03	18.03.2016	WJ	RB	Full planting layout added, BREEAM note added
02	09.02.2016	WJ	RB	Revised in line with latest layout
01	02.02.2016	WJ	RB	Revised in line with latest layout

drawing notes
Do not scale from this drawing. Figure dimensions only to be taken from this drawing. All dimensions to be checked on site. The original version of this drawing was produced in colour - monochrome copies should not be relied upon to accurately reflect all drawing elements.

purpose of issue	PLANNING
project	REEC Schools
drawing title	Planting Plan (North)
drawing no.	C1521-PL-25
scale	1:200 @ A1
date	12.01.2016
drawn by	WJ
checked by	RB

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Site-wide planting schedule

Abbreviation	Species	Specification	Density	Qty.
Ac	Acer campestre	14-16cm girth 4-4.5m ht RB	37	No.
Al	Alnus glutinosa	14-16cm girth 4-4.5m ht RB	2	No.
ApLe	Acer pseudoplatanus 'Leopoldi'	14-16cm girth 4-4.5m ht RB	11	No.
LTA	Liriodendron tulip. 'Aureomarginatum'	11-18cm girth 4.5-6m ht RB	6	No.
PsPe	Prunus salicifolia 'Pendula'	8-10cm girth 1.75-2m ht RB	10	No.

Abbreviation	Species	Specification	Density	Qty.
Fsyl	Pinus sylvestris	2.5-3m ht RB	4	No.

Abbreviation	Species	Specification	Density	% Mix	Qty.
Acer_camp	Acer campestre	80-100cm BR 0.5Cir Triple Staggered at 0.5m offset	20%	200	No.
Acer_camp	Acer campestre	80-100cm BR 0.5Cir Double Staggered at 0.3m offset	20%	211	No.
Carp_betu	Carpinus betulus	80-100 cm BR 0.5Cir Triple Staggered at 0.5m offset	40%	398	No.
Carp_betu	Carpinus betulus	80-100 cm BR 0.5Cir Double Staggered at 0.3m offset	40%	414	No.
Cory_avel	Corylus avellana	60-80cm BR 0.5Cir Triple Staggered at 0.5m offset	20%	200	No.
Cory_avel	Corylus avellana	60-80cm BR 0.5Cir Double Staggered at 0.3m offset	20%	211	No.
Crat_mono	Crataegus monogyna	80-100cm BR 0.5Cir Triple Staggered at 0.5m offset	20%	200	No.
Crat_mono	Crataegus monogyna	80-100cm BR 0.5Cir Double Staggered at 0.3m offset	20%	211	No.

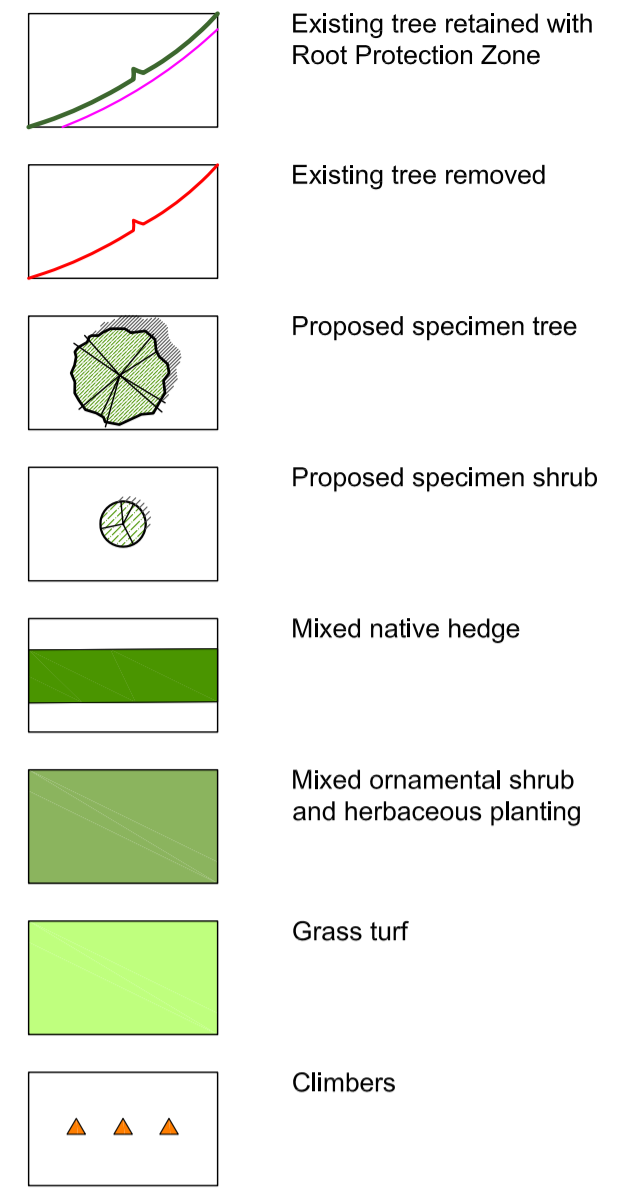
Abbreviation	Species	Specification	Density	Qty.
Corn_seri 'Flav'	Cornus sericea 'Flaviramea'	60-80cm 10L	2/m ²	226 No.
Corn_stol 'Flav'	Cornus stolonifera 'Flaviramea'	1.5-1.75m ht 25L CG	Counted	15 No.
Elaea 'Limelight'	Elaeagnus ebbingei 'Limelight'	1.5-1.75m ht 25L CG	Counted	17 No.
Hebe 'Cal'	Hebe 'Caedonia'	10L CG	4/m ²	1094 No.
Hebe 'GR'	Hedera helix 'Green Ripple'	3L CG	4/m ²	116 No.
Phot_fras 'R.R.'	Photinia fraseri 'Red Robin'	1.5m ht. lollipop with 1m clear stem 25L CG	Counted	3 No.
Sene 'Sunshine'	Senecio 'Sunshine'	40-60cm ht 10 CG	2/m ²	85 No.
Skim 'K.G'	Skimmia confusa 'Kew Green'	10L CG	4/m ²	380 No.
Vinc_mino 'La Grave'	Vinca minor 'La Grave'	3L CG	6/m ²	2104 No.

Abbreviation	Species	Specification	Density	Qty.
Ajug_rept 'CG'	Ajuga reptans 'Cattin's Giant'	3L CG	8/m ²	103 No.
Epim 'Froh'	Epimedium x perralaticum 'Frohleiten'	3L CG	6/m ²	577 No.
Liri 'RP'	Liriope muscari 'Royal Purple'	3L CG	8/m ²	577 No.
Sal_nem 'Lub'	Salvia nemorosa 'Lubecca'	3L CG	5/m ²	107 No.
Stac_byza	Stachys byzantina	3L CG	7/m ²	247 No.
Verb_bon	Verbena bonariensis	3L CG	5/m ²	82 No.

Abbreviation	Species	Specification	Density	Qty.
Cyrt_falc	Cyrtomium falcatum	3L CG	5/m ²	194 No.

Abbreviation	Species	Specification	Density	Qty.
Care_oshi 'Evergold'	Carex oshimensis 'Evergold'	3L CG	8/m ²	441 No.

Abbreviation	Species	Specification	Density	Qty.
Clem 'Tetra'	Clematis montana 'Tetrazose'	1.5m ht 10L CG 0.5Cir	Counted	22 No.
Clem 'BM'	Clematis lanquica 'Bill Mackenzie'	1.5m ht 10L CG	Counted	3 No.
Hede_hell	Hedera helix	1.5m ht 10L CG 0.5Cir	Counted	30 No.
Part_quin	Parthenocissus quinquefolia	1.5m ht 10L CG 0.5Cir	Counted	22 No.



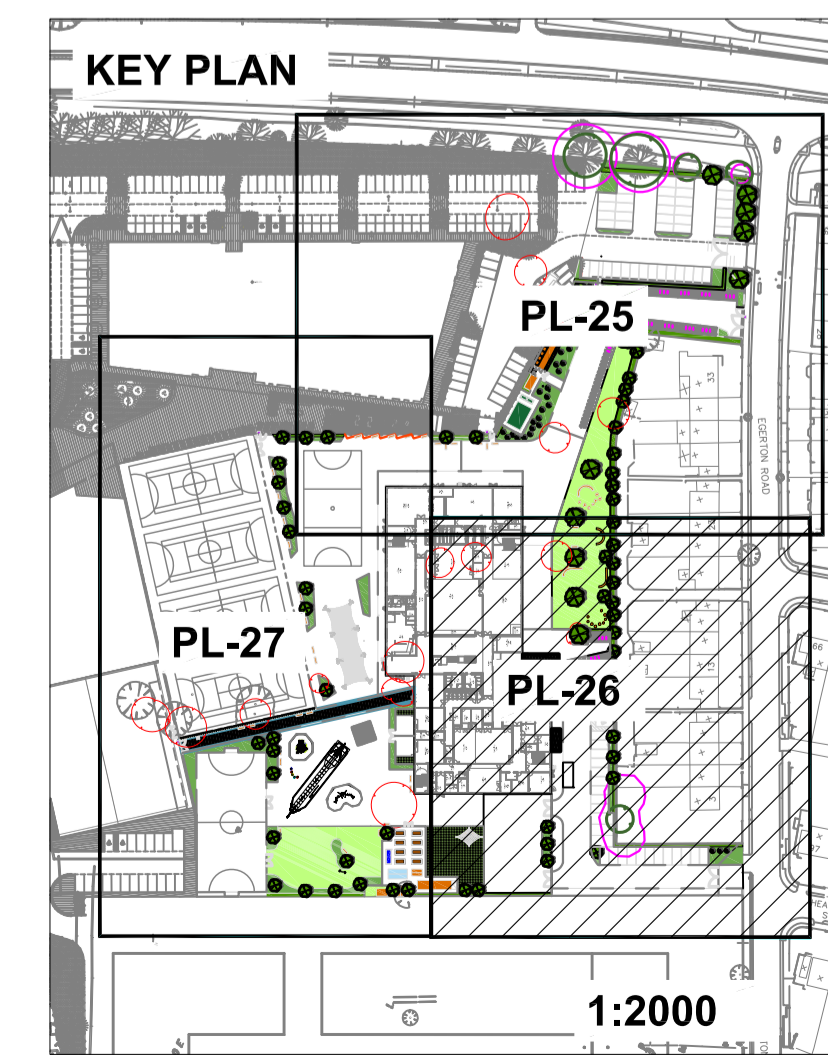
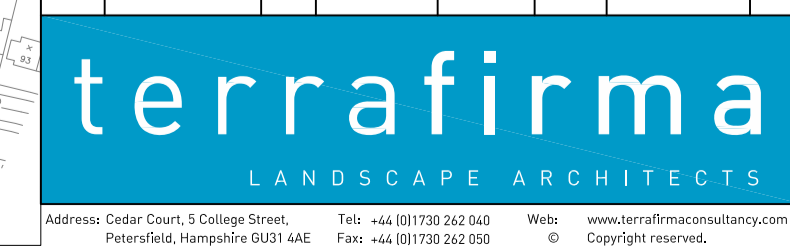
BREEAM
Irrigation - External landscaping and planting to rely solely on precipitation, during all seasons of the year.
For spec notes refer to drawing C1521-PL-25
Lighting not indicated on planting plans



rev.	date	by	chk	notes
11	10.10.2016	PS	RB	Change to PL25 trees, schedule updated
10	05.10.2016	PS	RB	Change to PL25 trees, schedule updated
09	23.09.2016	WJ	RB	Planting bed amendments further to changes to access
08	19.07.2016	WJ	RB	Change to PL-25 and PL-27 resulting in change to schedule
07	04.05.2016	WJ	RB	Change to PL-25 resulting in change to schedule
06	28.04.2016	WJ	RB	Revised to accommodate changes to cycle shelter layout, tree at southern entrance changed to specimen shrubs to allow CCTV visibility
05	22.04.2016	WJ	RB	Base updated and changes to schedule
04	13.04.2016	WJ	RB	Hedge planting amended
03	18.03.2016	WJ	RB	Full planting layout added, BREEAM note added
02	09.02.2016	WJ	RB	Revised in line with latest layout
01	02.02.2016	WJ	RB	Revised in line with latest layout

drawing notes
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purpose of issue	PLANNING
project	REEC Schools
drawing title	Planting Plan (South)
drawing no.	C1521-PL-26
scale	1:200 @ A1
date	12.01.2016
drawn by	WJ
checked by	RB

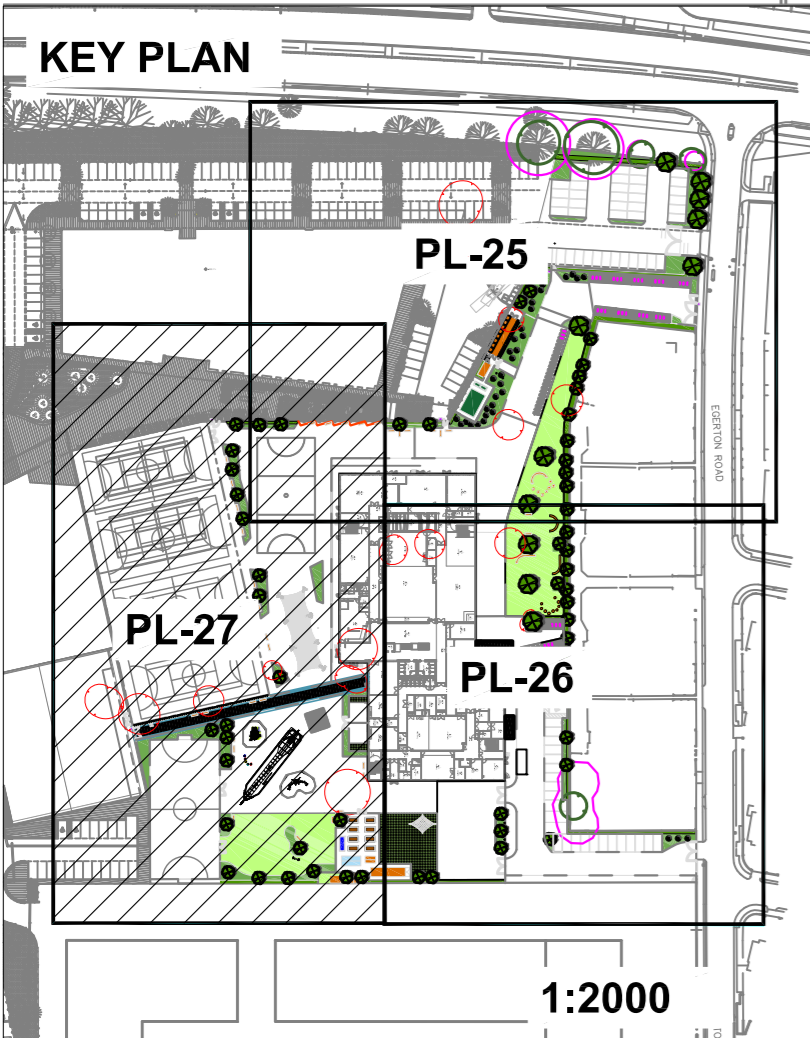
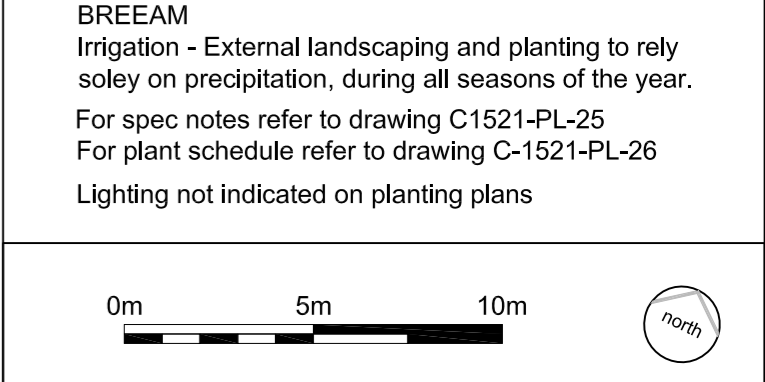




Legend

- Existing tree retained with Root Protection Zone
- Existing tree removed
- Proposed specimen tree
- Proposed specimen shrub
- Mixed native hedge
- Mixed ornamental shrub and herbaceous planting
- Grass turf
- Climbers

BREEM
Irrigation - External landscaping and planting to rely solely on precipitation, during all seasons of the year.
For spec notes refer to drawing C1521-PL-25
For plant schedule refer to drawing C-1521-PL-26
Lighting not indicated on planting plans



rev.	date	by	chk	notes
06	19.07.2016	WJ	RB	Climbing species changed
05	04.05.2016	WJ	RB	Key plan updated to reflect latest layout
04	20.04.2016	WJ	RB	Key plan updated to reflect latest layout
03	16.03.2016	WJ	RB	Full planting layout added. BREEM note added
02	09.02.2016	WJ	RB	Revised in line with latest layout
01	02.02.2016	WJ	RB	Revised in line with latest layout

drawing notes	Do not scale from this drawing. Figure dimensions only to be taken from this drawing. All dimensions to be checked on site. The original version of this drawing was produced in colour - monochrome copies should not be relied upon to accurately reflect all drawing elements.		
purpose of issue	PLANNING		
project	REEC Schools		
drawing title	Planting Plan (west)		
drawing no.	C1521-PL-27	06	
scale	1:200 @ A1	date	12.01.2016
	drawn by	WJ	checked by
			RB