



Landscape and Habitat Management Plan

Immingham, North Lincolnshire

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5 Year Landscape and Habitat Management Plan

Introduction

This Landscape and Habitat Management Plan provides a series of recommendations and specifications for management of the existing boundary habitats and the maintenance of the proposed new landscape planting for the overflow car park of the new administration building.

Plan Contents

Section 1: Ecological Habitat Management Recommendations

Ecological recommendations for the management of existing landscape bordering the surrounding field margins, ditch and hedgerows.

Section 2: Soft Landscape Maintenance Operations

Five years of detailed management operations and specifications for soft landscape works for the overflow car park. The plan specifies the management and maintenance treatments to be applied to the proposed new habitats and vegetation types created including individual trees, tree and shrub planting beds and wildflowers and grass areas detailed on plan C / 609 / 1.

Details of operations required for undertaking any replacement overflow car park landscape planting required after the initial 5 year management period has ended.

Section 3: NBS Soft Landscape Specifications

Details of specifications operations for planting, establishment, maintenance and replacement planting if required.

Section 1

Ecological Habitat Management Recommendations

Ecology

The management of the site will aim to increase its biodiversity and nature conservation value, in accordance with policies DS1 and LC20 of the local plan. This will include the encouragement of farmland birds by the management and maintenance of ditches, hedgerows and the creation of and maintenance of grassland and field margins. This will provide a foraging and nesting resource for important farmland birds such as corn buntings *Miliaia calandra*, reed buntings *Emberiza schoeniclus*, linnets *Carduelis cannabina*, yellowhammers *Motacilla flava* grey partridge *Perdix Perdix*, barn owl *Tito alba* and yellow wagtail *Motacilla flava*.

In 2002, a re-assessment of birds of conservation concern was published (The population status of birds in the United Kingdom, Channel Islands and Isle of Man analysis of conservation concern 2002-2007). This updates the 1996 Birds of Conservation Concern in the UK, Channel Islands and Isle of Man (RSPB 1996), which defined rare and threatened bird species on two lists (Red and Amber) describing the level of threat to each species of concern. Green list species comprise breeding birds that are considered to be relatively unthreatened. These target species listed above are on the Red List because of their rapid decline in the UK breeding population over the last 25 years, with the exception of barn owl and yellow wagtail which are on the Amber List.

Grassland management (including field margins)

The main habitat within the site comprises a large species poor intensively managed arable field. This section of arable field will be enhanced as part of the landscaping plans by seeding the area to create a grassland habitat reinforced with a mesh covering to create a car parking area. This will be an overflow car park subject to low levels of use and therefore occasional disturbance. The grassland will be seeded in spring using a previously specified seed mix.

It is recommended that field margins of approximately 3-6 m be left without mesh covering and seeded with additional species to provide a rich food source for invertebrates and farmland birds. Additional species should include teasel *Dipsacus fullonum*, oxeye daisy *Leucanthemum vulgare*, wild poppy *Papava rhoeas*, common scabious *Knautia arvensis*, common knapweed *Centaurea nigra*, knotgrass *Polygonum aviculare*, common cat's-ear *Hypochaeris radicata* and yellow rattle *Rhinanthus minor*. If the mesh covering is required up to this zone this area should be subject to a specific two year mowing regime.

The field margins adjacent to the hedgerows and ditch will provide habitat for small mammals such as short-tailed vole *Microtus agrestis*. This will attract important farmland birds including barn owl *Tito alba*. These habitats will also provide habitat for important ground nesting birds such as grey partridge *Perdix perdix* and yellow wagtail *Motacilla flava*.

Hedgerow management

Two hedgerows exist within the site, a currently unmanaged hedgerow along the north and east boundary and an intensively managed hedgerow along the south boundary. The dominant species within the hedgerows is hawthorn *Crataegus monogyna* with occasional species including dog rose *Rosa canina*, ash *Fraxinus excelsior* and locally abundant blackthorn *Prunus spinosa*. The hedgerows should be managed by either laying or, where overgrown, coppicing and then annual trimming. Trimming should aim to maintain thick bottoms and retain reasonable height.

Methods for hedge laying should follow regional style. Standard trees within hedgerows should be retained where possible. Gaps should be re-planted using trees and shrubs of local provenance typical of the local area, with species including hawthorn, blackthorn, holly *Ilex aquifolium* and hazel *Corylus avellana*. Sensitive management will increase ecological diversity by encouraging farmland birds, mammals, reptiles and invertebrates such as butterflies.

Ditch management

A steep sided ditch, approximately 3 m deep with 20 cm of water depth runs along the southern boundary. The ditch is currently heavily managed and of limited intrinsic value to nature conservation. It is proposed to enhance management techniques through a program of planting and alteration of dredging specifications to maximise the potential interest of the ditch to wildlife, in particular wetland plants, invertebrates, small mammals and birds.

The ditch currently contains little in the way of aquatic or emergent wetland vegetation. It is proposed to plant the ditch margins with emergent plant species that provide structural diversity to the habitats and offer foraging interest to species such as water vole and important wetland birds including reed bunting. Due to the relatively small size of the ditch it is important only to introduce species that are relatively slow growing and will not rapidly choke the channel. Appropriate species include yellow iris *Iris pseudacorus*, flowering rush *Butomus umbellatus* and water plantain *Alisma plantago-aquatica*.

The ditch is currently intensively dredged to maintain its drainage function. Using standard methods described by Newbold et al 1989 it may be possible to alter the dredging regime to create a more diverse habitat whilst maintaining its hydrological function. When dredging is undertaken emergent vegetation should be retained at the fringes of the waterline. This can be achieved in a number of ways, preferably by creating a pattern retaining a fringe over short sections (5-10m) alternating from offside to nearside bank (Newbold 1989). This creates an undulating edge to the emergent vegetation habitats creating cover for birds and small mammals on both banks at regular intervals. This also maximises the area of fringing habitat creating territory niches for invertebrates, particularly dragonflies.

Creating a deeper pool area within the line of the existing ditch can significantly enhance the watercourse for a number of species including fish, invertebrates and submerged aquatic plants. This prevents drying of the ditch in periods of low rain fall and creates diversity in the flow regime at other times. This could be undertaken at two locations along the ditch and would be further enhanced if the ditch could be widened at one of these locations. Dredging to a depth of 1 m to 1.5 m and a length of 5 m would be desirable where conditions permit.

Methods described are standard and recognised methods of managing watercourses, however, any works to the ditch should only be undertaken following consultation with the Internal Drainage Board.

References

Newbold C, Horner J, and Buckley K. (1989). *Nature Conservation and the Management of Drainage Channels*. JNCC, Peterborough.

Timing and phasing of works

The Wildlife and Countryside act, 1981 (as amended) protects all species of bird, their nests, eggs and young against death, injury and taking. Potential conflict should be avoided by undertaking all hedgerow and woodland maintenance works outside the core bird breeding season which runs from April to July inclusive, although birds may nest both earlier and later in the year. Hedgerow management should ideally take place during winter.

Mowing of grasslands and field margins should take place on an annual basis in late summer (late August/September) and cuttings should be removed from site to avoid nutrient enrichment, encouraging plant species diversity. Seeding of grasslands and field margins should take place in spring.

Native Planting

All proposed planting is of native provenance. Native trees and shrubs support a wider range of plants and animals than introduced plant species. They help to maintain local character and conservation value. The genetic makeup of local provenance native planting ensures that they are well adapted to local conditions so they are more likely to establish well and thrive in the long term. They are better suited to the regions local soil and weather conditions as well as being more resistant to local competitive flora, insects and diseases.

Imported Topsoil

Reference should be made to BS3882:1965 Recommendations and Classification for Top Soil. This standard sets out the requirements for topsoil; it describes three grades of topsoil and recommends their appropriate use and handling. Various methods of sampling and testing topsoil are included. Topsoil must be free from pernicious weeds and roots, clay lumps, non-soil material, brick and other building materials, foreign matter and chemical contamination.

Recommended topsoil quality standards

Extracted from "A Guide to Specifying Topsoil" Parts 1 and 2 by R.M.Voelcker et al., published in Landscape Design, March and April 1989:

"A soil which meets the requirements of the specification would possess the necessary attributes to sustain healthy plant growth in a variety of landscape situations under satisfactory conditions of management"

Table 1

Major nutrients and acidity	
pH	5.5-7.8
Electrical Conductivity 1:2.5 (w/v) extract	<1500 us/cm
Organic Matter	> 4.0% (w/w) (1)
Nitrogen (N)	> 0.2% (w/w) (2)
Extractable Phosphorus (P)	> 45 mg/kg (3)

Extractable Potassium (K)	> 240 mg/kg (3)
Extractable Magnesium (Mg)	> 80 mg/kg (3)

Stone Content and Texture

Extracted from: British Standard BS 1377, (2) Kjeldahl, (3) MAFF Handbook RB427

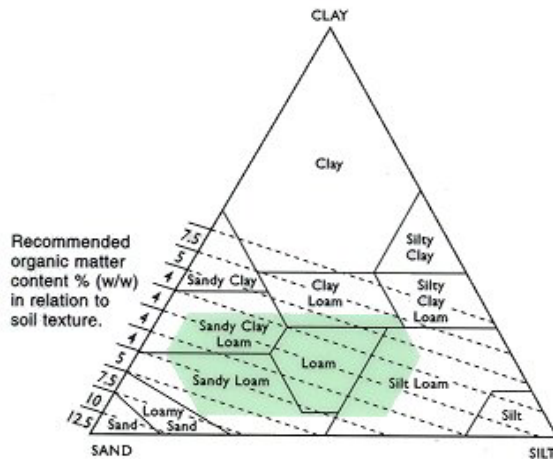
Soil stone content

Maximum size in any direction: 50mm

Maximum stone content (2mm-50mm): 35% by dry weight of which the fraction 2mm-5mm must not exceed 20% by dry weight

Soil Texture (refer to diagram below)

- Sand (0.05-2.00mm): Maximum 75% Minimum 20%
- Silt (0.002-0.05mm): Maximum 60% Minimum 5%
- Clay (less than 0.002mm): Maximum 30% Minimum 5%



Soil texture

The diagram to the left shows the soil texture triangle with lines denoting organic matter superimposed. Soils with the appropriate amounts of organic matter would have cation exchange values of 30+ meq. per 100g, and would possess adequate water-holding and sufficient cation retention properties. The area inside the hexagon (shaded in green) denotes the preferred textural classes for landscaping purposes.

Topsoil must be free from pernicious weeds and roots, clay lumps, non-soil material, brick and other building materials, foreign matter and chemical contamination.

Section 2

Immingham Overflow Car Park:

Soft Landscape Planting and Management Operations

Schedule of Works for Soft Landscape Proposals (Read with Plan C / 609 / 1)

Item	Description
1.0 BILL 1: PRELIMINARIES	
1.1	Allow for compliance with conditions of contract in respect of all insurances.
1.2	Allow for compliance with Health and Safety Regulations.
1.3	Allow for temporary fencing to secure site works area
1.4	Allow for accommodation, contractors facilities, etc. Include for reinstatement of site compound area at end of contract.
1.5	Allow for compliance with particular conditions of contract not mentioned in the above (detail breakdown will be required)
2.0 BILL 2: GENERAL	
2.1	Planting to be carried out in Autumn. All work is to be carried out without damage to new or existing works and any such damage shall be rectified at contractor's expense.
2.2	Allow for removal of any detritus / tipped materials off site to registered landfill
Site planting preparation	
2.3	Carry out ground cultivation and preparation using suitable systemic biodegradable herbicide where necessary to kill perennial and annual weeds. Allow for 2 applications. Include for removal of live weeds prior to planting.
2.4	Prior to any seeding/planting works being undertaken - topsoil across site should be free from pernicious weeds. Notify Contract Administrator if invasive species such as Japanese Knotweed / Horsetails / Docks are found. On instruction from CA allow for treatment of isolated topsoil areas to remove weeds as necessary prior to grass seeding.
2.5	Preparatory Works - Cultivation Subsoil must be well cultivated to ensure that topsoil can drain freely. Break up any compacted topsoil to full depth. Reduce top 100mm of all topsoil to a tilth suitable for blade grading (10mm down particles). Remove undesirable material brought to the surface including stones and clay balls larger than 50mm in any dimension, roots, tufts of grass and foreign matter.
Topsoil	
2.6	Soil to be imported to be to BS3882:1965 Recommendations and Classification for Top Soil.
2.7	All topsoiling to be a minimum depth 300mm for planting beds and 150mm depth for grassed areas.
2.8	Ensure topsoiled areas are suitably deep, aerated, well drained and in a good condition for planting works to commence.

Schedule of Works for Soft Landscape Proposals (Read with Plan C / 609 / 1)

Item	Description
3.0	BILL 3: TREE & SHRUB PLANTING
	Refer to detailed planting schedule. Undertake all planting in accordance with Specification Section Q31. Supply and plant all material in accordance with HTA Best Practice Guidelines and recommendations. Local provenance from recommended local supplier Johnsons of Whixley Ltd (www.nurserymen.co.uk).
	TREES
3.1	Supply and plant individual trees. Allow for staking, addition of peat free compost, application of suitable slow release granular fertilizer, biodegradable rabbit guards and watering as necessary to ensure establishment.
	Tree species as listed on drawing & planting schedule:
	TREES
	<i>Acer campestre, Height: 1200-1400mm</i>
	<i>Acer platanoides, Height 1200-1400mm</i>
	<i>Fraxinus excelsior, Height 1200-1400mm</i>
	<i>Prunus avium, Height 1200-1400mm</i>
	<i>Quercus robur, Height 1200-1400mm</i>
	<i>Sorbus aucuparia, Height 1200-1400mm</i>
	TREE & SHRUB PLANTING MIXES
3.2	Supply and plant below tree and shrub mixes. Allow for addition of peat free compost, application of suitable slow release granular fertilizer, biodegradable rabbit guards and watering as necessary to ensure establishment.
	Mixes as listed on drawing & planting schedule:
	A - EDGE MIX
	<i>Acer campestre, Height 900-1200mm BR</i>
	<i>Cornus alba, Height 600-900mm BR</i>
	<i>Corylus avellana, Height 600-900mm BR</i>
	<i>Crataegus monogyna, Height 600-900mm BR</i>
	<i>Ilex aquifolium, Height 600-900mm BR</i>
	<i>Prunus avium, Height 1200-1500mm BR</i>
	<i>Prunus spinosa, Height 600-900mm BR</i>
	<i>Rosa canina, Height 900-1200mm BR</i>
	<i>Sambucus nigra, Height 600-900mm BR</i>
	<i>Sorbus aucuparia, Height 1200-1500mm BR</i>
	<i>Viburnum opulus, Height 900-1200mm BR</i>
	B - MAIN MIX
	<i>Acer campestre, Height 900-1200mm</i>
	<i>Acer platanoides, Height 600-900mm</i>
	<i>Fraxinus excelsior, Height 900-1200mm</i>
	<i>Pinus nigra, Height 600-900mm</i>
	<i>Pinus sylvestris, Height 900-1200mm</i>
	<i>Quercus robur, Height 1500-2000mm</i>
	<i>Quercus robur, Height 900-1200mm</i>
	<i>Sorbus aucuparia, Height 900-1200mm</i>
	<i>Taxus baccata, Height 600-900mm</i>
	C - CHERRY GLADES
	<i>Prunus avium, Height 1500-2000</i>
3.3	Mulch all shrub beds and tree planting with 75mm depth coarse bark mulch in accordance with NBS Landscape specification Q31, 485A. Supplier Melcourt amenity bark mulch www.melcourt.co.uk
3.4	Replacement of any losses - If any planting is removed or becomes seriously damaged within 5 years from the date of planting, it shall be replaced in the best planting season with an equivalent tree/shrub.

Schedule of Works for Soft Landscape Proposals (Read with Plan C / 609 / 1)

Item	Description
4.0 BILL 4: SEEDING	
	Undertake all grass seeding according to Specification Section Q30.
Mesh Reinforced Grass Car Park	
4.1	Supply and sow British Seed Houses Ltd No 24 'Wear & Tear' mix across site in selected areas. Sow according to suppliers instructions at rate of 65kg/acre.
	<i>Seed mix comprises:</i>
	35% 'Rufilla' slender creeping red fescue
	30% 'Raisa' chewings fescue
	15% 'Aberimp' perennial ryegrass
	15% 'Aberelf' perennial ryegrass
	5% 'Avalon' velvet bent
4.2	Install reinforcing mesh. Fleximas Grass Reinforcing Mesh 'Premium' 5351, 650 g/m2 or similar and approved.
Wildflower & Grass Seed Mix	
4.3	Sow British Seed Houses Ltd RE10 'Marginal Land' across site in selected areas. Includes undersowing for all A, B & C planting areas. Sow according to suppliers instructions at rate of 4g/m2. Lightly chain harrow in 2 transverse directions to cover seed.
	<i>Seed mix comprises:</i>
	1.4% <i>Achillea millefolium</i>
	1.3% <i>Anthoxanthum odoratum</i>
	4% <i>Campanula rotundifolia</i>
	1.3% <i>Digitalis purpurea</i>
	1.3% <i>Endymnion non-scriptus</i>
	1.4% <i>Galium verum</i>
	1.3% <i>Lotus corniculatus</i>
	1.4% <i>Plantago lanceolata</i>
	1.4% <i>Prunella vulgaris</i>
	1.4% <i>Ranunculus repens</i>
	2.5% <i>Rumex acetosa</i>
	30% <i>Agrostis castellana</i>
	6% <i>Agrostis stolonifera</i>
	12.5% <i>Deschampsia flexuosa</i>
	25% <i>Festuca ovina</i>
	6.5% <i>Poa pratensis</i>

Year 1- Establishment of Planting Works		Visits/year
Item Description		
1.0 GENERAL		
1.1	Allow for all costs in connection with 4 no. minimum visits in each year for the purpose of executing maintenance.	4
1.2	Water plants during growing season according to NBS Specification Q35, Clause 155A as necessary for the continued thriving of all planting.	4
2.0 TREES AND HEDGEROWS		
2.1	Carry out herbicide application using a suitable systemic herbicide around the base of trees and hedgerow planting to a diameter of 1 metre to keep them free from perennial and annual weeds. Avoid damage to adjacent trees.	2
2.2	Strim off weed growth between weed free circles and remove arisings off site. Avoid damage to tree and hedgerow plant stems from nylon filament rotary cutters or other mechanical tools.	2
2.3	Prune all trees and hedgerow plants at an appropriate time to ensure vigorous bushy growth, removing dead, diseased and damaged material in accordance with good horticultural practice. Remove arisings off site.	1
	<i>Note: Timing of tree and hedgerow pruning works - Refer to ecological recommendations in Introductory Section 1</i>	
3.0 SHRUB PLANTING MIXES		
3.1	Prune all shrubs to ensure vigorous bushy growth, removing dead, diseased and damaged material in accordance with good horticultural practice. Remove arisings off site.	1
	<i>Note: Timing of pruning works - Refer to ecological recommendations in introductory section Introductory Section 1</i>	
3.2	Carry out herbicide application using a suitable systemic herbicide to eliminate any invasive weeds such as bindweed or thistles. Avoid damage to adjacent plants, trees or grass.	1
4.0 GRASS		
Mesh Reinforced Grass Car Park		
4.1	Carry out strimming to maintain the sward to 100mm high with a minimum of 2 visits during the growing season March - October. Remove all arisings off site.	4
Wildflower & Grass Seed Meadow Mix		
4.2	Prior to cutting undertake careful litter pick.	1
4.3	Carry out single annual strim to 50mm sward height of the meadow areas at the end of autumn once flowers have dropped their seed. <u>Timing:</u> Mid October. Spread cut material evenly across the meadow to allow natural re-seeding and provide habitat and food for wildlife.	1
5.0 LITTER		
5.1	Remove litter from the site including areas of vegetation to maintain a tidy appearance at all times. Litter includes for example, paper, packaging materials, bottles, cans and similar debris. It does not include larger tipped items - if these are found notify CA and on approval arrange for removal from site to appropriately licensed waste management site.	1

Years 2 - 5 Maintenance of Planting			
Item	Description	Visits/year	Year
1.0 GENERAL			
1.1	Allow for all costs in connection with 4 no. minimum visits in each year for the purpose of executing maintenance	2	Year 2 Year 3 Year 4 Year 5
1.2	Water plants according to NBS Specification Q35, Clause 155A as necessary for the continued thriving of all planting.	2	Year 2 Year 3 Year 4 Year 5
2.0 TREES AND HEDGEROWS			
2.1	Carry out herbicide application using a suitable systemic herbicide around the base of trees and hedgerow planting to a diameter of 1 metre to keep them free from perennial and annual weeds. Avoid damage to adjacent trees.	2	Year 2 Year 3 Year 4 Year 5
2.2	Strim off weed growth between weed free circles and remove arisings off site. Avoid damage to tree and hedgerow plant stems from nylon filament rotary cutters or other mechanical tools.	2	Year 2 Year 3 Year 4 Year 5
2.3	Prune all trees and hedgerow plants at an appropriate time to ensure vigorous bushy growth, removing dead, diseased and damaged material in accordance with good horticultural practice. Remove arisings off site.	Year 3 & 5	Year 3 Year 5
<i>Note: Timing of tree and hedgerow pruning works - Refer to ecological recommendations in Introductory Section 1</i>			
3.0 SHRUB PLANTING MIXES			
3.1	Prune all shrubs to ensure vigorous bushy growth, removing dead, diseased and damaged material in accordance with good horticultural practice. Remove arisings off site.	Year 3 & 5	Year 3 Year 5
<i>Note: Timing of pruning works - Refer to ecological recommendations in Introductory Section 1</i>			
3.2	Carry out herbicide application using a suitable systemic herbicide to eliminate any invasive weeds such as bindweed or thistles. Avoid damage to adjacent plants, trees or grass.	1	Year 2 Year 3 Year 4 Year 5
4.0 GRASS			
Mesh Reinforced Grass Car Park			
4.1	Carry out strimming to maintain the sward to 100mm high with a minimum of 2 visits during the growing season March - October. Remove all arisings off site.	1	Year 2 Year 3 Year 4 Year 5
4.2	Prior to cutting grass and wildflower meadow areas undertake careful litter pick.	2	Year 2 Year 3 Year 4 Year 5
Wildflower Meadow			
4.3	Carry out single annual strim to 50mm sward height of the meadow areas at the end of autumn once flowers have dropped their seed. <u>Timing:</u> Mid October. Spread cut material evenly across the meadow to allow natural re-seeding and provide habitat and food for wildlife.	1	Year 2 Year 3 Year 4 Year 5
4.4	Carry out single annual strim to 50mm sward height of the meadow areas at the end of autumn once flowers have dropped their seed. <u>Timing:</u> Mid October. Spread cut material evenly across the meadow to allow natural re-seeding and provide habitat and food for wildlife.	1	Year 2 Year 3 Year 4 Year 5
5.0 LITTER			
5.1	Remove litter from the site including areas of vegetation to maintain a tidy appearance at all times. Litter includes for example, paper, packaging materials, bottles, cans and similar debris. It does not include larger tipped items - if these are found notify CA and on approval arrange for removal from site to appropriately licensed waste management site.	2	Year 2 Year 3 Year 4 Year 5

Years 2 - 5 Maintenance of Planting				
Item	Description		Visits/year	Year
6.0 YEAR 5 - REPLACEMENT PLANTING WORKS				
6.1	Carry out thorough walkover inspection of planting beds to identify any dead or dying tree and shrubs. <u>Timing:</u> undertake identification whilst plants are in leaf between April and June - limiting inspection to careful walkover to minimise disturbance of habitat. After bird nesting season remove dead or dying shrubs carefully taking care not to damage surrounding planting. Remove from site. <u>Timing:</u> October to March			
	Replanting of trees and shrubs			
6.2	Replace dead or dying trees and shrubs with healthy specimens of the same species to specifications NBSQ31 External planting specifications.			
7.0 YEAR 1-5 of MAINTENANCE OF REPLACEMENT PLANTING				
Year 1 - Establishment of replacement planting				
7.1	Undertake establishment operations to NBS specifications as detailed in this schedule 'Year 1 Establishment' Items 1.0 - 5.1.			
Year 2-5 - Maintenance of replacement planting.				
7.2	Undertake establishment operations to NBS specifications as detailed in this schedule 'Years 2-5 Maintenance of Planting' Items 1.0 - 5.1.			

Planting Schedule

NOTE: Refer to drawing no. C/609/1 Overflow Carpark - Planting Bed Layout Details

TREES

Species	Specification	Quantity
<i>Acer campestre</i>	Height: 1200-1400mm, Whip	25
<i>Acer platanoides</i>	Height: 1200-1400mm, Whip	7
<i>Fraxinus excelsior</i>	Height: 1200-1400mm, Whip	7
<i>Prunus avium</i>	Height: 1200-1400mm, Whip	10
<i>Quercus robur</i>	Height: 1200-1400mm, Whip	15
<i>Sorbus aucuparia</i>	Height: 1200-1400mm, Whip	15

TREE & SHRUB PLANTING MIXES (BR Bare Root)

A - EDGE MIX			Quantites					
Species	Specification	%	A1	A2	A3	A4	A5	A6
<i>Acer campestre</i>	Height 900-1200mm, BR, Transplant	10	33	12	3	12	20	4
<i>Cornus alba</i>	Height 600-900mm, BR	7.5	25	9	2	8	15	3
<i>Corylus avellana</i>	Height 600-900mm, BR	7.5	25	9	2	9	15	3
<i>Crataegus monogyna</i>	Height 600-900mm, BR	20	66	24	6	24	40	8
<i>Ilex aquifolium</i>	Height 600-900mm, BR	7.5	25	9	2	8	15	3
<i>Prunus avium</i>	Height 1200-1500mm, BR	5	17	6	1	6	10	2
<i>Prunus spinosa</i>	Height 600-900mm, BR	10	33	12	3	12	20	4
<i>Rosa canina</i>	Height 900-1200mm, BR	10	33	12	3	12	20	4
<i>Sambucus nigra</i>	Height 600-900mm, BR	5	17	6	1	6	10	2
<i>Sorbus aucuparia</i>	Height 1200-1500mm, BR, Whip	10	30	12	3	12	20	4
<i>Viburnum opulus</i>	Height 900-1200mm, BR	7.5	25	9	2	9	15	3

B - MAIN MIX			Quantites	
Species	Specification	%	B1	B2
<i>Acer campestre</i>	Height 900-1200mm, Transplant	10	88	46
<i>Acer platanoides</i>	Height 600-900mm, Transplant	7.5	66	35
<i>Fraxinus excelsior</i>	Height 900-1200mm, Transplant	10	88	47
<i>Pinus nigra</i>	Height 600-900mm	7.5	67	35
<i>Pinus sylvestris</i>	Height 900-1200mm	20	176	93
<i>Quercus robur</i>	Height 1500-2000mm, Feathered	10	88	47
<i>Quercus robur</i>	Height 900-1200mm, Transplant	15	132	70
<i>Sorbus aucuparia</i>	Height 900-1200mm, Transplant	10	88	46
<i>Taxus baccata</i>	Height 600-900mm	10	88	47

C - CHERRY GLADES			Quantites		
Species	Specification	%	C1	C2	C3
<i>Prunus avium</i>	Height 1500-2000, Feathered	100	20	20	20

Grass Mixes

Grass Mix for Mesh Reinforced Grass Carpark
British Seed Houses Ltd - No 24 'Wear & Tear'
Sowing rate - 65kg/acre
Seed mix comprises:
35% 'Rufilla' slender creeping red fescue
30% 'Raisa' chewings fescue
15% 'Aberimp' perennial ryegrass
15% 'Aberelf' perennial ryegrass
5% 'Avalon' velvet bent
Wildflower & Grass Seed Mix
British Seed Houses Ltd - RE10 'Marginal Land'
Sowing rate - 4g/m2
Seed mix comprises:
1.4% Achillea millefolium
1.3% Anthoxanthum odoratum
4% Campanula rotundifolia
1.3% Digitalis purpurea
1.3% Endymnion non-scriptus
1.4% Galium verum
1.3% Lotus corniculatus
1.4% Plantago lanceolata
1.4% Prunella vulgaris
1.4% Ranunculus repens
2.5% Rumex acetosa
30% Agrostis castellana
6% Agrostis stolonifera
12.5% Deschampsia flexuosa
25% Festuca ovina
6.5% Poa pratensis

NOTE: Refer to drawing no. C/609/1 Overflow Carpark Planting Details

Section 3

Soft Landscape Specifications

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D

Groundwork

D20
Excavating and filling

D20 Excavating and filling

To be read with Preliminaries/General conditions

CLEARANCE/EXCAVATING

164A TREE ROOTS

- Protected area: Do not cut roots within an area which is the larger of:
 - The branch spread of the tree.
 - An area with a radius of half the tree's height, measured from the trunk.
- Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
- Cutting:
 - Make clean smooth cuts with no ragged edges.
 - Pare cut surfaces smooth with a sharp knife.
- Backfill: with original topsoil and consolidate by hand only, taking care not to over compact.

170A REMOVING TREES, SHRUBS AND HEDGES

- Identification: Clearly mark trees to be removed.
- Safety: Comply with Forestry and Arboriculture Safety and Training Council Safety Guides.
- Felling: Cut down and grub up roots of shrubs and smaller trees. Fell larger trees as close to the ground as possible and remove stumps mechanically to a minimum depth of 300mm below ground level.
- Work near retained trees: Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.
- Stumps: Obtain approval before removing stumps by winching and do not use other trees as supports or anchors.

181A SITE CLEARANCE

- General: Clear site of rubbish, debris and vegetation.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas except under canopies of trees and vegetation to be retained.
- Angle of line from horizontal: 45 degrees.

240 ADJACENT EXCAVATIONS

- Proximity: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto must be completed before the higher excavation is made.
- Angle of line from horizontal: 45 degrees.

310 UNSTABLE GROUND

- Generally: Ensure that the excavation remains stable at all times.
- Give notice: Without delay if any newly excavated faces are too unstable to allow earthwork support to be inserted.
- Take action: If instability is likely to affect adjacent structures or roadways, take appropriate emergency action.

320 RECORDED FEATURES

- Recorded foundations, beds, drains, manholes, etc: Break out and seal drain ends.
- Contaminated earth: Remove and disinfect as required by local authority.

330 UNRECORDED FEATURES

- Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

370 UNDERGROUND STRUCTURES IN LANDSCAPE AREAS

- Generally: Remove walls, roads, foundations, disused services, drains, manholes and the like to minimum depth.
- Minimum depth below finished levels:
 - Grass, ground cover and perennial planting: 500 mm.
 - Shrub planting: 750 mm.
 - Within 2 m of tree planting: 1000 mm.
- Walls and slabs remaining: In every 10 m² of wall or slab, make a drainage hole at least 600 mm diameter.

DISPOSAL OF MATERIALS

441 SURPLUS SUBSOIL

- Excavated material: Stockpile in temporary storage heaps.
- Retained material: Spread and level surplus subsoil on site.
 - Locations: agreed with CA .
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- Remaining material: Remove from site.

450 WATER

- Generally: Keep all excavations free from water until:
 - Formations are covered.
 - Below ground construction are completed.
 - Basement structures and retaining walls are able to resist leakage, water pressure and flotation.
- Drainage: Form surfaces of excavations and fill to provide adequate falls.
- Removal of water: Provide temporary drains, sumps and pumping as necessary. Do not pollute watercourses with silt laden water.

454A GROUND WATER LEVEL/ RUNNING WATER

- Give notice: If it is considered that the excavations are below the water table.

457A PUMPING

- General: Do not disturb excavated faces or stability of adjacent ground or structures.
- Pumped water: Discharge without flooding the site or adjoining property.
- Sumps: Construct clear of excavations. Fill on completion.

FILLING

510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - Frozen or containing ice.
 - Organic.
 - Contaminated or noxious.
 - Susceptible to spontaneous combustion.
 - Likely to erode or decay and cause voids.
 - With excessive moisture content, slurry, mud or from marshes or bogs.
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - Unacceptable, class U2 as defined in the Highways Agency 'Specification for highway works', clause 601.

530A PLACING FILL

- Excavations and areas to be filled: Free from loose soil, rubbish and standing water.
- Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
- Adjacent structures, membranes and buried services:
 - Do not overload, destabilise or damage.
 - Submit proposals for temporary support necessary to ensure stability during filling.
- Layers: Place so that only one type of material occurs in each layer.

Q

Paving/Planting/Fencing/Site furniture

Q28

Topsoil and growing media

Q28 Topsoil and growing media

To be read with Preliminaries/ General conditions.

- 200 GRADING SUBSOIL
- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
 - Areas of thicker topsoil: Excavate locally.
- 210 LIGHT AND NONCOHESIVE SUBSOILS
- Loosening: use a three tine ripper, drawn 300 mm deep at 600 mm centres in two directions obliquely, when ground conditions are reasonably dry.
- 220 STIFF CLAY AND COHESIVE SUBSOILS
- Loosening: use a single tine ripper, driven 450 mm deep at 1m centres in two directions obliquely, when ground conditions are reasonably dry.
- 250A SURFACE PREPARATION
- Stones: immediately before spreading topsoil remove stones larger than 50mm.
 - Other items: remove all rubbish and builders debris.
- 340A IMPORTED TOPSOIL FOR GENERAL PLANTING AREAS
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
 - Grade: To BS 3882, General purpose grade.
 - Source: To approval.
Submit: Declaration of analysis including information detailing each of the relevant parameters given in BS 3882, clause 6 and table 2.
 - Additional analyses: not required.
 - Other requirements: none.
- 380 CONTAMINATION
- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - Corrosive, explosive or flammable.
 - Hazardous to human or animal life.
 - Detrimental to healthy plant growth.
 - Subsoil: In areas to receive topsoil, do not use subsoil contaminated with the above materials.
 - Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.
- 410 HANDLING TOPSOIL
- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
 - Plant: Select and use plant to minimize disturbance, trafficking and compaction.
 - Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
 - Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
 - Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit as defined by BS 3882, Annex N2.

420 SPREADING TOPSOIL

- Temporary roads/surfacing: Remove before spreading topsoil.
- Layers:
 - Depth (maximum): 150 mm.
 - Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum): 450 mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

450 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 25 mm
- Below dpc of adjoining buildings: Not less than 150 mm
- Shrub areas: Higher than adjoining grass areas by 25 mm
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

Q30
Seeding/turfing

Q30 Seeding/turfing

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/REQUIREMENTS

115 SEEDED AND TURFED AREAS

- Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
- Appearance: A closely knit, continuous ground cover of even density, height and colour.

120 CLIMATIC CONDITIONS

- General: Carry out the work while soil and weather conditions are suitable.

145 WATERING

- Quantity: Wet full depth of topsoil.
- Application: Even and without displacing seed, seedlings or soil.
- Frequency: As necessary to ensure the establishment and continued thriving of all seeding/turfing.

150 WATER RESTRICTIONS

- Timing: If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/turfing until instructed. If seeding/turfing has been carried out, obtain instructions on watering.

160 NOTICE

- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Preparing seed bed.
 - Seeding or turfing.
 - Visiting site during maintenance period.
- Period of notice: 2 working days.

170 SETTING OUT

- Boundaries: Mark clearly.
- Delineation: In straight lines or smoothly flowing curves as shown on drawings.

PREPARATION

210a HERBICIDE FOR SEEDED AREAS

- Type: Suitable for suppressing perennial weeds.

231 PEAT

- Peat or products containing peat: Do not use.

250A CULTIVATION

- Compacted topsoil: Break up to full depth.
- Tilth: Reduce top 100 mm of topsoil to a tilth suitable for blade grading (10 mm down particles).
- Material brought to the surface: Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

260 GRADING

- Topsoil condition: Reasonably dry and workable.
- Contours: Smooth and flowing, with falls for adequate drainage.
 - Hollows and ridges: Not permitted.
- Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
- Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 150 mm .
- Give notice: If required levels cannot be achieved by movement of existing soil.

280A FINAL CULTIVATION

- Timing: After grading and fertilizing.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.
 - Depth: 25 mm.
 - Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
 - Remove surface stones/earth clods exceeding:
 - General areas: 50 mm.
 - Fine lawn areas: 25 mm.
- Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

SEEDING

311A GRASS SEED FOR MESH REINFORCED CAR PARK

- Supplier: British Seed Houses Ltd
 - Mixture reference: No 24 'Wear & Tear' mix
 - Application rate: 65kg/acre.

311B WILDFLOWER & GRASS SEED MIX

- Supplier: British Seed Houses Ltd.
 - Mixture reference: RE10 'Marginal Land'.
- Application rate: 4g/m².

330A SOWING

- General: Establish good seed contact with the root zone.
- Method: To suit soil type, proposed usage, location and weather conditions during and after sowing

335a SOWING SEASON

- Grass seed generally: March - May or August - October.

340A PRE-EMERGENT HERBICIDE FOR SEEDED AREAS

- General: where soil has not been allowed to lie fallow apply a suitable pre-emergent herbicide immediately after sowing.

352A EDGES TO SEEDED AREAS

- Location: Planting beds and around newly planted trees.
- Timing: After seeded areas are well established.
- Edges: Clean straight lines or smooth curves. Draw back to permit edging.
- Arisings: Remove.

530A FIRST CUT OF GRASSED AREAS

- Timing: When grass reaches 40-75 mm high and is reasonably dry.
- Preparation: Before cutting, remove debris, litter and stones and earth clods larger than 25 mm in any dimension
- Height of first cut: 40 mm.
- Arisings: Remove from site.

590 CLEANLINESS

- Soil and arisings: Remove from hard surfaces.
- General: Leave the works in a clean, tidy condition at Completion and after any maintenance operations.

MAINTENANCE

605A MAINTENANCE

- Duration: Carry out the operations in clauses 610 to 685 from completion of seeding/ turfing until the end of the defects liability period.

610A FAILURES OF SEEDING/TURFING

- General: Grassed areas that have failed to thrive (unless due to theft or malicious damage), during the period stated in clause 605, will be regarded as defects due to materials or workmanship not in accordance with the Contract. Make good by recultivation and reseeding/returfing.
Defective materials or workmanship: Areas that have failed to thrive.
- Timing of making good: Submit proposals.

620A MAINTAINING GENERAL GRASSED AREAS

- Maximum height of growth at any time: 50 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 20 mm
 - Arisings: Remove from site
- Trimming: At the end of each cut, trim all grass edges, including round the base of trees, manholes, etc. and remove arisings..
- Weed control: keep the sward substantially free of broad leaved weeds by applying a suitable selective herbicide.
- Watering: As Q30 / 145

680A FERTILIZER FOR ALL GRASSED AREAS

- March application: 15:10:10 Spring turf fertilizer at 35 g/m².
- September application: 5:10:10 Autumn turf fertilizer at 50 g/m².

Q31
External planting

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS

- 110A TOP SOIL
- At the time of planting all topsoil spreading will be complete at a minimum depth of 300mm for planting areas and 150mm for grassed areas.
- 112A SITE CLEARANCE GENERALLY
- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
 - Stones: Remove those with any dimension exceeding 50 mm.
 - Contamination: Substances injurious to plant growth including subsoil, rubble, fuel, and lubricants.
 - Vegetation: clear any remaining vegetation, where planting to take place, by spraying with an approved translocated and non-residual herbicide and removing any dead material off site once treatment has taken effect or other approved method.
 - Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- 118 SOIL CONDITIONS
- Soil for cultivating and planting: Moist, friable and (excepting aquatic/ marginal planting) not waterlogged.
 - Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.
- 120A CLIMATIC CONDITIONS
- General: Carry out the work while soil and weather conditions are suitable.
 - Do not plant during periods of frost or strong winds.
- 125A TIMES OF YEAR FOR PLANTING
- Deciduous trees and shrubs: Late October to late March.
 - Conifers and evergreens: September/ October or April/ May.
 - Herbaceous plants (including aquatic and marginal): September/ October or March/ April.
 - Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate Watering and weed control provided.
 - Dried bulbs, corms and tubers: September/ October.
 - Colchicum (crocus): July/ August.
 - Green bulbs: After flowering in spring.
 - Wildflower plugs: Late August to mid November or March/ April.
- 130A MECHANICAL TOOLS
- Use only machinery and tools suitable for the site conditions and the work to be carried out. Use Hand tools around trees, plants in confined spaces where it is impracticable to use machinery
- 145 WATERING
- Quantity: Wet full depth of topsoil.
 - Application: Even and without damaging or displacing plants or soil.
 - Frequency: As necessary to ensure establishment and continued thriving of planting.

- 150 WATER RESTRICTIONS
- General: If water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.
- 160A NOTICE
- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Delivery of plants/ trees.
 - Planting shrubs.
 - Planting trees into previously dug pits.
 - Watering.
 - Visiting site during maintenance period.
 - Period of notice: 5 days
- 165A PREPARATION, PLANTING AND MULCHING MATERIALS
- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
 - Certified materials: For each of the following materials submit a certificate giving supply source, content analysis, confirmation of suitability for purpose and confirmation of absence of harmful substances: bark mulch.
 - Give notice before ordering or using.
- 200A PLANTS/ TREES - GENERAL
- Condition: Materially undamaged, sturdy, healthy and vigorous.
 - Appearance: Of good shape and without elongated shoots.
 - Hardiness: Grown in a suitable environment and hardened off.
 - Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
 - Budded or grafted plants: Bottom worked.
 - Root system and condition: To requirements of national plant specification and Balanced with branch system.
 - Species: True to name.
 - Origin/ Provenance: Grown in the United Kingdom for at least one growing season, unless otherwise approved.
 - Origin and Provenance have the meaning given in the National Plant Specification.
- 215 PLANTS/ TREES - SPECIFICATION CRITERIA
- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.
- 235 CONTAINER GROWN PLANTS/ TREES
- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
 - Plants: Centred in containers, firmed and well watered.
 - Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
 - Hardiness: Grown in the open for at least two months before being supplied.
 - Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

- 245 LABELLING AND INFORMATION
- General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
 - Full botanical name.
 - Total number.
 - Number of bundles.
 - Part bundles.
 - Supplier's name.
 - Employer's name and project reference.
 - Plant specification, in accordance with scheduled National Plant Specification categories.
 - Additional information: Submit on request: any additional stock required by the CA.
- 250 SUPPLY OF PLANTS/TREES
- Suppliers: Members of the horticultural Trades Association Nursery Certification Scheme
- 260A PLANT/ TREE SUBSTITUTION
- Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
 - Price.
 - Difference from specified plants/ trees.
 - Further alternatives: Proposed substitutions may not be acceptable and submission of further alternatives may be required
 - Approval: Obtain before making any substitution.
- 265A PLANT HANDLING, STORAGE TRANSPORT AND PLANTING
- Standard: To CPSE 'Handling and establishing landscape plants' (Obtainable from the Horticultural Trades Association) Part I, Part II, Part II, paragraphs 1.3.3 to 1.3.6, 3.0 and 4.0
 - Frost: Protect plants from frost.
 - Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
 - Plant packaging: Black polyethylene bags.
 - Packaging of bulk quantities: alternatively use pallets or bins sealed with polythene and shrink wrapped.
- 270 PLANTING GENERALLY
- Standard: To CPSE 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part III, paragraphs 6.2 to 6.6.
 - Appearance: Plant upright or well balanced with best side to front
- 280 TREATMENT OF TREE WOUNDS
- Cutting: Keep wounds as small as possible.
 - Cut cleanly back to sound wood using sharp, clean tools.
 - Leave branch collars. Do not cut flush with stem or trunk.
 - Set cuts so that water will not collect on cut area.
 - Fungicide/ Sealant: Do not apply unless instructed.
- 290A SURPLUS MATERIAL
- General: Remove Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, prunings and other arisings/rubbish.
- 341 PEAT
- Peat or products containing peat: Do not use.

375A CULTIVATION

- Compacted topsoil: Break up to full depth.
- Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm.
 - Depth: Top 150 mm of planting beds.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels:
 - As required in sections D20 and Q28
 - Within 75 mm of levels specified on drawings
- Undesirable material brought to the surface: Remove, including weeds, roots, stones and clods larger than 50 mm in any dimension, tufts of grass and foreign matter.
- Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

435A CLIMBING PLANTS USED AS GROUND COVER

- Planting: Remove Canes or other supports. Spread stems, pinning to ground where appropriate to ensure good contact for rooting and early establishment

476A BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required, together with:
 - Ameliorant/ Conditioner: Melcourt 'Topgrow' tree and shrub planting compost or equivalent
Coverage: at 1 part compost to 4 parts topsoil.
 - Fertilizer: Scotts sierrablenn flora or equivalent.
Coverage: 70g/m²

480A AFTER PLANTING

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.

485A MULCHING PLANTING BEDS

- Material: Conifer bark
 - Purity: Free of pests, disease, fungus and weeds.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: Mulch the whole surface area of planting areas with Melcourt Amenity Bark Mulch at 1m³ of material per 13.3 m² (equivalent to 75 mm depth) allow min 5% settlement after 30 days
Manufacturer: Melcourt Industries Ltd. Boldridge Brake, Long Newnton, Tetbury, Gloucester GL8 8RT. Tel: 01666 502711 Fax: 01666504398

PLANTING TREES

535A STAKING GENERALLY (FEATHERED TREES)

- Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
- Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
- Minimum stake sizes:

Tree size/type:	Overall length of stake:	Cross section of stake:
Feathered Trees	1200 mm	60 mm

595A RABBIT SPIRALS (PROVISIONAL RATE ONLY)

- Transplants to have an approved rabbit spiral, such as Acorn 'Spiral Shelters', size 600 mm high x 50 mm diameter or similar and approved transparent, spirally wound tree shelter, available from Acorn PLanting products; Tel. 01508 528763. Spirals to an internal 900 mm long 14/14lbs bamboo cane.
- Ensure that protection methods do not impede natural movement of trees or restrict growth.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

710A MAINTENANCE

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the defects liability period, or as instructed by the CA
- Frequency of maintenance visits: Approximately monthly during the growing season and as necessary to fulfill the requirements of the specification.

720A FAILURES OF PLANTING

- General: Plants/trees/shrubs that have failed to thrive (unless due to theft or malicious damage after completion) during period stated in clause 710, will be regarded as defects due to materials or workmanship not in accordance with the Contract. Replace with equivalent plants/trees/shrubs.
- Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- Timing of making good: During the next suitable planting season

740 CLEANLINESS

- Soil and arisings: Remove from hard surfaces and grassed areas.
- General: Leave the works in a clean tidy condition at completion and after any maintenance operations.

750A PLANTING MAINTENANCE

During the Defects Liability Period carry out maintenance of the planted areas as follows:

- Weed control within naturalistic tree and shrub planted areas: Maintain weed free area around each tree and shrub, minimum diameter the larger of 1m or the surface of original planting pit. Keep planting beds clear of weeds, by use of suitable herbicides, remove dead material off site once treatment has taken effect.
- Weed control with Ornamentalshrub planting area: Maintain in a weed free condition at all times by hand weeding or use of suitable herbicides, remove dead material off site once treatment has taken effect.
- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards. Replace Broken or missing items. Adjust if necessary to allow growth and prevent rubbing of bark. Cut back any damaged bark.
 - Frequency of checks: Every 3 months
- Trees: Spray crown when in leaf during warm weather. Carry out in the evening.

755A PLANTING MAINTENANCE - FERTILIZER

- Time of year: March or April.
- Fertilizer: Miracle Professional 'Enmag' or equal approved.
- Application: Evenly spread, carefully incorporating below mulch materials.
- Coverage: 70 g/m².

760A PLANTING MAINTENANCE - PRUNING

- General: Prune at appropriate times, to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape.
 - Prune trees to favour a single central leading shoot.

765 PLANTING MAINTENANCE - WATERING

- General: As clauses 145 and 150, using a fine rose or sprinkler until full depth of topsoil is saturated.

780A MAINTENANCE INSTRUCTIONS

- General: Before end of the period stated in clause 710, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year.

Q35

Landscape maintenance

Q35 Landscape maintenance

5 YEARS MAINTENANCE

To be read with Preliminaries/ General conditions.

GENERALLY

110A NOTICE

- Give notice before:
 - Application of herbicide.
 - Application of fertilizer.
 - Watering.
 - Each site maintenance visit.
- Period of notice: 5 days

130A REINSTATEMENT

- Reinstate to original condition and within reasonable period of time (accroding to season), any damage or disturbance occurring during the work, to soil structure, planting, grass, fencing, hard landscaping, structures or buildings.

140A CONTROL OF MAMMALIAN PESTS

- Employ only approved specialist firms and methods.

155A WATERING

- Supply: Potable mains water, obtain CA approval before using an alternative water supply.
- Quantity: Ensure full depth of topsoil is throughly wetted.
- Application: Use a fine rose or low pressure hose where appropriate to avoid damaging or loosening plants..
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: As necessary for the continued thriving of all planting.

175A DISPOSAL OF ARISINGS

- General: Unless specified otherwise, dispose of arisings as follows:
- Removing from site

180 CHIPPING OR SHREDDING

- General: Not permitted on site.

190 LITTER

- Extraneous rubbish not arising from the contract work: Collect and remove from site.

197 CLEANLINESS

- Soil and arisings: Remove from hard surfaces.
- General: Leave the works in a clean, tidy condition at completion and after any maintenance operations.

GRASSED AREAS

210A MAINTENANCE OF GRASSED AREAS

- General: Maintain turf in a manner appropriate to the intended use.
- Grass height: Maintain within range specified in clauses 260 to 280.
Soil and grass condition:
 - Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
 - Prevent waterlogging and compaction
 - Repair damage due to trampling, abrasion or scalping during mowing.
- Ornamental lawns: Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
 - Edges: Neat and well defined, in clean straight lines or smooth flowing curves.
- Litter and fallen leaves: Remove regularly to maintain a neat appearance.

220 GRASS CUTTING GENERALLY

- Before mowing: Remove litter, rubbish and debris.
- Finish: Neat and even, without surface rutting, compaction or damage to grass.
- Edges: Leave neat and well defined. Neatly trim around obstructions.
- Adjoining hard areas: Sweep clear and remove arisings.
- Drought or wet conditions: Obtain instructions.

225 TREE STEMS

- Precautions: Do not use mowing machinery closer than 100 mm to tree stems. Use nylon filament rotary cutters and other hand held mechanical tools carefully to avoid damage to bark.

250A LEAF REMOVAL

- Operations: Collect fallen leaves.
- Special requirements: None

265 MOWING GENERAL AREAS

- Grass height: Maintain between 25 and 50 mm.
- Arisings: Remove.

309 EDGES TO SEEDED AREAS

- Location: Planting beds and around newly planted trees.
- Timing: After seeded areas are well established.
- Edges: Cut to clean straight lines or smooth curves. Draw back soil to permit edging.
- Arisings: Remove.

310A RE-FORMING GRASS EDGES

- Location: Planting beds, paths, manhole covers and the like.
- Edges: Draw back soil and re-form edges to clean straight lines or smooth flowing curves, sloping slightly back from vertical.

340A SPOT WEEDKILLING IN ROUGH GRASS AREAS

- Operations: Spot treat with a suitable herbicide: All broad leaved weeds.

SHRUBS/TREES/HEDGES

500A ESTABLISHMENT OF NEW PLANTING

- During the initial establishment of newly planted trees and shrubs, carry out maintenance of the planted areas as follows:
- Maintain in a weed free condition, a minimum diameter the larger of 1m or the surface area of the original planting pit. Keep planting pits clear of weeds by use of suitable herbicides and maintaining full thickness of mulch as specified.
- Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
- Trees: When in leaf, spray crowns in the evening during warm weather.

502A ESTABLISHMENT OF NEW PLANTING - FERTILIZER

- Time of year: March or April.
- Type: Miracle professional 'Enmag'.
- Spreading: Spread evenly. Carefully lift and replace any mulch materials.
 - Coverage: 70 g per m².

520 REFIRMING OF TREES AND SHRUBS

- Timing: After strong winds, frost heave and other disturbances.
- Refirming: Tread around the base until firmly bedded.
- Collars in soil at base of tree stems, created by tree movement: Break up by fork, avoiding damage to roots. Backfill with topsoil and refirm.

540 PRUNING GENERALLY

- Pruning: In accordance with good horticultural and arboricultural practice.
 - Removing branches: Do not damage or tear the stem or bark.
 - Wounds: Keep as small as possible and cut cleanly back to sound wood.
 - Cutting: Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - Larger branches: Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
- Appearance: Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well balanced natural appearance.
- Tools: Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
- Disease or infection: Give notice if detected.
- Growth retardants, fungicide or pruning sealant: Do not use unless instructed.

545A PRUNING OF EXCESSIVE OVERHANG

- Timing: Within Defects Liability Period.
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.

555A PRUNING TREES AND SHRUBS

- Standard: To BS 7370-4, clauses 3.6.3 to 3.6.5
- Special requirements: except where specified otherwise.

570A FORMATIVE PRUNING OF YOUNG TREES

- Time of year: Do not prune during the late winter/ early spring sap flow period.
- Young trees up to 4 m high:
 - Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.
 - Remove duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
- Whips or feathered trees: Do not prune.
- Operatives: Extensive pruning of young trees and any surgery to larger trees must be carried out by an approved member of the Arboricultural Association or other approved specialist.

620 REMOVAL OF DEAD PLANT MATERIAL

- Operations: At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.

630 DEAD AND DISEASED PLANTS

- Removal: As soon as possible.
- Replacement: In the next scheduled round of replacement planting.

635A REINSTATEMENT OF SHRUB/ HERBACEOUS AREAS

- Dead and damaged plants: Remove.
- Mulch/ matting materials:
 - Carefully move to one side and dig over the soil, leaving it fit for replanting.
 - Do not disturb roots of adjacent plants.
- Replacement plants:
 - Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
 - Additional requirements:
- Dressing: Slow release fertilizer:
 - Type: approved
 - Coverage: 70 g/m²

645A WEED CONTROL GENERALLY

- Weed tolerance: Control weed growth through monthly translocated herbicide treatments from April to September for Ornamental Shrub planting, or as required to maintain the site in a weed free condition. Remove dead plant material from site once herbicide treatment has taken effect.
- Adjacent plants, trees and grass: Do not damage.

650 HAND WEEDING

- General: Remove weeds entirely, including roots.
- Disturbance: Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
- Completion: Rake area to a neat, clean condition.
- Mulch: Reinststate to original depth.

655A WEED CUTTING BY HAND OR MACHINE

- Type: Suitable residual soil acting herbicide.
Time of year: Unless otherwise agreed, complete before end of March.
Timing: Allow recommended period for herbicide to take effect before clearing arisings.

670 WEED CONTROL WITH SUMMER HERBICIDE

- Type: Suitable foliar acting herbicide.
- Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.

685 SOIL LEVEL ADJUSTMENT

- Level of soil/mulch at edges of beds: Reduce to 50 mm below adjacent grass or hard surface.
 - Arisings (if any): Spread evenly over the bed.

690A MAINTENANCE OF LOOSE MULCH

- Thickness (minimum): 50 mm.
 - Top up: with mulch as previously specified.
- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
- Weeding: Remove weeds growing on or in mulch by hand weeding or herbicide.

700A SNOW REMOVAL FROM SHRUBS/ TREES

- General: Remove snow as recommended by BS 7370-4, clause 3.5.15 when instructed by CA.

TREE WORK

810 TREE WORK GENERALLY

- Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
- Protection: Avoid damage to neighbouring trees, plants and property.
- Standards: To BS 3998 and Health & Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'.
- Removing branches: Cut as Arboricultural Association Leaflet 'Mature tree management'. Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
- Appearance: Leave trees with a well balanced natural appearance.
- Chain saw work: Operatives must hold a Certificate of Competence.
- Tree work: To be carried out by an approved member of the Arboricultural Association.

815A ADDITIONAL WORK

- Carry out only those works indicated in the schedule. If defective, diseased, unsafe or weak parts of trees are discovered other than those scheduled for attention, inform the CA and await instructions.

820 PREVENTION OF WOUND BLEEDING

- Standard: To BS 3998, clause 8.

825 PREVENTION OF DISEASE TRANSMISSION

- Standard: To BS 3998, clause 9 and Appendix B.

835 CUTTING AND PRUNING GENERALLY

- Tools: Appropriate, well maintained and sharp.
- Final pruning cuts:
 - Chainsaws: Do not use on branches of less than 50 mm diameter.
 - Hand saws: Form a smooth cut surface.
 - Anvil type secateurs: Do not use.
- Removing branches: Do not damage or tear the stem.
- Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
- Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
Large branches: Remove only if unavoidable.
 - Remove in small sections and lower to ground with ropes and slings.
- Dead branches and stubs: When removing, do not cut into live wood.
- Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
- Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.