



## **GRAVEN HILL, BICESTER**



Construction Phase 1a  
Specimen Specification Appendices - LANDSCAPE

May 2016

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**Client Name:** Graven Hill Village Development Company Limited  
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### Quality Assurance – Approval Status

This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

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<b>Issue</b>	<b>Date</b>	<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>
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### Comments

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## Disclaimer

This report has been prepared by Waterman Infrastructure & Environment Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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## Introduction

1. This Specimen Specification Appendices document relates to external hard and soft landscape works (“the Works”) within Construction Phase 1a (“the Site”), located near Bicester, Oxfordshire, on part of the original MOD Graven Hill Site. The access to Construction Phase 1a is located approximately at Post Code OX26 6HE off the A41. The boundary of Construction Phase 1a is described on the plan information which accompanies this document.
2. This Specimen Specification Appendices document shall be read in conjunction with all the other landscape tender information.
3. The Contractor shall carefully study the contents of the contract documents and satisfy themselves on all matters associated with the Works.
4. All Tendering Contractors shall be invited to, and are expected to, visit the Site prior to tendering.
5. The Tendering Contractor shall be deemed to have inspected the Site and considered all site conditions when preparing their tender.
6. It is assumed that the Contractor shall undertake sufficient site visits to familiarise themselves with the Client’s Requirements, the Specimen Specification Appendices Requirements and the Scope of Works.
7. This Specimen Specification Appendices document should be read in conjunction with the relevant Preliminaries and General Conditions detailed within Waterman document ‘Construction Phase 1a Specimen Specification Appendices – INFRASTRUCTURE’.

## **D Groundwork**

## D20 Excavating and Filling

To be read with Preliminaries/General Conditions

### GENERALLY/ THE SITE

#### 150A EXISTING SERVICES, FEATURES AND STRUCTURES

- Services/ utilities: The recorded locations are indicative only. Underground services/ utilities searches shall be carried out by the Contractor at all excavation points to factually demonstrate that the area is clear of all underground services/ utilities.
- Underground services/ utilities indicated on landscape drawings: Contractor shall CAT scan and demarcate on site.
  - No tree pits to be located on existing underground services.
  - Any excavation, earthworks or Works in proximity to existing underground services shall be hand dug only to maximum 1.2m below existing ground level.

### CLEARANCE/EXCAVATING

#### 164 TREE ROOTS

- Protected area: Do not cut roots within precautionary protection area.
  - Size of area: Root Protection Area or canopy spread - whichever is the greater.
- Excavation in protected area:
  - Method: As per Waterman Arboricultural Method Statement.'
  - Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
- 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.
  - Treatment of cut roots: Not required.
- Backfill: As dug material, lightly consolidated.

#### 168 SITE CLEARANCE

- Timing: Before topsoil stripping, if any.
- General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.
- Treatment: Apply a suitable non-residual herbicide to areas to receive planting.

#### 170 REMOVING SMALL TREES, SHRUBS, HEDGES AND ROOTS

- Identification: Clearly mark trees to be removed.
- Small trees, shrubs and hedges: Cut down
- Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas



- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.

#### 175 FELLING LARGE TREES

- Definition: Girth over 600 mm.
- Identification: Clearly mark trees to be removed.
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.
- Felling: As close to the ground as possible.
- Stumps: Remove mechanically to a minimum depth of 300 mm below ground level ONLY if this will not disturb the rootzones of adjacent retained trees, tree groups or hedgerows.
- 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.

#### 180 CHIPPING AND SHREDDING

- General: Permitted, some arisings may be spread on site in areas designated - TBA.

#### 220 STRIPPING TOPSOIL

- General: Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on drawings.
- Depth:
  - Remove to an average depth of 250 mm.
  - Give notice where the depth of topsoil is difficult to determine.
- Handling: Handle topsoil for reuse or sale in accordance with clause 225.
- Around trees: Do not remove topsoil from below the spread of trees to be retained.
- Site storage: Keep separate from excavated sub-soil.

#### 221 TREATING TOPSOIL

- Treatment: Apply a suitable translocated nonresidue herbicide.
- Timing: Not less than two weeks before excavating topsoil.

#### 225 HANDLING TOPSOIL

- Standard: To BS 3882.
- Aggressive weeds:
  - Species: Included in the Weeds Act, section 2 or the appropriate Wildlife and Countryside Act for the relevant jurisdiction.
  - Give notice: Obtain instructions before moving topsoil.
- Contamination: Do not mix topsoil with:
  - Subsoil, stone, hardcore, rubbish or material from demolition work.
  - Other soil or material containing aggressive weeds, sharps, plastics and non-soil forming materials and notifiable animal or plant diseases.
  - Oil, fuel, cement or other substances harmful to plant growth.

- Other classifications of topsoil.
- Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

### 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 m<sup>2</sup> of wall or slab, make a drainage hole at least 600 mm diameter.

## DISPOSAL OF MATERIALS

### 420 TOPSOIL STORAGE HEAPS

- Location: TBA.
- Standard: To BS 3882.
- Height (maximum): 1000mm.
- Protection:
  - Do not place any other material on top of storage heaps.
  - Do not allow construction plant to pass over storage heaps.
- Prevent compaction and contamination.

### 421 TOPSOIL STORAGE HEAP TREATMENT

- Treatment: Apply a suitable non-residual herbicide then if topsoil to be stored for longer than 6 months seed with deep rooting grass/legume seed mixture .

### 441 SURPLUS SUBSOIL

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

## FILLING

### 500A PROPOSED FILL MATERIALS (EARTH MOUNDS WITHIN LAP PLAY AREAS AND PUBLIC OPEN SPACES)

- Details: Submit full details of proposed fill materials to demonstrate compliance with specification, including:

- Type and source of imported fill.
- Proposals for processing and reuse of material excavated on site.
- Test reports as required elsewhere.
- Timing: At least 21 days before starting filling.

#### 510A HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS (EARTH MOUNDS WITHIN LAP PLAY AREAS AND PUBLIC OPEN SPACES)

- 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.
  - 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.

#### 530A PLACING FILL (EARTH MOUNDS WITHIN LAP PLAY AREAS AND PUBLIC OPEN SPACES)

- Surfaces of areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
- Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and re-compact 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.
  - Allow 14 days (minimum) before backfilling against in situ concrete structures.
- Layers: Place so that only one type of material occurs in each layer.
- Gradients: Finished gradients of mounds to be no steeper than 1:3.

#### 535A COMPACTION GENERALLY

- General: Create mounds by compacting fill in layers no greater than 200mm depth.
- After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.
- Defective areas: Remove and re-compact to full thickness of layer using new material.

#### 610 COMPACTED FILLING FOR LANDSCAPE AREAS

- Fill: Material capable of compaction by light earthmoving plant.
- Filling: Layers not more than 200 mm thick. Lightly compact each layer to produce a stable soil structure.

615 LOOSE TIP FILLING FOR LANDSCAPE AREAS

- Filling: Do not firm, consolidate or compact when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.



## **N Furniture/Equipment**

## **N91 External Signage and Interpretation**

### **SIGNAGE OUTLINE**

#### **120 BESPOKE SIGNAGE SYSTEM to selected areas of public open space**

- Function: Information and Interpretation.
- Sign type: TBA.
- Products/ Integral features: Woodscape Hardwood Timber Knott End Style Sign) or similar approved).
- Materials: FSC Approved timber with content and weather-proof finish TBA.
- Electrical supplies: Not required.

### **SYSTEM PERFORMANCE**

#### **205 DESIGN OF SIGNAGE SYSTEMS FOR INFORMATION & INTERPRETATION BOARDS**

- Design: Complete detailed design and submit before commencing work.
- Proposals: Submit drawings, schedules, technical information, calculations and manufacturer's literature before commencing work.

#### **210 EXTERNAL SIGNAGE GENERALLY**

- Signage systems generally: Complete to BS 559, including components, inserts, accessories and fixings necessary to complete the system.
- External signage: To BS 559, clause 6.1.
- Content: Signs including facing information, components, inserts, accessories and fixings necessary to complete the system.
- Geometric shapes, colours and layout: To BS 8501 and ISO 7001.
- Wind loads: To BS EN 1991-1-4.

### **PRODUCTS**

#### **310 POSTS FOR EXTERNAL SIGNS GENERALLY INCLUDING DIRECTIONAL SIGNAGE**

- Manufacturer: Woodscape (or similar approved).
  - Product reference: Hardwood Timber Knott End Style Sign.
- Material: FSC Certified hardwood timber.
- Size: TBC.
- Finish: TBC.
- Colour: TBC.
- Base: TBC.
- Method of setting post to ground or base: Root fix into concrete and Submit proposals.

## FABRICATION

### 505 SIGNAGE SAMPLES

- Sign type: Information and interpretation.
  - Action: Submit labelled samples.
- Timing: For client and design team approval of boards.
  - Conformity: Retain samples on site for the duration of the contract or until instructed to remove.
- Delivered product: To conform to labelled samples.

### 510 SAFETY SIGNGATEWAY ATTENUATION POND WANING SIGNAGE (9No.)

- Manufacturer: Landmark Timber Products.
  - Product reference: Monolith Timber Sign.
  - Language: English.
- Material: FSC Hardwood timber.
  - Finish: Planed with routed and painted lettering/details including Graven Hill Village Logo.
  - Manufacturing process: Manufacturer's standard.
- Layout and dimensions: TBC.
  - Graphics and/ or wording: TBA.
- Fixing accessories: TBA.
- Additional requirements: Root fixed in accordance with manufacturers recommendations.

## EXECUTION/ ERECTION/ INSTALLATION

### 605 METHOD OF FIXING SAFETY SIGNAGE

- Method of fixing Coach bolted to timber fence rails.

### 610 FIXING SIGNS GENERALLY

- Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.
- Installation: To BS 559.
  - Secure, plumb and level.
- Strength of fasteners: Sufficient to support all live and dead loads.
- Fasteners and/ or adhesives: As section Z20
- Fasteners for external signs: Corrosion resistant material or with a corrosion resistant finish. Isolate dissimilar metals to avoid electrolytic corrosion.
- Fixings showing on surface of sign: Must not detract from the message being displayed.
- Temporary support: Do not subject members to non-design loadings.
- Protection of users:
  - Fasteners for signs must not have sharp edges or protrusions that would cause injury to users.

- Fasteners for tactile/ Braille signs must not have protrusions that would cause confusion to users.

#### 650 ROUTING IN WOOD SAFETY SIGNAGE

- Sign writer/ artist: TBC.
- Timber species: Exterior grade.
- Profile: Slot/ groove.
  - Finish: Painted in routed grooves, as section M60.

#### 670 MAKING GOOD TREATED WOOD

- Surfaces exposed by minor cutting and/ or drilling: Treat by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
- Heavily worked sections: Re-treat.
- Cutting and machining: Carry out as much as possible before treatment.
- Extensively processed wood: Retreat wood sawn lengthways, planed, ploughed, etc.

### COMPLETION

#### 905 INSPECTION OF SIGNS

- Standard for timber structures: In accordance with BS EN 1995-1-1.
- Timing: Two weeks prior to date when principal contractor expects work to be complete.
- Period of notice (minimum): Three working days.
- Maintenance inspection: Check and tighten fixings 6-8 weeks after completion of structure.
- Access: Provide access for inspection and maintenance of luminaires and other technologies.





## **Q Paving/Planting/Fencing/Site furniture**

## Q05 Biodiversity and Environmental Conservation

### SYSTEM OUTLINE

#### 120 HABITAT MANAGEMENT AND ENHANCEMENT TO NEW AND EXISTING WOODLAND AREAS.

- Generally: To discourage excessive public access to valuable habitat areas.
- Habitat type: Deciduous woodland.
- Designation: None.
- Location: As per Hardworks Plans.
- Surveys required:
  - Prior to work commencing: Not required.
  - During establishment phase: Not required.
- Scope of work: Creation of linear windows/dead-hedges from woody site-won arisings (Max 1.5m wide x 1.0m height) within specified areas.
- Source data provided for reference/ verification: Baseline Ecological Assessment report

#### 120A HABITAT MANAGEMENT AND ENHANCEMENT TO EXISTING CONIFER WOODLAND.

- Generally: Tinning out of existing conifer trees.
- Habitat type: Coniferous plantation woodland.
- Designation: None.
- Location: As per Waterman Hardworks and Planting Plans.
- Surveys required:
  - Prior to work commencing: Check for active bird nests and confirm locations of bat-boxes prior to commencement.
  - During establishment phase: Not required.
- Scope of work: Thin out weaker/smaller coniferous plantation trees and undesirable woody vegetation by approx. 50% to allow development of adjacent trees and construction of paths, boardwalks and equipment associated with Local Equipped Area of Play (LEAP).
- Note, arising's to be re-used on site where possible - habitat log-piles etc.
- Source data provided for reference/ verification: Baseline Tree Survey Report and Ecological Assessment report

#### 120B HABITAT MANAGEMENT AND ENHANCEMENT TO EXISTING BOUNDARY HEDGEROWS.

- Generally: Hedgerow management in the interests of screening, stock-proofing and habitat.
- Habitat type: Existing native hedgerows.
- Designation: None.
- Location: As per Waterman Hardworks and Planting Plans.
- Surveys required:
  - Prior to work commencing: Check for active bird nests prior to commencement.

- During establishment phase: Not required.
- Scope of work: Existing hedgerows to be laid to 'Midland Bullock' style and gapped up with new planting = Waterman native hedge planting mix. Arisings to be re-used on site as brush piles where possible.
- Source data provided for reference/ verification: Baseline Tree Survey Report and Ecological Assessment report

#### 120C TREE MANAGEMENT AND ENHANCEMENT TO EXISTING TREES TO BE RETAINED (INCLUDING WOODLAND AREAS.)

- Generally: Undertake condition survey to include recommendations for safe management of trees in proximity to new development, garden spaces, areas of public open space, roads and path links. Within trees flanking highways to include removal of sucker growth/deadwood and general formative pruning to raise and balance tree canopies.
- Habitat type: Existing trees and woodlands.
- Designation: None.
- Location: As per Waterman Tree Survey, Hardworks and Planting Plans.
- Surveys required:
  - Prior to work commencing: Check for active bird nests and bat boxes prior to commencement.
  - During establishment phase: Monitor general health and condition of trees in relation to safe use and occupation of site.
- Scope of work: Inspection and pruning works to existing trees and woodlands in accordance with principles of BS3998:2010. Arisings to be re-used on site as brush piles where possible. Works to be undertaken by an Arboricultural Association Approved Contractor.
- Source data provided for reference/ verification: Baseline Tree Survey Report and Ecological Assessment report

#### 130 HABITAT PROTECTION EXISTING TREES AND WOODY VEGETATION TO BE RETAINED.

- Generally: Protection in accordance with the principles outlined in BS5837:2012 Trees in relation to design, demolition and construction - recommendation during construction phase.
- Habitat type: Existing trees, hedgerows, scrub and woodlands.
- Designation: None.
- Location: As per Waterman Tree Survey Report and associated drawings.
- Surveys required:
  - Prior to work commencing: Arboricultural inspection of tree protection fencing during construction phase.
  - During establishment phase: On-going monitoring of tree protection systems required by suitably qualified arboricultural consultant.
- Scope of work: As above.
- Source data provided for reference/ verification: Waterman Tree Survey Report and associated drawings.

## PERFORMANCE

### 220 HABITAT PROTECTION: NESTING BIRDS.

- Habitat type: Existing trees, hedgerows, scrub and woodland.
- Designation: None.
- Location: Waterman Tree Survey Report and associated drawings.
- Requirement: Active bird nests must not be disturbed.
  - Date/ Time: Generally March - October.
- Surveys required:
  - Prior to work commencing: Ecological survey to record the feature being free of active bird nests prior to undertaking any disturbance works.
  - During establishment phase: N/A.
- Source data provided for reference/ verification: Trees to be removed and retained as detailed within Waterman Tree Survey Report and associated drawings.

## Q23 Gravel/ Hoggin/Woodchip/Resin bound roads/Paving/Overlays

To be read with Preliminaries/ General Conditions.

### TYPES OF SURFACING

#### 110 HARD BINDING GRAVEL

To selected paths, cycle ways and amenity spaces within Construction Phase 1a

- Subgrade improvement layer: Submit proposals.
  - Compacted thickness: Submit proposals.
- Geotextile: Sheet.
  - Manufacturer: Terram.
  - Product reference: 1000.
- Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
  - Compacted thickness: 1000 mm.
- Blinding to sub-base: Required.
- Surface course: Angular gravel, free from clay, with sufficient grit to enable compaction.
  - Type: Ironstone crushed stone.
  - Source: Peter Bennie Quarries (Tel: 01536 720400).
  - Colour: Red/Brown.
  - Size: Graded 0-10 mm.
  - Compacted thickness: 50 mm.
- Completion: Compact to produce a firm, regular surface, stable in use.

#### 225 PROPRIETARY RESIN BOUND CHIPPINGS TO HARD SURFACED VERGE AREAS WITHIN HIGH STREET - PEDESTRIAN USE ONLY

- Subgrade improvement layer: Contractor's choice.
  - Compacted thickness: Contractor's choice.
- Geomembrane: Contractor's choice.
  - Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Granular sub-base: Permeable type/contractor's choice.
  - Compacted thickness: Contractor's choice.
- Water collection: Passive drainage into tree root cell system below.
- Geotextile: Not required.
  - Manufacturer: Not required.
  - Product reference: Not required.
- Base course: Asphalt concrete, as section Q22.

- Surface course:
  - Manufacturer: Addagrip.
  - Product reference: Addaset.
  - Slip/ skid resistance: Submit proposals.
  - Binder: Epoxy resin.
  - Chippings: Lucerne Silver.
- Colour: Silver/grey.
  - Aggregate size: 3-10mm.
  - Mix ratio (binder: aggregate): Suppliers recommendation.
- Application: Thoroughly mixed and uniformly spread.
  - Spreading rate: Suppliers recommendation.
  - Thickness: Suppliers recommendation.
  - Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use.

#### 240A BARK MULCH SURFACED PATHS

- Preparation:
  - Obstructions: Remove.
  - Hollows, ruts and poorly drained ground: Fill with free draining gravel. Provide a level surface.
- Geotextile: Terram 1000 (or similar approved).
  - Manufacturer: Submit proposals.
- Product reference: Submit proposals.
  - Laying: Lay over heavy soils, laps (minimum): 300mm.
- Base course: Generally no-dig type construction
  - Carefully remove loose surface materials to reveal the natural topsoil surface.
  - Lightly compact existing topsoil surface.
  - Apply geotextile layer prior to application of bark mulch
- Surface course:
  - Woodchips: Free from pests, disease, weeds and fine particles, graded 5-30 mm.
  - Thickness after settlement and consolidation: 100 mm.
  - Laying: Thoroughly mix in a ratio of 3:2 (woodchips:stone) and consolidate to produce a firm, regular surface, stable in use.

#### LAYING

#### 310A TIMBER EDGING

- Softwood board:
  - Size: 150 x 50 mm.

- Fixing: Galvanized steel staples.
- Rebar stakes:
  - Size: 12 x 500mm.
  - Fixing: Drive into ground.
  - Centres: 1000 mm (Minimum).
- Softwood board preservative treatment: Pressure Impregnated with timber preservative and all cut ends treated with suitable preservative.

### 320 SAMPLES

- Submit: Representative samples of chippings for hard binding gravel as clause 110.

### 340 LAYING GENERALLY

- Channels, gullies, etc.: Keep clear.
- Finished surfaces:
  - Lines and levels: To prevent ponding.
  - Overall texture: Even.
  - State at completion: Clean.

### 350 COLD WEATHER WORKING

- Frozen materials: Do not use.
- Freezing conditions: Do not lay pavings.
- Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.
- Other dressings or overlays: As manufacturers' recommendations.

### 360A DRAINAGE FALLS

- Bound gravel surfaces:
  - Falls and cross falls (minimum): 6%.

### 380A LAYING GRANULAR SURFACES TO PATHS AND AMENITY AREAS

- Permissible deviation from required levels, falls and cambers (maximum):  $\pm 12$  mm.
- General: Spread and level in 100 mm maximum layers. As soon as possible, compact each layer.
- Dry weather: Lightly water layers during compaction.

### 390 PROTECTION FROM TRAFFIC AND PLANT

- Paved areas: Restrict access to prevent damage.

## Q25 Slab/Brick/Sett/Cobble Pavings

### GENERAL

### PRODUCTS

#### 315 CONCRETE FLAGS To Village Green seating area and Romney Hut courtyard space

- Standard: To BS EN 1339.
  - Manufacturer: Marshalls.
- Product reference: Conservation flag paving.
- Recycled content: Submit proposals.
- Colour: Silver/grey.
  - Finish: Smooth ground.
  - Nominal sizes: 600x900mm and 600x600mm.
- Arises: Chamfered.
- Water absorption and freeze/ thaw resistance class: As manufactured.
- Bending strength class: As manufactured.
- Abrasion resistance class: As manufactured.
- Slip/ Skid resistance: As manufactured.
- Breaking load class: As manufactured.

#### 330 NATURAL STONE SETTS To selected path and kerb edges within landscaped areas

- Standard: To BS EN 1342.
- Supplier: Submit proposals.
  - Product reference: Cropped Granite Sett.
  - Quarry: Submit proposals.
- Petrographical description/ stone type: Granite.
- Finish: Coarse textured.
- Sizes: 150 x 75 x 150 mm.
  - Plan dimension and thickness deviation: Class 1.
- Special setts: Not required.
  - Tolerances on undercut of sides: Class 1.
  - Tolerances on hewn and coarse textured face irregularities: Class 1.
  - Breaking strength: No requirement.
- Slip resistance: No requirement.
- Skid resistance: No requirement.
- Surface treatment: None.



### 390 SAND FOR FLEXIBLE LAYING COURSE AND JOINTING OF CONCRETE FLAG PAVING IN ACCORDANCE WITH HIGHWAY ENGINEERS RECOMMENDATIONS.

- Standard: To BS 7533-4, unbound construction laying course and jointing material.
- Purity: Free from deleterious salts, contaminants, lime and cement.
- Procurement: Obtain from one source and ensure consistent grading.

## EXECUTION

### 610 MATERIAL SAMPLES

- Samples representative of colour and appearance of designated materials: Submit before placing orders.
  - Designated materials: Concrete slab paving and granite setts.

### 620 ADVERSE WEATHER

- General:
  - Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
  - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding:
  - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Paving laid and jointed in sand:
  - Stockpiled bedding sand: Protect from saturation.
  - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
  - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
  - Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

### 625 LAYING PAVINGS - GENERAL

- Appearance: Smooth and even with regular joints and accurate to line, level and profile.
- Falls: To prevent ponding.
- Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
  - Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
- Slopes: Lay paving units upwards from the bottom of slopes.
- Paving units: Free of mortar and sand stains.
- Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

#### 630 LEVELS OF PAVING

- Permissible deviation from specified levels:
  - Generally:  $\pm 6$  mm.
- Height of finished paving above features:
  - At gullies: +6 to +10 mm.
  - At drainage channels and kerbs: +3 to +6 mm.

#### 635 REGULARITY OF PAVED SURFACES

- Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface):
  - Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.
  - Precast concrete flags or natural stone slabs: 3 mm.
- Difference in level between adjacent paving units (maximum): 2 mm.
- Sudden irregularities: Not permitted.

#### 637 REGULARITY OF PAVED SURFACES

- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
- Joints between paving units or utility access covers:
  - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
  - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
  - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

#### 640 COLOUR BANDING

- General: Unless premixed by manufacturer, select from at least 3No. Separate packs in rotation to avoid colour banding.

#### 645 PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arises, or previously laid paving.
- Mortar bedded pavings: Keep free from traffic after laying:
  - Pedestrian traffic (minimum): 5 days.
  - Vehicular traffic (minimum): 14 days.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.

#### 650 CEMENTITIOUS BASES AND SUB-BASES

- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

#### 655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE

- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
- Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
- Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
- Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
- Levels and falls: Accurate and within the specified tolerances.
- Drainage outlets: Within 0-10 mm of the required finished level.
- Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
- Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

#### 710 LAYING FLAG AND SLAB PAVING - SAND LAYING COURSE AND JOINTING

- Standard: In accordance with BS 7533-4.
- Flag installation and cutting: To Interpave 'Concrete flag paving'.
- Laying course:
  - Nominal thickness after compaction: In accordance with Highway Engineers recommendations.
- Joint width: 2-5 mm.

#### 730 LAYING NATURAL STONE SETT PAVING

- Standard generally: In accordance with BS 7533-7.
- Laying type: Rigid.
  - Laying and jointing method: In accordance with Highway Engineers recommendations.
- Laying course:
  - Target thickness after compaction: In accordance with Highway Engineers recommendation.
- Joint width (nominal): In accordance with Highway Engineers recommendation.

#### 805 CLEANING EXISTING BLOCKS AND SETTS

- Area: All pedestrian hard surfaced within areas of public open space.
- Application:
  - Method: To cleaning solution manufacturer's recommendations.
  - Dosage: As cleaning solution manufacturer's recommendations.
- Sand jointed paving: Do not displace jointing sand during cleaning process.

## **COMPLETION**

### 915 COMPLETION OF PAVING WITH DRY SAND OR FINE AGGREGATE FILLED JOINTS

- Sand dressing: Leave a thin layer of dry jointing sand over the paving, sweep clean before practical completion.
- Final compaction of the surface course: In accordance with BS 7533-3.
- Vacuum cleaning machines: Not allowed.

## Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General Conditions.

### SYSTEM OUTLINE

#### 115 SOIL SYSTEM FOR GRASS SWARDS FOR GRASSED VERGE AREAS

- Composition:
  - Soil: Site sourced topsoil with ameliorants as necessary.
  - Ameliorants: Submit proposals to satisfy BS3882:2015 General Purpose Grade Topsoil.
  - Accessories: None.

#### 115A SOIL SYSTEM FOR GRASS MEADOW SWARDS DISTURBED GROUND ONLY

- Composition:
  - Soil: Site sourced topsoil.
  - Ameliorants: None.
  - Accessories: None.

#### 115B SOIL SYSTEM FOR WILDFLOWER VERGES FLANKING PROPOSED VEHICULAR ACCESS TRACK ADJACENT TO ALLOTMENTS

- Composition:
  - Soil: Site sourced subsoil with ameliorants as necessary.
  - Ameliorants: Submit proposals to satisfy BS8601:2013 Multi-Purpose Grade Sub-soil.
  - Depth: Min 150mm over suitable sub-grade.

#### 135 PLANTING BED SOIL SYSTEM FOR AMENITY PLANTED SHRUB BED(S)

- Composition:
  - Topsoil: Site sourced topsoil with ameliorants as necessary.
  - Ameliorants: Submit proposals to satisfy BS3882:2015 General Purpose Grade Topsoil.
  - Accessories: None.

### PRODUCTS

#### 300 PREPARATION MATERIALS GENERALLY

- Purity: Free of pests and disease.
- Foreign matter: On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
- Contamination: 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 or planting media, do not use subsoil contaminated with the above materials.
- Objectionable odour: None.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

#### 305 PERMITTED MATERIALS

- Materials: Composted animal manures and Composted green waste.
- Give notice: before ordering or using.
- Declaration of compliance in accordance with BS EN 13650: Required.

#### 310 MATERIALS NOT PERMITTED

- Materials: Products containing peat and river and canal dredgings.

#### 335 IMPORTED MANUFACTURED TOPSOIL, CUSTOM MIX For backfill into STRATACELL tree pits and raised planters within Urban Lane (West) and Village Green

- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- Source: Submit proposals.
  - Product reference: Submit proposals.
- Texture: Fine graded sandy loam.
- Reaction, to BS 1377-3: pH 5.8-7.6.
- Organic matter to BSI PD CR 13456: Minimum 5%.
- Nutrient content: Minimum index values for nitrogen, phosphorus, potassium and magnesium to be as for BS 3882 multipurpose topsoil.
- Crumb structure: Made up of discernible crumbs.
- Stone size in any dimension (maximum): 20 mm.

#### 370 TEMPORARY CROPS GROWN ON SITE ON TEMPORARY TOPSOIL STORAGE HEAPS

- Seed mix: Leguminous seed mix.
- Source: Contractor's choice.
  - Product reference: Contractor's choice.

#### 385 WATER RETENTION GELS For raised planters within Urban Lane (West) and Village Green

- Type: Agri polymer gel .
- Manufacturer: Broadleaf.
  - Product reference: P4.
- Accessories: Pre-mix at a rate of 750g/m<sup>3</sup> of fine graded sandy loam topsoil prior to backfilling.

## EXECUTION

### 610 TOPSOIL ANALYSIS

- Soil to be analysed: Representative samples of stockpiled topsoil (Allow for minimum 5No. samples within Phase 1a).
- Soil analyst: Contractors choice.
- Samples: Collect in accordance with BS 3882.
- Submit:
  - Declaration of analysis: For compliance with BS3882:2015 standards (General Purpose Grade) and Phytotoxic and CLEA elements including recommendations for remediation (if required).
- Report detailing soil analyst's recommendations.

### 610A SUBSOIL ANALYSIS

- Soil to be analysed: Representative samples of existing stockpiled sub-soil to be re-used within selected areas of wildflower seeding (allow for minimum 3No. samples within Phase 1a).
- Soil analyst: Contractors choice.
- Samples: Collect in accordance with BS8601:2013.
- Submit:
  - Declaration of analysis: For compliance with BS8601:2013 standards (Multi-purpose Grade) and Phytotoxic and CLEA elements including recommendations for remediation (if required).
  - Report detailing soil analyst's recommendations.

### 620A IMPORTING TOPSOIL & SUBSOILS

- Assumed not to be required for landscape purposes.

### 635 DOCUMENTATION FOR COMPOST AND COMPOSTED MATERIALS FOR IMPORTED SOIL IMPROVERS

- Timing: Submit at handover.
- Contents:
  - Full description of all compost components.
  - Record of source for all compost components.
  - Analyst's report for each test carried out.
  - Declaration of compliance: in accordance with PAS 100 and BSI PD CR 13456.
  - Quality Compost Protocol certification: Required.
- Number of copies: Two.

### 650 NOTICE

- Give notice before:
  - Setting out.
  - Spreading topsoil.

- Applying herbicide.
- Applying fertilizer.
- Visiting site during maintenance period.
- Period of notice: 1 week.

#### 655A MECHANICAL TOOLS

- Restrictions: Do not use within Root Protection Areas of trees/hedgerows and 100 mm of other plant stems.

#### 660 GRADING SUBSOIL

- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
- Loosening:
  - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
  - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
  - Rock and chalk subgrades: Lightly scarify to promote free drainage.
- Areas of thicker topsoil: Excavate locally.
- Avoid over compaction.

#### 665A SUBSOIL SURFACE PREPARATION (FOR USE WITHIN PROPOSED WILDFLOWER SEEDED AREAS)

- General: Excavate and/ or place fill to required profiles and levels, as section D20.
- Loosening:
  - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
  - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
  - Rock and chalk subgrades: Lightly scarify to promote free drainage.
- Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
- Remove from site: Arisings, contaminants and debris and Builders rubble.

#### 670 INSPECTING FORMATIONS

- Give notice: Before spreading topsoil for disturbed areas to be made good.
- Notice period: 7 days.

#### 675 PREPARATION OF UNDISTURBED TOPSOIL

- Standard: In accordance with BS 4428.
  - Grading and cultivation: To suit cultivation operations specified in Q30 and Q31.
- Hard ground: Break up thoroughly.



- Clearing: Remove visible roots and large stones with a diameter greater than 100 mm.
- Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
- Fallow period (minimum): One month.
  - Weed control: At appropriate times cut back grass and herbage to 100mm Height.

#### 690 TOPSOIL STORAGE HEAPS

- Location: Throughout the site.
- Height (maximum): 1.0 m.
- Width (maximum): 2.0 m.
  - Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
- Protection:
  - Do not place any other material on top of storage heaps.
  - Do not allow construction plant to pass over storage heaps.
  - Prevent compaction and contamination, by fencing and covering as appropriate.

#### 700 GRADING OF TOPSOIL

- 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.
- Give notice: If required levels cannot be achieved by movement of existing soil.

#### 705 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 less 3%, to BS 1377-2.

#### 710 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): 150 mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

#### 715 LOOSE TIPPING OF TOPSOIL

- General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

#### 718 FINAL CULTIVATION FOR GRASS AND WILDFLOWER SEEDING

- Compacted topsoil: Break up to full depth.
- Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
- Depth: 150 mm.
- Particle size (maximum): 5 mm.
- Timing: After grading and within a few days before seeding.
- Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: 50 mm above adjoining meadow areas.
- Undesirable material brought to the surface:
  - Remove visible weeds.
  - Remove roots and large stones with any dimension exceeding 50 mm.

#### 718A FINAL CULTIVATION FOR, WOODLAND, HEDGEROWS AND AMENITY PLANTED AREAS

- Compacted topsoil: Break up to full depth.
- Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
- Depth: 450 mm (For amenity planted areas) full depth of natural topsoil for remaining disturbed areas.
- Particle size (maximum): 5 mm.
- Timing: After grading and within a few days before planting.
- Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: 50 mm above adjoining areas.
- Undesirable material brought to the surface:
  - Remove visible weeds.
  - Remove roots and large stones with any dimension exceeding 50 mm.

#### 720 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 25 mm.
- Below DPC of adjoining buildings: Not less than 150 mm.
- Planting beds: Higher than adjoining grass areas by 50 mm.

- Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
- Sports fields: To even levels and within the following permitted deviations:
  - From levels or gradients shown on drawings:  $\pm 75$  mm.
  - From line between boning rods 30 m apart:  $\pm 25$  mm.
- Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

#### 805 APPLYING SOIL AMELIORANT TO AMELIORATE DEFICIENCY WITHIN DISTURBED PLANTED AREAS (IF REQUIRED)

- Type: Organic materials.
- Locations: All disturbed planted areas.
- Fully incorporate into topsoil to a depth of 250 mm.
- Application: Spread evenly.
- Timing: Apply prior to cultivation.
  - Rate: To suit soil report recommendations.
- Timing: Prior to cultivation.
- Other requirements: Submit details of recent chemical and physical analysis before ordering.

#### 845A APPLYING LOOSE MULCH FOR ALL PLANTED AREAS

- Timing: Immediately after planting.
- Preparation: Ensure that soil is thoroughly moistened, applying water where necessary.
- Coverage of mulch (minimum):
  - Planted areas and individual trees (depth): 75 mm depth.
  - Individual Standard/Feathered Trees: In a circular area of 500 mm radius measured from the tree stem.
  - Woodland and hedge planting: 300mm radius measured from the plant stem.
- Finished level of mulch: 70 mm above adjacent grassed areas.

#### 845B APPLYING LOOSE MULCH FOR ALL RAISED PLANTERS WITHIN URBAN LANE (WEST) AND VILLAGE GREEN

- Timing: Immediately after planting.
- Preparation: Ensure that soil is thoroughly moistened, applying water where necessary.
- Material: Cocoa Shell Mulch
- Coverage of mulch (minimum):
  - Planted surface (depth): 60mm depth.
- Finished level of mulch: Minimum 50mm below adjacent top of planter.

#### 920 APPLYING MULCH

- Timing: At end of the rectification period.
- Watering: Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.
- Planting beds: Re-mulch.
  - Depth (minimum): 75 mm.
- Trees: Remulch.
  - Depth (minimum): 75 mm.
- Container planting: Remulch.
  - Depth (minimum): 75 mm.

#### 920A APPLYING MULCH TO RAISED PLANTERS

- Timing: At end of the rectification period.
- Watering: Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.
- Raised planters: Re-mulch.
  - Depth (minimum): 60 mm

## 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: 1 week.

#### 170 SETTING OUT

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

### PREPARATION

#### 210 HERBICIDE FOR ALL DISTURBED GRASS VERGE, MEADOW & WILDFLOWER SEEDED AREAS

- Type: Suitable for suppressing perennial weeds.

- Timing: Allow fallow period before cultivation.
  - Duration: 2 weeks.

#### 290 PREPARATION FOR HYDRAULIC SEEDING

- Clearance: Remove rubbish, and stones with any dimension exceeding: 50 mm.
- Herbicide:
  - General weeds: Selective contact herbicide.
  - Pernicious weeds: Selective hormone herbicide.
- Grading: Smooth, flowing levels.
  - Cultivation: Ensure grass roots can penetrate substrate.
- Finished surface: Ribbed or rough textured.
- Reinforcement: Not required.
  - Fixing: Not required.

#### SEEDING

##### 311A WILDFLOWER MEADOW GRASS OVER-SEEDING FOR ALL UNDISTURBED MEADOW AREAS

- Supplier: Boston Seeds (01205) 280069.
  - Mixture reference: BSRE 100% Restore & Enrich Mixture.
- Application rate: 3 g/m<sup>2</sup>.

##### 311B WILDFLOWER MEADOW GRASS SEEDING FOR AREAS OF DISTURBED GROUND PROPOSED FOR WILDFLOWER MEADOW SEEDING

- Supplier: Boston Seeds (01205) 280069.
  - Mixture reference: BS5 Heavy Clay Soils Mixture.
- Application rate: 5g/m<sup>2</sup>.

##### 311C WETLAND & POND EDGE SEEDING FOR ALL DISTURBED/GRADED BANKS FLANKING SWALES, ECOLOGY/ATTENUATION PONDS

- Supplier: Boston Seeds (01205) 280069.
  - Mixture reference: BS6 Wetland & Pond Edge Mixture.
- Application rate: 5g/m<sup>2</sup>.

#### 319 QUALITY OF SEED FOR ALL MEADOW & WETLAND AREAS

- Freshness: Produced for the current growing season.
- Certification: Blue label certified varieties.
  - Standard: EC purity and germination regulations.
  - Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.

- Samples of mixtures: Submit when requested.

#### 336A WILDFLOWER MEADOW GRASS SOWING SEASON (DISTURBED AREAS)

- Wildflower seed generally: March to May.

#### 336B WILDFLOWER MEADOW GRASS OVER-SEEDING SOWING SEASON (UNDISTURBED AREAS)

- Wildflower seed generally: September to October.

#### 336C WETLAND & POND EDGE SOWING SEASON (DISTURBED AREAS)

- Wildflower seed generally: March to May.

### TURFING

#### 410 TURF TO BS 3969 FOR SELECTED GRASS VERGE AREAS

- Standard: To BS 3969, free from undesirable grasses and weeds.
  - Grade: General purpose utility turf with no perennial ryegrass.
- Source: Submit proposals.
- Herbicide treatment: Apply not less than four weeks and not more than three months before lifting.
- Dimensions: 1640 x 610 mm.

#### 420 DELIVERY AND STORAGE

- Timing: Lay turf with minimum possible delay after lifting. If delay occurs, lay turf out on topsoil and keep moist.
- Frosty weather or waterlogged ground: Do not lift turf.
- Delivery: Arrange to avoid need for excessive stacking.
- Stacking height (maximum): 1 m.
- Dried out or deteriorated turf: Do not use.
- Certification:
  - Standard: To BS 3969.
- Declaration: Species mix, including percentage of specified species.

#### 423 INSPECTION OF TURF FOR SELECTED GRASS VERGE AREAS

- Sampling method: To BS 3969.
- Give notice: Before lifting turf.
  - Period of notice: 1 week.

#### 430 TURFING GENERALLY

- Time of year: To be agreed.
- Timing of laying:
  - Spring and summer: Within 18 hours of delivery.

- Autumn and winter: Within 24 hours of delivery.
- Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
- Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
- Jointing: Laid with broken joints, well butted up. Do not stretch turf.
- Edges: Whole turfs, trimmed to a true line.
- Adjusting levels: Remove high spots and fill hollows with fine soil.
- Consolidating: Lightly and evenly firm as laying proceeds to ensure full contact with substrate. Do not use rollers.
- Dressing, brushed well in to completely fill all joints: None.
- Watering: Thoroughly water completed turf immediately after laying. Check that water has penetrated into the soil below.

## **PROTECTING/CUTTING**

### **510 PROTECTIVE FENCING**

- Fencing type: Chestnut pale fencing to BS 1722-4.
  - Height: 1.2 m.
- Erection: On completion of seeding/ turfing.
- Removal: After grass is well established. Fencing will remain the property of the Contractor.

### **530A FIRST CUT OF AMENITY GRASS VERGE AREAS**

- Timing: When grass is reasonably dry.
  - Height of initial growth: 75 mm.
- Preparation:
  - Debris and litter: Remove.
  - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 40 mm.
- Mower type: Contractor's choice.
- Arisings: Spread evenly over cut areas.

### **530B FIRST CUT OF MEADOW PATHS AND PATH MARGINS**

- Timing: When grass is reasonably dry.
  - Height of initial growth: Min 150mm.
- Preparation:
  - Debris and litter: Remove.
  - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 75 mm.
- Mower type: Contractor's choice.



- Arisings: Spread evenly over cut areas.

#### 530C FIRST CUT OF MEADOW AREAS

- Timing: When meadow grass is reasonably dry.
  - Height of initial growth: N/A.
- Preparation:
  - Debris and litter: Remove.
  - Stones and earth clods larger than 50 mm in any dimension: Remove
- Height of first cut: 150 mm.
- Mower type: Contractor's choice.
- Arisings: Repeatedly turn and dry over 3-5 days post-cutting. After 5 days, rake off and dispose of at suitable recycling facility.

#### 530D FIRST CUT OF WETLAND & POND EDGE PLANTS ON SWALE BANKS & MARGINS

- Timing: When grass and marginal plants are reasonably dry.
  - Height of initial growth: N/A.
- Preparation:
  - Debris and litter: Remove.
  - Stones and earth clods larger than 50 mm in any dimension: Remove
- Height of first cut: 100 mm.
- Mower type: Contractor's choice.
- Arisings from swale edges: Repeatedly turn and dry over 3-5 days post-cutting.
- After 5 days, rake off and dispose of at suitable recycling facility. Do not allow arisings to foul swale channel or culverts etc.

#### 530E FIRST CUT OF WETLAND & POND EDGE PLANTS BOUNDING ECOLOGY & ATTENUATION PONDS

- Timing: When grass and marginal plants are reasonably dry.
  - Height of initial growth: N/A.
- Preparation:
  - Debris and litter: Remove.
  - Stones and earth clods larger than 50 mm in any dimension: Remove
- Height of first cut: 100 mm.
- Mower type: Contractor's choice.
- Arisings from swale edges: Repeatedly turn and dry over 3-5 days post-cutting. After 5 days, rake off and dispose of at suitable recycling facility. Do not allow arisings to foul pond area etc.

#### 550 AREAS NOT TO BE CUT

- Do not cut:

- Grass and herbage on ecology hibernacula features.

#### 560 GRASS EDGING STRIPSTO FEATURE GASS STRIPS WITHIN VILLAGE GREEN AND ENTRANCE GREEN AREAS

- Manufacturer: Everedge.
  - Product reference: Pro Edge BP7 (150mm Height.).
- Timing: After grass has become established.
- Installation: In true straight lines or flowing curves.
- Installation height: 10mm below finished areas of close mown grass.

#### 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

#### 610 FAILURES OF SEEDING/TURFING

- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
- Defective materials or workmanship: Areas that have failed to thrive.
  - Exclusions: Theft or malicious damage.
  - Method of making good: Recultivation and reseeding/ returfing.
- Timing of making good: The next suitable planting season once cause of failure has been identified.

#### 620A MAINTAINING AMENITY GRASS VERGE AREAS

- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
- Maximum height of growth at any time: 100 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: Every two weeks between March and October to a height of 50 mm.
  - Arisings: Spread evenly over cut areas (do not allow swales or ditches to become fouled with arisings).
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
  - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
  - Method: Application of a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
  - Size: Exceeding 25 mm in any dimension.

- Areas of settlement: Make good.
- Watering: If required to maintain a healthy sward during periods of hot/dry weather.

#### 620B MAINTAINING MEADOW GRASS CUT PATHS AND PATH EDGES

- Duration: Carry out the following operations from completion of seeding/ turving until: the end of the rectification period.
- Maximum height of growth at any time: N/A.
- Preparation: Before each cut remove all litter and debris.
- Cutting: Every two weeks between March and October to a height of 75 mm.
  - Arisings: Spread evenly over cut areas (do not allow gravel paths to become fouled with arisings).
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
  - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
  - Method: Spot spray using a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
  - Size: Exceeding 50 mm in any dimension.
- Areas of settlement: Make good.
- Watering: Advise if sward likely to be damaged by extended periods of hot/dry weather and submit proposals for watering.

#### 620C MAINTAINING MEADOW GRASS AREAS

- Duration: Carry out the following operations from completion of seeding/ turving until: the end of the rectification period.
- Maximum height of growth at any time: N/A.
- Preparation: Before each cut remove all litter and debris.
- Cutting: Twice annually in March/April and August/September to a height of 75 mm.
  - Arisings: Repeatedly turn and dry over 3-5 days post-cutting. After 5 days, rake off and dispose of at suitable recycling facility. Do not allow arisings to foul ponds, swales or ditch courses etc.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
  - Arisings: Remove.
- Weed control: Substantially free of invasive or non-native weeds.
  - Method: Seek approval before use of spot spray using a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
  - Size: Exceeding 50 mm in any dimension.
- Areas of settlement: Record and submit proposals for repair if required.

- Watering: Advise if sward likely to be damaged by extended periods of hot/dry weather and submit proposals for watering.

#### 620D MAINTAINING WETLAND AND POND EDGE ON SWALE EDGES & POND MARGINS

- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
- Maximum height of growth at any time: N/A.
- Preparation: Before each cut remove all litter and debris.
- Cutting: Twice annually at end of August to a height of 150 mm.
  - Arisings: Repeatedly turn and dry over 3-5 days post-cutting. After 5 days, rake off and dispose of at suitable recycling facility. Do not allow arisings to foul ponds, swales or ditch courses etc.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
  - Arisings: Remove.
- Weed control: Substantially free of invasive or non-native weeds.
  - Method: Seek approval before use of spot spray using a suitable selective herbicide (approved for use near water bodies).
- Stones brought to the surface: Remove regularly.
  - Size: Exceeding 50 mm in any dimension.
- Areas of settlement: Record and submit proposals for repair if required.
- Watering: Advise if sward likely to be damaged by extended periods of hot/dry weather and submit proposals for watering.

## Q31 External planting

To be read with Preliminaries/General Conditions.

### GENERAL INFORMATION/ REQUIREMENTS

#### 112 SITE CLEARANCE GENERALLY

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with any dimension exceeding 50 mm.
- Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Vegetation: Clear scrub to ground level by flail mowing and remove arisings; retain and protect trees indicated on drawings.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: Rake off arisings and remove to approved recycling facility.

#### 115A SITE CLEARANCE FOR AQUATIC/ MARGINAL PLANTING

- Clearance:
  - General: Remove loose debris and rubbish and general preparation as per Q30 for wetland and pond edge areas.
  - Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Vegetation/ Algae: Remove by hand.
- Additional requirements: Marginal preparation and planting to be coordinated with wetland and pond edge seeding within the same areas.

#### 118 SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (except in 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.

#### 120 CLIMATIC CONDITIONS

- General: Carry out the work while soil and weather conditions are suitable.
  - Strong winds: Do not plant.

#### 125 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 marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable.
  - Watering and weed control: Provide as necessary.

- 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.
- Aquatic plants: May/ June or September/ October.

#### 130A MECHANICAL TOOLS

- Restrictions: Do not use within Root Protection Area of retained trees or hedgerows and within 100 mm of plant stems.

#### 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.

#### 160 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: One week.

#### 170A SOIL REQUIREMENTS

- Type
  - Planted beds: Planting bed soil system, as section Q28.
  - Tree pits, shrub pits and other backfilling: Plant pit backfilling soil system, as section Q28.
  - Raised planters to Village Green and Urban Lane (West): Fine graded sandy loam topsoil as section Q28.
  - Mulch applied after planting: As section Q28.

## 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: Balanced with branch system.
  - Standard: BS8545:2014.
- Species: True to name.
- Origin/ Provenance: All native plants to be British provenance. All plants to be grown/monitored in UK nursery for minimum 12 months with approved documentation.
- Definition: Origin and Provenance have the meaning given in the National Plant Specification.
- Pruning: All formative pruning to be undertaken by a suitably qualified individual at the nursery, prior to delivery to site. This should include crown lifting, balancing (where required) and the development of a single, strong leader shoot. Pruning to be undertaken in accordance with BS399:2010 and BS8545:2014 standards.

## 215 PLANTS/ TREES - SPECIFICATION CRITERIA

- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.

## 225 BULBS/ CORMS/ TUBERS

- Condition: Firm, entire, not dried out or shrivelled.
- Health: Free from pests, diseases and fungus.
- Handling: Remove from packaging immediately.
- Storage: Permitted only when necessary.
  - Location: Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
  - Duration: Minimum period.
  - Temperature: 18-21°C.

## 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:
  - Country of origin;
  - Date supplied and consignment details or reference;
  - Name or designation of rootstock of budded or grafted plants;
  - Potting dates;
  - Propagation method and dates;
  - Pruning dates; and
  - Type of container.

#### 246 LABELLING AND INFORMATION

- Standard: To BS 3936.

#### 260 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.
- Approval: Obtain before making any substitution.

#### 265A PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: BS8545:2014 Trees from Nursery to Independence in the Landscape.
- 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: Coextruded polyethylene bags with black interior and white exterior (for bare root plant material).
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped.
- Planting: Upright or well balanced with best side to front.



#### 275 PERMANENT IDENTIFICATION OF PLANTS

- Location: All standard trees.
- Labels: Black plastics 75 mm x 100 mm with white weatherproof lettering attached to tree trunks at 1.5m from ground level.
- Wording: Genus, species, variety, common name and month/ year date planted.

#### 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.

#### 285 PROTECTION OF EXISTING GRASS

- General: Protect areas affected by planting operations using boards/ tarpaulins.
  - Excavated or imported material: Do not place directly on grass.
  - Duration: Minimum period.

#### 290 SURPLUS MATERIAL

- Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

### PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

#### 300A HERBICIDE TO CLEAR WEEDS & SELF-SOWN HERBACEOUS PLANTS

- Locations: Amenity planting beds and disturbed ground where tree, woodland or hedge planting proposed.
- Type: Non-residual type suitable for suppressing perennial weeds.
- Timing: Allow fallow period before cultivation.
  - Duration (minimum): Two weeks.

#### 305 WEED CONTROL FOR INVASIVE NON-NATIVE WEEDS

- Locations: All areas.
- General: Prevent weeds from seeding and perennial weeds from becoming established, submit proposals for management.

#### 385A MULCHING TO ALL PLANTED AREAS (EXCEPT RAISED PLANTERS)

- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
  - Mats: 1.0 x 1.0m Hessian/jute mulch mats (to all standard tree planting stations within areas of grass (excluding road verges)

- Bark Mulch Type: Medium Grade chipped bark laid to 75mm depth.
- Recycled content: Submit proposals.
- Timing: Lay immediately after planting.
- Watering: Water soil thoroughly before laying.
- Laying: In close contact with soil surface. Lap or butt joints as recommended by manufacturer, with no gaps. Peg down mulch mats as per manufactures specifications
- Planting: Cut neat slits or flaps. Refit closely around plant stems.
- Overlay: Mulching to all planted areas.

## **PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS**

### **401 REGULAR PLANT LAYOUTTO ALL PLANTED AREAS**

- Spacing: In regular, staggered rows.
- Density: As plant schedule.

### **405A AMENITY SHRUB PLANTING PITS**

- Sizes: Square pit, wide enough to accommodate roots when fully spread and 75 mm deeper than root system.
- Pit bottom improvement Break up to a depth of 150 mm, incorporating 25 g of slow release fertilizer per planting pit.

### **415 ANTIDESICCANT FOR CONIFERS/ EVERGREENS**

- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Application: Dip before delivering to site. Spray soon after planting.
  - Do not apply in wet or frosty weather.
  - Ensure full coverage of underside of foliage.

### **435 CLIMBING PLANTS USED AS GROUND COVER**

- Planting:
  - Canes or other supports: Remove.
  - Arrangement: Spread stems.
- Fixing: Pinned to ground to ensure good contact.

### **445 PLANTING BULBS/ CORMS/ TUBERS**

- Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
- Backfilling: Finely broken soil. Lightly firm to existing ground level.
- Naturalized planting in existing grassed areas:
  - Scattering: Random. Plant bulbs/ corms/ tubers where they fall.

- Planting: Neatly remove a plug of turf and replace after planting.

#### 457 PLANTING AQUATIC/ MARGINAL PLANT PLUGS

- Handling: Keep plants watered and in shade until planted. Do not allow to dry out.
- Preparation: Remove coarse weeds etc. from planting sites.
- Planting sites: Wetland margins to swales and ecology pond.
- Waterproofing membrane below soil: Do not puncture.
- Planting: Into a hole to suit plug size and shape. Create a cleft at bottom of hole to improve rooting. Gently firm plant into hole to ensure good root hold into substrate.

#### 470 FORMAL HEDGES

- Shrubs for hedges: Consistent in species, cultivar and clone to ensure a uniform hedge.
- Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

#### 471A NATIVE FIELD HEDGES

- Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

#### 472 FENCING SUPPORT FOR NEW HEDGES

- Type: 1.1m Ht. Timber post and rail or timber post and wire.
- Timing: Before planting hedge.
- Support: Lightly secure hedge plants to fence wires at appropriate intervals.

#### 472A FENCING SUPPORT FOR NEW NATIVE FIELD HEDGES

- Type: 1.1m Ht. Timber post and three rail fencing, as section Q40.
- Timing: Before planting hedge.
- Support: Lightly secure hedge plants to fence wires at appropriate intervals.

#### 480 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.
- Top dressing: Mulching and top dressing system, as section Q28.
  - Depth: 75 mm.

#### 486A WOODLAND & HEDGE PLANTING WHIP PROTECTION

- Manufacturer: Tubex.
  - Product reference: Shrub shelter.
- Type: Round.
- Material: Polypropylene.
- Size: 0.75 m high x 150 mm diameter.

- Colour: Green.
- Support: Single timber stake and 2No. ties.
- General: Ensure that protection methods do not impede natural movement of shrubs or restrict growth.

#### 490A INDIVIDUAL MULCH MATS TO WOODLAND/WOODLAND EDGE WHIP PLANTING AND STANDARD/FEATHERED TREES WITHIN GRASSED AREAS

- Manufacturer: Tubex.
  - Product reference: Hessian/jute mulch mat.
  - Type/ Size: 1.0m Square.
- Recycled content: Submit proposals.
- Timing: Lay after planting.
- Watering: Water soil thoroughly before laying.
- Laying: In close contact with the soil surface. Position pre-slit mats closely around plant stems.
- Fixing: Galvanized steel pins, 9 No. per mat at corners and edges.
- Overlay: 75mm Depth planting bed bark mulch.

#### PLANTING TREES

##### 505 TREE PITS

- Sizes: Square pit 75 mm deeper than root system and wide enough to accommodate roots when fully spread.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 200 mm.
  - Treatment: Ensure adequate drainage to all planting pits prior to planting & backfilling.
- Pit sides: Scarify.
- Backfilling material: Plant pit backfilling soil system, as section Q28.
- Accessories: None.

##### 510A TREE PIT ROOT BARRIERS

- Locations: Standard trees within High Street tree pits.
- Manufacturer: Green Blue Urban.
  - Product reference: Root Director RD1400A.
- Depth of top of root barrier below finished soil level: As per Waterman Tree in Hard Landscape detail.
- Installation: As per manufacturer's recommendations.

##### 512 TREE PIT ACCESSORIES

- Locations: Standard trees within High Street, hard surfaces and selected highway verges.
- Manufacturer: Blue Green Urban.

- Product reference: StrataCell.
- Type: Rootcells provided sufficient for 30 cubic metres growing medium per tree.

#### 512A TREE PIT ACCESSORIES

- Locations: Standard trees within High Street and hard surfaces.
- Manufacturer: Blue Green Urban.
  - Product reference: Hydrogrille.
- Type: Irrigation and aeration system to be provided to all trees planted within hard surfaces.

#### 512B TREE PIT ACCESSORIES

- Locations: Standard trees within highway verges and other areas of grass.
- Manufacturer: Treegator.
  - Product reference: Treegator Original 50L capacity.
- Type: Slow release irrigation system.

#### 525 SEMIMATURE TREES

- Standard: Prepare roots and transplant to BS 4043.
- Backfilling material: As clause 585.
- Support: Underground guying to BS 4043.
- Protection: Wrap trunks and lower branches with hessian strips and leave on for at least two summers.

#### 535A STAKING GENERALLY

- Stakes: Peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
  - Preservative treatment: Not required.
- Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
- Stake size (minimum): 50 mm diameter.

#### 555A SHORT SINGLE STAKING FOR WOODLAND WHIPS AND HEDGING PLANTS

- Staking: Position stake close to tree on windward side and drive vertically at least 300 mm into bottom of pit before planting.
  - Backfilling: Consolidate material around stake
- Stake Material: Square treated softwood
- Height of stakes: Cut to approximately 600 mm above ground level.
- Ties: Fixed plastic zip ties - to fix shrub-guard to stake.
- Guard: Tubex - Standard Tree Shelter 750mm Ht.
- Secure guard firmly but not rigidly to stake with at least two ties within 25 mm of top of stake.

#### 565A LONG DOUBLE STAKING FOR INDIVIDUAL HEAVY STANDARD & FEATHERED TREES

- Staking: Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting.
  - Backfilling: Consolidate material around stakes.
- Height of stakes: Cut off just below lowest branch of tree.
- Ties: Tubex Nail on Strapping and spacers. Rubber strap (1No. per stake) and rubber spacer blocks (2No. per stake).
  - Firmly fix within 25mm of top of stake with 2No. galvanised nails per stake. Spacer blocks to be adjusted to as close as possible to stem and stakes.
- Tying: Secure tree firmly but not rigidly to ties.

#### 595A TREE PROTECTION TO ALL INDIVIDUAL STANDARD/FEATHERED TREES

- Manufacturer: Green-Tech.
  - Product reference: Weld-Mesh Tree Guard (including clips and fastenings to timber tree stakes.
- Type: Round.
- Material: Wire mesh.
- Size: 1.2 m high x 250 mm diameter.
- Colour: None/galvanised.
- Support: Two timber stakes.
- General: Ensure that protection methods do not impede natural movement of trees or restrict growth.

#### 595D BROWSING & HERBICIDE PROTECTION TO ALL INDIVIDUAL STANDARD/FEATHERED TREES

- Manufacturer: Tubex.
  - Product reference: Easy-Wrap.
- Type: Round.
- Material: Polyethylene.
- Size: 0.75m high.
- Colour: Green.
- Support: Two timber stakes.
- General: Ensure that protection methods do not impede natural movement of trees or restrict growth.

#### 597A TREE SPATS/ MULCH MATS (TO ALL INDIVIDUAL HEAVY STANDARD/FEATHERED TREES)

- Manufacturer: Tubex.
  - Product reference: Biodegradable mulch mat.
  - Material: Hessian/Jute.
  - Size: 1000 x 1000 mm.
- Recycled content: As per product specification.
- Watering: Water soil thoroughly before laying.

- Laying: In close contact with the soil surface.
  - Fitting: Neatly and closely around tree stem, where necessary cutting a slit or flap.
  - Fixing: Galvanized steel pins, min 9 No. per mat at corners and edges.
  - Overlay: 75mm depth bark mulch.

## **WOODLAND/ MATRIX/ BUFFER ZONE PLANTING**

### **600 WOODLAND WORK GENERALLY**

- Services: Check for below and above ground services, including land drainage, in the vicinity. Give notice if they may be affected and obtain instructions before proceeding.
- Safety: Comply with Arboriculture and Forestry Advisory Group Safety leaflets.

### **605 EXISTING VEGETATION/ WEED CLEARANCE**

- Surface vegetation clearance: Screen an area one metre diameter around each planting location.
- Arisings: Remove.

### **615 EXISTING TREES/ SEEDLINGS/ COPPICE SHOOTS**

- Existing trees and seedlings: Retain.
- Coppice shoots: Thin to 3-5 stems per stool, removing all damaged, dead or diseased shoots.

### **625 CULTIVATION**

- General: Rotary cultivate to full depth of topsoil.
- Consolidation: Leave for one month.
- Soil within root spread of trees to be retained: Do not plough or cultivate.

### **635 NOTCH PLANTING IN UNCULTIVATED GROUND**

- Notching: Make a vertical 'I', 'L', 'T' or 'H' notch.
  - Depth: To accommodate full depth of roots.
- Planting: Plant tree, close notch with root collar at ground level and firm the soil.

### **645 PLANTING IN TURF**

- Preparation: Cut and upturn a turf of minimum 800 mm square.
- Notching: Make a vertical slit from the centre of the turf, to the side away from the prevailing wind.
  - Depth: To accommodate full depth of roots.
- Planting: Plant tree, close notch with root collar at ground level and firm the soil.

### **665 SETTING OUT**

- Distance between trees: As plant schedule.
- Distance between rows: As plant schedule.
  - Plant in staggered rows.

## **PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS**

### **710 MAINTENANCE**

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period.
- Frequency of maintenance visits: In accordance with the agreed maintenance schedule.

### **720 FAILURES OF PLANTING**

- Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
  - Exclusions: Theft or malicious damage after completion.
  - Rectification: 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 once cause of failure has been identified.

### **730 PROTECTIVE FENCING**

- Fencing type: Cleft chestnut pale fencing, as section Q40.
- Erection: On completion of planting.
- Removal: Fencing will remain the property of the Contractor. Remove and refill post holes following acceptance of rectified defects.

### **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.

### **750 PLANTING MAINTENANCE GENERALLY**

- Weed control: Maintain weed free area around each tree and shrub.
  - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
  - Keep planting beds clear of weeds: By maintaining full thickness of mulch, hand weeding and use of suitable non-residual herbicide.
- 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.
  - Broken or missing items: Replace.
  - Rubbing: Prevent.
  - Ties: Adjust to accommodate growth.



- Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
- Frequency of checks: At each scheduled maintenance visit.
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
- Trees: Spray crown when in leaf during warm weather.
  - Timing: After dusk.
- Watering: as required to maintain healthy plant growth, irrespective of weather conditions.

#### 760 PLANTING MAINTENANCE - PRUNING

- General: Prune to promote healthy growth and natural shape.
  - Dead, dying, diseased wood and suckers: Remove.
  - Timing: In accordance with the agreed maintenance schedule.
  - Trees: Favour a single central leading shoot.
    - Arisings: Remove.

#### 780 MAINTENANCE INSTRUCTIONS

- General: Before end of the maintenance period, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year: Provide a schedule of any ongoing maintenance problems experienced during the rectification period.

#### 790 FINAL MULCHING

- Timing: At end of the maintenance period.
- Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
- Planting beds: Remulch.
  - Depth (minimum): 50 mm.
- Trees: Remulch.
  - Depth (minimum): 50 mm.

## Q35 Landscape maintenance

To be read with Preliminaries/ General Conditions.

### GENERALLY

#### 105 MAINTENANCE OBJECTIVES

- Location: Construction Phase 1a area.
  - Duration: Five years.
- Aims: Improved landscape visual amenity and Provide wildlife habitat and increase biodiversity.
- Restrictions: Protection of protected wildlife.
- Results: Thriving and established landscape.

#### 110 NOTICE

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

Period of notice: 7 days.

#### 130 REINSTATEMENT

- Damage or disturbance to soil structure, planting, grass, fencing, hard landscaping, structures or buildings: Reinstate to original condition.

#### 140 CONTROL OF MAMMALIAN PESTS

- Specialist firms: Submit proposals.
  - Method: Submit proposals.

#### 152 PERFORMANCE CRITERIA FOR CONTROL OF INVASIVE PLANT SPECIES

- Specialist firms: Submit proposals.
- Species: Japanese knotweed and any other non-native invasive impeding planting or seeding establishment.
- Location: Whole site.
- Requirement: Ensure complete removal.
  - Timing: As detailed in Waterman 15 Year Landscape & Habitat Management Plan.

#### 156 WATERING

- Supply: No site supply available, submit proposals.
- Quantity: Wet full depth of topsoil.

- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: Sufficient to maintain healthy growth of all planted and seeded areas, irrespective of weather conditions.

#### 160 WATER RESTRICTIONS

- General: If water supply is, or is likely to be, restricted by emergency legislation, submit

#### 170A DISPOSAL OF ARISING

- General: Unless specified otherwise in Waterman 15 Year Landscape & Ecology Management Plan, dispose of arisings as follows:
  - Biodegradable arisings: Remove to suitable recycling facility.
  - Amenity grass/close mown grass cuttings: [Spread evenly within the cut areas]
  - Wildflower/meadow grass cuttings: Leave for two to three days after cutting (including turning/drying) then remove to a suitable recycling facility.
  - Tree roots and stumps: Remove from site.
  - Shrub and tree prunings: As per Waterman 15 Year Landscape and Ecology
- Management Plan.
- Litter and non-biodegradable arisings: Remove from site.

#### 190 LITTER

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

#### 195 PROTECTION OF EXISTING GRASS

- General: Protect areas affected by maintenance operations using boards/tarpaulins. Do not place excavated or imported materials directly on grass.

#### 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 & WILDFLOWER MEADOW AREAS

- General: Maintain sward in a manner appropriate to the intended use.
- Soil and grass:
  - Condition: Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
  - Waterlogging and compaction: Record/report and submit proposals for alleviation.
  - Damage: Record and report. Submit proposals for repair of trampling, abrasion or scalping etc.

- Amenity grass verges and close mown paths/path edges: 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.

#### 211 MAINTENANCE OF GRASSED AREAS

- Standard: To BS 7370-3. Carry out maintenance appropriate to each category of turf, as follows:
  - Objectives: To BS 7370-3, table 6.
  - Programme: To BS 7370-3, clause 11.
  - Mowing methods: To BS 7370-3, table 3.

#### 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.

#### 226 TREE STEMS

- Precautions: Do not allow nylon filament rotary cutters and other mechanical tools closer than 100 mm to the stem of any tree.
  - Operations close to stems: Complete using hand tools.

#### 235 BULBS AND CORMS IN GRASSED AREAS

- Before flowering: Do not cut.
- Interval between end of flowering and start of grass cutting (minimum): Six weeks.

#### 240A MOWING STRIPS

- Location: As mown paths and bounding gravel paths.
- Width (approximate): 2.0 - 2.5m width, as per plans.
- Operations: Maintain by hand weeding and cultivation.

#### 240B MOWING STRIPS

- Location: Highway grass verge areas.
- Width (approximate): 1.0m width, as per Waterman Tree in Verge detail.
- Operations: Maintain by hand weeding and cultivation.

#### 250 LEAF REMOVAL

- Operations: Collect fallen leaves.
- Special requirements: Have regard to the presence of protected species (e.g. Greater Crested Newts).

- Disposal: Remove to a suitable recycling facility.

#### 255 FIRST CUT OF AMENITY GRASS, MOWN EDGES/PATHS & ROAD VERGES

- Height of initial growth: 100 mm.
- Preparation:
  - Debris and litter: Remove.
  - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 50 mm.
- Mower type: Contractor's choice.
- Arisings: Spread evenly over cut areas.

#### 272A MAINTAINING GRASSED AREAS WITH PERENNIAL WILD FLOWERS

- Preparation: Before each cut remove litter and debris.
- Height and frequency of cut in first growing season:
  - Time of first cut: March/ April.
  - Height of first cut: 75 mm.
  - Frequency of subsequent cutting (minimum): Biannually.
  - Height of growth permitted (maximum): N/A.
  - Height and frequency of cut in second growing season:
    - Time of cut: March/April and August/September.
    - Height of cut: 75 mm.
- Trimming: All edges.
  - Arisings: Turn and dry arisings over period 3-5 days following cutting then remove to a suitable recycling facility.
- Watering: If required during seed establishment to maintain healthy growth.

#### 272B MAINTAINING GRASS AND HERBAGE WITHIN NEW WOODLAND/WOODLAND EDGE PLANTED AREAS

- Preparation: Before each cut remove litter and debris.
- Height and frequency of cut in first growing season:
  - Time of first cut: August/September.
  - Height of first cut: 100 mm.
  - Frequency of subsequent cutting (minimum): Annually.
  - Height of growth permitted (maximum): N/A.
- Height and frequency of cut in second growing season:
  - Time of cut: August/September.
  - Height of cut: 100 mm.
- Trimming: All edges.

- Arisings: Spread evenly within cut areas.
- Watering: Not required (to maintain grass or herbage).

### 300A SCARIFYING

- Location: Undisturbed areas of wildflower meadow that have not previously been seeded.
- Timing: September in first growing season.
- Operations: Relieve thatch conditions and remove dead grass to create approximately 50% bare ground immediately prior to over-seeding.
- Depth (maximum): 15 mm into soil.
- Arisings: Remove to suitable composting facility.

### 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.

### 320 LEVELLING HOLLOWES AND BUMPS IN TURF

- Standard: To BS 7370-3, clauses 12.4 and 12.5.

### 325A RELIEVING SURFACE COMPACTION IN AMENITY GRASS AND GRASS VERGE AREAS

- Standard: To BS 7370-3.
- Method: Spiking.
- Top dressing: Fine sand.
  - Depth: 2-3 mm.

### 330 SELECTIVE HERBICIDE

- Location: Amenity grass and grass verge areas.
- Herbicide: non-residual type suitable for suppressing invasive weeds.
- Areas not to be sprayed: Bulb and corm planted areas when in leaf.

### 340A SPOT WEEDKILLING IN WILDFLOWER MEADOW AREAS (EXCLUDING GRAZED MEADOWS)

- Herbicide: Selective non-residual type.
- Operations: Spot treat all invasive/undesirable weeds.

### 350A FERTILIZER - SPRING APPLICATION WITHIN AREAS OF AMENITY/ORNAMENTAL PLANTING ONLY

- Type: Organic.
- Application rate: 60 g/m<sup>2</sup>.

### 375 PEST CONTROL

- Location: Areas of grass, wildflower meadows and planting.
- Treatment: Insecticide.
  - Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Timing: As manufacturer's recommendation.

### 381 REINSTATEMENT OF WORN OR DAMAGED LAWNS

- Worn or damaged areas: Make good by turfing or reseeding:
  - Turfing standard: To BS 7370-3, Clause 12.2.
  - Reseeding standard: To BS 7370-3, Clause 12.6.
- Turf or seed: To match existing in appearance and quality.
- Protection and watering: Provide as necessary to promote successful germination and/ or establishment.

## SHRUBS/TREES/HEDGES

### 500 ESTABLISHMENT OF NEW PLANTING

- Duration: Five years.
- Weed control:
  - Method: Keep planting beds clear of weeds by maintaining full thickness of mulch, hand weeding and use of approved, selective, non-residual herbicide.
  - Area: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
- Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
- Watering: As required to maintain healthy growth of all planted areas irrespective of planting season.

### 502A ESTABLISHMENT OF NEW AMENITY/ORNAMENTAL PLANTING - FERTILIZER

- Time of year: March or April.
- Type: Organic.
- Spreading: Spread evenly. Carefully lift and replace any mulch materials.
  - Application rate: As manufacturer's recommendations.

### 510 TREE STAKES AND TIES

- Inspection/ Maintenance times: During each scheduled maintenance visit and immediately after strong winds.
- Stakes:
  - Replace loose, broken or decayed stakes to original specification.

- If longer than half of clear tree stem height, cut to this height in spring. Retie to tree firmly but not tightly with a single tie.
- Ties: Adjust, re-fix or replace loose or defective ties, allowing for growth and to prevent chafing.
  - Where chafing has occurred, reposition or replace ties to prevent further chafing.
- Removal of stakes and ties: Three to five years after planting depending on tree establishment rates.
- Fill stake holes with lightly compacted soil.

#### 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.

#### 525 TREE GUARDS

- Loose or defective guards: Adjust, re-fix or replace to original specification and to prevent chafing.

#### 530A TREE SHELTERS/GUARDS

- Loose or defective shelters: Adjust, re-fix or replace to original specification and to prevent chafing.
- Removal: Three to five years following planting, depending on tree establishment rates.
- Note: Tree guards to remain on all standard/feathered trees within grass/wildflower meadow areas.

#### 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 OF SHRUB OR TREE PLANTING

- Timing: Annually in November to February.
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.



- Special requirements: Have regard to the potential presence of protected species.

#### 550A PRUNING OF EXCESSIVE HEIGHT OF SHRUB PLANTING (ONLY)

- Timing: Annually.
- Operations: Remove excessive height to allow adequate visibility from adjacent paths or roads.

#### 555 PRUNING TREES AND SHRUBS

- Standard: To BS 7370-4.
- Special requirements: Growth retardants not permitted.

#### 570A FORMATIVE PRUNING OF INDIVIDUAL STANDARD AND FEATHERED TREES

- Standard: Type and timing of pruning operations to suit the plant species.
- Time of year: November to February.
- Planted ornamental and native trees:
  - Crown prune by removing dead branches and to promote a well-balanced canopy 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.
  - Undertake progressive crown-lifting to proportions of 1/3 trunk to 2/3 canopy height to archive a maximum canopy clearance of 3.0m for trees within wildflower meadow areas and 4.0m for trees within hedgerows or grass verge areas.
- Operatives: Arboricultural Association Approved Contractor.
- Standard: [BS3998:2010 Treework - recommendations and BS8545:2014 Trees from nursery to independence in the landscape].

#### 570B FORMATIVE PRUNING OF PLANTED WOODLAND TREES

- Standard: Type and timing of pruning operations to suit the plant species.
- Time of year: November to February.
- Young trees up to 4 m high:
  - Crown prune by removing dead branches and to preserve a well-balanced canopy 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 self-sown trees: Do not prune within initial three years of planting.
- Operatives: Arboricultural Association Approved Contractor.
- Standard: [BS3998:2010 Treework - recommendations and BS8545:2014 Trees from nursery to independence in the landscape].

#### 575 PRUNING ORNAMENTAL SHRUBS

- General: Prune to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour.
- Suckers: Remove by cutting back level with the source stem or root.

## 580 PRUNING FLOWERING SPECIES OF SHRUBS AND ROSES

- Time of year:
  - Winter flowering shrubs: Spring.
  - Shrubs flowering between March and July: Immediately after the flowering period.
  - Shrubs flowering between July and October: Back to old wood in winter.
  - Rose bushes: Early spring to encourage basal growths and a balanced, compact habit.

## 590 PRUNING PARTICULAR SPECIES

- Species to be pruned to separate specific instructions: Dogwood (Conus species) to be pruned back hard to 200mm height every 2-3 years to encourage young stem development.

## 605A TRIMMING SLOWLY ESTABLISHING NATIVE HEDGES

- Operations:
  - Allow planted hedgerows to grow for minimum 2-3 years prior to cutting
  - Once hedges have become established (after 3-5 years) coppice back to 300mm Ht. and allow to regenerate.
  - Timing: Following coppicing, undertake biannual cutting in April and October to encourage bushy growth down to ground level.
  - Form: Allow to reach 1.2 - 1.5m Ht. only by gradual degrees, depending on growth rate and habit.

## 610A TRIMMING TAPERING ESTABLISHED HEDGEROWS

- Time of year: Trim biannually in April and October.
- Operations:
  - Form: Trim carefully and neatly to regular line and shape, with the width at the top less than that at the base.
  - Trim: Remove current growth rather than old wood.
- Tools/ Cutting: Suitable mechanical cutters.
- Allow the development of field trees of suitable species at approximately 10-20m centres within the hedgeline through natural regeneration

## 615A LAYING OF PLANTED AND ESTABLISHED FIELD HEDGES

- Phase hedge laying to ensure that all hedgerows are layered once within 15 year period
- Hedge laying:
  - Suspend hedge cutting of hedgerows selected to be layered for 2-3 years prior to laying.
  - Undertake hedge laying of selected hedgerows during November to February in the 'Midland Bullock' style
- Operatives: Accredited Member of the National Hedge laying Society ([www.hedgelaying.org.uk](http://www.hedgelaying.org.uk))

#### 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.

#### 625 CLIMBING PLANTS

- Pruning: Remove excess growth, to ensure that signs, light fittings, doors and windows are kept clear at all times.
- Insecure growth: Attach to supporting wires or structures using Stainless steel wire.
- Supporting structures: Check and repair as necessary.

#### 630 DEAD AND DISEASED PLANTS

- Removal: As soon as possible.
- Replacement: Once cause of failure has been established and in the next suitable planting season.

#### 635 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: Maintenance operations for establishment of new planting to be re-set to year 1 maintenance actions.
- Dressing: Slow release fertilizer:
  - Type: Submit proposals.
  - Application rate: As manufacturer's recommendations.

#### 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: Reinstate to original depth.

#### 650A HAND WEEDING WITHIN ECOLOGY & ATTENUATION POND AREAS

- General: Remove invasive 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: Reinstate to original depth.

#### 655A WEED CUTTING BY HAND OR MACHINE WITHIN AREAS OF WOODLAND OR WOODLAND EDGE PLANTING

- Undesirable grass, brambles and herbaceous growth: Cut down cleanly to a maximum height of 100mm.
- Herbicides: To prevent the spread of invasive weeds. Give notice before use.

#### 657A HERBICIDE TO KILL REGROWTH OF INVASIVE WEEDS

- Type: Selective, non-residual type, foliar acting herbicide to kill regrowth.

#### 680 SOIL AERATION

- Compacted soil surfaces:
  - Prick up: To aerate the soil of root areas and break surface crust.
  - Size of lumps: Reduce to crumb and level off.
  - Damage: Do not damage plants and their roots.

#### 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.

#### 690 MAINTENANCE OF LOOSE MULCH

- Thickness (minimum): 75 mm.
  - Top up: Annually.
- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
- Weeding: Remove weeds growing on or in mulch by a combination of hand weeding and application of an approved non-residual herbicide.

#### 693 MAINTENANCE OF MULCH MATTING/ SHEET MULCHES

- General: Inspect and reattach or refirm mulch mats and sheet mulches.
- Type: Hessian/jute mulch mat.
- Remove: After not required - mats are biodegradable.

#### 710A WOODLAND AND WOODLAND EDGE PLANTING MAINTENANCE

- Watering: To maintain healthy growth irrespective of weather conditions.
- Loose plants: Refirm surrounding soil, without compacting.
- Vegetation: Control invasive weeds and herbage
  - Arisings: Leave between rows.
- Ditches and drains: Keep clear.

#### 715 WOODLAND THINNING

- Mature planting density: Thin out undesirable species and weaker trees.

- Timing: Thin in stages In accordance with 15 Year Landscape and Habitat Maintenance Plan.

#### 720A COPPICING

- Material to be coppiced Fast growing pioneer trees and woody plants where impeding development of adjacent slower growing climax tree species.
- Standard: Good forestry practice.
- Cut stems: As low as possible, or to previous coppice level.
  - Finish: Leave sloping upward towards the centre to promote rainwater runoff.
- Brush: Lay in windrows minimum 5.0m from publically accessible areas.
- Coppiced timber: Stack in a safe manner minimum 5.0m from publically accessible areas.

#### 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.

##### 815 ADDITIONAL WORK

- Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.

##### 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.

##### 830 CLEANING OUT AND DEADWOODING

- Remove:
  - Dead, dying, or diseased wood, broken branches and stubs.
  - Fungal growths and fruiting bodies.
  - Rubbish, windblown or accumulated in branch forks.
  - Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.

- Other unwanted objects, e.g. tree houses, swings.
- Climbing plants (e.g. ivy) - Cut climber at base and remove from lower 1.0m of trunk.

### 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 with prior approval.
  - 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 epicormics 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.

### 845 CROWN LIFTING

- Clearances: Remove branch systems to give clearance.
  - Height: Only to allow safe clearance for persons or vehicles below canopy.
- Removing branches: Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sub lateral buds or branches. Do not leave stumps.

### 855 CUTTING TREE ROOTS

- Excavating: Use hand tools only.
- 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 50 mm in diameter. Do not cut without approval.
- Cutting:
  - Cutting: Make clean smooth cuts with a hand saw.
  - Wounds: Minimize. Avoid ragged edges.
  - Finishing: Pare cut surfaces smooth with a sharp knife.
- Backfilling:
  - Protection: Cover cut roots with clean sharp sand.

- Material: Backfill with original topsoil.

#### 860 REMOVING TREES, SHRUBS AND HEDGES

- Standards: To BS 3998, Appendix A and Health & Safety Executive (HSE)/ Arboricultural and Forestry Advisory Group Safety Leaflets.
- Existing services: Check for below and above ground services. Give notice if they may be affected.
- Shrubs and smaller trees: Cut down and grub up roots.
- Tree stumps:
  - Removal: Remove mechanically to a minimum depth of 300 mm below ground level.
  - Removal by winching: Give notice. Do not use other trees as supports or anchors.
- Protection: Avoid damage to neighbouring trees, plants and property.
- Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Filling holes:
  - Material: Use as-dug material and/ or imported soil as required.
  - Finishing: Consolidate and grade to marry in with surrounding ground level.

#### 865 BARK DAMAGE

- Wounds:
  - Do not attempt to stop sap bleeding.
  - Bark: Remove ragged edges using a sharp knife.
  - Wood: Remove splintered wood from deep wounds.
  - Size: Keep wounds as small as possible.
- Liquid or flux oozing from apparently healthy bark: Give notice.

#### 870 CAVITIES IN TREES

- Investigation: Remove rubbish and rotten wood. Probe the cavity to find the extent of any decay, and give notice.
- Water filled cavities: Do not drain.
- Sound wood inside cavities: Do not remove.
- Cavity openings: Do not cover.

### WATER AREAS

#### 895A CLEARANCE OF SWALES

- Clearance: Remove litter, debris, accumulated silt and excessive vegetation causing an obstruction.
- Frequency: Biannually (minimum) and check for blockages during each scheduled maintenance visit.
- Time of year: March/April and September/October.
- Method: By hand.

- Access: From one bank only.
- Position: At least 1 m from the top of the bank.
- Clearance: To ensure safe operation of swales and prevent blockages
- Phasing: As per Waterman 15 Year Landscape & Ecology Management Plan.

#### 895B CLEARANCE OF ECOLOGY & ATTENUATION PONDS

- Clearance: Remove litter, debris, accumulated silt and excessive vegetation causing an obstruction.
- Frequency: Biannually (minimum) and check for injurious debris during each scheduled maintenance visit.
- Time of year: March/April and September/October.
- Method: By hand.
  - Access: From one bank only.
  - Position: At least 1 m from the top of the bank.
  - Clearance: To ensure minimum 25% open water is maintained.
- Phasing: As per Waterman 15 Year Landscape & Ecology Management Plan.

#### HARD LANDSCAPE AREAS/FENCING

##### 910 HARD SURFACES AND GRAVEL AREAS

- Herbicide: Apply a suitable foliar acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
- Hard surfaces: Remove litter, leaves and other debris.
- Surface gutters and channels: Remove mud, silt and debris.
- Drainage gullies: Empty traps and flush clean.
- Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.
- Repairs to flexible bituminous pavings: In accordance with the original paving specification or BS 7370-2, clause 4.12.
- Stain removal: In accordance with BS 7370-2, table 4.

##### 920 FENCING

- Fences: Inspect and repair to maintain protection against unwanted vehicular access.



## Q40 Fencing

To be read with Preliminaries/ General Conditions.

### FENCING SYSTEMS

#### 210A WOODEN POST AND RAIL FENCING

- Manufacturer: Submit proposals.
  - Product reference: Post and three rail fence.
- Standard: To BS 1722-7
- Height: 1100 mm.
- Wood: Softwood.
  - Treatment: Pressure treated with preservative applied to all cuts.
  - Finish: None required.
- Maximum centres of posts: 1.8 m.
- Method of setting posts: Submit proposals.
- Accessories: Radicalised post tops, 3No. rails with morticed joints and galvanised fixings & bespoke 250 x 250mm end posts to detail.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-7.

#### 210B WOODEN POST AND RAIL FENCING WITH MESH INFILL (TO LIVESTOCK GRAZED FIELDS)

- Manufacturer: Submit proposals.
  - Product reference: Post and three rail fence.
- Standard: To BS 1722-7
- Height: 1400 mm.
- Wood: Softwood.
  - Treatment: Pressure treated with preservative applied to all cuts.
  - Finish: None required.
- Maximum centres of posts: 1.8 m.
- Method of setting posts: Submit proposals.
- Mesh infill: 1150mm Height Galfan coated C8/11/30 Code 320200 (steel mesh) available from Jacksons fencing, fixed to rails with galvanised steel staples and lower straining wire.
- Signage: Not required.
- Accessories: Radialised post tops, 3No. rails with morticed joints and galvanised fixings.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-7.

#### 210C LOG FENCING TO LOCAL AREA OF PLAY (LAP)

- Manufacturer: M&M Timber (Or similar approved).
  - Product reference: Unilog Pro Landscape Timber.

- Standard: To BS 1722-7
- Height: Varies 750-1200 mm.
- Wood: Softwood.
  - Treatment: Pressure treated with preservative applied to all cuts.
  - Finish: Natural finish with rounded post tops.
- Maximum centres of posts: 150mm (Vertical log fencing).
- Method of setting posts: Submit proposals.
- Accessories: Self closing single leaf pedestrian gate, to BS EN 1176 (see clause Q40:570).
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-7.

#### 210D WOODEN POST AND RAIL FENCING WITH MESH INFILL (TO STOCK-PROOF BOUNDARIES)

- Manufacturer: Submit proposals.
  - Product reference: Post and three rail fence.
- Standard: To BS 1722-7
- Height: 1250 mm.
- Wood: Softwood.
  - Treatment: Pressure treated with preservative applied to all cuts.
  - Finish: None required.
- Maximum centres of posts: 1.8 m.
- Method of setting posts: Submit proposals.
- Mesh infill: 25mm Square galvanised steel mesh (16 gauge) fixed to rails with galvanised steel staples.
- Signage: 3No. timber warning signage panels securely fixed to outside of fencing mesh/gated access (to detail).
- Accessories: Radialised post tops, 3No. rails with morticed joints and galvanised fixings.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-7.

#### 210E WOODEN POST AND WIRE/MESH FENCING (TO STOCK-PROOF BOUNDARIES OF AGRICULTURAL FIELDS)

- Manufacturer: Jacksons Fencing.
  - Product reference: '100m Post and Wire Kit suitable for sheep and lambs', code AGC8MR.
- Standard: To BS 1722-2
- Height: 1100 mm (min. finished height above ground level).
- Wood: 'Jakcured' softwood (strainer posts, rounded struts, rounded stakes).
  - Treatment: 'Jakcure' pressure treated with preservative applied to all cuts.
  - Finish: None required.
- Maximum centres of posts: to manufacturer's recommendations.
- Method of setting posts: Submit proposals.

- Mesh infill: 8No. lines and wires max. 150mm apart (3mm gauge top and bottom, 2.5mm gauge intermediates) fixed to straining wires.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-2.

## **GATES, POSTS AND STILES**

### **510 FIELD GATES AND POSTS**

- Manufacturer: Centre wire (or similar approved).
  - Product reference: Timber Field Gate (Ref: LE F010 0010 36).
- Size: 1100 mm high x 3600 mm wide.
- Materials: Wood gate and posts (including bespoke gate posts - see details) with galvanised steel fixings.
  - Treatment: Pressure treated with timber preservative.
  - Finish: Planed timber.
- Fittings: Two adjustable hook and band hinges, hasp and staple and padlock.
  - Finish: Hot dip galvanized to BS EN ISO 1461.
- Method of setting posts: Submit proposals.
- Accessories: Bespoke gatepost - see details.

### **530 KISSING GATES AND POSTS**

- Manufacturer: Centre wire (or similar approved).
  - Product reference: Oxford Large Kissing Gate Ref: XX F010 0113 03).
- Standard: To BS 5709.
- Format: Rectangular.
- Size: 1100 mm high x 1600 mm nominal width.
- Materials: Wood gate and posts (including bespoke gate posts).
  - Treatment: Pressure treated with timber preservative.
  - Finish: Planed timber.
- Fittings: Two self-closing hinges and cushioned slam plates.
  - Finish: Hot dip galvanized to BS EN ISO 1461.
  - Method of setting posts: Submit proposals.
- Accessories: Bespoke gateposts - see details.

### **570 GATES**

- Manufacturer: Jacksons or equal and approved.
  - Product reference: Anti Trap Bow Top Gate (self-closing and to BS EN 1176).
- Sizes: 1000 mm clear opening.

- Posts: as supplied.
- Finish as delivered: Powder coated to BS 1722-16, colour black (RAL 9005).
- Fittings: as supplied.
  - Finish: Hot dip galvanized to BS EN ISO 1461.
- Method of fixing: Posts set in concrete foundation (to manufacturer's recommendations).
- Accessories: None.

## **ACCESSORIES**

### **625A ADDITIONAL MESH/ FABRIC**

- To gates within stock proofed fence (per clause Q40:210D)
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Type: Galvanized welded mesh.
  - Colour: Not applicable.
- Mesh size: 25 mm.
- Height: 1250 mm.
- Bottom of mesh: Wrap over bottom rail and secure - see detail.
- Fixings: Nailed or stapled to timber fence rails wooden posts and rails at min 500mm centres (galvanised staples).

### **635A BADGER GATES Within stock-proofed fence**

- Manufacturer: Submit proposals.
- Product reference: Submit proposals.
- Type: Submit proposals.
- Mechanism: Submit proposals.
- Number of transmitters: N/A.
- Accessories: N/A.

## **EXECUTION**

### **710 INSTALLATION GENERALLY**

- Set out and erect:
  - Alignment: Straight lines or smoothly flowing curves.
  - Tops of posts: Following profile of the ground.
  - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
- Fixings: All components securely fixed.

#### 720 SETTING POSTS IN CONCRETE

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
- Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
- Admixtures: Do not use.
- Holes: Excavate neatly and with vertical sides.
- Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
- Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

#### 770 SITE CUTTING OF WOOD

- General: Kept to a minimum.
- Below or near ground level: Cutting prohibited.
- Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution recommended for the purpose by main treatment solution manufacturer. 'Jakcured' products to be treated with appropriate 'Jakcure' treatment, supplied by Jacksons Fencing.

#### 780 MAKING GOOD GALVANIZED SURFACES

- Treatment of minor damage (including on fasteners and fittings): Low melting point zinc alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint to BS 4652.
- Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

### COMPLETION

#### 910 CLEANING

- General: Leave the works in a clean, tidy condition.
- Surfaces: Clean immediately before handover.

#### 920 FIXINGS

- All components: Tighten.
  - Timing: Before handover.

#### 930 GATES

- Hinges, latches and closers: Adjust to provide smooth operation. Lubricate where necessary.
  - Timing: Before handover.

## Q50 Site/street furniture/equipment

To be read with Preliminaries/ General Conditions.

### GATES, BARRIERS AND PARKING CONTROLS

#### 190A BOLLARDS to selected areas of public open space

- Manufacturer: Broxap
  - Product reference: Square section timber bollard 'BX17', or equal approved.
- Material: FSC Certified hardwood.
  - Finish as delivered: As manufactured.
  - Colour: None.
- Height above ground: Minimum 450 mm (750mm overall height).
  - Section Size: 200 x 200mm.
  - Special features: Chamfered top.
- Method of fixing: Root below ground, set in concrete base - manufacturer to recommend foundation type/depth.

#### 190B BOLLARDS to selected areas of public open space ('urban lane west')

- Manufacturer: Streetlife.
  - Product reference: Streetlife CorTen Bicycle Rack.
- Material: Corten steel.
  - Finish as delivered: As manufactured.
  - Colour: None.
- Height above ground: 750 mm.
  - Section Size: [350 x 50mm].
- Method of fixing: Root below ground, set in concrete base - manufacturer to recommend foundation type/depth.

### SITE AND STREET FURNITURE

#### 210A CYCLE STANDS to High Street

- Manufacturer: Broxap.
  - Product reference: Broxap Harrogate Cycle Stand BXMW/GH-Harrogate-Stand.
- Material: Stainless steel (316 grade).
  - Finish: Brushed.
  - Colour: None.
- Size: H800mm.
- Accessories/ Special requirements: None.

- Method of fixing: Root, below ground, set in concrete base to manufacturer's recommendations.

#### 220 BENCHES to selected areas of public open space

- Manufacturer: WOODSCAPE.
  - Product reference: Woodscape 'Type 2' bench.
- Material: FSC Certified hardwood.
  - Finish: As manufactured.
  - Colour: None.
- Size: 2.0 m long.
- Accessories/ Special requirements: None.
- Method of fixing: Root, below ground, set in concrete base to manufacturer's recommendations.

#### 225 SEATS To Urban Lane (East)

- Manufacturer: Blueton.
  - Product reference: 0804.01 Cube Bench.
- Material: FSC Certified Green Oak.
  - Finish: Stained as per manufacturers recommendations.
  - Colour: Natural.
- Size: 500x500x500mm.
- Accessories/ Special requirements: None.
- Method of fixing: Root fixed in accordance with manufacturers recommendations.

#### 225A SEATS To Urban Lane (West)

- Manufacturer: Bailey Artform Rapadouro.
  - Product reference: Rapadouro Corten Steel and Timber Bench.
- Material: Corten Steel and FSC Certified Hardwood.
  - Finish: As per manufacturers recommendations.
  - Colour: Natural.
- Size: 2000x600x435mm.
- Accessories/ Special requirements: None.
- Method of fixing: Surface fixed in accordance with manufacturers recommendations.

#### 225B SEATS To High Street

- Manufacturer: Blueton.
  - Product reference: Ref 088 Stainless Steel & Timber Seat.
- Material: Stainless steel (316 grade) and FSC certified hardwood timber.
  - Finish: As per manufacturer's recommendations.
  - Colour: Natural.

- Size: L1800 x W600 x D800mm.
- Accessories/ Special requirements: None.
- Method of fixing: Root fixed in accordance with manufacturers recommendations.

#### 225C SEATS To Village Green

- Manufacturer: Streetlife.
  - Product reference: Solid 6 Bench.
- Material: FSC certified hardwood and galvanised steel powder coated colour black.
  - Finish: Galvanised steel to be powder coated colour black.
  - Colour: Natural (hardwood) / RAL Black (steel components).
- Size: L2340 x W460 x H450mm.
- Accessories/ Special requirements: None.
- Method of fixing: Root fixed in accordance with manufacturers recommendations.

#### 230A PICNIC TABLES to selected areas of public open space

- Manufacturer: Streetlife.
  - Product reference: Solid Picnic Set.
- Material: FSC certified hardwood and galvanised steel powder coated colour black.
  - Finish: As manufactured (hardwood) / powder coated colour black (galvanised steel).
  - Colour: Natural (hardwood) / RAL Black (galvanised steel).
- Size: L2340 x W930 x H780mm.
- Accessories/ Special requirements: None.
- Method of fixing: Root, below ground, set in concrete base to manufacturer's recommendations.

#### 230B PICNIC TABLES to selected areas of public open space

- Manufacturer: Woodscape.
  - Product reference: Picnic Set Type 1.
- Material: FSC certified hardwood.
  - Finish: As manufactured.
  - Colour: Natural (hardwood).
- Size: Table: L1800 x W570 x H680mm. Seats: L2000mm.
- Accessories/ Special requirements: None.
- Method of fixing: Root, below ground, set in concrete base to manufacturer's recommendations.

#### 240 LITTER BINS to selected areas of public open space

- Manufacturer: WOODSCAPE.
  - Product reference: Woodscape 'LBR 90' litter bin.



- Material: FSC Certified hardwood.
  - Finish: As manufactured.
  - Colour: None.
- Accessories/ Special requirements: Lockable lid and lock. Steel insert lining.
- Method of fixing: Root, below ground, set in concrete base to manufacturer's recommendations.

#### 240A LITTER BINS to High Street

- Manufacturer: Blueton.
  - Product reference: Ref 034.01ss Post Mounted Litter Bin.
- Material: Stainless steel (316 grade).
  - Finish: As manufactured.
  - Colour: None.
- Accessories/ Special requirements: Steel insert lining.
- Method of fixing: Root, below ground, set in concrete base to manufacturer's recommendations.

#### 242A DOG BINS to selected areas of public open space

- Manufacturer: FURNITUBES INTERNATIONAL.
  - Product reference: Lucky Dog Waste Bin LUK 745 F.
- Material: Steel.
- Finish: Hot dip galvanized to BS EN ISO 1461 and Polyester powder coated as section Z31.
  - Colour: Black.
- Accessories/ Special requirements: Free standing.
- Method of fixing: Root, below ground, set in concrete base to manufacturer's recommendations.

#### 252A INTERPRETATION/SIGNAGE BOARDS to selected areas of public open space

- Manufacturer: WOODSCAPE.
  - Product reference: Hardwood Timber Knott End Style Sign.
- Material: FSC Certified hardwood.
  - Finish: As manufactured.
  - Colour: None.
- Accessories/ Special requirements: Logo, and information content TBA.
- Method of fixing: Post-mounted with root fixing in accordance with manufacturer's recommendations.

#### 252B INTERPRETATION/SIGNAGE BOARDS To Gateway Park

- Manufacturer: Fitzpatrick Woolmer.
  - Product reference: Musketeer Twin Leg Wooden Lectern - A1 Size.
- Material: FSC Certified hardwood.
  - Finish: As manufactured.

- Colour: None.
- Accessories/ Special requirements: Graven Hill Village Logo, and information content TBA.
- Method of fixing: Post-mounted with root fixing in accordance with manufacturers recommendations.

#### 262A RAISED PLANTERS AND SEATING to Urban Lane (West)

- Manufacturer: Streetlife.
  - Product reference: R&R
- Big Green Bench (Square) with seating on two sides only.
- Material: Corten Steel and FSC Certified Hardwood.
  - Finish: As manufactured.
  - Colour: As manufactured.
- Size: 1800 x 1800mm.
- Accessories/ Special requirements: Bottomless base to allow plant rooting into topsoil/sub-soil layers below.
- Accessories/ Special requirements: [To be installed in conjunction with BLUEGREEN URBAN RD1400A Root-director to allow rooting to penetrate highway hard surfacing (1No. root director per planter)].
- Method of fixing: As per manufacturer's recommendations.

#### 262B RAISED PLANTERS AND SEATING to Village Green

- Manufacturer: Streetlife.
  - Product reference: R&R
- Big Green Bench (Square) with seating on two sides only.
- Material: Galvanised steel powder coated black and FSC Certified Hardwood.
  - Finish: Natural (hardwood) / Powder coated colour black (steel).
  - Colour: Natural (hardwood) / RAL black (steel).
- Size: 1800 x 1800mm.
- Accessories/ Special requirements: Bottomless base to allow plant rooting into topsoil/sub-soil layers below.
- Accessories/ Special requirements: To be installed in conjunction with BLUEGREEN URBAN RD1400A Root-director to allow rooting to penetrate highway hard surfacing (1No. root director per planter).
- Method of fixing: As per manufacturer's recommendations.

#### 262C RAISED PLANTERS AND SEATING to Village Green

- Manufacturer: Streetlife.
  - Product reference: R&R
- Big Green Bench (Square) with seating on one side only.
- Material: Galvanised steel powder coated black and FSC Certified Hardwood.
  - Finish: Natural (hardwood) / Powder coated colour black (steel).

- Colour: Natural (hardwood) / RAL black (steel).
- Size: 1800 x 1800mm.
- Accessories/ Special requirements: Bottomless base to allow plant rooting into topsoil/sub-soil layers below.
- Accessories/ Special requirements: To be installed in conjunction with BLUEGREEN URBAN RD1400A Root-director to allow rooting to penetrate highway hard surfacing (1No. root director per planter).
- Method of fixing: As per manufacturer's recommendations.

### 340A PROPOSED LOG PILES

- Locations: Woodland and habitat areas.
- Material: Straight timber logs.
- Bio-security: Ensure all timber is free from significant defects and significant pests and diseases.
- Approximate size: Min 450mm dia. x 2.5m length.
- Delivery/ Handling/ Storage requirements: Obtain from site-won airings where possible.
- Method of fixing: Logs to be stacked no greater than 1.2m Ht with discrete metal fixings provided to prevent individual logs becoming dislodged.

## INSTALLATION

### 510 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Concrete: In accordance with product manufacturer's requirements.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, and haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

### 545 ERECTION OF TIMBER AND PREFABRICATED STRUCTURES

- Checking: 5 days (minimum) before proposed erection date, check foundations, holding down bolts, etc.
- Inaccuracies or defects in prepared bases or supplied structures: Report immediately.
- Obtain instructions before proceeding.

### 550 DAMAGE TO GALVANIZED SURFACES

- Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings): Make good.
  - Material: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
  - Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

### 560 SITE PAINTING

- Timing: Prepare surfaces and apply finishes as soon as possible after fixing.

## Q52 Play and Sports Equipment

### GENERAL

#### 115A LAP PLAY AREAS 2No. Within Areas of Public Open Space

- Equipment: As per Waterman drawings WIB13983-107-AA-74-602-B and WIB13983-107-AA-74-606-B.
  - System manufacturer: As per above drawings or similar approved.
- Surfacing: Ironstone crushed stone, bark mulch and amenity/meadow grass.
- Containment: Wooden Unilog palisade fencing, as per Waterman drawing WIB13983-107-AA-74-806.
- Accessories: Benches, litter bins and self-closing gate.

### SYSTEM PERFORMANCE

#### 210 DESIGN

- Design: Complete the design of the Local Area of Play (LAP).
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
- Performance criteria: Undertake independent safety audit of design prior to procurement of equipment and installation in site.

### PRODUCTS

#### 320A TRACTOR WITH TRAILER TO LAP

- Standard: To BS EN 1176-1.
- Manufacturer: Jupiter Play.
  - Product reference: Tractor with Trailer Ref: 90876115RO.
- Age range: 2-10.
- Materials: Wood.
  - Finish: Natural with painted details.
  - Colour: Natural with painted details.
- Length: 7.5m.
- Height: 3.9m.
- Features: Seating/informal climbing.
- Method of fixing: Below ground as per manufacturers details.

#### 320B SCRAMBLE NET TO LAP

- Standard: To BS EN 1176-1.
- Manufacturer: Jupiter Play.
  - Product reference: Scramble Net Ref: 906193150R.
- Age range: 3+.

- Materials: Wood and polyamide Hercules ropes.
  - Finish: Natural with painted details.
  - Colour: Natural with painted details.
- Length: 5.35m.
- Height: 4.5m.
- Features: | Ground level climbing feature.
- Method of fixing: Below ground as per manufacturers details.

#### 320C LOG SEATING/PLAY FEATURE TO LAP

- Standard: To BS EN 1176-1.
- Manufacturer: Locally sourced timber.
- Product reference: Straight logs layed flat on site. Logs cut to size/free from disease, decay, sharp edges, or other injurious foreign matter.
- Age range: N/A.
- Materials: Straight European Oak logs.
  - Finish: Natural.
  - Colour: Natural.
- Length: Min 600mm.
- Height: Min 500mm diameter.
- Features: | Seating and informal play feature.
- Method of fixing: Discrete below ground fixings to prevent unwanted movement.

#### 320D SAND PIT PLAY FEATURE TO LAP

- Standard: To BS EN 1176-1.
- Manufacturer: M&M Timber edging. Play sand and sand pit liner supplier to Contractors choice.
  - Product reference: Treated Softwood timber edgings. Play sand suitable for use within LAP play area with suitable liner/drainage etc.
- Age range: 3+.
- Materials: Timber edging with galvanised steel fixings, including suitable play sand and liner.
  - Finish: Natural.
  - Colour: Natural.
- Length: As Shown on Waterman Local Area of Play 1 drawing WIB13983-107-AA-74-602-B.
- Height: As Shown on Waterman Local Area of Play 1 drawing WIB13983-107-AA-74-602-B.
- Features: Informal play feature.
- Method of fixing: Contractors choice / suitable for 3+ age range.

#### 320E ASCENT RAMP TO LAP

- Standard: To BS EN 1176-1.

- Manufacturer: Juniper Play.
  - Product reference: Ramp Ascent Ref: 906193100R.
- Age range: 3+.
- Materials: Timber and polyamide Hercules ropes.
  - Finish: Natural with coloured details.
  - Colour: As manufactured.
- Length: 3.95m.
- Height: 5.30m.
- Features: Informal climbing feature.
- Method of fixing: Below ground fixings in accordance with manufacturers details.

### 320F PROPOSED TEPEE TO LAP

- Standard: To BS EN 1176-1.
- Manufacturer: Juniper Play.
  - Product reference: Tepee Little Wolf Ref: 907224150R.
- Age range: 3+.
- Materials: Timber and galvanised steel fixings.
  - Finish: Natural.
  - Colour: As manufactured.
- Length: 5.45 - 5.85m.
- Height: N/A.
- Features: Informal shelter.
- Method of fixing: Below ground fixings in accordance with manufacturers details.

### 320G PROPOSED STILTS COURSE TO LAP

- Standard: To BS EN 1176-1.
- Manufacturer: Juniper Play.
  - Product reference: Stilts Course Ref: 906110400R.
- Age range: 3-12.
- Materials: Timber and galvanised steel fixings.
  - Finish: Natural.
  - Colour: As manufactured.
- Length: 3.85 - 6.85m.
- Height: N/A.
- Features: Informal balance feature.
- Method of fixing: Below ground fixings in accordance with manufacturers details.

## EXECUTION

### 710 PLAY EQUIPMENT INSTALLATION GENERALLY

- Standard: To manufacturer's written instructions provided in accordance with BS EN 1176-1.

### 720 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Concrete: Designated, not less than GEN 1 or Standard prescribed, not less than ST2.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, hunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

### 725 SETTING COMPONENTS IN CONCRETE

- Holes: As per manufacturers recommendations.
- Components: Accurately positioned and securely supported.
- Concrete fill: Fully compacted as filling proceeds.
- Concrete foundations exposed to view: Finished to weathering profile to shed water and trowel smooth.
- Temporary component support: Maintain undisturbed for minimum 48 hours.

### 740 PRESERVATIVE TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood

### 750 DAMAGE TO GALVANIZED SURFACES

- Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings): Make good.
  - Materials: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
  - Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

### 760 SITE PAINTING

- Timing: Prepare surfaces and apply finishes as soon as possible after installing components.

## COMPLETION

### 910 INSPECTION

- Standard: In accordance with equipment manufacturer's and Local Planning Authorities maintenance and inspection instructions.
- Timing: 2 weeks prior to date when work is expected to be practically complete.
- Period of notice (minimum): 3 working days.

### 920 CLEANING

- General: Leave the works in a clean, tidy condition.

- Surfaces: Clean immediately before handover.

#### 930 TESTING

- Standard: To BS EN 1176-1.

#### 940 LABELS

- Standard: To BS EN 1176-1.
- Labels: Provide permanent labelling on all types of play equipment.
- Location: Where visible when erected on site.

#### 950 DOCUMENTATION

- Standard: To BS EN 1176-1.
- Contents:
  - Copies of test reports.
  - General product information.
  - Installation information.
  - Inspection and maintenance information.
- Number of copies: 3.
- Submission: 2 weeks prior to date when work is expected to be practically complete.

#### 970 OPERATING TOOLS

- Tools: Supply tools required for operation, maintenance and cleaning purposes.



## Q55 External Decks, Boardwalks and Bridges

### TENDERING

#### 10 INFORMATION TO BE PROVIDED WITH TENDER

- General structural requirements in accordance with clause See geotechnical reports detailing ground conditions on site.

### GENERAL

#### 110A VIEWING DECK TO GATEWAY PARK ATTENUATION POND AREA

- Base preparation: As per manufacturers recommendations.
- Structure, other than surfacing: FSC Certified Hardwood.
  - Fasteners: Galvanised metal as supplied.
- Post setting: Posts set in foundations to manufacturers recommendations.
- Surfacing: Non-slip FSC Certified hardwood deck boards.
  - Method of attachment: As per manufacturers recommendations.
- Guarding: Vertical bar infill as per manufacturers recommendations.
- Edge protection: As per manufacturers recommendations.
- Accessories: Applied slip resistant rebated inserts.

#### 120 BOARDWALK TO GATEWAY PARK ATTENUATION POND AREA

- Base preparation: As per manufacturers recommendations.
- Structure, other than surfacing: FSC Certified Hardwood.
  - Fasteners: Galvanised metal as supplied.
- Post setting: Posts set in foundations to manufacturers recommendations.
- Surfacing: Non-slip FSC Certified hardwood deck boards.
  - Method of attachment: As per manufacturers recommendations.
- Guarding: Vertical bar infill as per manufacturers recommendations.
- Edge protection: As per manufacturers recommendations.
- Accessories: Applied slip resistant rebated inserts.

#### 130 FOOTBRIDGE To Swale Park and Gateway Park

- Width: 2000 mm.
- Span: Varies.
- Structure, other than surfacing: FSC Certified Hardwood.
  - Fasteners: Galvanised steel fixings.
- Post setting: As per manufacturers recommendations.
- Surfacing: As supplied / gripped hardwood boards.

- Method of attachment: As per manufacturers recommendations.
- Guarding: Vertical timber balustrade infill.
- Edge protection: as per manufacturers recommendations.
- Accessories: Applied slip resistant rebated inserts. Bridge to be tied in at-grade to adjacent ground levels.

## **SYSTEM PERFORMANCE**

### **217A STRUCTURAL DESIGN PROVIDED**

- Description: TO FOOTBRIDGE, VIEWING DECK AND BOARDWALK.  
Requirements:
  - Generally to confirm: Foundation design and general structural suitability for intended purpose.
  - Additional requirements: None.
- Production/ Execution records: In accordance with the designated code of practice and manufacturers recommendations.

## **PRODUCTS**

### **305 TIMBER PROCUREMENT**

- Timber (including timber for wood based products): Obtained from well managed forests and/ or plantations in accordance with:
  - The laws governing forest management in the producer country or countries.
  - International agreements such as the Convention on International Trade in Endangered
- Species of wild fauna and flora (CITES).
- Documentation: Provide either:
  - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
  - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
- Certification scheme: Forest Stewardship Council (FSC).
- Other evidence: None.

## **FABRICATION**

### **510 FABRICATION GENERALLY**

- Design: Complete the detailed design and obtain approval prior to commencing fabrication.
- Shop drawings: Submit.
- Structural calculations: Submit.
- Frameworks: Assemble and brace, including temporary members required for installation.
- Contact between dissimilar metals: Avoid.

- Fixings: Fully bolt together. Tighten bolts.
- Temporary support: Do not subject members to non-design loadings.

## **EXECUTION**

### **610 LOADING**

- Site activities: Restrict, to ensure that design loads are not exceeded, or submit proposals for temporary supports.

### **620 CONCRETE FOUNDATIONS GENERALLY**

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, hunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

### **655 ERECTION OF PREFABRICATED TIMBER STRUCTURES ON PREPARED BASES**

- Survey: Five days (minimum) before proposed erection date. Check foundations, holding down bolts, etc.
- Inaccuracies or defects in prepared bases or supplied structures: Report immediately.
- Obtain instructions before proceeding.

### **950 DOCUMENTATION**

- Contents:
  - General product information.
  - Installation information.
  - Inspection and maintenance reports.
- Number of copies: 3.
- Submission: 2 weeks prior to date when principal contractor expects work to be practically complete.

# UK and Ireland Office Locations

