

Intended for

Equans & Wokingham Council

Document type

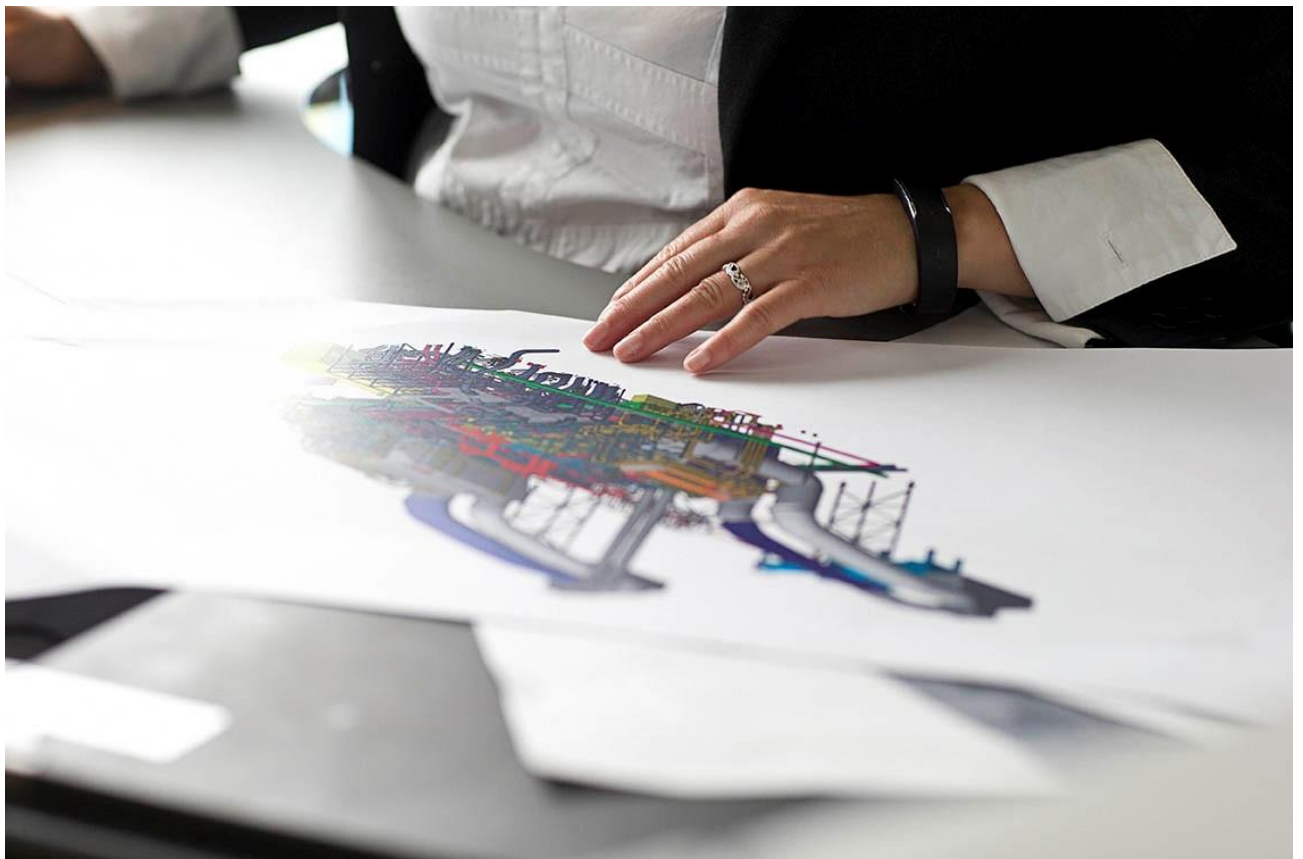
NBS Landscape Management Specifications

Date

June 2024

Barkham Solar Farm

NBS Landscape Specifications



Barkham Solar Farm

NBS Landscape Specifications for Landscape and Planting

Project name **Barkham Solar Farm**Error! Unknown document property name.

Project no. **171549**

Recipient **Equans**

Document type **NBS Specification**

Document number **BFSF-RAMB-XX-SP-L**

Version Error! Unknown document property name.-**S3**

Date **04/06/2024**

Prepared by **S. Leith**

Checked by **T. Landell Mills**

Approved by **I . Lanchbury**

Description **Specification for Landscape and Planting**Error! Unknown document property name.

Revision	Date	Prepared by	Checked by	Approved by	Description
P01	23/05/2024	S. Leith	T. Landell Mills	I. Lanchbury	Preliminary issue
C01	01/12/2023	S. Leith	T.Landell Mills	I. Lanchbury	Update following comments
P3.12	20/12/2023	S. Leith	T.Landell Mills	I. Lanchbury	Update latest layout

Ramboll UK Limited
Registered in England & Wales
Company No: 03659970
Registered office:
240 Blackfriars Road
London
SE1 8NW

Contents

D20 Excavating and filling	1
Generally/the site	1
Clearance/excavating	1
Disposal of materials	2
Filling	3
Q23 Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays	5
Types of surfacing	5
Laying	5
Q28 Topsoil and soil ameliorants	7
System outline	7
Products	8
Execution	9
Completion	12
Q30 Seeding/ turfing	13
General information/requirements	13
Preparation	13
Seeding	14
STANDARD GENERAL PURPOSE MEADOW MIX (EM2)	14
MEADOW MIX FOR CLAY SOILS (EM4)	14
MEADOW MIX FOR SANDY SOILS (EM7)	14
WOODLAND MIXTURE (EW1)	14
Protecting/cutting	15
Maintenance	15
Q31 External planting	16
General information/ requirements	16
Preparation of planting beds/ planting materials	18
Planting shrubs/ herbaceous plants/ bulbs	18
Planting trees	19
Woodland/ matrix/ buffer zone planting	20
Protecting/ maintaining/ making good defects	21
Q35 Landscape maintenance	23
Generally	23
Grassed areas	24
Flower beds/ seasonal beddings - Not Used	25
Shrubs/ trees/ hedges	25
Tree work	27
Hard landscape areas/ fencing	28
Q40 Fencing	30
Fencing systems	30
Gates, posts and stiles	30
Execution	31
Completion	32

D20

Excavating and filling

Generally/the site

112 Site investigation report

1. Contractor shall appoint approved soil scientist to carry out soil testing and soil resource survey ahead of site clearance / excavation, assessment to include, but not limited to, assessing topsoil conditions for establishing wild flower mixes and need for supplements to site won topsoil to establish trees and shrubs. The Contractor shall allow sufficient time for sourcing and testing the necessary soils to meet the requirements of Q28. .

145 Variations in ground water level

1. Give notice: If levels encountered are significantly different from levels in the site investigation report or previously measured.

150 Existing services, features and structures

1. Services: Existing services in surveys:
 230633-CAT-XX-XX-M2-Z-00001.dwg P03
 230633-CAT-XX-XX-M3-G-00001.dwg P03
 230633-OSL-XX-XX-M2-G-00001.dwg P03
 230633-CAT-XX-XX-RP-SR-00001.pdf P03
2. Site features to be retained: Existing features in surveys:
 SJA TPP NL 24126-04 Barkham Solar Farm, Wokingham.dwg
 70074897-XX-XX-DP-008-P03 Site Location Plan.dwg
 BFSF-EQNS-XX-DR-Y1-0007 Rev 1 INDICATIVE SITE LAYOUT 2024 04 17 detached.dwg
 BFSF-EQNS-XX-DR-Y1-0001 Reb 3 Solar PV Layout Sketch.dwg
3. Structures: Existing Structures provided in surveys listed above in 1 & 2.

Clearance/excavating

164 Tree roots

1. Protected area: Do not cut roots within precautionary protection area.
 - 1.1. Size of area: as shown in Arboricultural Survey and Tree Protection Methodology BFSF RAMB XX RP 3205 BFSF-RAMB-XX-RP-L-3205 and on As drawing BFSF-RAMB-XX-M2-L-3101-Landscape General Arrangement Plan.dwg
2. Excavation in protected area
 - 2.1. Method: By hand
 - 2.2. Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
3. Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
4. Cutting
 - 4.1. Make clean smooth cuts with no ragged edges.
 - 4.2. Pare cut surfaces smooth with a sharp knife.
 - 4.3. Treatment of cut roots: Not required
5. Backfill: As dug material, enriched with phosphate fertilizer

168 Site clearance

1. Timing: Before topsoil stripping, if any.
2. General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.

170 Removing small trees, shrubs, hedges and roots

1. Identification: Clearly mark trees to be removed. Refer to BFSF-RAMB-XX-M2-L-3101-Landscape General Arrangement Plan.dwg for location of vegetation to be removed.
2. Small trees, shrubs and hedges: Cut down.
3. Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
4. Safety: Comply with Forest Industry Safety Accord safety leaflets.

175 Felling large trees

1. Definition: Girth over 600 mm.
2. Identification: Clearly mark trees to be removed. Refer to BSFS-RAMB-XX-M2-L-3101-Landscape General Arrangement Plan.dwg for location of trees to be removed.
3. Safety: Comply with Forest Industry Safety Accord safety leaflets.
4. Felling: As close to the ground as possible.
5. Stumps: Remove by stump grinding. Stumps of trees within the Root Protection Areas of trees to be retained shall either be left in place or removed by stump grinding.
6. 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

1. General: Permitted, spread arisings on site in areas designated Permitted, spread arisings on site in areas designated

220 Stripping topsoil

1. 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. Refer to BFSF-RAMB-XX-M2-L-3101-Landscape General Arrangement Plan.dwg.
2. Depth
3. Handling: Handle topsoil for reuse or sale in accordance with clause 225.
4. Around trees: Do not remove topsoil from below the spread of trees to be retained.
5. Site storage: Keep separate from excavated sub-soil

225 Handling topsoil

1. Standard: To BS 3882.
2. Aggressive weeds
 - 2.1. Species: Notify the presence of species included in the Weeds Act, section 2, or the appropriate Wildlife and Countryside Act for the relevant jurisdiction.
 - 2.2. Give notice: Obtain instructions before moving topsoil.
3. Contamination: Do not mix topsoil with:
 - 3.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 3.2. Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
 - 3.3. Oil, fuel, cement or other substances harmful to plant growth.
 - 3.4. Other classifications of topsoil.
4. Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

Disposal of materials

420 Topsoil storage heaps

1. Location: Contractor to submit proposal. Soil shall be stored in areas of the site where it will be left undisturbed and will not interfere with site operations.
2. Standard: To BS 3882.
3. Height (maximum): 1.5m
4. Protection
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination.

421 Topsoil storage heap treatment

1. Treatment: Sow with perennial ryegrass, sowing rate 20g/m2. Apply a suitable herbicide at appropriate times to prevent seeding of weeds.

441 Surplus subsoil

1. Excavated material: Stockpile in temporary storage heaps.
2. Retained material: Spread and level surplus subsoil on site.
 - 2.1. Locations: Contractor to submit proposal.
 - 2.2. Protected areas: Do not raise soil level within root spread of trees that are to be retained.
3. Remaining material: Remove from site.

450 Water

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

454 Ground water level, springs or running water

1. Give notice: If it is considered that the excavations are below the water table.
2. Springs/ Running water: Give notice immediately if encountered.

Filling

500 Proposed fill materials

1. Details: Submit full details of proposed fill materials to demonstrate compliance with specification, including:
 - 1.1. Type and source of imported fill.
 - 1.2. Proposals for processing and reuse of material excavated on site.
 - 1.3. Test reports as required elsewhere.
2. Timing: 1 week.

510 Hazardous, aggressive or unstable materials

1. 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:
 - 1.1. Frozen or containing ice.
 - 1.2. Organic.
 - 1.3. Contaminated or noxious.
 - 1.4. Susceptible to spontaneous combustion.
 - 1.5. Likely to erode or decay and cause voids.
 - 1.6. With excessive moisture content, slurry, mud or from marshes or bogs.
 - 1.7. Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - 1.8. Unacceptable, class U2 as defined in the 'Specification for highway works', clause 601.

530 Placing fill

1. Surfaces of excavations and areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
2. Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
3. Adjacent structures, membranes and buried services
 - 3.1. Do not overload, destabilise or damage.
 - 3.2. Submit proposals for temporary support necessary to ensure stability during filling.
 - 3.3. Allow 14 days (minimum) before backfilling against in situ concrete structures.
4. Layers: Place so that only one type of material occurs in each layer.
5. Earthmoving equipment: Vary route to avoid rutting.

535 Compaction generally

1. General: Compact fill not specified to be left loose as soon as possible after placing.
2. 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.
3. Defective areas: Remove and recompact to full thickness of layer using new material.

540 Benching in fill

1. Adjacent areas: If, during filling the difference in level between adjacent areas of filling exceeds 600 mm, cut into edge of higher filling to form benches 600 mm minimum width and height equivalent to depth of a layer of compacted filling.
2. New filling: Spread and compact to ensure maximum continuity with previous filling.

550 Geotextile sheet

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Contractor's choice. Terram T1000 or similar.
2. Jointing: As per manufacturer's recommendations.
3. Preparation of subgrade: Before laying sheet, remove humps and sharp projections. Fill hollows
4. Protect from
 - 4.1. Exposure to light.
 - 4.2. Contaminants.
 - 4.3. Materials listed as potentially deleterious by geotextile manufacturer.
 - 4.4. Wind uplift.

571 Geocells (Cellweb)

1. Manufacturer: Contractor's choice. Geosynthetics or similar. Refer to drawing BFSF-RAMB-XX-DR-L-3026.
 - 1.1. Contact details
 - 1.1.1. Web: <https://www.geosyn.co.uk/product/cellweb-tree-root-protection>
 - 1.2. Product reference: Cellweb® Tree Root Protection (TRP)
2. Size of cells (length x width x thickness): As per manufacturers' recommendations.
3. Preparation of subgrade: Before laying geocells, remove humps and sharp projections, and fill hollows
4. Fixing/ Connecting: As per manufacturers' recommendations.
 - 4.1. Centres: As per manufacturers' recommendations.

610 Compacted filling for landscape areas

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

Ω End of Section

Q23

Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays

Types of surfacing

110 Hard binding gravel (Hoggin Path)

1. Description: 150mm locally sourced hoggin.
Well graded with maximum 40mm diameter gravel.
2. Subgrade improvement layer: As section Q20
 - 2.1. Compacted thickness: 100-150mm.
Refer to drawing BFSF-RAMB-XX-DR-L-30026.
3. Geotextile: Sheet
 - 3.1. Manufacturer: Contractor's choice
 - 3.1.1. Product reference: Terram T1000 or similar.
4. Granular sub-base: Type 1 unbound mixture, as section Q20. Refer to drawing BFSF-RAMB-XX-DR-L-30026.
 - 4.1. Compacted thickness: Refer to drawing BFSF-RAMB-XX-DR-L-30026.
5. Blinding to sub-base: Refer to drawing BFSF-RAMB-XX-DR-L-30026.
6. Surface course: Angular gravel, free from clay, with sufficient grit to enable compaction.
 - 6.1. Type: Well graded hoggin, with maximum 40mm diameter gravel.
Refer to drawing BFSF-RAMB-XX-DR-L-30026.
 - 6.2. Source: Contractor's choice of locally sourced supplier.
 - 6.3. Colour: Grey
 - 6.4. Size: As per manufacturers' recommendations.
 - 6.5. Compacted thickness: Refer to drawing BFSF-RAMB-XX-DR-L-30026.
7. Completion: Compact to produce a firm, regular surface, stable in use.

140 Surfacing for Greenway (Cycle/Bridleway/Pedestrian Loadings)

1. Subgrade improvement layer: As per manufacturer's recommendations for Bridleway/Cycle/Pedestrian loading.
Refer to Landscape detail 6 of 9 BFSF-RAMB-XX-DR-L-30026.
 - 1.1. Compacted thickness: As per manufacturer's recommendations.
2. Geotextile: As per manufacturer's recommendations. To be confirmed on site.
 - 2.1. Manufacturer: Contractor's choice.
 - 2.1.1. Product reference: Terram T1000 or similar.
3. Granular sub-base: As per manufacturer's recommendations for Bridleway/Cycle/Pedestrian loading.
Refer to BFSF-RAMB-XX-DR-L-30026.
 - 3.1. Compacted thickness: As per manufacturer's recommendations.
4. Surface course: KBI flexi-paved or Trail Flex.
 - 4.1. Thickness: As per manufacturer's recommendations.
5. Drainage falls: As per manufacturer's recommendations.
6. Surface of path: As per manufacturer's recommendations.
Refer to Landscape detail 6 of 9 BFSF-RAMB-XX-DR-L-30026.
7. Completion: As per manufacturer's recommendations.

Laying

310 Timber edging

1. Softwood board
 - 1.1. Size: Contractor's choice. Refer to drawing Landscape detail 6 of 9 BFSF-RAMB-XX-DR-L-30026.
 - 1.2. Fixing: Galvanized nails into softwood pegs.
2. Softwood pegs

- 2.1. Size: Contractor's choice. Refer to drawing Landscape detail 6 of 9 BFSF-RAMB-XX-DR-L-30026.
- 2.2. Fixing: Drive into ground.
- 2.3. Centres: Contractor's choice
3. Preservative treatment: As section Z12 and WPA Commodity Specification C4, with 15 year desired service life

325 Blinding to sub-base

1. Type: As per Manufacturers' recommendations. Refer to drawing BFSF-RAMB-XX-DR-L-30026.
2. Laying: Compact. Seal interstices. Provide free drainage.
3. Compacted thickness: 50mm. Refer to drawing BFSF-RAMB-XX-DR-L-30026.

340 Laying generally

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

350 Cold weather working

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

360 Drainage falls

1. Sealed surfaces
 - 1.1. Falls and cross falls (minimum): 1:40 for Hoggin Path.
As per manufacturers' recommendations for Greenway surfacing.

Ω End of Section

Q28

Topsoil and soil ameliorants

System outline

115a Soil system for GENERAL PURPOSE MEADOWS

1. Description: FOR GENERAL PURPOSE MEADOWS.
2. Composition
 - 2.1. Topsoil: Suitability of the existing soil for sowing onto will be assessed prior to seeding; techniques such as removal of upper layer of topsoil, soil inversion and burying of topsoil or substitution with a low fertility soil are to be considered if topsoil is too fertile and deemed unsuitable.
 - 2.2. Subsoil: Remove existing turf; remove top 50mm topsoil and dispose on site and cultivate to a depth of 100mm, stones over 50mm in diameter shall be broken up or removed.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

115b Soil system for MEADOW MIX FOR CLAY SOILS

1. Description: FOR MEADOW MIX FOR CLAY SOILS.
2. Composition
 - 2.1. Topsoil: Remove turf and top 50mm topsoil. However, the suitability of the existing soil for sowing onto will be assessed prior to seeding and based on topsoil specific properties fertility
 - 2.2. Subsoil: Remove existing turf and cultivate to a depth of 100mm, stones over 50mm in diameter shall be broken up or removed.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

115c Soil system for MEADOW MIX FOR SANDY SOILS

1. Description: FOR MEADOW MIX FOR SANDY SOILS.
2. Composition
 - 2.1. Topsoil: Remove turf and top 50mm topsoil. However, the suitability of the existing soil for sowing onto will be assessed prior to seeding and based on topsoil specific properties fertility
 - 2.2. Subsoil: Remove existing turf and cultivate to a depth between 200mm and 250mm, stones over 50mm in diameter shall be broken up or removed.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

115d Soil system for WOODLAND MIXTURE

1. Description: FOR WOODLAND MIXTURE.
2. Composition
 - 2.1. Topsoil: Suitability of the existing soil for sowing onto will be assessed prior to seeding and may require substitution with a low fertility soil if deemed unsuitable.
 - 2.2. Subsoil: Remove existing turf and cultivate to a depth of 150mm, stones over 50mm in diameter shall be broken up or removed.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

115e Soil system for SCRUB MIX

1. Description: FOR SCRUB MIX.
2. Composition
 - 2.1. Topsoil: Suitability of the existing soil for sowing onto will be assessed prior to seeding and may require substitution with a low fertility soil if deemed unsuitable.
 - 2.2. Subsoil: Remove existing turf and cultivate to a depth of 300mm, stones over 50mm in diameter shall be broken up or removed.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

145a Planting pit backfilling topsoil system FOR WHIPS AND SHRUBS

1. Description: FOR WHIPS AND SHRUBS.
2. Composition
 - 2.1. Topsoil: To a depth of 300mm. 80% Topsoil to BS 3882:2015 to 20% Compost.
 - 2.2. Subsoil:: Site WON subsoil to BS 8601:2013 or agreed. To be cultivated to a depth of 300m, stones over 75mm Dia shall be broken up and side of pit forked.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

145b Planting pit backfilling topsoil system FOR STANDARD TREES

1. Description: FOR STANDARD AND SELECT STANDARD TREES ON LEVEL GROUND.
2. Composition
 - 2.1. Topsoil: 600mm backfill with 80% LCoW WON Topsoil free of contamination, or imported topsoil to BS 3882:2015 / 20% Compost mixture.
 - 2.2. Subsoil:: 200mm layer of 6-10mm Grade clean drainage aggregate.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

145c Planting pit backfilling topsoil system FOR EXTRA HEAVY STANDARD TREES

1. Description: FOR EXTRA HEAVY STANDARD TREES ON LEVEL GROUND.
2. Composition
 - 2.1. Topsoil: 300mm min layer of LCoW approved site won topsoil free of contamination or imported BS3882:2015.

450mm min backfill with 80% LCoW WON Topsoil free of contamination, or imported topsoil to BS 3882:2015 / 20% Compost mixture.
 - 2.2. Subsoil:: 200mm layer of 6-10mm Grade clean drainage aggregate.
 - 2.3. Ameliorants: None
 - 2.4. Accessories: None

155 Mulching and top dressing system

1. Description: FOR WOODLAND EDGE AREAS.
FOR NATURAL BROADLEAVED WOODLAND AREA.
FOR SCRUB AREAS.
FOR WET WOODLAND AREAS.
FOR NATIVE HEDGEROW PLANTING.
FOR MIDLAND HEDGE AREAS.
2. Composition
 - 2.1. Material: 100mm depth bark mulch.

Products

300 Preparation materials generally

1. Purity: Free of pests and disease.
2. 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.
3. Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - 3.1. Corrosive, explosive or flammable.
 - 3.2. Hazardous to human or animal life.
 - 3.3. Detrimental to healthy plant growth.
4. Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
5. Objectionable odour: None.
6. Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

315 Imported topsoil to BS 3882

1. Description: Import topsoil only if required.
2. Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
3. Standard: To BS 3882.
4. Classification: Multipurpose
5. Source: Submit location and test certificate.

320 Site WON topsoil

1. Description: The LCoW shall approve site-won topsoil for use for planting. If there is insufficient site-won soil the contractor shall allow sufficient time for sourcing topsoil and provide proof that soil is compliant with BS 3882:2015.

345 Aggregates

1. Description: FOR TREE PITS
2. Source: Contractor's choice
 - 2.1. Product reference: 6-10mm grade clean drainage aggregate.

355 Organic materials (Compost Mixture)

1. Description: FOR TREE PITS
2. Type: Compost Mixture
3. Source: Contractor's choice. Local.

Execution

610 Topsoil analysis

1. Soil to be analysed: suitability of the existing soil for sowing onto will be assessed prior to seeding and based on topsoil specific properties fertility. Refer to LEMP.
2. Soil analyst: Contractors choice
3. Samples: Collect in accordance with BS 3882.
4. Submit
 - 4.1. Declaration of analysis: In accordance with BS 3882, clause 6 and Table 1.
 - 4.2. Report detailing soil analyst's recommendations.

620 Importing topsoil

1. Give notice: Before stripping topsoil for transfer to site.
 - 1.1. Notice period: 1 week.

630 Documentation for imported topsoil

1. Description: FOR TREE PITS
FOR WHIPS AND SCRUBS
2. Timing: Submit at handover.
3. Contents
 - 3.1. Full description of all soil components.
 - 3.2. Record of source for all soil components.
 - 3.3. Record drawings showing the location and depth of all soils by type and grade.
 - 3.4. Declaration of analysis: in accordance with BS 3882, clause 6 and Table 1.

635 Documentation for compost and composted materials

1. Description: FOR COMPOST
2. Timing: Submit at handover.
3. Contents
 - 3.1. Full description of all compost components.
 - 3.2. Record of source for all compost components.

- 3.3. Analyst's report for each test carried out.
- 3.4. Declaration of compliance: in accordance with PAS 100 and BSI PD CR 13456.
- 3.5. Quality Compost Protocol certification: Required

650 Notice

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Spreading topsoil.
 - 1.3. Applying herbicide.
 - 1.4. Applying fertilizer.
 - 1.5. Visiting site during maintenance period.
2. Period of notice: 1 week

655 Mechanical tools

1. Restrictions: Do not use within 100 mm of tree and plant stems. Do not damage adjacent planting.

660 Grading subsoil for:

1. Description: MEADOW MIX AREAS
2. Standard: In accordance with BS 8601.
3. General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
4. Areas of thicker topsoil: Excavate locally.
5. Avoid compaction.
6. Excess subsoil: Remove.

665 Subsoil surface preparation for: MEADOW MIXES AND SCRUB

1. Description:
MEADOW MIX FOR CLAY SOILS
MEADOW MIX FOR SANDY SOILS
WOODLAND MIX
PLANTING FOR WHIPS AND SHRUBS
2. Standard: In accordance with BS 3882.
3. General: Remove existing turf and cultivate to appropriate depths as per drawing BFSF-RAMB-XX-DR-L-3023.
4. Loosening
 - 4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth
 - 4.1.1. Light and non-cohesive subsoils: 200-250mm.
 - 4.1.2. Stiff clay and cohesive subsoils: 100mm.
 - 4.2. Wet conditions: Do not loosen subsoils.
5. Stones: Immediately before spreading topsoil, remove stones larger than 50MM.
6. Remove from site: Refer to LEMP.

666 Subsoil surface preparation for: EXISTING MEADOW RESOWN WITH GENERAL PURPOSE MEADOW M2

1. Description:
EXISTING MEADOW RESOWN WITH GENERAL PURPOSED MEADOW M2
2. General: Most of meadow will be intact after installation of the solar panels and to be managed as input field.

685 Surplus materials to be removed

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

690 Topsoil storage heaps

1. Location: Contractor to submit proposal.
2. Height (maximum): 1.5m

3. Width (maximum): 5.0m
 - 3.1. Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
4. Protection
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination, by fencing and covering as appropriate.

700 Grading of topsoil

1. Topsoil condition: Reasonably dry and workable.
2. Contours: Smooth and flowing, with falls for adequate drainage.
 - 2.1. Hollows and ridges: Not permitted.
3. Give notice: If required levels cannot be achieved by movement of existing soil.

705 Handling topsoil

1. Standard: In accordance with BS 3882.
2. Aggressive weeds: Give notice and obtain instructions before moving topsoil.
3. Plant: Select and use plant to minimize disturbance, trafficking and compaction.
4. Contamination: Do not mix topsoil with:
 - 4.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 4.2. Other grades of topsoil.
5. Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
6. Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall, or when the moisture content is greater than the plastic limit.

710 Spreading topsoil on MEADOW GRASS AREAS

1. Description: MEADOW GRASS AREAS
2. Standard: In accordance with BS 3882.
3. Temporary roads/ surfacing: Remove before spreading topsoil.
4. Layers
 - 4.1. Depth (maximum): 100 mm.
 - 4.2. Gently firm each layer before spreading the next.
5. Depth after firming and settlement: 100 mm
6. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

718 Final cultivation

1. Description:
MEADOW MIX FOR CLAY SOILS.
MEADOW MIX FOR SANDY SOILS.
WOODLAND MIX.
SCRUBS
2. Compacted topsoil: Break up to full depth.
3. Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
4. Depth: Refer to drawing BFSF-RAMB-XX-DR-L-3023
5. Timing: Within a few days before planting
6. Weather and ground conditions: Suitably dry.
7. Surface: Leave regular and even.
8. Undesirable material brought to the surface
 - 8.1. Remove visible weeds.
 - 8.2. Remove roots and large stones with any dimension exceeding 60 mm.

720 Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: Flush

2. Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
3. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
4. Adjoining soil areas: Marry in.

Completion

920 Applying mulch

1. Timing: Topped up annually in spring and/or autumn.
2. Watering: Initial water following establishment and first 2/3 years following periods of drought.
3. Trees: Topped up annually in spring and/or autumn.

Ω End of Section

Q30

Seeding/ turfing

General information/requirements

115 Seeded and turfed areas

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

120 Climatic conditions

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

145 Watering

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

150 Water restrictions

1. 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

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Applying herbicide.
 - 1.3. Applying fertilizer.
 - 1.4. Preparing seed bed.
 - 1.5. Seeding or turfing.
 - 1.6. Visiting site during maintenance period.
2. Period of notice: 1 week.

170 Setting out

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

Preparation

210 Herbicide

1. Description: Refer to LEMP. Use of chemical herbicides and fertilisers should be avoided wherever possible, and where absolutely necessary should not be used within a 5 m radius of trees and within 10m of watercourses and waterbodies.
2. Type: Suitable for suppressing perennial weeds.
3. Timing: Allow fallow period before cultivation.
 - 3.1. Duration: As manufacturer's recommendation.

212 Seed bed cleaning before sowing

1. Description: STANDARD GENERAL PURPOSE MEADOW
MEADOW MIX FOR CLAY SOILS
MEADOW MIX FOR SANDY SOILS
WOODLAND MIXTURE
2. Operations: As seed supplier's recommendations.

250 Soil requirements

1. Type

- 1.1. Seeded areas: Existing topsoil
- 1.2. Turfed areas: Existing topsoil
- 1.3. Reinforced grass areas: Existing topsoil

Seeding

311a STANDARD GENERAL PURPOSE MEADOW (EM2)

1. Description: STANDARD GENERAL PURPOSE MEADOW (EM2)
2. Supplier: Emorsgate or similar.
EM2 Standard General Purpose Meadow Mixture - Emorsgate Seeds (wildseed.co.uk)
 - 2.1. Mixture reference:

STANDARD GENERAL PURPOSE MEADOW MIX (EM2)

3. Application rate: 4g/m².

311b MEADOW MIX FOR CLAY SOILS (EM4)

1. Description: MEADOW MIX FOR CLAY SOILS (EM4)
2. Supplier: Emorsgate or similar.
EM4 Meadow Mixture for Clay Soils - Emorsgate Seeds (wildseed.co.uk)
 - 2.1. Mixture reference:

MEADOW MIX FOR CLAY SOILS (EM4)

3. Application rate: 4g/m².

311c MEADOW MIX FOR SANDY SOILS (EM7)

1. Description: MEADOW MIX FOR SANDY SOILS (EM7)
2. Supplier: Emorsgate or similar.
EM7 Meadow Mixture for Sandy Soils - Emorsgate Seeds (wildseed.co.uk)
 - 2.1. Mixture reference:

MEADOW MIX FOR SANDY SOILS (EM7)

3. Application rate: 4g/m².

311d WOODLAND MIXTURE (EW1)

1. Description: WOODLAND MIXTURE (EW1)
2. Supplier: Emorsgate or similar.
EW1 Woodland Mixture - Emorsgate Seeds (wildseed.co.uk)
 - 2.1. Mixture reference:

WOODLAND MIXTURE (EW1)

3. Application rate: 4g/m².

319 Quality of seed

1. Description: FOR ALL GRASSED AREAS
FOR WOODLAND AREAS
2. Freshness: Produced for the current growing season.
3. Certification: Blue label certified varieties.
 - 3.1. Standard: EC purity and germination regulations.
 - 3.2. Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
4. Samples of mixtures: Submit when requested.

330 Sowing

1. General: Establish good seed contact with the root zone.
2. Method: Refer to LEMP. Hand or machine.
 - 2.1. Distribution: 2 equal sowings at right angles to each other and diagonally to main axis

336 Wildflower sowing season

1. Wildflower seed generally: Refer to LEMP. Optimum time Autumn or Spring.

Protecting/cutting

540 First cut of MEADOW MIXES

1. Description: MEADOW MIXES AND WOODLAND AREAS.
2. Preparation:
3. Debris and litter: Remove.
 - 3.1. Stones and earth clods larger than 25 mm in any dimension: Remove
4. Height of first cut: Refer to LEMP. 40-60mm.
5. Arisings: Refer to LEMP. Left on the ground for a week before being removed.

590 Cleanliness

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

Maintenance

610 Failures of seeding/ turfing

1. Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. Defective materials or workmanship: Areas that have failed to thrive.
 - 2.1. Exclusions: Theft or malicious damage.
3. Method of making good: Recultivation and reseeded/ returfing.
4. Timing of making good: The next suitable planting season

660 Maintaining grassed areas with annual wildflowers

1. Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. Preparation: Before each cut remove all litter and debris.
3. Timing of first cut: Refer to LEMP. Late June and end of August.
4. Height of first cut: Refer to LEMP. 40-60mm.
5. Subsequent cutting: As necessary, so the height of growth does not exceed 50mm.
 - 5.1. Height of cut: Refer to LEMP. 50mm.
6. Trimming: All edges.
 - 6.1. Arisings: Refer to LEMP. Left on the ground for a week and then removed.

Ω End of Section

Q31

External planting

General information/ requirements

112 Site clearance generally

1. General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. Stones: Remove those with any dimension exceeding 75 mm.
3. Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. Vegetation: Clear scrub to ground level by flail mowing and remove arisings; retain and protect trees indicated on drawings
5. Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
6. Additional requirements: Remove remnants of old fence posts and mesh

115 Site clearance for aquatic/ marginal planting

1. Clearance
 - 1.1. General: Remove loose debris and rubbish.
 - 1.2. Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

118 Soil conditions

1. Soil for cultivating and planting: Moist, friable and (except in aquatic/ marginal planting) not waterlogged.
2. 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

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

125 Times of year for planting

1. General: Refer to approved LEMP.

145 Watering

1. Quantity: Wet full depth of topsoil.
2. Application: Even and without damaging or displacing plants or soil.
3. Frequency: Refer to approved LEMP.

150 Water restrictions

1. 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

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Applying herbicide.
 - 1.3. Applying fertilizer.
 - 1.4. Delivery of plants/ trees.
 - 1.5. Planting shrubs.
 - 1.6. Planting trees into previously dug pits.
 - 1.7. Watering.
 - 1.8. Visiting site during maintenance period.
2. Period of notice: 1 week.

170 Soil requirements

1. Type

- 1.1. Planted beds: Refer to drawing BFSF-RAMB-XX-DR-L-3023.
- 1.2. Tree pits, shrub pits and other backfilling: Refer to drawing BFSF-RAMB-XX-DR-L-3023.
- 1.3. Mulch applied after planting: Refer to drawings BFSF-RAMB-XX-DR-L-3023, 3024 and 3025 and approved LEMP.

200 Plants/ Trees – general

1. Condition: Materially undamaged, sturdy, healthy and vigorous.
2. Appearance: Of good shape and without elongated shoots.
3. Hardiness: Grown in a suitable environment and hardened off.
4. Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
5. Budded or grafted plants: Bottom worked.
6. Root system and condition: Balanced with branch system.
 - 6.1. Standard: The National Plant Specification
7. Species: True to name.
8. Origin/ Provenance: Grown in the United Kingdom for at least one growing season, unless otherwise approved
9. Definition: Origin and Provenance have the meaning given in the National Plant Specification.

215 Plants/ Trees – specification criteria

1. Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification (available on CS Design Software Limited's website).

245 Labelling and information

1. 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:
 - 1.1. Full botanical name.
 - 1.2. Total number.
 - 1.3. Number of bundles.
 - 1.4. Part bundles.
 - 1.5. Supplier's name.
 - 1.6. Employer's name and project reference.
 - 1.7. Plant specification, in accordance with scheduled National Plant Specification categories.
2. Additional information: Submit on request: Country of origin; Date supplied and consignment details or reference Impact of pest/ disease; Name or designation of rootstock of budded or grafted plants; Potting dates; Pruning dates; Type of container.

255 Plants/ Trees reserved at supplier's premises

1. Types/ Species: As plant schedule
2. Predelivery inspection: Give notice.
3. Labelling: Identify inspected plants/ trees as reserved for use on this project.

260 Plant/ Tree substitution

1. Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
 - 1.1. Price.
 - 1.2. Difference from specified plants/ trees.
2. Approval: Obtain before making any substitution.

265 Plant handling, storage transport and planting

1. Standard: To CPSE 'Handling and establishing landscape plants'.
2. Frost: Protect plants from frost.
3. Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.

4. Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped
5. Planting: Upright or well balanced with best side to front.

280 Treatment of tree wounds

1. Cutting: Keep wounds as small as possible.
 - 1.1. Cut cleanly back to sound wood using sharp, clean tools.
 - 1.2. Leave branch collars. Do not cut flush with stem or trunk.
 - 1.3. Set cuts so that water will not collect on cut area.
2. Fungicide/ Sealant: Do not apply unless instructed.

285 Protection of existing grass

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

290 Surplus material

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

Preparation of planting beds/ planting materials

300 Herbicide

1. Description: Use of chemical herbicides and fertilisers should be avoided wherever possible
2. Locations: Should not be used within a 5 m radius of trees and within 10m of watercourses and waterbodies. If necessary needs to be undertaken in accordance with guidance from Environment Agency.
3. Timing: Allow fallow period before cultivation.
 - 3.1. Duration (minimum): As manufacturer's recommendations.

305 Weed control

1. Description: Refer to approved LEMP. To be in accordance with the ECow or invasive weeds specialist consultant recommendations.
2. Locations: Whole site

Planting shrubs/ herbaceous plants/ bulbs

400 Random plant layout

1. Description: FOR WOODLAND AREAS
FOR NATURAL BROADLEAVED WOODLAND PLANTING
FOR WET WOODLAND
FOR SCRUB PLANTING
2. Spacing: Refer to BFSF-RAMB-XX-DR-L-30025.
3. Density: Refer to BFSF-RAMB-XX-DR-L-30025.

405 Shrub planting pits

1. Timing: Excavate 1-2 days (maximum) before planting.

471 Naturalized hedges

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

472 Stake and Binder support for midland hedges

1. Type: Greenwood Stakes. Refer to drawing BFSF-RAMB-XX-DR-L-3024.
2. Timing: Before planting hedge.
3. Support: Lightly secure hedge plants to fence wires at appropriate intervals.

480 After planting

1. Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.

2. 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.
3. Top dressing: Mulching and top dressing system, as section Q28

486 Shrub protection

1. Manufacturer: Contractor's choice
2. Type: Rainbow Treebio Biodegradeable Spiral Guard or similar.
3. General: Ensure that protection methods do not impede natural movement of shrubs or restrict growth. Refer to LEMP.

Planting trees

500 Tree planting

1. Standard: Prepare trees and transplant in accordance with Planting Schedule.

505 Tree pits

1. Sizes: Refer to drawings BFSF-RAMB-XX-DR-L-3023 and 3024.
2. Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. Excavated material: Separate topsoil and subsoil material and stockpile for backfilling.
4. Pit sides: Scarify.
5. Backfilling material: Refer to drawings BFSF-RAMB-XX-DR-L-3023 and 3024.

512 Tree irrigation rings

1. Locations: FOR HEAVY STANDARD TREE PITS
2. Manufacturer: GreenBlue Urban Ltd
 - 2.1. Contact details
 - 2.1.1. Address: Northpoint
Compass Park
Junction Road
Bodiam
East Sussex
TN32 5BS
 - 2.1.2. Telephone: +44 (0)1580 830800
 - 2.1.3. Web: www.greenblue.com
 - 2.1.4. Email: hello@greenblueurban.com
 - 2.2. Product reference: Greenblue Urban Roottrain Civi - RRCIVIC1A
3. Type: Perforated plastics irrigation pipe with inlet
4. Installation
 - 4.1. Pipe: Lay in loop above root ball with slight fall away from inlet pipe. Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
 - 4.2. Top cap of inlet: Protruding slightly above finished surround level.
 - 4.3. Backfill material: Carefully compact in layers.

515 Tree pit drainage

1. Locations: FOR STANDARD TREES
FOR HEAVY STANDARD TREES.
2. Depth of excavation: Refer to drawing BFSF-RAMB-XX-DR-L-3023.
3. Aggregate layer: 200mm clean gravel or broken stone, with no fines, graded 6 to 10 mm.
4. Completed pits: Test for free drainage before planting.

546 Single vertical staking for STANDARD and SELECT STANDARD TREES

1. Description: STANDARD TREES AND SELECT STANDARD TREES ON LEVEL GROUND
2. Staking
 - 2.1. Position: Close to tree position on windward side.
 - 2.2. Driving: Vertically at least 300 mm into bottom of pit before planting.

- 2.3. Backfilling: Consolidate material around stake.
- 2.4. Firming: Sufficiently firm to prevent movement of the rootball/ rootstock.
3. Height of stakes: Cut off at approximately one third of the height of the clear stem of tree
4. Ties: Environmentally friendly tree ties 'natiretie' by Tom's Tree Ties or similar.
5. Tying: Secure tree firmly but not rigidly to stake with ties. Prevent tree from touching stake using spacer blocks or cushions if required.
 - 5.1. Position: Top tie within 25 mm of top of stake and additional ties equally spaced along the stake.
6. Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.

550 Double staking for EXTRA HEAVY STANDARD TREES

1. Description: EXTRA HEAVY STANDARD TREES ON LEVEL GROUND
2. Staking
 - 2.1. Position: Either side of tree position and perpendicular to wind direction.
 - 2.2. Driving: Vertically at least 300 mm into bottom of pit before planting.
 - 2.3. Backfilling: Consolidate material around stake.
 - 2.4. Firming: Sufficiently firm to prevent movement of the rootball/ rootstock.
3. Height of stakes: Cut off to approximately 600 mm above ground level
4. Ties: Contractor's choice. 2 x Environmentally Friend Tree Ties 'Naturetie' by Tom's Tree Ties or similar.
5. Nails for fixing ties, belts and webbing: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.

566 Tree protection

1. Manufacturer: Contractor's choice
2. Type: 1200mm tall Bioearth Biodegradable plastic free tree guard or similar approved.
3. General: Ensure that protection methods do not impede natural movement of trees or restrict growth. Refer to LEMP.

576 Tree pit surfacing – loose fill

1. Surfacing material: Mulch, as section Q28
2. Area: 1000 mm Dia
3. Depth: 100 mm
4. Watering: Water soil thoroughly before laying.
5. Installation: Ensure the base of the tree stem is kept free from loose filled material.

Woodland/ matrix/ buffer zone planting

600 Woodland work generally

1. 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.
2. Safety: Comply with Arboriculture and Forestry Advisory Group Safety leaflets.

605 Existing vegetation/ Weed clearance

1. Surface vegetation clearance: Refer to BFSF-RAMB-XX-DR-L3001 and 3002.
2. Arisings: Refer to LEMP.

615 Existing trees/ Seedlings/ Coppice shoots

1. Existing trees and seedlings: Retain.

617 Removing trees and hedges

1. Identification: Clearly mark trees and hedges to be removed.
2. Work near retained trees: Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
3. Arisings: Remove.
4. Tree stumps: Cut as close to ground as possible. Stumps will be either left in place or ground out with a lightweight self-powered stump grinding machine.

625 Cultivation

1. General: as per drawings BFSF-RAMB-XX-DR-I-3023, 3024 and 3025.
2. Soil within root spread of trees to be retained: Do not plough or cultivate.

680 Setting out

1. Planting density: as per drawings BFSF-RAMB-XX-DR-I-3023, 3024 and 3025.
2. Layout: as per drawings BFSF-RAMB-XX-DR-I-3023, 3024 and 3025.

Protecting/ maintaining/ making good defects

710 Maintenance

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

720 Failures of planting

1. Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
 - 1.1. Exclusions: Theft or malicious damage after completion.
 - 1.2. Rectification: Replace with equivalent plants/ trees/ shrubs.
2. Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
3. Timing of making good: During the next suitable planting season

740 Cleanliness

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

750 Planting maintenance generally

1. Weed control: Maintain weed free area around each tree and shrub. Refer to LEMP.
2. 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.
3. Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. Trees: Spray crown when in leaf during warm weather.
 - 5.1. Timing: After dusk.
6. Tree accessories: Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - 6.1. Broken or missing items: Replace.
 - 6.2. Loose stakes: Re-firm in the ground or replace as necessary to provide support to the tree.
 - 6.3. Loose guys: Re-firm anchor points and adjust as necessary to provide support to the tree.
 - 6.4. Ties: Adjust to accommodate growth and prevent constriction or abrasion.
 - 6.5. Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - 6.6. Frequency of checks: Refer to approved LEMP.
7. Watering: Refer to approved LEMP.

760 Planting maintenance – pruning

1. General: Prune to promote healthy growth and natural shape.
 - 1.1. Dead, dying, diseased wood and suckers: Refer to approved LEMP.
 - 1.2. Timing: Refer to approved LEMP.
 - 1.3. Trees: Favour a single central leading shoot.
2. Arisings: Refer to approved LEMP.

Ω End of Section

Q35 Landscape maintenance

Generally

105 Maintenance objectives

1. Location: All soft landscape area.
 - 1.1. Duration: Five years post construction, then rolled over with adjustments as needed. Refer to approved LEMP.
2. Aims: to satisfy the planning consent conditions of 25 years as well as the operational phase of development of up to 30 years, covering the expected lifetime of the solar farm.
3. Restrictions: As described in the approved LEMP.
4. Results: to provide appropriate habitat of wildlife value in the long-term

110 Notice

1. Give notice before
 - 1.1. Application of herbicide.
 - 1.2. Application of fertilizer.
 - 1.3. Watering.
 - 1.4. Each site maintenance visit.
2. Period of notice: one week.

130 Reinstatement

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

140 Control of mammalian pests

1. Specialist firms: Contractor's choice.
 - 1.1. Method: Spiral Tree and Hedge Guards.
Bioearth Biodegradable plastic free tree guard or similar approved.
Refer to drawing BFSF-RAMB-XX-DR-L-3023.

If rabbit attacks persist then rabbit-proof fencing or other measures to be considered.

150 Performance criteria for control of invasive animal species

1. Specialist firms: ECoW and Site Manager
2. Location: Whole site.
3. Requirement: Any guards and stakes inputted will be routinely inspected for the first 2-4 years in January, April and October by the Site management to ensure that guards are secure, not too tight and identify if any guards need replacement. If trees have successfully been established, protection will be removed in year 5, and responsibly disposed of. Refer to approved LEMP.
 - 3.1. Timing: Monitoring visit will occur between May-September and undertaken in years 1-3, with one visit in year 5. One visit every 2 years between year 6-15, and one visit every 5 years between years 16 – 30.

152 Performance criteria for control of invasive plant species

1. Specialist firms: ECoW or invasive weeds specialist.
2. Location: Whole site
3. Requirement: Annual checks for Schedule 9 plants the Wildlife and Countryside Act 1981 will be undertaken in summer months (May- August).
 - 3.1. Timing: Monitoring visits will occur in years 3, 5, 7, 10, 12, 15, 20, 25 and 30.

160 Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.

170 Disposal of arisings

1. General: Unless specified otherwise, dispose of arisings as per the approved LEMP.

181 Mechanical equipment

1. General: Minimize.

190 Litter

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

195 Protection of existing grass

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

197 Cleanliness

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

Grassed areas

210 Performance-based maintenance of grassed areas

1. General: Maintain turf in a manner appropriate to the intended use.
2. Soil and grass
 - 2.1. Condition: Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
 - 2.2. Waterlogging and compaction: Prevent.
 - 2.3. Damage: Repair trampling, abrasion or scalping.
3. Litter and fallen leaves: Remove regularly to maintain a neat appearance.

211 Maintenance of grassed areas

1. Standard: To BS 7370-3. Carry out maintenance appropriate to each category of turf, as follows:
 - 1.1. Objectives: As set out in approved Landscape and Ecology Plan (LEMP).
 - 1.2. Programme: As set out in approved Landscape and Ecology Plan (LEMP).
 - 1.3. Mowing methods: As set out in Q30.

220 Grass cutting generally

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

235 Bulbs and corms in grassed areas

1. Before flowering: as per approved LEMP.
2. Interval between end of flowering and start of grass cutting (minimum): as per approved LEMP.

250 Leaf removal

1. Operations: Collect fallen leaves.
2. Special requirements: Refer to approved LEMP. Fallen leaves may provide suitable leaf piles for hibernating hedgehog (to not be removed).

255 First cut of

1. Description: ALL GRASSED AREAS
NATURALIZED AREAS
WILDFLOWER MEADOWS
WOODLAND AREAS

2. Initial Cut: Refer to approved LEMP. Summer cut will be carried out between late June and the end of August.
3. Preparation
 - 3.1. Debris and litter: Refer to approved LEMP. To be removed from site.
4. Height of second cuts: Refer to approved LEMP. From early August through to March of the following year, regular cutting of 40-60mm.
5. Mower type: Contractor's decision.
6. Arisings: Refer to approved LEMP. To be left on ground for one week to allow seeds to drop to the ground. Arising are then to be removed from site.

270 Mowing Rough Grassland

1. Grass height: Refer to LEMP. Mowed back to 50mm in late autumn and again in Spring as needed.
2. Arisings: Refer to LEMP. The 'Hay' arisings to be left in situ for no more than one week, and then removed from site.
3. Alternatively light sheep grazing can be undertaken.

273 Maintaining Wildflower Grassland

1. Preparation: Before each cut remove all litter and debris.
2. Timing of first cut: Refer to LEMP.
3. Height of first cut: Refer to LEMP. 40-60mm.
4. Subsequent cutting: in the first year cut as necessary, so the height of growth does not exceed 40-60mm, as per LEMP.
5. Trimming: Refer to LEMP.
 - 5.1. Arisings: Refer to LEMP. To be left on site for 1 week and then removed.

309 Edges to seeded areas

1. Location: Edges of grassland boundaries
2. Arisings: Refer to approved LEMP. Cut vegetation can be left in habitat piles on the edge of grassland boundaries.

Flower beds/ seasonal beddings - Not Used

Shrubs/ trees/ hedges

510 Tree stakes and ties

1. Inspection/ maintenance times: as per approved LEMP. Routinely inspected every year for the first 2-4 years in January, April and October by the Site management to ensure that guards are secure, not too tight and identify if any guards need replacement
2. Stakes
 - 2.1. Replace loose, broken or decayed stakes to original specification.
 - 2.2. 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.
3. Ties: Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
 - 3.1. Where chafing has occurred, reposition or replace ties to prevent further chafing.
4. Removal of stakes and ties: 3 years after planting.
 - 4.1. Fill stake holes with lightly compacted soil.

515 Tree guy wires

1. Inspection/ maintenance times: as per approved LEMP.
2. Operations
 - 2.1. Replace or resecure loose or missing guy wires.
 - 2.2. Adjust to suit stem growth and to provide correct and uniform tension.
3. Removal: 3 years after planting.

520 Re-firming of trees and shrubs

1. Timing: As per approved LEMP. At least annually and additionally after periods of strong wind.
2. Re-firming: Tread around the base until firmly bedded.
3. 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

1. Loose or defective guards: Adjust, refix or replace to original specification and to prevent chafing.

537 Nesting wild birds

1. Survey: Before starting hedge or tree work during the period of February to August (inclusive), carry out a survey by a qualified ecologist and submit report.
2. Accidental disturbance: Report immediately.

540 Pruning generally

1. Pruning: Refer to LEMP.
 - 1.1. Removing branches: Refer to LEMP.
 - 1.2. Wounds: Keep as small as possible and cut cleanly back to sound wood.
 - 1.3. Cutting: Refer to LEMP.
 - 1.4. Larger branches: Refer to LEMP.
2. Appearance: Refer to LEMP.
3. Tools: Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
4. Disease or infection: Give notice if detected.
5. Growth retardants, fungicide or pruning sealant: Do not use unless instructed.

570 Formative pruning of young trees

1. Standard: Type and timing of pruning operations to suit the plant species.
2. Time of year: Refer to LEMP.
3. Young trees up to 4 m high
 - 3.1. Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well-balanced head and ensure the development of a single strong leader.
 - 3.2. Remove duplicated branches and potentially weak or tight forks. In each case, cut back to live wood.
4. Whips or feathered trees: Do not prune.
5. Operatives: Approved specialist contractor

590 Pruning particular species

1. Species to be pruned to separate specific instructions: Refer to LEMP. Sections of flowering hedgerows will be allowed to flower on a rotational basis before being pruned.

615 Trimming field hedges

1. Operations: Refer to LEMP. Trimming to be kept to a minimum. Trim to specified height and profile using suitable mechanical cutters.

620 Removal of dead plant material

1. Operations: Refer to LEMP. Only remove if it poses a health and safety risk.

630 Dead and diseased plants

1. Removal: Refer to LEMP. Dead or dying trees will be left standing to benefit a range of wildlife and will only be removed if it poses a health and safety risk.
2. Replacement: as per approved LEMP.

642 Thinning by transplanting surplus plants

1. Plants to be thinned: Refer to approved LEMP.
2. Standard: BS 7370-4.

3. Timing: After 3 years. Refer to approved LEMP.
4. Roots
 - 4.1. Disturbance to adjacent plants: Minimize.
 - 4.2. Soil: Refill holes with topsoil to leave an even-graded surface.
 - 4.3. Mulch: Maintain mulch as original specification.
 - 4.4. Adjacent plants: Make good any minor damage immediately.
5. Plants for retention: Select plants with a strong healthy habit.
6. Mature planting density: Refer to LEMP. Planting should be thinned by 25%.

645 Weed control generally

1. Weed tolerance: Refer to LEMP. ECoW or invasive weeds specialist consulted for advice on the best course of action to address their presence. Weed control to take places throughout the year, and as needed.
2. Adjacent plants, trees and grass: Do not damage. ECoW or invasive weeds specialist consulted for advice.

690 Maintenance of loose mulch

1. Thickness (minimum): 100mm
 - 1.1. Top up: Refer to approved LEMP. Annually in spring and/or autumn.
2. Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.

695 Fertilizing and Herbicides of established trees and shrubs

1. Time of year: Should be avoided wherever possible.
2. Type of fertilizer: Type in accordance with Environment Agency.
3. Application: Spread evenly, avoid within a 5m radius of trees and 10m of watercourses/waterbodies.
 - 3.1. Rate: As manufacturer's recommendations

705 Winter leaf removal

1. Arisings: Refer to approved LEMP. Leaves to be left to provide suitable leaf piles for hibernating hedgehog.

710 Woodland maintenance

1. Watering: Refer to approved LEMP. Initial watering following establishment and first 2/3 years following periods of drought.
2. Loose plants: Refer to approved LEMP. Any trees that do not establish effectively and die as a result should be replaced as soon as possible in the next planting season from November to March for bare root nursery stock.
3. Vegetation: Except trees and coppice shoots to be retained, cut down to 100 mm above ground level within the plantation area.
4. Arisings: Leaves to be left to provide suitable leaf piles for hibernating hedgehog.

715 Woodland thinning

1. Mature planting density: Refer to approved LEMP. Thinned by 25%.
2. Timing: Thin in stages In accordance with the agreed management plan.

720 Coppicing

1. Material to be coppiced: hedgerows that become gappy or lack dense branches at their base. Refer to approved LEMP.
2. Standard: Refer to approved LEMP - 'conservation' type laying. If possible, flails not to be used.
3. Cut stems: As low as possible, or to previous coppice level. Refer to LEMP.
 - 3.1. Finish: Leave sloping upward towards the centre to promote rainwater run-off. Refer to LEMP.

Tree work

810 Tree work generally

1. Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
2. Protection: Avoid damage to neighbouring trees, plants and property.
3. Standard: To BS 3998.

4. Removing branches: Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
5. Appearance: Leave trees with a well-balanced natural appearance.
6. Chain saw work: Operatives must hold a certificate of competence.
7. Tree work: To be carried out by an approved member of the Arboricultural Association.

830 Cleaning out and dead-wooding

1. Remove
 - 1.1. Dead, dying or diseased wood, broken branches and stubs.
 - 1.2. Fungal growths and fruiting bodies.
 - 1.3. Rubbish, windblown or accumulated in branch forks.
 - 1.4. Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
 - 1.5. Other unwanted objects, e.g. tree houses, swings.

835 Cutting and pruning generally

1. Tools: Refer to approved LEMP. Traditional management techniques.
2. Final pruning cuts
3. Removing branches: Refer to approved LEMP. Trimming of trees such as oak and holly should be kept to a minimum to encourage a varied structure, which provides a greater availability of habitats, food and refuge. Branches that pose health and safety risk to be removed.
4. Cutting: Retained trees will require maintenance schedule primarily undertaken by arboriculturist. Refer to approved LEMP.
5. Large/hazardous branches:
 - 5.1. Remove in small sections and lower to ground with ropes and slings. Branches deemed potentially hazardous will be promptly and safely removed in accordance with BS 3998:2010 Tree Works. Removed wood to be cut into logs and added into piles. Refer to LEMP.
6. Dead, Diseased or fungus: Refer to approved LEMP. For first 3 years dead or dying trees will be left standing and only removed if posing a health and safety risk. In subsequent years remove poor, weak, diseased or overcrowded trees to make the remaining trees stronger and sturdier.

860 Removing trees, shrubs and hedges

1. Standard: To BS 3998.
2. Existing services: Check for below and above ground services. Give notice if they may be affected.
3. Shrubs and smaller trees: Cut down and grub up roots.
4. Tree stumps
 - 4.1. Treatment: Remove mechanically to a minimum depth of 300 mm below ground level
 - 4.2. Removal by winching: Give notice. Do not use other trees as supports or anchors.
5. Protection: Avoid damage to neighbouring trees, plants and property
6. 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.
7. Filling holes
 - 7.1. Material: Use as-dug material and/ or imported soil as required.
 - 7.2. Finishing: Consolidate and grade to marry in with surrounding ground level.

Hard landscape areas/ fencing

900 Snow clearance

1. Clearance: When instructed
2. De-icing: To Greenway, footpaths and roads.

910 Hard surfaces and gravel areas

1. Herbicide: Apply a suitable foliar-acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
2. Hard surfaces: Remove litter, leaves and other debris.
3. Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.

4. Stain removal: In accordance with BS 7370-2, Table 4.

920 Fencing

1. Fences: Inspect and repair to maintain protection against Deer Intruders Rabbit.

Ω End of Section

Q40 Fencing

Fencing systems

126 Open mesh steel panel security fencing

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Contractor's choice
2. Standard: To BS 1722-14, category 2.
3. Height: 2400 mm
4. Mesh and wire: Deer Proof Mesh (HT 190/15/13). Refer to drawing BFSF-RAMB-XX-DR-L-3029 with Wildlife Hole every 150m.
5. Posts: as per manufacturers' recommendations. Refer to drawing BFSF-RAMB-XX-DR-L-3029.
6. Maximum centres of posts: 4m
7. Method of setting posts: Fence Posts to be knocked into Natural Earth as per manufacturers' recommendations. Refer to drawing BFSF-RAMB-XX-DR-L-3029.
8. Bottom of fencing: Contractor's choice. To be confirmed on site dependent on ground conditions.
9. Accessories: Galvanised Steel Gate. Refer to drawing BFSF-RAMB-XX-DR-L-3029.
10. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.

210 Wooden post and rail fencing

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Morticed Post and Rail Fencing. Refer to drawing BFSF-RAMB-XX_DR-L-3027.
2. Standard: To BS 1722-7, type SPCR 125/2.
3. Height: 1200 mm
4. Wood: As per manufacturer's recommendations.
 - 4.1. Treatment: To provide a 15-year service life
 - 4.2. Finish: None
5. Maximum centres of posts: 2.85 m
6. Method of setting posts: As per manufacturer's recommendations.
7. Accessories: None
8. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-7.

Gates, posts and stiles

520 Bridle gates and posts

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Contractor's choice. Refer to drawing BFSF-RAMB-XX-DR-L-3027.
2. Standard: To BS 5709.
3. Sizes: 1100 mm high x 2100 mm clear width between posts
4. Materials: Steel gate and wood posts
 - 4.1. Treatment: To provide a 15-year service life
 - 4.2. Finish: None
5. Fittings: As per manufacturer's recommendations.
 - 5.1. Finish: Hot-dip galvanized to BS EN ISO 1461
6. Method of setting posts: As per manufacturer's recommendations.
7. Accessories: Gate opener

530 Kissing gates and posts

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Oxford - Large Mobility. Refer to drawing BFSF-RAMB-XX-DR-L-3027.
2. Standard: To BS 5709.

3. Size: INSTALLED HEIGHT - 1000mm-1200mm
LENGTH IN THE FENCELINE -3005mm
WIDTH - 1600mm
4. Materials: Wood gate and posts
 - 4.1. Treatment: To provide a 15-year service life
 - 4.2. Finish: None
5. Fittings: As per manufacturer's recommendations.
 - 5.1. Finish: Hot-dip galvanized to BS EN ISO 1461
6. Method of setting posts: As per manufacturer's recommendations.
7. Accessories: Footpath route sign

570 Vehicle Internal Access Gate

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Wire Mesh Welded Gate. Refer to drawing BFSF-RAMB-XX-DR-L-3028.
2. Sizes: 4000mm
3. Posts: Not required
4. Finish as delivered: Powder-coated to BS 1722-16
5. Fittings: As per manufacturer's recommendations.
 - 5.1. Finish: Hot-dip galvanized to BS EN ISO 1461
6. Method of fixing: As per manufacturer's recommendations.
7. Accessories: Security notice (supplied by Employer)

Execution

710 Installation generally

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

715 Competence

1. Operatives: Contractors must employ competent operatives.
2. Qualifications: Submit certification of training.
 - 2.1. NHSS Sector Scheme 2A sub categories: (a) (d) (g)
 - 2.2. NHSS Sector Scheme 2C sub categories: (a)

720 Setting posts in concrete

1. Standard: To BS 8500-2.
2. Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
3. 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.
4. Admixtures: Do not use.
5. Holes: Excavate neatly and with vertical sides.
6. Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
7. Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

740 Setting posts in earth

1. Holes: Excavated neatly, with vertical sides and as small as practicable to allow refilling.
2. Filling: Position posts/ struts and replace excavated material, well rammed as filling proceeds.

750 Driven posts

1. Damage to heads: Minimize.
 - 1.1. Repair: Neatly finish post tops after installation.

760 Nailed wood rails

1. Length (minimum): Two bays, with joints in adjacent rails staggered.
2. Fixing: Nail each length of rail to each post with two 100 mm galvanized nails.
3. Rails with split ends: Replace.

770 Site cutting of wood

1. General: Kept to a minimum.
2. Below or near ground level: Cutting prohibited.
3. Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution recommended for the purpose by main treatment solution manufacturer.

780 Making good galvanized surfaces

1. 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.
2. Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

790 Site painting

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

Completion

910 Cleaning

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

920 Fixings

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

930 Gates

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

Ω End of Section