LANDSCAPE MANAGEMENT PLAN

For

Construction of an Industrial Building (Including associated infrastructure) for General Industrial (B2), Storage (B8) and Industrial processes (E(g) (iii) use at

> Game Engineering Ltd Camp Road Witham St Hughs Lincoln Lincolnshire LN6 9TW



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1.0 OBJECTIVES

1.1 Introduction

This document has been prepared by LHL Group to support the Discharge of planning (condition 6) attached to the approved LA reference: 23/0548/FUL for the erection of an Industrial building at Game engineering, Witham St Hughs. The document is a Landscape Management Plan for areas within the Red line boundary only as shown for the approval at Game Engineering, Witham St Hughs, Lincoln

1.2 Purpose of the Landscape Management Plan

The Landscape Management Plan is drafted to ensure that the design objectives set for the development are implemented and maintained.

- 1.3 Design Objectives
- To maintain and improve the landscape in the long term.
- To create a development which achieves the client's brief whilst being appropriate to the local environment.
- To increase biodiverse habitats.
- To provide a maintenance plan to ensure the initial establishment of key features and planting and provide a guide to manage specific areas in the long term.
- 1.4 Management Responsibilities and Requirements:

The developer will be responsible for the implementation and maintenance of all areas. The subject areas do not include public highway and all areas are within the Developer's continued ownership.

2.0 MANAGEMENT OF GRASSED AREAS

Generally

2.1 In all circumstances, particularly on sloping ground, the Contractor shall take into account safety of operatives and members of the General Public when selecting the appropriate method and equipment employed in the works.

Grass Cutting Generally

- 2.2 Dependent on climactic conditions and the use to which the area is to be put, all cuts to grassed areas shall be cut within height limits stated in paragraph 3.5.
 - 2.2.1 The Contractor shall note the size of the site, length of vegetation and degree of difficulty of cutting at the site and make allowance accordingly.

Grass Cutting

- 2.3 All cuts to grassed areas are to be kept to within the limits described and cut with an approved machine to produce a standard of finish appropriate to the use to which the area is to be put.
 - 2.3.1 Cutters to all machines shall be sharp and properly set to cut the sward cleanly and evenly. The cutting height shall be set as ordered.

- 2.3.2 The rates shall include for cutting margins, corners around obstructions, up to flower beds, shrubberies or the like and around the bases of trees.
- 2.3.3 The Contractor shall allow for sweeping clean of all paths and roads from grass cuttings after each visit.
- 2.3.4 Grass shall be cut when dry and care should be taken to avoid root pulling.
- 2.3.5 In drought conditions mowing shall continue until otherwise directed.
- 2.3.6 In very wet conditions all operations involving grass cutting shall cease until conditions allow reasonable standards of cutting to be achieved.
- 2.3.7 Any grass damage as a result of cutting in inappropriate conditions, or from spillage of petrol, oil or grease or the like shall be replaced at the Contractor's expense. The Contractor shall be responsible for any damage to tree shrubs etc., caused in the carrying out of grass cutting and will be liable for the replacement of same in the appropriate season at no cost to the Authority.

Litter Clearance

2.4 The Contractor shall inspect the area immediately before each mowing operation and shall remove all rubbish, leaf litter or debris particularly to attenuation areas.

Cutting Limits

- 2.5 All areas shall not be cut shorter than 20mm and left longer than 50mm unless otherwise directed.
 - 2.5.1 Mowing shall be done at right angles or diagonal to the last cut.
 - 2.5.2 Mowing shall take place to the full area of grass up to pavings, fencings and shrubberies around obstructions and other site boundaries. All grass edges to soil margins, pavings, tree pits, shrub borders and planting areas shall be kept trim, tidy and true to line.

Edging

2.6 The Contractor shall trim all edges to grass areas with specialised approved equipment, taking great care to prevent damage to adjacent trees, shrubs or other artefacts.

Newly Seeded or Turfed Areas

2.7 When the grass is cut between 50mm-75mm in height the area shall be lightly rolled 24 hours prior to the first cut. The first cut shall reduce the height of the grass by no more than 30%. Care should be taken not to pull or otherwise damage the grass. Any damage shall be reported immediately and rectified at the Contractor's expense.

Arisings

2.8 Arisings shall be left on site unless otherwise instructed. Frequency of cutting operations to be adjusted as necessary throughout the growing season to produce very fine arisings and thus preventing the build-up of grass debris.

3.0 MANAGEMENT OF WILDFLOWER AREAS

Generally

3.1 The requirements in the first year are to control weeds and reduce competition from grasses.

First Year Management

3.2 The sward shall be cut regularly to a height of 4.0-6.0cm or when the sward reaches 10-15cm high. Remove all cut material to avoid smothering the sward. Where persistent weeds are a problem, spot treat with a selective herbicide or dig-out.

Future Management (Wildflower Areas)

3.3 The sward should be well established after the first 12 months and contain a variety of species. The sward shall be cut to 5cm in March/April and cutting shall be removed. The second cut should take place at the end of the flowering season during September to October. The site may require further mowing in the autumn to remove untidy growth in an extended growing season.

Arisings

3.4 All arisings from all operations shall be removed to an approved tip at the end of each working day or upon completion, whichever is the sooner.

4.0 MANAGEMENT OF PLANTED AREAS

Specimen Trees

4.1 Management Objective:

To establish stable and healthy growing trees which will provide screening, amenity and ecological benefit. The aim is to establish, within three years from planting, well shaped trees with frameworks for the future healthy growth, and an overall neat and tidy appearance including around the base of the trees.

Managed trees may be divided into two categories:

- Those shaped to achieve a dense even, symmetrical profile
- Those to the Entrance Gateway (verge) and adjacent road highways where a clear stem of 2m must be maintained

With open canopy tree the aim is to establish and maintain individual trees and groups of trees with balanced canopies of natural but tidy form, free from all dead and dying vegetation and cross wood.

To prevent overcrowding of tree groups, selective thinning and stump removal may be required.

To ensure a balanced age structure within tree groups by planting new trees of the same species to prevent group senility.

Pruning Trees

4.2 All tree work shall be carried out in accordance with B.S.3998 – Recommendations for tree work.

- 4.2.1 The Contractor shall ensure that all die back is pruned back to the nearest live bud with clean, sharp instruments, once a year. Removal of unsightly shoots and branches that cross and removal of all Epicormic growth shall be carried out at the same time in accordance with best horticultural standards.
- 4.2.2 Crown reductions, reshaping, lifting, thinning, pollarding, or on other standard pruning format, shall be carried out by a qualified arboriculturist using appropriate methods, tools, etc.
- 4.2.3 Street trees and those adjacent road highways to be maintained at 2 metre clear stem.

Cutting and Trimming Hedges

- 4.3.1 The Contractor shall cut hedges to the specified profile.
- 4.3.2 All dead leaves, litter/debris shall be cleaned out by hand from the bottom of the hedge at the same time as cutting and trimming takes place.

Arisings

4.4 All arisings from all operations shall be removed to an approved tip at the end of each working day or upon completion, whichever is the sooner.

Inspection of Guys (underground where applicable)

4.5 Guys shall be checked three times annually at equal intervals to ensure they are firm, unbroken and that trees are not leaning and unsafe. Any damaged guys shall be replaced immediately.

Re-firming of Trees

4.6 The Contractor shall ensure that trees remain firm and well secured after frost heave, wind rock and other ground disturbance. Collars at the base of tree trunks that have been created by tree movement shall be broken up by fork and backfilled with topsoil as necessary and re-firmed.

Watering Trees

- 4.7 During the establishment period and in dry spells there is to be a regular programme of watering. Trees shall be watered every 1-2 weeks in such periods at a volume to bring the tree pit to field capacity. Water applied slowly to prevent run off.
 - 4.7.1 Water shall be applied through tree watering tubes where existing.

Mulching

- 4.8 Mulching shall be carried out annually, immediately following the final programmed weeding operation.
 - 4.8.1 Mulch shall be applied to form a total cover on tree pits (soft landscape areas only) / planted areas to a minimum depth of 50mm after settling and to be maintained at a depth of 50-75mm over establishment period. It is to be applied when the soil is moist. The Contractor shall ensure that the ground is completely free of litter, debris, weed growth, etc.

4.8.2 Mulch shall be laid up to and under all shrubs or ground cover plants where possible.

Fertilizing Trees in Grassed Areas

4.9 Trees shall have 4 no. cores taken from the grassed area around each tree to a depth of 100mm. These shall have fertilizer at the recommended rate per standard tree, divided amongst the holes, and the cores shall be replaced and firmed down.

Fertilizing Planted Areas

4.10 Supply and spread slow release fertilizer as described elsewhere in this specification at manufacturer's recommended rates to planted areas, lightly raked into the soil surface.

Watering Planted Areas

- 4.11 The Contractor shall thoroughly water planted areas, by means of hose lines, sprinklers, trickle hoses or other approved method.
 - 4.11.1 Water shall be applied at an appropriate pressure so as not to disturb soil surface, plants, etc.

Theft or Vandalism to Trees & Shrubs

4.12 The Contractor shall replace vandalised/stolen trees or shrubs of the same size and species.

5.0 WEED AND PEST CONTROL CHEMICAL CONTROL

Chemical Control Generally

5.1 All weed killers and pesticides are to be used in accordance with the manufacturer's instructions as to mixing, application, use, protection of personnel, animal and vegetable life, disposal of empty containers. All operatives must be properly instructed in the use and precautions necessary for safe operations including appropriate protective clothing and equipment.

Certification of Operatives

5.2 All operatives applying herbicides must hold a certificate of competence in use of herbicides in accordance with the Food and Environment Protection Act 1985.

Adequate Warning

5.3 Before spraying or application of herbicides takes place, the Contractor must give 24 hours warning to the users of the affected area, that spraying is to take place.

Approved Chemicals

5.4 Where chemical weed control is specified, all weed growth shall be controlled by means of the appropriate chemical herbicide, as listed in appendix 1

Regulations

5.5 The Contractor is to adhere to all Department for Environment Food and Rural Affairs (DEFRA) statutory requirements and recommendations for the Application, Use and Storage of Weed Killers and Pesticides and in particular the main legislation controlling the sale, supply and use of plant protection products is Council Directive 91/414/EEC concerning the placing of Plant Protection Products on the Market, Food and Environment Protection Act 1985 and codes of practice for the use of approved pesticides in amenity areas published by the National Turfgrass Council and any subsequent revisions as which from time to time may be made. Where applications may spread into water courses the Contractor will adhere to any relevant regulations and bye laws issued by the Water Authorities.

Weather Conditions

5.6 Weather Conditions. Chemical application shall not be made during wet or windy weather or if rain is expected within 24 hours following application. Care should be taken to avoid drift of chemicals.

Mixing and Transportation

- 5.7 Mixing and Transportation. No mixing of chemicals shall be carried out at the site but shall be bought to site in a lockable leakproof container in a separate compartment from the driver and passengers. Containers should be firmly secured to avoid damage and spillage and clearly labelled as to the contents.
 - 5.7.1 The Contractor shall ensure that no containers, empty or full are to be left unattended on site at any time or on vehicles unless securely locked away.

Calibration

5.8 The Contractor shall ensure that all spraying equipment is carefully calibrated to prevent over or under dosing.

Spot Treatment

5.9 Where a contact herbicide is used around plants in leaf, the Contractor shall ensure that an adequate guard or suitable applicator is used for spot treatment.

Damage

5.10 The Contractor shall be responsible for replacing any plants or rectifying any damage caused by the improper application of chemicals.

Records

5.11 The Contractor shall ensure that adequate records are maintained for all operations involving the application of pesticides under the Control of Pesticides Regulations 1986, and these records shall be available at all times for inspection.

Hand Weeding Generally

5.12 The Contractor must ensure that hand weeding shall be carried out in conjunction with programmed litter/debris clearance so as to avoid duplication of operations.

Raking Die Back

5.13 Hand raking of die back following spraying operations may be permitted in certain areas and shall be carried out in 14 days after completion of spraying unless otherwise directed.

Hand Weeding Die Back

5.14 Hand weeding of die back following spraying operations shall be carried out 14 days after completion of spraying unless otherwise directed and shall achieve a totally weed free condition.

Hard Landscaping

5.15 On areas of Hard Landscaping, weeds shall be pulled by hand or removed with a suitable implement to remove roots where possible. Any arisings, displaced soil, or the like shall be swept up immediately and the site left in clean and tidy weed free condition.

6.0 LITTER CLEARANCE

Generally

- 6.1 The Contractor must ensure that all operatives are aware of the possibility of encountering contaminated sharps both during litter collection and bag transportation/disposal.
 - 6.1.1 Crossovers, steps, traffic islands, parking areas or the like shall be deemed as footpaths/hard landscaped areas for the purposes of this specification.

Autumn Leaves

6.2 Autumn leaves shall be classed as litter/debris on hard landscaped areas and shall be cleared in conjunction with normal sweeping operations, during the appropriate season at no extra cost to the Authority.

Animal Faeces

6.3 Any animal faeces encountered shall not be swept or spread by any means. It should be picked from the area when other sweeping operations are being carried out, using a suitably protected hand, or scoop, shovel or other approved method. All faeces shall be bagged in plastic sacks, differing in colour from those general litter/debris and clearly stamped foul waste in letters not less than 100 mm high x 50 mm wide. All plastic sacks shall be tied at the neck and removed from the authority's premises to an approved tip. The area shall be disinfected immediately after removal of faeces, using a non-pressurized, diluted, non-colouring, non-staining household disinfectant. Waste from dog litter bins (where applicable) to be disposed of as above. Bin to be disinfected prior to replacement of new liner.

Snow Clearance

6.4 In the event of significant snowfall, normal sweeping operations shall be substituted for snow clearance where directed, at no extra cost to the Authority. Emptying of litter bins and removal of animal faeces shall continue as normal.

Hard Landscaping

- 6.5 The sweeping and clearance of litter/debris from footpaths and areas of hard landscaping shall be carried out.
 - 6.5.1 Sweeping shall be carried out by hand using a large-headed broom, or other appropriate method Arisings shall be collected and bagged in coloured plastic sacks. The plastic sacks shall be tied at the neck and removed from site within 1 hour to an approved tip. All plastic sacks should be cleared from the site at the end of each working day. Under no circumstances shall arisings be swept into any road channels, gullies, planted areas, tree pits, water areas or the like.

Irregular Litter/Debris

6.6 Items or irregular litter/debris shall be moved to the edge of the footpath/hard landscaped area furthest away from any carriageway in a position where the least obstruction to pedestrians will be caused and a report shall be made to the S.O. who will arrange for suitable disposal.

Health and Safety

6.7 All works shall be carried out in accordance with the Authority's and the Contractor's own Health and Safety Policy and in accordance with all current Statutory Obligations.

Mechanical Sweeping

6.8 The sweeping and clearance of litter/debris from footpaths and areas of hard landscaping by mechanical means may be permitted.

Litter Clearance from Soft Landscaping

- 6.9 The removal of litter/debris, animal faeces, autumn leaves, shall be carried out at fortnightly intervals.
 - 6.9.1 Any damage caused to shrubs, trees, grassed areas, or the like caused through removal of litter/debris, or the like shall be made good at the Contractor's expense.

7.0 MANAGEMENT PLAN REVIEW PROCESS

Generally:

- 7.1 At the end of a yearly contract period the site shall be appraised to review the performance of the landscaped areas.
 - 7.1.1 Each area shall be reviewed in terms of the following as appropriate for the open space:
 - plant form and growth,
 - diversity,
 - use patterns,
 - wear and tear of surfacing, street furniture, fencing etc.
 - the ability to modify site objectives, operations and programmes.
 - 7.1.3 A schedule shall be produced identifying any issues relating to the above and incorporated into the management regime for the forth coming contract period.

8.0 PREAMBLES

Q28 Topsoil and Growing Media

Retain and reuse topsoil stripped and stored on site from soft landscape and grassed areas.

GENERALLY

100 USE OF MATERIALS:

- All materials used shall conform to current British Standards, Codes of Practice or other accepted EU standards.
- The sub-contractor shall provide the DESIGN TEAM with certificates relating to their conformity if called for.
- The sub-contractor is advised of the open and windy nature of this site and shall make due allowance in his design and selection of materials and fixings.
- Foam or foam filled products will not be allowed on this contract.

101 DRAWING REFERENCES

 Where given, drawing references are generally to GA drawings. The main contractor/subcontractor shall check and use all relevant drawings, including those of other consultants and sub-contractors.

102 INTERFACES

 Allow for materials to form all interfaces with adjacent components and construction and for completion of junctions, including where necessary building-in work left incomplete by others, to achieve design intent.

103 EQUIVALENT PRODUCTS

- Equivalent products, materials, goods or suppliers to those named in this section will be allowed for works under this section provided that technical data, test reports and other information is submitted to the Design Team/Client for comment prior to the change. Equivalent products shall not change the design intent or reduce specification requirements.

104 SCOPE OF WORK

- The design, details and materials indicated within this specification and relevant drawings represents the minimum standard acceptable as the Employers Requirements/Specified
- The scope of work generally described in this clause shall not change the appearance or design intent as required by the Design Team. The Design Team shall retain aesthetic control over works in this section.

106 LEGISLATION

- Comply with all relevant legislation including current "Building Regulations", British Standards, and Codes of Practice.

108 HEALTH & SAFETY/OPERATING & MAINTENANCE MANUALS.

- The specialist sub-contractor shall submit to the main contractor relevant information on all items to be included in the building Health & Safety File and recommendations for cleaning and maintenance for the Operating and Maintenance Manuals.
- The submission shall be titled with clear reference to works in this section.

GENERAL INFORMATION/ REQUIREMENTS

200 GRADING SUBSOIL

- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
- Areas of thicker topsoil: Excavate locally.

250 SUBSOIL SURFACE PREPARATION

- General: Excavate and/ or place fill to required profiles and levels, as section D20.
- Loosening:
- Light and noncohesive 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 50mm.
- Remove: Arisings, contaminants and debris and Builders rubble.

260 INSPECTING FORMATIONS

- Give notice: Before spreading topsoil for lawn areas and planting beds.
- Notice period: 7 days.

310 PREPARATION OF UNDISTURBED TOPSOIL

- Standard: In accordance with BS 4428.
- Grading and cultivation: Category A .
- Hard ground: Break up thoroughly.
- Clearing: Remove visible roots and large stones with a diameter greater than 50mm.
- 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 treat with a suitable translocated nonresidual herbicide.

335 SURPLUS TOPSOIL TO BE REMOVED

- Generally: Remove from site topsoil remaining after completion of all landscaping work.

340 IMPORTED TOPSOIL TO BS 3882

- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- Standard: To BS 3882.
- Classification: Multipurpose.
- Source: Contractor's choice.
- Submit: Declaration of analysis in accordance with BS 3882, Annex E.
- Additional analyses: Not required.

355 COMPOST

- Standard: In accordance with PAS 100.
- Supplier: Local source.
- Product reference: tbc.
- Type: Sanitized and stabilized compost.
- Horticultural parameters:
- pH (1:5 water extract): 7.0-8.7.
- Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
- Moisture content (m/m of fresh weight): 35–55%.
- Organic matter (minimum): 25%.
- Grading (air dried samples): 99% passing 25 mm screen, and 90% a 10 mm screen mesh aperture.
- Carbon: Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Required.
- Submit: Declaration of analysis.
- Additional analyses: Not required.
- Samples: Not required.
- Application rate: 3.7 m³/100 m².
- Timing: Apply prior to cultivation.

395 PEAT

- Peat or products containing peat: Do not use.

650 NOTICE OF IMPORTING TOPSOIL

- Give notice: Before stripping topsoil for transfer to site.
- Notice period: 14 days.

670 CONTAMINATION

- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
- Corrosive, explosive or flammable.
- Hazardous to human or animal life.
- Detrimental to healthy plant growth.
- Subsoil: In areas to receive topsoil, do not use subsoil contaminated with the above materials.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.

680 TOPSOIL STORAGE HEAPS

- Location: tba.
- Height (maximum): 1.0m.
- Width (maximum): 2.0m.
- 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.

690 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.

700 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): 150mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

710 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.
- Depths after settlement (minimum): 150mm .

720 SPORTSFIELDS

- Grading: To even levels and within the following permitted deviations:
- From levels or gradients shown on drawings: ±75 mm.
- From line between boning rods 30 m apart: ±25 mm.

910 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 25mm.

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

920 DOCUMENTATION

- Timing: Submit at handover.
- Contents:
- Full description of all soil components.
- Record of source for all soil components.
- Analyst's report for each test carried out.
- Record drawings showing the location and depth of all soils by type and grade.
- Supplier's declaration of compliance with BS 3882.
- Number of copies: 3.

Q30 Seeding / Turfing GENERALLY

100 USE OF MATERIALS:

- All materials used shall conform to current British Standards, Codes of Practice or other accepted EU standards.
- The sub-contractor shall provide the DESIGN TEAM with certificates relating to their conformity if called for.
- The sub-contractor is advised of the open and windy nature of this site and shall make due allowance in his design and selection of materials and fixings.
- Foam or foam filled products will not be allowed on this contract.

101 DRAWING REFERENCES

- Where given, drawing references are generally to GA drawings. The main contractor/subcontractor shall check and use all relevant drawings, including those of other consultants and sub-contractors.

102 INTERFACES

- Allow for materials to form all interfaces with adjacent components and construction and for completion of junctions, including where necessary building-in work left incomplete by others, to achieve design intent.

103 EQUIVALENT PRODUCTS

- Equivalent products, materials, goods or suppliers to those named in this section will be allowed for works under this section provided that technical data, test reports and other information is submitted to the Design Team/Client for comment prior to the change. Equivalent products shall not change the design intent or reduce specification requirements.

104 SCOPE OF WORK

- The design, details and materials indicated within this specification and relevant drawings represents the minimum standard acceptable as the Employers Requirements/Specified Performance.
- The scope of work generally described in this clause shall not change the appearance or design intent as required by the Design Team. The Design Team shall retain aesthetic control over works in this section.

106 LEGISLATION

- Comply with all relevant legislation including current "Building Regulations", British Standards, and Codes of Practice.

108 HEALTH & SAFETY/OPERATING & MAINTENANCE MANUALS.

- The specialist sub-contractor shall submit to the main contractor relevant information on all items to be included in the building Health & Safety File and recommendations for cleaning and maintenance for the Operating and Maintenance Manuals.
- The submission shall be titled with clear reference to works in this section.

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: 48 hours.

170 SETTING OUT

- Boundaries of seeding/ turfing areas: Mark clearly.

PREPARATION

205 PREPARATION MATERIALS

- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Certification: Submit certificate giving supply source, content analysis, confirmation of suitability for purpose and confirmation of absence of harmful substances: sewage sludge.
- Certified materials: Sanitized and stabilized compost.
- Give notice before ordering or using.

210 HERBICIDE FOR SEEDED AREAS

- Type: Suitable for suppressing perennial weeds.
- Timing: Allow fallow period before cultivation.
- Duration: As manufacturer's recommendation.

212 SEED BED CLEANING BEFORE SOWING: ALL GRASSED AREAS INC. WILDFLOWER MEADOW AREAS

- Operations: Kill pernicious weeds with selective contact herbicide.

226 COMPOST FOR ALL GRASSED AREAS - NOT FOR WILDLFOWER MEADOW AREAS

- Type: Sanitized and stabilized compost.
- Standard: In accordance with PAS 100.
- Supplier: Submit proposals.
- Product reference: Submit proposals.
- Standard: To PAS 100.
- Horticultural parameters:
- pH (1:5 water extract): 7.0-8.7.
- Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
- Moisture content (m/m of fresh weight): 35-55%.
- Organic matter content (minimum): 25%.
- Grading (air dried samples): 99% passing 25 mm screen, and 90% passing 10 mm screen mesh aperture.
- Carbon: Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Not required.
- Declaration of analysis: Submit
- Samples: Not required.
- Application rate: 25mm thick layer.
- Timing: Apply prior to cultivation.

231 PEAT

- Peat or products containing peat: Do not use.

260 GRADING

- Topsoil condition: Reasonably dry and workable.
- Contours: Smooth and flowing, with falls for adequate drainage. Remove minor hollows and ridges.
- Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
- Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 100mm.
- Give notice: If required levels cannot be achieved by movement of existing soil.

270 FERTILIZER FOR ALL GRASSED AREAS.

- Types: Apply both:
- Superphosphate with a minimum of 18% water soluble phosphoric acid.
- A sulfate of ammonia with a minimum of 20% nitrogen.
- Application: Before final cultivation and three to five days before seeding/ turfing.
- Coverage: Spread evenly, each type at 70 g/m² (or sq m) in transverse directions.

280 FINAL CULTIVATION

- Timing: After grading and fertilizing.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.
- Depth: 25 mm.
- Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
- Remove surface stones/ earth clods exceeding: General areas: 20 mm.
 Fine lawn areas: 10 mm.
- Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

SEEDING

310 GRASS SEED FOR ALL GRASSED AREAS.

- Mixture: 35% Chewings fescue, 35% Slender red fescue, 20% Smooth stalked meadow grass, 10% Brown top bent.
- Application rate: 20–35 g/m².

319 QUALITY OF SEED FOR ALL GRASSED AREAS

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

330 SOWING

- General: Establish good seed contact with the root zone to promote healthy, consistent growth.
- Method: To suit soil type, proposed usage of grassed area, location and weather conditions during and after sowing.
- Distribution: 4 equal sowings.

335 SOWING SEASON

- Grass seed generally: April to June or August to October.

340 PRE-EMERGENT HERBICIDE FOR ALL GRASSED AREAS

- Standard: Pesticide Safety Directorate approved.
- Application rate: In accordance with manufacturer's written recommendation.
- Timing: Immediately after sowing.

352 EDGES TO SEEDED AREAS ADJACENT TO PLANTING BEDS AND TREE PITS.

- Timing: After seeded areas are well established.
- Edges: Clean straight lines or smooth curves.
- Mulch and soil: Draw back to permit edging.
- Arisings: Remove.
- Completion: Respread soil and mulch.

PROTECTING/ CUTTING

510 PROTECTIVE FENCING

- Fencing type: Chestnut pale fencing to BS 1722-4.
- Height: 1.1 m.
- Erection: On completion of seeding/ turfing.
- Removal: After grass is well established. Fencing will remain the property of the Contractor.

520 WATERING

- WATERING: During establishment of grass areas ensure that sufficient water is applied using a fine sprinkler or oscillating spray to maintain healthy growth.

530 FIRST CUT OF GRASSED AREAS

- Timing: When grass is reasonably dry.
- Height of initial growth: 40-75 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: Remove from site.

590 CLEANLINESS

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

MAINTENANCE

605 MAINTENANCE

- Duration: Carry out the following operations from completion of seeding/ turfing until of the defects liability period.

610 FAILURES OF SEEDING/ TURFING

- 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.

620 MAINTAINING GRASSED BANKS

- Maximum height of growth at any time: 50 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 50 mm.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
- 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: As clause 145.

Q31 External Planting GENERALLY

100 USE OF MATERIALS:

- All materials used shall conform to current British Standards Codes of Practice or other accepted EU standards.
- The sub-contractor shall provide the Design team with certificates relating to approval or listing for each component or system if called for.

101 DRAWING REFERENCES

- Where given, drawing references are generally to GA drawings. The main contractor/subcontractor shall check and use all relevant drawings, including those of other consultants and sub-contractors.

103 EQUIVALENT PRODUCTS

 Equivalent products, materials, goods or suppliers to those named in this section will be allowed for works under this section provided that technical data, test reports and other information is submitted to the DESIGN TEAM/CLIENT for comment prior to the change. Equivalent products shall not change the design intent or reduce specification requirements.

106 LEGISLATION

- Comply with all relevant legislation including current "Building Regulations", British Standards, and Codes of Practice.

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 50mm.
- 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: Remove street furniture.

118 SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (excepting aquatic/ marginal planting) not waterlogged.
- Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

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.

130 MECHANICAL TOOLS

- Restrictions: Do not use within 100 mm of tree and 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: 1 week.

165 PREPARATION, PLANTING AND MULCHING MATERIALS

- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Certification of source, analysis, suitability for purpose and absence of harmful substances: Submit.
- Certified materials: Sanitized and stabilized compost and Wood.
- Give notice before ordering or using.

200 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: The relevant parts of BS 3936.
- Species: True to name.
- Origin/ Provenance: Grown in the United Kingdom for at least one growing season, unless otherwise approved. .
- Definition: Origin and Provenance have the meaning given in the National Plant Specification.

216 PLANTS/ TREES – SPECIFICATION CRITERIA

- Name, forms, dimensions and other criteria: To the relevant part of BS 3936.

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.

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.

265 PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To HTA 'Handling and establishing landscape plants'.
- 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.
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped.
- Planting: Upright or well balanced with best side to front.

280 TREATMENT OF TREE WOUNDS

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

290 SURPLUS MATERIAL

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

PLANTING TREES

505 TREE PITS

- Sizes: 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 200mm.
- Treatment: Soil ameliorant worked into pit bottoms.
- Pit sides: Scarify.
- Backfilling material: Tree backfilling material.
- Accessories:
- Perforated plastics irrigation/ ventilation pipe;
- Root barrier; and
- Underground guying to BS 4043.

510 TREE PIT ROOT BARRIERS

- Locations: Wherever the installed rootball will be within 2.0 m of a building or retaining wall foundation.
- Manufacturer: Greenleaf horticuture.
- Product reference: ReRoot 2000.
- Depth of top of root barrier below finished soil level: 50mm.
- Installation: With sides vertical.

512 TREE PIT ACCESSORIES

- Locations: All tree pits.
- Manufacturer: Submit proposals.
- Product reference: Submit proposals.
- Type: Perforated plastics ventilation pipe, 50 mm diameter, in circle below rootball.

515 TREE PIT DRAINAGE

- Depth of excavation: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
- Depth: 400mm .
- Drainage pipes:
- Type: Perforated plastics.
- Diameter: 60 mm.
- Position: Lay around perimeter of pit within aggregate layer.
- Discharge: tba.
- Geotextile filter:
- Manufacturer: Submit proposals.

Product reference: Submit proposals.

- Position: Lay over aggregate before installing tree or backfill.
- Completed pits: Test for free drainage before planting.

525 SEMIMATURE TREES

- Standard: Prepare roots and transplant to BS 4043.
- Backfilling material: As clause 586.
- Support: Underground guying to BS 4043.
- Protection: Not required.

586 TREE BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.
- Ameliorant/ Conditioner: Sanitized and stabilized compost.
- Application rate: 5 m³ per 10 m³ of topsoil.
- Fertilizer: Slow release.
- Application rate: To manufacturer's/ supplier's recommendations.

590 MULCHING TREES

- Material: Fine grade bark mulch.
- Purity: Free of pests, disease, fungus and weeds.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 50 litres per tree position, 75 mm depth.
- Finished level of mulch: 30 mm below adjacent grassed or paved areas.

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 defects liability period.
- Frequency of maintenance visits: Submit proposals.

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.

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.
- 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: When instructed.

755 PLANTING MAINTENANCE – FERTILIZER

- Time of year: March or April.
- Fertilizer: Slow release.
- Manufacturer: Submit proposals.

Product reference: Submit proposals.

- Application: Evenly spread, carefully incorporating below mulch materials.
- Application rate: To manufacturer's recommendations.

760 PLANTING MAINTENANCE – PRUNING

- General: Prune to promote healthy growth and natural shape.
- Dead, dying, diseased wood and suckers: Remove.
- Timing: As appropriate to the species.
- 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 defects liability 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): 50mm.
- Trees: Remulch.
- Depth (minimum): 50mm.

589 WATERING

Trees shall be watered thoroughly immediately after backfilling.

591 MULCHING TREES

- Material: Bark mulch as specified in schedule of work.
- Purity: Free of pests, disease, fungus and weeds.
- Recycled content: None permitted.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: In a circular area of 500 mm radius measured from the tree stem, 50mm depth.

Finished level of mulch: 30 mm below adjacent grassed or paved areas.

596A RABBIT HEDGE

TO TREES

- Refer to drawing.
- Manufacturer: Acorn Planting Products (or similar approved).
- Product reference: Spiral Guard..
- Type: Spiral.
- Material: HDPE.

- Size: 0.6 m high x 50 mm diameter or greater to suit girth of tree.
- Colour: Brown.
- Support: 900mm Bamboo Cane (300mm below ground level).
- General: Ensure that protection methods do not impede natural movement of trees or restrict growth.

Q35 Landscape Maintenance GENERALLY

101 MAINTENANCE PERIOD

• The whole of the works are to be maintained for a period of twelve months from the date of Practical Completion.

106 SCOPE OF MAINTENANCE

- Maintenance shall include all operations to keep the works in good order and in tidy condition until areas are inspected, authorised and handed over.
- The number of maintenance visits and operations will be as stated in the Schedule of Work but must be sufficient to ensure that all of the specified operations are carried out.
- Allow for a minimum of 21 maintenance visits during the twelve month period. A visit be defined as the period of time required by the Contractor to carry out all of the maintenance items specified in the Schedule of Work and below.

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.

155 WATERING

- Supply: to be confirmed.
- 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: As necessary for the continued thriving of all planting.

160 WATER RESTRICTIONS

• 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

- General: Unless specified otherwise, dispose of arisings as follows:
- Biodegradable arisings: Remove to recycling facility.
- Tree roots and stumps: Remove from site.
- Shrub and tree prunings: Remove to recycling facility. Litter and nonbiodegradable arisings: Remove from site.

180 CHIPPING OR SHREDDING

General: Not permitted on site.

190 LITTER

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

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 AREAS

- General: Maintain turf 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: Prevent.
- Damage: Repair trampling, abrasion or scalping.
- Ornamental lawns: Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
- Edges: Neat and well defined, in clean straight lines or smooth flowing curves.
- Litter and fallen leaves: Remove regularly to maintain a neat appearance.
- Keep the grass sward substantially free of broad leaved weed as instructed by the Contract Administrator, by applying suitabyle selective herbicides. No herbicide application shall occur in areas designated for wild flora.
- Apply fertiliser to grass sward during spring and autumn, in accordance with the requirements stated in the schedule of work.
 Apply moss killer to grass sward, as instructed by the Contract Administrator.

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. Drought or wet conditions: Obtain instructions.

225 TREE STEMS

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

250 LEAF REMOVAL

- Operations: Collect fallen leaves.
- Special requirements: None. Disposal: Remove from site for recycling.

255 FIRST CUT OF ALL GRASSED AREAS

- Height of initial growth: 40-75mm.
- Preparation:
- Debris and litter: Remove.
- Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 30mm.
- Mower type: Contractor's choice.

260 MOWING LAWNS

• Grass height: Maintain between 19 and 30 mm. Arisings: Spread evenly over cut areas, excessive arising to be removed from site.

270 MOWING ROUGH GRASSED AREAS

• Grass height: Maintain between 50 and 75 mm.

285 TOP DRESSING

- Location: Where required.
- Timing: In autumn following scarification and aeration.
- Material: Compost/ sand/ loam mix.
- Supplier: Contractor's choice.
- Product reference: Contractor's choice.
- Declaration of analysis: Submit.
- Additional analyses: Not required.
- Samples: Not required. Application rate: as supplier's recommendations.

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 HOLLOWS AND BUMPS IN TURF Standard: To BS 7370-3, clauses 12.4 and 12.5.

330 SELECTIVE HERBICIDE

- Location: All lawns.
- Herbicide: Contractor's choice. Areas not to be sprayed: Wildflower areas.

350 FERTILIZER - SPRING APPLICATION

• Type: Scotts Professional, Spring/summer fertiliser 9+7+7 or similar approved. Application rate: as manufacturer's recommendations.

360 FERTILIZER - AUTUMN APPLICATION

• Type: Scotts Professional, Autumn fertiliser 4+12+12 or similar approved.

Application rate: as manufacturer's recommendations.

381 REINSTATEMENT OF WORN OR DAMAGED LAWNS

- Worn or damaged areas: Make good by returfing or reseeding:
- Returfing 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.

TREES/HEDGES

500A ESTABLISHMENT OF NEW PLANTING

- Duration: One year.
- Weed control:
- Method: Keep planting beds clear of weeds by handweeding unless otherwise stated. Spot treatment of perennial weed with herbicide is only to be used where approved by the Contract Administrator.

 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.
 Watering: Contractor's choice to maintain healthy growth.

502 ESTABLISHMENT OF NEW PLANTING - FERTILIZER

- Time of year: March or April.
- Type: Slow release Enmag CRF or similar approved.
- Spreading: Spread evenly. Carefully lift and replace any mulch materials. Application rate: As manufacturer's recommendations.

510 TREE STAKES AND TIES

- Inspection/ Maintenance times: At each 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, refix 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: only when instructed when trees are sufficiently established. Fill stake holes with lightly compacted soil.

515 TREE GUY WIRES

- Inspection/ Maintenance times: At each maintenance visit and immediately after strong winds.
- Operations:
- Replace or resecure loose or missing guy wires.
- Adjust to suit stem growth and to provide correct and uniform tension. Removal: only when instructed when trees are sufficiently established.

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, refix or replace to original specification and to prevent chafing.

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.

545 PRUNING OF EXCESSIVE OVERHANG

- Timing: Annually.
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
 Special requirements: None.

550 PRUNING OF EXCESSIVE HEIGHT

 Timing: Annually. Operations: Remove excessive height if required.

555 PRUNING TREES AND SHRUBS

• Standard: To BS 7370-4. Special requirements: None.

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.

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 1 mm diameter black plastics coated steel wire.

Supporting structures: Check and repair as necessary.

630 DEAD AND DISEASED PLANTS

 Removal: Within one week of notification. Replacement: 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: Obtain approval from Contract Adminstrator of alternatives if original species are unavailable. Proposed substitutions may not be acceptable and submission of further alternatives may be required.
- Dressing: Slow release fertilizer:
- Type: Enmag CRF or similar approved. Application rate: As manufacturer's recommendations.

645 WEED CONTROL GENERALLY

• Weed tolerance: At all times, weed cover less than 5% and no weed to exceed 100 mm high. Adjacent plants, trees and grass: Do not damage.

650 HAND WEEDING

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

657 HERBICIDE TO KILL REGROWTH

• Type: Suitable foliar acting herbicide to kill regrowth. Timing: Allow recommended period for herbicide to take effect before clearing dead

670 WEED CONTROL WITH SUMMER HERBICIDE

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

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.

695 FERTILIZING ESTABLISHED TREES AND SHRUBS

- Time of year: During February or March.
- Type of fertilizer: Slow release.
- Application: Spread evenly. Rate: As manufacturer's recommendations.

705 WINTER LEAF REMOVAL

 Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds. Arisings: Remove to recycling facility.

920 FENCING

• Fences: Inspect and repair to maintain protection against rabbits, where fencing is installed.

705 MAINTENANCE WORKS

- Maintenance works to External Planting are specified in: Section Q35 and the schedule of works.
- The contractor should refer to this for all operations that are to be carried out during the specified maintenance period.

707 MAINTENANCE PRIOR TO PRACTICAL COMPLETION

- The Contractor shall physically maintain the planted areas prior to completion at his own expense unless otherwise agreed with the Contract Administrator.
- Maintenance shall include all of the works that are specified in section Q35 and the Schedule of Work to keep areas in an acceptable condition prior to be accepted for handover. The Contractor shall be responsible for any watering of planted areas prior to completion.

710A MAINTENANCE

- Duration: Carry out the operations in Section Q35 from completion of planting until practical completion.
- Frequency of maintenance visits: Fortnightly during growing season or as dictated by the season.

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.

721 DEFECTS LIABILITY

 Any defects which appear within the Defects Liability Period and which are due to materials and workmanship not in accordance with the Contract Documentation shall be made good or replaced by the Contractor at his own cost.

722A DEFECTS INSPECTION BY CONTRACTOR

 The Contractor shall independently make an inspection to ascertain works required under Defects Liability. These works shall be carried out just prior to twelve months after the Date of Practical Completion for tree planting, planted and grassed areas.

723 MAKING GOOD DEFECTS

- The Contractor shall arrange a Making Good of Defects inspection with the Contract Administrator to take place immediately after the completion of these works.
- At the Making Good of Defects inspection, all areas shall be complete, in good order and in a tidy condition; grass shall be mown and edges edged; planted areas and areas at the base of trees shall be weed free, tidy and in a friable state.

725 FINAL INSPECTION

• Should the Contract Administrator deem further work is required under Defects Liability the Contractor shall be responsible for maintenance and defects liability until these works are completed and a Certificate of Making Good Defects issued.

740 CLEANLINESS

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

WILDFLOWER MEADOW

800 MAINTENANCE OF WILDFLOWER MEADOW

- General: Wildflower meadows to be sown with N1 General Purpose Meadow Mixture in accordance with Manufacturers specification. Management regimes to areas of grassland have evolved over time to enhance the biodiversity of the industrial site and allow for improved ecological connectivity.
- Areas of the development are left to grow as meadow and then cut and collected in August. Other areas of grassland are maintained on a hierarchy basis to lessen the impact on the operator and reduce the green waste generated. This works on the basis of Ride-on-mower (cut & drop)-hand mower (cut & collect) and finally strimming if required.

801 DELIVERY

In the first-year meadow establishment to be reviewed but suggest the wildflower meadow to be cut on a regular basis to prevent the establishment and control of weeds. Sward to be retained short in the first year until June to allow wildflowers to see with the proposal every time the vegetation height reaches 10 to 15cm. Remove all cut material to avoid smothering the sward and compost. After the first year the wildflower will be cut only twice a year, the first cut in early spring (March / April) and the second cut to take place end of the flowering season during September / October. Remove all cuttings and remove untidy growth in an extended growing season.

802 SOWING

- Mix seed to ensure even species of distribution
- Surface broadcast with fertilizer spreader
- Rate 5g/m2 (50kg/ha 80:20 mixes) or 1.0g/m2/ha pure wildflower mixtures)
- Sand up small seeding rates with sand or sawdust

803 MAINTENANCE SUMMARY

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. Drought or wet conditions: Obtain instructions.
- FIRST YEAR •
- First cut 5cm March/April (Spring Seeding 1st cut in May)
- Preparation:
- Debris and litter: Remove.
- Stones and earth clods larger than 25 mm in any dimension: Remove
- Cut every 2 months or when sward reaches approx 15 cm. Meadow to be cut on regular basis to prevent the establishment and control of weeds
- Stop cutting in June-August to allow wildflowers to seed
- Final cut September/October
- Remove all cuttings
- Mower type: Contractor's choice.

FUTURE YEARS

- First cut 5cm March / April
- Second cut 5cm September / October

804 MONITORING

- Monitoring of established grassland to determine requirements for weed control and management.

APPENDICES

Appendix 1 - List of Herbicides Appendix 2 - Years 1-5 Maintenance Programme Appendix 3 – 09889 – 22 – 02 Existing Topographical Survey Appendix 4 – 09889 BSP 22 – 2001 - Proposed Landscaping Plan

Appendix 1 - List of Herbicides

Area to be treated or type of weed growth	Recommended active ingredients	Herbicide Trade name(s)	Manufacturer Categor		Time of Application		
Weeds in shrub beds	Oxadiazon	Festival	Bayer	1	Treat from January to June avoiding young leaves & shoots.		
Spot treatment of weeds in shrub beds and around trees.	Glyphosate	Round-up Pro Biactive 450	Monsanto	5	During active growing season. No residual effect. Folair acting herbicide: to be applied with great care among trees and shrubs using spray guard or weed wipe. April- September.		
And as a total contact weed killer around non-edible ornamental crops.	Glufosinate - ammonium	Finale	Bayer	4	As for round up.		
Brambles and woody weeds	Glyphosate Pyraflufen-ethyl	Hammer	Scotts	4 / 5	During active growing season, April to September.		
Total weed control on hard surfaces.	Glyphosate, Diflufenican	Pistol – Non selective total herbicide	Bayer	1	March to end September. Total weed control with residual effect to prevent germination of weed seedlings.		
Weed & Moss Killer	Carfentrazone- ethyl, Mecoprop-P	Scotts Jewel - Weed & Moss Killer	Scotts	Moss killer	Spring to late summer. Do not apply during freezing conditions or drought.		
Selective treatment of broad leaved weeds in established turf.	Dicamba DMA MCPA DMA Mecoprop-P DMA	Re-Act	Scotts	7	April – September (when grass is actively growing).		
Selective treatment of broad leaved weeds in newly sown turf.	Dicamba DMA MCPA DMA Mecoprop-P DMA	Re-Act	Scotts	7	April – September (when grass is actively growing).		

Key to categories of herbicides:

- 1. Residual, high persistence, high knockdown
- 2. Residual, high persistence, limited knockdown
- 3. Residual, low persistence, high knockdown
- 4. Contact, no persistence, high knockdown
- 5. Translocated, low persistence, high knockdown
- 6. Selective grasskillers
- 7. Selective broadleaf killers
- 8. Wood-weed and scrub killers
- 9. Total weed killers

(Note – 'knockdown' refers to the ability of a chemical to kill established weeds).

Appendix 2 - Years 1-5 Maintenance Programme

OPERATION	J	F	м	A	м	J	J	A	s	ο	N	D
GENERAL MAINTENANCE								1				
Plant replacement inspection									x1			
Plant replacement	As req'd	d								As requir	ed	
Watering of new planting			As requir	ed								
Refirming	As require	ed										
Pest and disease control	As require	ed										
Plant support	As require	ed										
Weed control to beds		x1	x2	x2	x2	x2	x2	x2	x2	x2	x1	
Fertilizer application			x1									
Removal of litter	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2
Leaf clearance	x2	x2								x2	x2	x2
Topping up Mulch											x1	
GRASSED AREAS (where applicable)												
Mowing (Excluding Meadow Grass / Wildflower)		x1	x2	x3	x3	x3	x3	x3	x3	x2	x1	
Edge trimming/strimming		x1	x2	x3	x3	x3	x3	x3	x3	x2	x1	
Edge cutting			x1						x1			
Fertilizer application				x1					x1			
Herbicide application				As require	ed							
Damage Repair		As requir	ed							As requir	ed	
Meadow Grass - 1st Year	*Cut regu	larly to 4-	6cm	x1		x1		x1		x1		
Meadow Grass - 2nd Year onwards			x1	Cut to 4-7	7.5cm		x1	Cut to 4-	7.5cm	x1		
Meadow Grass to Base of Attenuation Basins			x1							x1		
TREES												
Weed control	As require	ed										
Tree inspection	x1	x1	x1	x1	x1	x1	x1	x1	x1	x1	x1	x1
Formative pruning As required										As require	ed	
Tree removal (dead)	As require	ed										
Watering of newly planted trees Every 1-2 weeks during dry spells. To field capacity.												
HARD LANDSCAPED AREAS												
Sweep, litter pick and weed control	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2
Gritting and snow clearance	As require	ed									As require	ed
Fixtures & defects (paving, seating etc)		x2	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2
Rectify hard landscape defects	As require	ed										
Removal of graffiti	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2	x2

FREQUENCY KEY: MONTHLY = x1 FORTNIGHTLY = x2 3 TIMES MONTHLY = x3 (every 7-10 days) WEEKLY = x4 Appendix 3 – 09889 – 22 – 02 Existing Topographical Survey



Existing Topographical Survey



Overgrown Banking

Overgrown Banking

_____ Assumed Boundary

HAZARD / ACTIVITY LEADING TO UNUSUAL, SIGNIFICANT OR UNACCEPTABLE RISKS DURING CONSTRUCTION ARE IDENTIFIED ON THIS

DRAWING AS: The list below identifies certain risks but does not cover all possible unusual etc situations which may be encountered during the construction process, it is also therefore the main contractor's responsibility to identify any further risks / hazards and take appropriate action. Risks / Hazards particular to this drawing are listed below in numerical references, please refer to architectural risk register for further details: N/A - Existing Survey

- NOTES;
- Levels related to OSGB 1936-GRID OSTN15 GPS Datum
 Co-ordinates related to UK GRID OSTN15 3. Drawing scale 1:250 when plotted on A0 drawing sheet
- 4. Underground services not show
- 5. Areas not surveyed due to inaccessible through dense vegetation or as agreed with client prior. 6. Assumed Boundary taken from information provided by others

KEY TO SYMBOL/ANNOTATION LEVELS

AC	-	Air Conditioning Unit
BEMB	-	Bottom of embankment
CONC	-	Concrete
EV	-	Eaves Height
FFL	-	Finished Floor Level
FN	-	Fence
GATE	-	Gate
GRAV	-	Gravel
GUL	-	SW Gully
HG	-	Hedge
IC	-	Inspection Chamber
KRB	-	Kerb
LP	-	Lamp post
MH	-	Man Hole
POST	-	Post
RD	-	Road
RID	-	Ridge Height
RP	-	Rodding Point
RWP	-	Rainwater Pipe
SH	-	Spot Height
ST	-	Step
TFN	-	Top of Fence
TKRB	-	Top of Kerb
TP	-	Telegraph Pole
TR	-	Tree



Appendix 4 – 09889 BSP 22 – 2001 - Proposed Landscaping Plan





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