**Landscape Specification for Environment Agency**

 **Landscape Works Implementation and**

**Establishment Aftercare Works**

 **Radcliffe & Redvales Phase 1**

 **October 2021**

**Environment Agency**

**Horizon House**

**Deanery Road**

**Bristol**

**BS1 5AH**

**June 2018 Version 2**

**Using this Landscape Specification for Environment Agency Landscape and Establishment Aftercare Works**

This Environment Agency Landscape Specification for Works Implementation and Establishment Aftercare Works follows the Common Arrangement of Work Sections (CAWS) which defines an efficient and widely accepted arrangement for specifications and schedules of quantities for construction projects. The template comprises a comprehensive set of detailed work sections, all within a classification framework of Groups and Sub-groups and follows the National Building Specification (NBS) format for Landscape Works.

It consists of standard paragraphs arranged in work sections which are reproduced in project specifications to define performance of components, elements and services, and the quality of materials and workmanship required. Users will be expected to be licensed for the use of NBS Landscape.

Any additional or amended clauses that are required for a specific piece of work and which will vary this specification template will be notified to the landscape contractor at the time of procuring a Contract.

Within this Specification, sections of text are highlighted in different ways to denote the following meanings:

* Red text is used to highlight notes and contract / project specific items to be completed.
* Green text is used to highlight clauses that have been amended or added to the specification by the Environment Agency and are not standard NBS clauses.
* Blue text highlights any wetland-related specification clauses amended or added by the Environment Agency and are not standard NBS clauses.
* The # symbol denotes optional elements of clauses.

It is designed to operate in conjunction with the Standard Forms of Contract issued by the JCLI Contracts Forum, principally the Landscape Works Contract 2017 (JCLI LWC 2017) and the Landscape Maintenance Works Contract 2017 (JCLI LMWC 2017). Amendments to the relevant recitals, articles and contract particulars in both Forms of Contract for this specific contract are included in the separate JCLI Terms & Conditions document.

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# A10 Project Particulars

1. THE PROJECT:

Name: Radcliffe & Redvales Phase 1

Nature: Flood Risk Management Scheme

Location: The site is located to the North-East of the centre of Radcliffe (Ordnance Survey grid reference SD 79897 07582)

 120 EMPLOYER (CLIENT):

 Name: Environment Agency

 Address: Horizon House

 Deanery Road

 Bristol

 BS1 5AH

Contact: TBC

Telephone: TBC

130 PRINCIPAL CONTRACTOR (for the purpose of the CDM Regulations)

• Name: TBC

• Address: TBC

• Contact: TBC

• Telephone: TBC

• E-mail: TBC

140 NEAS LANDSCAPE ARCHITECT/CONTRACT ADMINISTRATOR (hereinafter referred to as CA”)

 Name: Julian Francis or as otherwise

 Chartered Landscape Architect (CMLI)

 Environment Agency, National Environmental Assessment Service (NEAS)

150 CDM COORDINATOR

• Name: TBC

• Address: TBC

• Contact: TBC

• Telephone: TBC

• E-mail: TBC

200 LANDSCAPE CONSULTANTS

• Description: Landscape Architects

• Name: Mott MacDonald

• Address: TBC

• Telephone: TBC

# A11 Tender and Contract Documents

120 CONTRACT DRAWINGS

 The Contract Drawings: All relevant drawings issued prior to the works being undertaken.

160 PRECONSTRUCTION INFORMATION

• Format: The Preconstruction information is described and referenced in these preliminaries in Section A34.

It refers to information given elsewhere in the preliminaries and other tender documents including the Environment Agency Pre Contract Information template.

180A OTHER DOCUMENTS

 Inspection: Drawings and other documents relating to the contract will be issued electronically. The documents include:

* Schedule of rates
* Contract Drawings
* Scope information

# A12 The Site / Existing Buildings

110 THE SITE:

 The landscape works are situated within Close Park and Dumers Lane which is adjacent to the River Irwell.

140 EXISTING UTILITIES AND SERVICES

• To be provided with Preconstruction Information.

160A SOILS AND GROUND WATER

• To be provided with Preconstruction Information.

170A SITE INVESTIGATION

• To be provided with Preconstruction Information.

175 SITE LOCATION PLANS:

• Drawings: (Information shown is indicative only):

* + ENV0000389C-MMD-DZ-00-DR-L-0307008-S2-C03 FLM Close Park 1 of 2
	+ ENV0000389C-MMD-DZ-00-DR-L-0307023-S2-C01 FLM Close Park 2 of 2
	+ ENV0000389C-MMD-DZ-CP-DR-EN-0302015-C03 Close Park WFD Area
	+ ENV0000389C-MMD-DZ-00-DR-L-0307009-S2-C03 FLM Dumers Lane 1 of 1
	+ ENV0000389C-MMD-DZ-CP-DR-L-0307040-S2-P02 Close Park Seeding Plan

180 HEALTH AND SAFETY FILE (AS APPLICABLE)

• Availability for inspection: The Health and Safety File for the site/ building may be seen by

appointment during normal office hours at: TBC at pre-start meeting or by CA.

• Other documents: TBC at pre-start meeting or by CA.

• Arrangements for inspection: TBC at pre-start meeting or by CA.

200 ACCESS TO THE SITE

• Description: TBC at pre-start meeting or by Client.

• Limitations: TBC at pre-start meeting or by Client.

210 PARKING

• Restrictions on parking of the Contractor's and employees' vehicles: TBC by Client.

220 USE OF THE SITE

• General: Do not use the site for any purpose other than carrying out the Works.

• Limitations: TBC.

230 SURROUNDING LAND/ BUILDING USES

• General: Adjacent or nearby uses or activities are as follows:

- TBC.

240 HEALTH AND SAFETY HAZARDS

• General: The nature and condition of the site/ building cannot be fully and certainly

ascertained before it is opened up. However the following hazards are or may be present:

- TBC.

• Information: The accuracy and sufficiency of this information is not guaranteed by the

Employer or the Employer's representative. Ascertain if any additional information is

required to ensure the safety of all persons and the Works.

• Site staff: Draw to the attention of all personnel working on the site the nature of any

possible contamination and the need to take appropriate precautionary measures.

250A SITE INFORMATION:

The Contractor should inspect the relevant drawings to ascertain the nature and extent of the work, and make himself conversant with all the site conditions, existing levels, means of access, storage space for materials and plant, boundaries etc. and satisfy himself as to the supply or any conditions affecting labour. No claim due to lack of knowledge or information in connection with the above will be entertained.

# A13 Description of the Work

120 THE WORK:

Description: Landscape Implementation works and/or associated Landscape Management and Maintenance works as set out on drawings and as itemised and priced in the tendered Schedule of Rates.

130 WORK BY OTHERS CONCURRENT WITH THE CONTRACT

• Description: THIS WILL BE CONFIRMED TO THE LANDSCAPE CONTRACTOR WHERE APPLICABLE

# A20 The Contract

The following Forms of Contract will be deemed to operate:

1. The Joint Committee for Landscape Industries (JCLI) Landscape Maintenance Works Contract 2017 (JCLI LMWC 2017) published by the Landscape Institute.

Note the application of the Environment Agency publication *“Constructing a Better Environment”,* a *Safety, Health, Environment and Wellbeing (SHEW) Code of* *Practice*. All landscape contractors should ensure they are conversant with its content that is applied to all design and construction work we procure and deliver.

The JCLI Terms & Conditions that apply to this contract are in a separate document.

# A30 Tendering / Subletting / Supply

**MAIN CONTRACT TENDERING**

110A SCOPE:

General: These conditions are supplementary to those stated in the Invitation to Tender and on the Form of Offer.

145 TENDERING PROCEDURE:

General: In accordance with the principles of: Environment Agency and public procurement legislation.

Arithmetical errors: Drawings are dominant.

160 EXCLUSIONS:

• Inability to tender: Immediately inform if any parts of the work as defined in the tender

documents cannot be tendered.

• Relevant parts of the work: Define those parts, stating reasons for the inability to tender.

170 ACCEPTANCE OF TENDER:

• Acceptance: No guarantee is offered that any tender will be recommended for acceptance

or be accepted, or that reasons for non-acceptance will be given.

• Costs: No liability is accepted for any cost incurred in the preparation of any tender.

180 SITE VISIT:

Not applicable – The Contractor should inspect the relevant drawings to ascertain the nature and extent of the work.

190 PERIOD OF VALIDITY:

• Period: After submission or lodgement, keep tender open for consideration (unless

previously withdrawn) for not less than 90 days from the date fixed for the submission or lodgement of tenders.

• Date for possession/ commencement: See section A20.

**PRICING/ SUBMISSION OF DOCUMENTS**

210A PRELIMINARIES IN THE SPECIFICATION

Preliminaries /General Conditions sections (A10 – A35 inclusive) must not be relied on as complying with SMM7, and should be priced clearly as separate items on the schedule. Any additional items over those listed should be brought to the notice of the CA at the pre-start meeting if the landscape contractor believes them to be required.

250A PRICED SCHEDULE OF RATES (SoR)

Alterations and qualifications to the Schedule must not be made without the written consent of the CA. Tenders containing such alterations or qualifications may be rejected.

Measurements: Where not stated, ascertain from the drawings.

Deemed included: Costs relating to items which are not priced will be deemed to have been included elsewhere in the Schedules.

270 ERRORS IN PRICED SCHEDULES:

Will be in accordance with Environment Agency and public procurement legislation.

320 SPECIFICATION WITHOUT QUANTITIES:

Where and to the extent that quantities are not included in the specification, tenders must include for all work shown or described in the tender documents as a whole or clearly apparent as being necessary for the complete and proper execution of the works.

440 SCHEDULE OF RATES

Content: An (unpriced) schedule is included with the tender documents.

Fully priced copy: Must be submitted with the tender return.

450 REMEASUREMENT:

All works, for which rates are tendered, may be remeasured on completion of that item or at Practical Completion, if so requested by either party. All remeasurement shall be conducted or agreed by the CA or if applicable, by the CA’s representative. Such remeasurement will supersede the listed quantities as a basis for payment.

460 CONTINGENCIES:

Where included in a SoR, the purpose of this sum is to cover the cost of those small items which may be overlooked, and is deducted from the contract sum on award of a contract. This sum is expended only on instruction from the CA and otherwise represents a saving to the Employer.

480 PROGRAMME

• Programme of work: A programme of works showing the sequence and timing of the principal parts of the Works will need to be submitted by the Landscape Contractor to the Contract Administrator after the pre-start meeting.

# A31 Provision, Content and Use of Documents

**DEFINITIONS AND INTERPRETATIONS**

110 DEFINITIONS

• Meaning: Terms, derived terms and synonyms used in the preliminaries/ general

conditions and specification are as stated therein or in the appropriate British Standard or

British Standard glossary.

115 CA

Means the person nominated in the Contract as Landscape Architect or Contract Administrator or his authorised representative.

118 IN WRITING

When required to notify, inform, instruct, agree, confirm, obtain approval or obtain instructions, do so in writing.

120 COMMUNICATION

• Definition: Includes advise, inform, submit, give notice, instruct, agree, confirm, seek or

obtain information, consent or instructions, or make arrangements.

• Format: In writing to the person named in clause A10/140 unless specified otherwise.

• Response: Do not proceed until response has been received.

140 APPROVAL (and words derived therefrom):

Means the approval in writing from the CA, unless specified otherwise.

155 SUBMIT PROPOSALS

• Meaning: Submit information in response to specified requirements.

160A TERMS USED IN SPECIFICATION (SEE ALSO CLAUSES 270-375)

• Remove: Disconnect, dismantle as necessary and take out the designated products or

work and associated accessories, fixings, supports, linings and bedding materials. Dispose

of unwanted materials. Excludes taking out and disposing of associated pipe work, wiring,

ductwork or other services.

• Fix: Receive, unload, handle, store, protect, place and fasten in position and disposal of

waste and surplus packaging including all labour, materials and site equipment for that

purpose.

• Supply and fix: As above, but including supply of products to be fixed. All products to be

supplied and fixed complete unless stated otherwise. Include for all fixing materials.

• Keep for reuse: Do not damage designated products or work. Clean off bedding and

jointing materials. Stack neatly, adequately protect and store until required by the

Employer/ Purchaser or for use in the Works as instructed.

• Replace: Supply and fix new products matching those removed. Execute work to match

original new state of that removed.

• Repair: Execute remedial work to designated products. Make secure, sound and neat.

Excludes redecoration and/ or replacement.

• Ease: Adjust moving parts of designated products or work to achieve free movement and

good fit in open and closed positions.

• System: Equipment, accessories, controls, supports and ancillary items, including

installation, necessary for that section of the work to function.

200 SUBSTITUTION OF PRODUCTS

• Products: If an alternative product to that specified is proposed, obtain approval before

ordering the product.

• Reasons: Submit reasons for the proposed substitution.

• Documentation: Submit relevant information, including:

- manufacturer and product reference;

- cost;

- availability;

- relevant standards;

- performance;

- function;

- compatibility of accessories;

- proposed revisions to drawings and specification;

- compatibility with adjacent work;

- appearance;

- copy of warranty/ guarantee.

• Alterations to adjacent work: If needed, advise scope, nature and cost.

• Manufacturers' guarantees: If substitution is accepted, submit before ordering products.

210A CROSS-REFERENCE TO THE SPECIFICATION:

* Where a numerical cross-reference to a specification section or clause is given on drawings or in the schedule or other pricing document, the Contractor must verify its accuracy by checking the remainder of the annotation or item description against the terminology used in the referred to section or clause.
* Where a cross-reference for a particular type of work feature material or product is given, relevant clause(s) elsewhere in the specification referred to, dealing with general matters, ancillary products and workmanship also apply.
* The Contractor must, before proceeding, obtain clarification or instructions in relation to any discrepancy or ambiguity which he may discover.

220 REFERENCED DOCUMENTS

• Conflicts: Specification prevails over referenced documents.

225 REFERENCES TO BSI DOCUMENTS:

These are the versions and amendments listed in the British Standards Catalogue (current version).

235 MANUFACTURER AND REFERENCE:

Where used in combination:

* ‘Manufacturer’ means the firm under whose name the particular product is marketed.
* ‘Reference’ means the proprietary brand name and/or reference by which the particular product is identified.

270 OR EQUIVALENT APPROVED:

Means that a product of different manufacture may be substituted if prior approval has been obtained, but the CA reserves the right to insist on the named product(s) specified, unless agreed otherwise.

310 DEMOLISHING/REMOVING/CUTTING:

These terms mean remove existing works so described and all associated accessories, fastenings, linings and bedding materials, without damaging adjacent work to be retained and cart to tip unwanted materials. Refer to Clause A31:375

320 REFIX:

Means:

* Carefully remove existing work required to be refixed. Clean and repair materials as necessary.
* Set aside and adequately protect until required.
* Relocate accurately and fix securely using fixing and jointing materials and methods to match existing, or alternatives.
* Comply with additional specified requirements.

330 MAKE GOOD:

Means carry out local remedial work, including the following as appropriate and necessary to leave the work in a sound, safe and neat condition:

* Remove defective vegetation, parts of existing finishes, components or whole items as necessary, together with fixings, foundations etc.
* Prepare soil, sub base, foundations, surfaces, extend existing finishes, make minor repairs and adjustments.
* Replace, reseed, refix, restick or redecorate as directed.

350 RENEW: Means carefully removing existing work and replace:

* With materials/products identical to those removed or equivalent substitutes of approved appearance.
* Using methods similar to those used in constructing the removed work.
* To meet additionally specified requirements.

371 TO MATCH EXISTING:

Means use products, materials and methods to closely match all visual characteristics and features of the existing work, with joints between existing and new work as inconspicuous as possible, all to the approval of appearance and to additional specified requirements.

375 CART TO LICENCED FACILITY/REMOVE FROM SITE

The Environment Agency has a target in our e:Mission Sustainability Plan to recover, reuse and recycle more than 95% of waste produced from our construction projects. Our target is to reduce the environmental impact of our supply chain (by intensity) by 20%. The reduction will be across four key impact areas: greenhouse gases, water, land use and waste.

The contractor will minimise the waste sent to landfill by following the waste hierarchy through the project planning process and documenting this in the relevant Site Waste Management Plan as below:

• Eliminate;

• Reduce;

• Re-use & Repair;

• Recycle or compost;

• Recover (i.e. energy recovery).

This waste hierarchy may be updated at any time during the contract in accordance with best practice guidelines.

In the event that material does need to be taken/removed from site, this means take off site to a licenced facility as soon as possible at Contractor’s expense. Under the Environmental Protection Act and any relevant Waste Regulations legislation, removal and carriage of all waste so defined shall be performed by a registered carrier and disposal shall take place at a suitable licensed facility. An authorised copy of the carrier’s current Certificate of Registration, together with the name of the receiving facility and its licensing authority, shall be provided to the CA prior to the removal of any waste. Refer also to clauses A34: 400-500. No burning of waste on site is permitted.

The contractor will undertake reasonable checks to ensure the waste carrier/s and licensed facility will remain authorised to transport and receive EA waste at all times. Evidence of these checks will be made in the Site Waste Management Plan (SWMP).

If at any time the waste carriers licence or waste permits/exemptions are withdrawn or revoked, the EA contract manager must be informed immediately and any further movement of waste with the waste carrier or to the relevant site must cease until they become authorised again. In this instance, the contractor will need to find a legally compliant replacement to minimise operational disruption to the EA at no extra cost ensuring all the relevant details are provided to the EA contract manager.

Refer to Section A34:267-269 for additional guidance on biosecurity measures and control procedures in relation to the management of waste associated with plant diseases and Invasive Non-Native Plant Species (INNS).

**DOCUMENTS PROVIDED ON BEHALF OF THE EMPLOYER**

415 ADDITIONAL COPIES OF DRAWINGS: Drawings will be issued electronically.

430 ADDITIONAL COPIES OF SPECIFICATION: The Specification will be issued electronically.

440A DIMENSIONS:

The accuracy of dimensions scaled from the drawings is NOT guaranteed. Immediately obtain from the Delegated CA or CA any dimensions required but not given in figures on the drawings nor calculable from figures on the drawings. This includes queries relating to accuracy or the scale stated on drawings.

450 MEASURED QUANTITIES

• Ordering products and constructing the Works: The accuracy and sufficiency of the

measured quantities is not guaranteed.

• Precedence: The specification and drawings shall override the measured quantities.

460 THE SPECIFICATION

• Coordination: All sections must be read in conjunction with Main Contract Preliminaries/

General conditions.

610 PRODUCTION INFORMATION

• Contractor/ Domestic subcontractor provide: On request

• Submit:

- For comment and make any necessary amendments.

- Sufficient copies of final version for distribution to all affected parties.

630 TECHNICAL LITERATURE

• Information: Keep on site for reference by all supervisory personnel:

- Manufacturers' current literature relating to all products to be used in the Works.

- Relevant British, EN or ISO Standards.

640 MAINTENANCE INSTRUCTIONS AND GUARANTEES

• Components and equipment: Obtain or retain copies, register with manufacturer and hand

over on or before completion of the Works.

• Information location: To be confirmed by CA

• Emergency call out services: Provide telephone numbers for use after completion. Extent

of cover: TBC.

720 MAINTENANCE INSTRUCTIONS AND GUARANTEES:

1. Retain copies delivered with components and equipment (failing which, obtain), register with the manufacturer as necessary and hand over to the CA on or before Practical Completion.

2. Notify the CA of telephone numbers for emergency services by sub-contractors after Practical Completion.

# A32 Management of the Works

**GENERALLY**

110 SUPERVISION:

General: Accept responsibility for co-ordination, supervision and administration of the Works, including all sub-contracts.

Coordination: Arrange and monitor a programme with each sub-contractor, supplier, local authority and statutory undertaker, and obtain and supply information as necessary for co-ordination of the work.

120A INSURANCE:

Documentary evidence: Before starting work on site, submit current valid documentary evidence and/or policies and receipts for the insurances required by the Conditions of Contract.

130 INSURANCE CLAIMS:

Notice: If any event occurs, which may give rise to any claim or proceeding in respect of loss or damage to the Works or injury or damage to persons or property arising out of the works, immediately give notice in writing to the Employer, the person named in A10/140 and the Insurers.

Failure to notify: Indemnify the employer against any loss, which may be caused by failure to give such notice.

140 CLIMATIC CONDITIONS:

Information: Record accurately and retain:

1. Daily maximum and minimum air temperature (including overnight)
2. Delays due to adverse weather, including description of the weather, types of work affected and number of hours lost.

190 MATERIALS ON SITE:

Unless otherwise provided for in the specification and/or schedule of rates, materials found on site shall remain the property of the Employers and shall not be removed or used by the Contractor without the written express permission of the CA.

195 The Agency encourages the use of re-cycled materials and innovation on its projects subject to acceptance by the CA and EA

**PROGRAMME/ PROGRESS**

211 MASTER PROGRAMME:

* As soon as possible and before starting work on site, prepare in an approved format the master programme for the Works, which must make allowance for all:
	+ Sub-contractor’s work, including the completion of drawings etc. (see section A31), testing and commissioning.
	+ Work resulting from the instruction issued in regard to the expenditure of provisional sums.
	+ Work by others concurrent with the Contract. The nature and scope of which the relationship with preceding and following work and any relevant limitations on method, sequence or timing are suitably defined in the Contract Documents.
* Where and to the extent that the programme implications for work which is not so defined are impossible to assess, the Contractor should exclude it from his programme and confirm this when submitting the programme.
* Submit two copies to the CA.

245 START OF WORK ON SITE:

Notice: Before the proposed date for start of work on site give minimum notice of at least five working days to the CA.

260A SITE MEETINGS:

1. The CA and Principal Contractor will hold meetings from time to time to review progress and other matters arising from the administration of the Contract. Meetings will be held when appropriate.

2. The Contractor should attend all meetings requested by the CA and inform sub-contractors and suppliers when their presence is required.

290 NOTICE OF COMPLETION

• Requirement: Give notice of the anticipated dates of completion of the whole or parts of the

Works.

• Associated works: Ensure necessary access, services and facilities are complete.

• Period of notice (minimum): One weeks’ notice to CA for completion and practical completion.

300 ADVERSE WEATHER:

Use all reasonable and suitable building aids and methods to prevent or minimise delays during adverse weather conditions.

310A EXTENSIONS OF TIME:

Notice: When a notice of the cause or any delay or likely delay in the progress of the Works is given under JCLI Landscape Works Contract Clause 2.7, written notice must also be given of all other causes which apply concurrently. The Contractor shall, submit to the CA at the earliest possible date and in every case before the date set for completion:

1. Relevant particulars of the expected effects, if appropriate related to the concurrent causes;
2. An estimate of the extent, if any, of the expected delay in the completion of Works beyond the Date for Completion;
3. All other relevant information required by the CA.

410 APPLICATIONS FOR PAYMENT:

During implementation and upon completion of major sections of the contract works, the contractor may make application for payment to the CA at intervals of not less than four weeks. An initial draft application MUST be submitted by the contractor for review and acceptance by the CA prior to a formal submission and certification of payment by the delegated CA. Each application must be supported by a detailed breakdown of the works for which payment is due in the format provided in the schedule of rates, together with any CA Instructions implemented and approved.

Following practical completion and during the establishment maintenance period, the contractor may only make applications for payment at quarterly intervals (or half-yearly if mutually agreed with the CA). Annual payments will not normally be acceptable.

Each application should also clearly include the Environment Agency Purchase Order number and the correct contract name and must include for the deduction of the correct percentage of retention. This is normally 10% on all applications prior to the granting of Practical Completion, with 5% being released upon granting of Practical Completion. This 5% will then normally be retained throughout the entire establishment maintenance period without any further new deductions being made, and will be released on satisfactory standards being obtained at full completion and handover.

The Contractor should submit the top invoice to the Environment Agency for payment in accordance with the instructions received with the Purchase Order. At the same time, a copy of this invoice clearly marked as a “COPY” must also be submitted to the CA as a file copy and to assist in confirming submission of the top copy.

# A33 Quality Standards / Control

**STANDARDS OF PRODUCTS AND EXECUTIONS**

110A INCOMPLETE DOCUMENTATION

• General: Where and to the extent that products or work are not fully documented, they are

to be:

- Of a kind and standard appropriate to the nature and character of that part of the Works

where they will be used.

- Suitable for the purposes stated or reasonably to be inferred from the project

documents.

Contract documents: Omissions or errors in description and/ or quantity shall not vitiate

the Contract nor release the Contractor from any obligations or liabilities under the Contract.

- In accordance with good construction practice.

125 GENERAL QUALITIES OF PRODUCTS/MATERIALS:

* Whilst most products specified are likely to be new, the Environment Agency welcomes innovation in assisting us to avoid purchase, and for re-use and recycling wherever practicable. The landscape contractor is expected to engage with the CA to offer substitutes or other sustainable solutions where opportunities arise. For products and materials specified to a British Standard, obtain certificates of compliance from manufacturers when requested by CA;
* Where a choice of manufacturer or source of supply is allowed for any particular product or material, the whole quantity required to complete the work will normally be of the same type, manufacture and/or source unless otherwise approved. Re-cycled or re-used products will be considered, particularly where consistency in finish may not be critical. Produce written evidence of sources of supply when requested by the CA;
* Ensure that the whole quantity of each product and material required to complete the work is of consistent kind, size, quality and overall appearance unless circumstances dictate that this may not be critical and that after discussion and agreement with the CA, a mix of products may be acceptable;
* Where consistency of appearance is desirable, ensure consistency of supply from the same source. Unless otherwise approved, do not use different colour batches where they can be seen together;
* If materials are prone to deterioration or have a limited shelf life, order in suitable quantities to a programme and use in appropriate sequence. Innovation and good materials management will also minimise waste.

126 SUSTAINABILITY OF PRODUCTS/MATERIALS

In order to minimise carbon emissions and other environmental impacts of specified construction products, the Environment Agency looks to:

* Increased percentage of re-used and recycled materials in projects;
* Local sourcing for minimal transport impacts;
* Ensure all timber is from legal and sustainable sources;
* Reduced waste and improve resource efficiency - our e:Mission Sustainability Plan target is to reduce the environmental impact of our supply chain (by intensity) by 20%;
* Reduced exposure to environmental risk;
* Demonstration of social responsibility and protect public image;
* Green procurement – buying the right product from the right suppliers;
* Encouraging the procurement of products/materials which have packaging that can be re-used/recycled.

128 PROPRIETARY PRODUCTS/MANUFACTURERS RECOMMENDATIONS:

* Handle, store, prepare and use or fix each product in accordance with its manufacturer’s current printed or written recommendations/instructions. Inform the CA if these conflict with any other specified requirement. Submit copies to the CA when requested;
* The tender will be deemed to be based on the products as marketed and recommendations on their use current at the date of tender;
* Obtain confirmation from the manufacturers that the products specified and recommendations on their use have not been changed since that time. Where such change has occurred inform the CA and do not place orders for, or use the affected products, without further instructions.

140A CHECKING COMPLIANCE OF PRODUCTS/MATERIALS

Check all delivery tickets, labels, identification marks, and where appropriate, the goods themselves to ensure that all products comply with the project documents. Where different types of any product are specified, check to ensure that the correct type is being used in each location and in particular, check that:

* The sources, types, qualities, finishes and colours are correct and match any approved samples;
* All accessories and fixings which should be supplied with the goods have been supplied;
* Sizes and dimensions are correct. Where tolerances of component are critical, measure a sufficient quantity to ensure compliance;
* The delivered quantities are correct, to ensure that shortages do not cause delays in the work;
* The goods are clean, undamaged and otherwise in good condition, with any intact protective coverings and unbroken seals;
* Any materials which have a limited shelf life are not out of date.

145 PROTECTION OF PRODUCTS/MATERIALS:

* Keep from over-stressing and any other type of physical damage;
* Keep clean and free from contamination and staining;
* Keep dry and in a suitably low humidity atmosphere to prevent premature setting, moisture movement and similar defects. Where appropriate, allow free air movement around and between stored components;
* Prevent excessively high or low temperatures and rapid changes of temperature in the material;
* Protect adequately from rain, frost, sun and other elements as appropriate;
* Ensure that sheds and covers are of ample size, in good weatherproof condition and well secured;
* Keep different types and grades of materials separately and adequately ventilated;
* So far as possible, keep materials in their original wrappings, packaging’s or containers, with unbroken seals, until immediately before they are used;
* Wherever possible, retain protective wrappings after fixing until shortly before Practical Completion;
* If it is unavoidable to purchase products/materials without protective wrappings or packaging, ensure that these are recycled/disposed of at an appropriate facility;
* Ensure that protective measures are fully compatible with and not prejudicial to the products/materials.

165 SUSTAINABILITY OF PREVIOUS WORK AND CONDITIONS:

Before starting each new type or section of work, ensure that:

* Previous related work is appropriately complete, in accordance with the project documents, to a suitable standard and in a suitable condition to receive the new work;
* All necessary preparatory work has been carried out, including provision for services, damp proofing, priming and sealing.

175 GENERAL QUALITY OF WORKMANSHIP

* Operatives must be appropriately skilled and experienced for the type and quality of work;
* Inspect components/materials carefully before fixing or using and reject any that are defective;
* Fix or lay securely, accurately and in alignment;
* All proprietary materials/products shall be installed fully in accordance with the manufacturer’s recommendations;
* Provide suitable, tight packings at screwed and bolted fixing points to take up tolerances and prevent distortion. Do not over tighten fixings;
* Adjust location and fixing of components so that joints that are to be finished with mortar or sealant or otherwise left open to view are even and regular;
* Ensure that all moving parts operate properly and freely. Do not cut, grind or plane pre-finished component to remedy binding or poor fit without approval;
* Take all necessary precautions to prevent damage to the work from frost, rain and other hazards.

185 COMPARARIVE TRIALS:

* From time to time, the CA may require (the Contractor) to carry out comparative appraisals of alternative materials/procedures. In such cases, the contractor shall implement the items to be compared in a precisely controlled manner. Such that the particular areas of work involved and their implementation are exactly similar in every particular, other than the aspect to be compared;
* Except as otherwise instructed, the treatment of the areas/items to be compared should be as close to normal practice, as modified by the general specification, as practicable;
* Materials /procedures to be compared may not be varied in any particular by the Contractor from those specified. Special care should therefore be taken to order any necessary materials or make any necessary arrangements, in good time to avoid delays on site;
* The Contractor shall ensure that implementation of such comparative trials is directly supervised on site by a competent foreman or manager;
* The Contractor should also notify the CA at least two days prior to implementation to enable a representative of the CA to be present during implementation.

**SAMPLES/APPROVALS:**

210A SAMPLES:

Where approval of products or material is specified, submit samples or other evidence of suitability. Do not confirm orders or use materials until approval of samples has been obtained. Retain approved samples in good, clean condition on site for comparison with products and materials used in the Works. Remove when no longer required.

225 APPROVALS:

Where and to the extent that products, materials or work are specified to be approved or the CA instructs or requires that they are to be approved, the same must be supplied and executed to comply with all other requirements and in respect of the stated or implied characteristics either:

1. To the express approval of the CA or
2. To match a sample expressly approved by the CA as a standard for the purpose.

**ACCURACY/SETTING OUT GENERALLY**

320A SETTING OUT:

* The Contractor shall be responsible for setting out and checking all levels and dimensions of the works shown on the drawings;
* The Contractor shall carry out a site visit and measured survey to enable him to carry out the above checks and price accordingly;
* Notify CA in writing of any discrepancies and obtain instructions before proceeding.

330A APPEARANCE AND FIT

* Arrange the setting out, erection, juxtaposition of components and application of finishes (working within the practical limits of the design and the specification) to ensure there is satisfactory fit at junctions, that there are no practically or visually unacceptable changes in plane, line or level and that the finished work has a true and regular appearance;
* Wherever satisfactory accuracy, fit and /or appearance of the work are likely to be critical or difficult to achieve, obtain approval of proposals or of the appearance of the relevant aspects of the partially finished work as soon as possible.

360 RECORD DRAWINGS

Site setting out drawing: Record details of all grid lines, setting-out stations, benchmarks and profiles. Retain on-site throughout the contract and hand to CA on completion.

**SERVICES GENERALLY**

410A SERVICE REGULATIONS:

Any work carried out to or which affects new or existing services must be in accordance with the byelaws or regulations of the relevant statutory authority and entirely to their inspector’s satisfaction.

425 EXISTING MAINS/SERVICES:

The landscape contractor will be provided with copies of any service plans. The contractor is reminded that they must follow their own health and safety arrangements for avoiding service strikes, as a minimum meeting the standards of HSE publication [HSG 47](http://www.hse.gov.uk/pubns/books/hsg47.htm) – “Avoiding Danger from Underground Services”. Reference should also be made to the EA’s SHEW Code of Practice in relation to management of work around services.

The contractor shall confirm and mark the precise location of underground services in the field. The Contractor shall seek and conform to the guidelines laid down by each utility regarding work in the vicinity of each service.

**SUPERVISION/ INSPECTION/ DEFECTIVE WORK**

511 SUPERVISION:

In addition to the constant management and supervision of the works provided by the contractor’s person in-charge, all significant types of work must be under the close control of competent trade supervisors to ensure maintenance of satisfactory quality and progress.

520 PERSON-IN-CHARGE:

Give one week’s notice to CA before changing the foreman-in-charge or site agent.

532 ACCESS FOR THE EMPLOYER AND HIS REPRESENTATIVES:

* Provide at all reasonable times access to the Works during working hours and to places where work is being prepared for the contract by the Contractor or sub-contractor;
* Access should be provided for routine maintenance of all existing grassed areas or shrub beds within the site boundary (if being maintained by others).

533 ACCESS FOR VEHICLES AND PEDESTRIANS TO PREMISES:

 Provide access at all times to premises, through co-operation with landowners and tenants where applicable.

570 PROPOSALS FOR RECTIFICATION OF DEFECTIVE WORK/MATERIALS:

* Within five working days of it becoming evident that the work or any materials or goods are not in accordance with the contract, the Contractor shall submit proposals to the CA for opening up, inspection, testing, making good or removal and re-execution;
* The Contractor shall allow for the possibility that such proposals may be unacceptable to the CA, and that he may instruct removal from the site.

580 MEASURES TO ESTABLISH ACCEPTABILITY:

Whenever inspection or testing shows that the work, materials or goods are not in accordance with the contract, and measures (e.g. testing, opening up, experimental making good) are taken to help in establishing whether or not the work is acceptable, such measures:

1. Will be at the expense of the Contractor;
2. Will not be considered for grounds for an extension of time.

**WORK AT/OR AFTER COMPLETION**

710 WORK BEFORE COMPLETION

• General: Make good all damage consequent upon the Works.

Temporary markings, coverings and protective wrappings: Remove unless otherwise

instructed.

• Cleaning: Clean the Works thoroughly inside and out, including all accessible ducts and

voids. Remove all splashes, deposits, efflorescence, rubbish and surplus materials.

• Cleaning materials and methods: As recommended by manufacturers of products being

cleaned, and must not damage or disfigure other materials or construction.

• COSHH dated data sheets: Obtain for all materials used for cleaning and ensure they are

used only as recommended by their manufacturers.

• Minor faults: Touch up in newly painted work, carefully matching colour and brushing out

edges. Repaint badly marked areas back to suitable breaks or junctions.

• Moving parts of new work: Adjust, ease and lubricate as necessary to ensure easy and

efficient operation, including doors, windows, drawers, ironmongery, appliances, valves

and controls.

712 PAINTED SURFACES:

Touch up minor faults in newly painted/repainted work, carefully matching colour, and brushing out edges. Repaint badly marked areas back to suitable breaks or junctions.

715 MOVING PARTS:

Adjust, ease and lubricate moving parts of new work as necessary to ensure easy and efficient operation, including ironmongery.

730 MAKING GOOD DEFECTS

 Make arrangements with the CA and give five working days’ notice of the precise dates for access to the various parts of the works for purposes of making good defects. Inform CA when remedial works to the various parts of the works are completed.

751 ENVIRONMENT AGENCY TIMBER REQUIREMENTS

Ensure all timber purchased for use on Environment Agency projects is from legal and sustainable sources in compliance with the UK Government Timber Procurement Policy and complies with the EA specific requirements.

The Timber Policy in the Minimum Requirements contains the requirements of the UK Government Timber Procurement Policy Timber Procurement Advice Note (TPAN) 5th Edition and Environment Agency specific requirements.

**Summary of Environment Agency Timber Purchasing Requirements**

|  |
| --- |
| This instruction applies to all purchases of timber by Environment Agency staff, suppliers and their supply chains purchasing on our behalf5 |
| **Timber Type** | **Requirements** |
| **Softwood**  | FSC[[1]](#footnote-1)/PEFC[[2]](#footnote-2) certified softwoods only [Note: coppiced material is exempt] |
| **Temperate Hardwood**  | FSC/PEFC/certified temperate hardwoods only [Note: coppiced material is exempt] |
| **Tropical Hardwood**  | Tropical hardwood will not be purchased unless it is an operational necessity. A business case must be completed for all potential applications / uses of tropical hardwood and senior management approval will be needed before any purchases can be made. If tropical hardwood is purchased, it must be FSC / PEFC certified only with a full chain of custody4. |
| **Recycled Timber** | From a waste hierarchy and resource use perspective the purchase of recycled timber is preferable to the purchase of virgin timber. Recycled timber is defined as timber which is being used for a different purpose than the purpose for which the tree was originally felled3. For recycled timber, the previous use must be established and documented [Note: this will be strictly monitored]. However, it is not necessary to prove legality or sustainability of the recycled timber. |
| **Coppiced Material** | Coppiced material6 is exempt from the requirements for softwood and temperate hardwood if documentary evidence which demonstrates the following is obtained: * The source of the coppiced material (full address/grid reference)
* The coppicer has legal rights to coppice the wood (e.g. letter from the landowner)
 |

These requirements apply to all virgin timber and wood-derived products used for the Environment Agency including temporary site works and material supplied by suppliers.

Referenced above:

1 Forest Stewardship Council;

2 Programme for the Endorsement of Forest Certification Schemes;

3 E.g. If a beach groyne is removed and re-sawn to make fencing posts. If the beach groyne was removed and used again as a beach groyne somewhere else, this is re-use not recycling and full chain of custody evidence is required.

 4 If certified timber is not available, credible evidence must be obtained which demonstrates legality, sustainability and traceability through the supply chain *[NB: this will be assessed in accordance with Category B checklists*] Acceptance of timber supplied with Category B evidence and FLEGT-licensed timber will be considered on a case by case basis, by exception.

 5 It applies to all purchases of timber, regardless of the value, quantity, type being purchased (i.e. softwood, temperate hardwood, tropical hardwood, recycled timber, reused timber or coppiced timber) or the procurement route (i.e. purchasing card / SOP / contractors acting on our behalf). Full Chain of Custody evidence must be provided.

 6 Short-rotation coppice is exempt from the requirements of the UK Timber Procurement Policy and falls under agricultural regulation and supervision rather than forestry.

Briefing Note on the use of Greenheart Tropical Hardwood (Feb 2017)

Key points

1. We will only purchase tropical hardwoods that have sufficient evidence of legality and sustainability.
2. This currently prohibits the purchase of new ‘Greenheart’ tropical hardwood unless it is sourced from Category A (FSC or PEFC) legal and sustainable sources.

Background

We have high-profile timber procurement requirements stating that we will only buy timber from legal and sustainable sources. This applies to purchases by the EA and our supply chains.

We have a specific focus on the use of tropical hardwoods given the risks (sustainability and reputation) associated with illegal logging and deforestation. Tropical hardwoods are recognised as a renewable resource and are ideally suited to many marine and freshwater construction applications such as groynes, piers, landing stations, lock gates etc. However, tropical hardwood is a precious resource and therefore we should use it wisely for applications that warrant it.

Tropical hardwood will not be purchased for EA projects unless it is an operational necessity. We have rigorous processes in place, including a business case, to assess and approve proposed uses prior to purchase and use.

We commissioned research through the FCRM joint R&D programme to assess the performance of selected lesser used species (LUS) of tropical hardwoods for use in FCRM applications. The research, laboratory tests and field trials demonstrated that these species are suitable to be used in fluvial and marine applications. All timbers assessed are available from Category A certified (e.g. FSC or PEFC) legal and sustainable sources. The LUS technical report, published in 2010, informs our current approach to specifying performance criteria and considering of a range of species that meet the requirements.

Our timber procurement policy has been in place for over a decade and we expressed and continue to have a strong preference for 'Category A' evidence demonstrating legality and sustainability with full traceability (i.e. FSC or PEFC certified timber). Acceptance of timber supplied with Category B evidence and FLEGT-licensed timber will be considered on a case by case basis, by exception.

Clarification on the use of Greenheart tropical hardwood

Of the species that we have commonly used, Greenheart (from Guyana) has not been available from Category A certified (e.g. FSC or PEFC) legal and sustainable sources. Furthermore, there is also currently insufficient Category B evidence (based on UK Government requirements) to prove it is from sustainably managed forests, though there is adequate evidence to prove legality. There was previously some confusion on whether Greenheart complies with the EA Timber Procurement requirements and associated target for 100% compliance. The confusion related to an exemption in the UK Government Timber Policy for specific works requiring particular tropical hardwoods where no sustainable source is available. We had been using Greenheart for projects where it was deemed to be an operational necessity and where no other suitable certified timber was available at the time.

However, at a National Engineering & Innovation Panel meeting in May 2015 a decision was made that we will not buy Greenheart or any other tropical hardwoods where there is insufficient evidence of legality and sustainability. This decision prohibited the purchase of new Greenheart for EA projects. Since this decision, Greenheart is now available in limited stocks from Category A (FSC or PEFC) certified sources and this can be considered for use on EA projects. Recycled Greenheart timber can be used where there is evidence and an audit trail to prove the previous use.

# A34 Security / Safety / Protection

**SECURITY, HEALTH AND SAFETY**

110 PRECONSTRUCTION INFORMATION

• Location: Integral with the project Preliminaries, including but not restricted to the following

sections:

- Description of project: Sections A10 and A11.

- Client's consideration and management requirements: Sections A12, A13 and A36.

- Environmental restrictions and on-site risks: Section A12, A35 and A34.

- Significant design and construction hazards: Section A34.

- The Health and Safety File: Section A37.

150 SECURITY:

Protection: Safeguard the site, Works, products, materials, plant and any existing buildings affected by the works from damage and theft.

Access: Take all reasonable precautions to prevent unauthorised access to the site, the Works and adjoining property.

Special requirements: NA

155 PREVENTION OF TRESPASS:

On sites which are not open to unrestricted access by vehicles, the Contractor shall take all reasonable steps to ensure that no unauthorised vehicles, caravans etc. gain access to the site, the Works or adjoining property during the Works, or as a consequence of the Works, or as a consequence of the actions of his employees. The Contractor shall be liable for any costs to the employer arising from his failure to comply with the above requirements, including the removal of any unauthorised vehicles.

170 OCCUPIED PREMISES:

Extent: The premises will be occupied and/or used during the Contract as follows:

Works: Carry out the Works without undue inconvenience and nuisance and without danger to occupants and users (See Section A12).

Overtime: If compliance with this clause requires certain operations to be carried out during

overtime, and such overtime is not required for any other reason, the extra cost will be paid

to the Contractor, provided that such overtime is authorized in advance.

**PROTECT AGAINST THE FOLLOWING:**

267 BIOSECURITY MEASURES: CONTROL PROCEDURES

Guidance on Biosecurity measures can be found in the Biosecurity Minimum Requirements. A Minimum Requirement document on the Guidance on the Management of Invasive Non-Native Plant Species (INNS) is also available.

330A NOISE: CONTROL OF NOISE TO CHAPTER 40, PART III OF THE CONTROL OF POLLUTION ACT 1974:

* Fit all compressors, percussion tools and vehicles with effective silencers of a type recommended by manufacturers of the compressors, tools or vehicles.
* Do not use pneumatic drills and other noisy appliances between the hours of 16.30 and 08.00 without consent of the CA.
* Do not use or permit employees to use radios or other audio equipment in ways or at times which may cause nuisance.

340A POLLUTION:

Take all reasonable precautions to prevent pollution of the site, the Works and the general environment, particularly control of entry of polluting matter and effluents into water courses including streams, rivers, waterways and public sewers as outlined in EU Directive 2008/1/EC and subsequent Environmental Permitting Regulations 2010. If pollution occurs, inform the appropriate authorities and CA without delay and provide them with all relevant information. All actual or potential environmental incidents must be immediately reported to the CA and PM and the appropriate authorities informed. The incident should be reported directly to the Environment Agency's pollution incident hotline on 0800 80 70 60.

Please refer to A33:494 for key Pollution Prevention advice and Guidance (PPG) notes.

346 PESTICIDES/HERBICIDES:

1. The Contractor must ensure that all pesticides/herbicides to be used and the operatives using them both have the approval and conform to the latest legislation contained within Part III of the Food and Environment protection Act and the Control of Pesticides (Amendment) Regulations 1997.

2. Pesticides/herbicides shall be used only as and when recommended by a person having a certificate of competence to do so, as defined by the above Act. The work must be carried out by an Amenity Assured Contractor (refer to Clause 347 (5)), or the landscape contractor will register with the Amenity Assured Contractor’s Scheme within 6 months of contract award.

3. In addition, they shall be strictly applied in accordance with the manufacturer’s recommendations, observing all precautions.

4. The Contractor shall notify the CA of each pesticide/herbicide to be used prior to application.

347 USE OF PESTICIDES/HERBICIDES***:***

1. Use only where specified or approved, and then only suitable products as listed in the UK Pesticide Guide;

2. Where work is near water, drainage ditches or land drains, comply with the Defra guidelines for the use of herbicides on weeds in or near watercourses and lakes. No herbicide may be applied on or near water without a valid herbicide application licence issued by the Environment Agency, allow sufficient time to obtain approval for this application. Proof of consent for each licence application must be provided to the CA prior to each herbicide application. Take special care to prevent spray drift into water bodies and adjoining land.

Application form: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/601813/LIT_4719.pdf>

It is also essential to ensure that groundwater quality is protected. Groundwater Source Protection Zones (SPZ’s) are areas of groundwater where there is particular sensitivity to pollution risks due to the closeness of a drinking water source and how the groundwater flows. They are used to protect abstractions used for public water supply and other forms of distribution. Generally, the closer the activity is to a groundwater source, then the greater the risk. More information on SPZ’s is available at: <http://www.environment-agency.gov.uk/homeandleisure/37833.aspx>

1. As a consequence, Picloram and other persistent biocides should not be used within the inner zone of a SPZ, and a risk based approach will be adopted when considering its use outside of the inner zone;
2. Observe all precautions recommended by the manufacturer and remove containers from site immediately they have been emptied or are no longer required;
3. ***The work must be carried out by an*** ***Amenity Assured Contractor*** *(refer to Clause 346 (2))*. Amenity Assured Certification will give the assurance of high quality standards of operation and legal compliance, all endorsed by, registered with and verified by the combined resources of:
* BASIS (Registration) Ltd
* National Association of Agricultural and Amenity Contractors (NAAC)
* City and Guilds NPTC

The Amenity Assured standards are also endorsed by the Pesticide Safety Directorate, The Environment Agency, The Amenity Forum and the Crop Protection Association.

Operatives must hold a BASIS Certificate of Competence, or work under the supervision of a Certificate holder, and must be trained to PA6A and PA6AW as a pre-requisite. Proof will be required by the CA and also when applying for EA application licences;

1. It is envisaged that Glyphosate non-selective herbicide is likely to be used under this contract e.g. Roundup or similar approved. A non-persistent herbicide such as 2,4D-amine which is selective of broadleaved plants is useful for treating weeds where grass is being established. The type of herbicide shall be recommended by the contractor and approved by the contractor’s own specialist advisor;
2. The specification and use of any herbicide is to be strictly in accordance with the Control of Pesticides (Amendment) Regulations 1997, the Control of Substances Hazardous to Health Regulations 2002, the Agriculture (Poisonous Substances) Regulations, the Poisons Act 1972, all as amended and any relevant Code of Practice issued by DEFRA;
3. Herbicide may be applied by glove, wick or knapsack sprayer. No spraying of herbicides shall take place in windy conditions and the Contractor will be responsible for reinstating any damage caused by drift of spray. Where a contact herbicide is used round plants in leaf, an adequate guard must be used or a suitable applicator used for spot treatment. All spraying equipment is to be carefully calibrated to prevent over or under dosing. The Contractor will be responsible for replacing any plants damaged by misplaced herbicide. Take special care to prevent spray drift into water bodies;
4. For full consent the Contractor must provide the CA with the name and NTCP Certificate number of the herbicide operator at least 14 days before the first herbicide application. This is necessary for subsequent operations only if details change;
5. The Contractor must give 48 hours’ notice to the CA prior to the use of herbicides;
6. Weed control may be required for injurious weeds as follows: Broad leafed dock; Curled dock; Common ragwort; Creeping thistle and Spear thistle; in addition to the invasive plant species: Himalayan Balsam; Giant hogweed and Japanese knotweed. In addition, invasive aquatic plants include New Zealand Pigmy weed also known as Australian swamp stonecrop, Water fern also known as Fairy fern, Floating pennywort, Water primrose and Parrot’s feather. If any of the above are found, the Landscape Clerk of Works should be advised immediately and a method statement provided;
7. For total weed control, weed treatment shall achieve total die-back of weeds and shall not allow any significant re-growth (less than 5%) within 6 months of application. In the case of selective weed control there shall be not more than 5% re-growth during the season. For site preparation, on topsoil heaps and in planting beds, a translocated, non-residual herbicide, approved for total weed control, shall be applied in accordance with the manufacturer’s instructions. Weeds in planted areas and grassed areas shall be controlled using a selective translocated herbicide. The herbicide shall be applied during a period of active growth in accordance with the manufacturer’s instructions. Return site visits to remedy treatment shortfalls within 6 months of the initial application will be deemed to be at the landscape contractor’s expense.

360A NUISANCE:

Duty: Prevent nuisance from smoke, dust, rubbish, vermin and other causes, in accordance with Part III of the Environmental Protection Act.

Surface water: Prevent hazardous build-up on site, in excavations and to surrounding areas and roads.

475 TRAFFIC MANAGEMENT

The Contractor shall provide, erect and maintain such traffic signs, lamps, barriers and traffic signals and such other measures as may be necessary in accordance with the recommendations contained in the Code of Practice – Safety at Street Works and Road Works, second edition 2002. The Contractor should allow for these measures. All traffic safety measures proposed should be submitted to the Local Authority for approval, after approval has been obtained from the local police authority. Contractors working on adopted highways need to be licensed by the relevant authority. Should the landscape contractor deem it necessary to work within the highway, including footway, then the CE should be advised as part of the Risk Assessments and Method Statements (RAMS).

476 PARKING

The Contractor’s and employee’s vehicles will be restricted to within the site boundary or as otherwise agreed by the CA. Parking shall not be permitted to damage existing grass or other surfaces. Any such damage shall be made good prior to Practical Completion at the latest, and if necessary again at Certificate of Making Good at Contractor’s own cost.

477 RUBBISH

Remove from site rubbish and debris from time to time and keep the site and Works clean and tidy. Remove all rubbish, dirt and residues from voids and cavities in the construction before closing in.

478 SAFETY, HEALTH and WELFARE

The Contractor shall provide suitable safety and welfare measures and amenities (including latrines, mess rooms etc.) all in compliance with the current Statutory Regulations, including under General Duties Construction (Design and Management) Regulations 2015.

The Environment Agency will expect immediate notification if any legislation is breached.

The Contractor will work in accordance with the latest Environment Agency’s SHE code of practice “Safety is Paramount, Constructing a Better Environment.”

Report all accidents, near misses and hazards as soon as you can. Report to the CA or Project Manager so the details can be logged into SHERMS2. Brilliant behaviours (or something you do which stops someone getting hurt) can also be reported.

479 CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

The Landscape Contractor will be appointed to work on projects directly by the Environment Agency. The tender Health and Safety questionnaire will assist the Environment Agency to satisfy itself that the Landscape Contractor is competent and that they have made adequate resources for health and safety.

Where the works are not deemed to be “construction”, and there is only one contractor on site, the landscape contractor will become the Principal Contractor.

Where a proposed project is deemed to be “construction works” under the Regulations, appointment will be via the following method.

1. The Landscape Contractor will be appointed as Principal Contractor where there is no other concurrent contract works and no other contractors on site. The Environment Agency will appoint a Principal Designer.

The Landscape Contractor will be required to develop the Health and Safety Plan in accordance with the requirements of the Regulations and co-operate with the Principal Designer to enable him to fulfil his duties under the Regulations.

Tenderers for the Landscape Contract accept that in these circumstances they would be willing to accept the appointment of Principal Contractor and the duties thereof as required by the CDM Regulations. Copies of site specific RAMS and a programme of works will require submission to the Principal Designer for review and acceptance prior to commencing works on site.

**WASTE/SUBSTANCES HAZARDOUS TO HEALTH**

480 DUTY OF CARE

Section 34 of the Environmental Protection Act 1990 as amended requires that persons act with a duty of care when handling waste.

481 TRANSFER OF WASTE

The Landscape Contractor will comply with the Waste (England and Wales) Regulations 2011, the Environmental Protection Act 1990 and, all other relevant legislation, as amended, for the carriage and disposal of waste. Unless otherwise specified, the Contractor will be required to take representative soil samples and obtain chemical test results for presentation to the Landscape Architect or CA. Contamination “hot spots” in excess of likely average results may be anticipated requiring additional measures to handle and dispose of such wastes.

482 SITE WASTE MANAGEMENT PLAN

We produce Site Waste Management Plans (SWMP) for all our construction and improvement projects, as part of the requirements of the SWMP regulations 2008. This includes flood defence, navigation, water resources, fisheries, estates and facilities management projects.

For small projects less than £250,000, the [WRAP ‘Lite’ version](http://www.wrap.org.uk/content/site-waste-management-plan-template-lite) should be used, the level of input to the ‘actions’ and ‘forecast waste’ sections should reflect the waste issues on the project, that is, If minimal waste, minimal input.

A SWMP sets out how building materials, and resulting waste, is to be managed during the project.

Its purpose is to ensure that:

* building materials are managed efficiently
* waste is disposed of legally, and
* material recycling, reuse and recovery is maximized.

There is also a requirement to comply with the non-native invasive plant species and to follow a Japanese Knotweed Code of Practice where it is present. Any plant that is listed on Schedule 9, Wildlife and Countryside Act 1981 should be eradicated or carefully transported to a suitable licenced landfill facility.

NOTE that the Environment Agency use SWMP’s on ALL of our projects.

The SWMP regulations are intended to be self-regulated. The onus is on the client to make sure:

* the SWMP is initiated, and meets its regulatory requirements
* all those involved in the project act in accordance with the plan and current waste legislation.

Both local authorities and the Environment Agency have power to enforce these regulations via fixed penalty notices or prosecution.

The SWMP will contain the following information as a minimum:

• who is the Client;

• who is the Principal Contractor;

• who is responsible for managing waste;

• a forecast of the types and volumes of waste;

• how each waste type will be managed - reduced, reused, recycled, other recovery or disposal;

• how contractors will be supported to ensure legal waste management;

• how the waste will be measured during the project.

A Basic SWMP is required for all projects less than £250,000. This includes the value of

materials, plant, labour, overheads and profit, but excludes the value of land and VAT. A basic SWMP must include a forecast of the waste expected to be generated during the project and clearly define who

will manage this waste and how they will do it. A Basic SWMP must:

• identify the licensed operators who remove the waste;

• record the types of waste removed;

• use European Waste Catalogue codes;

• record all transfer notes and consignment notes;

• note where the waste is being taken;

• be monitored and updated as works progress.

An Advanced SWMP is required for all projects above £250,000 in value. The Advanced SWMP is more

comprehensive than the Basic SWMP and the principal contractor should additionally ensure that:

• a formal review is undertaken every six months;

• data is collected for auditing and monitoring waste;

• a record is kept of the types and quantities of wastes that are reused, recycled, recovered or disposed both on and offsite;

• a comparison is made between the forecast and actual waste within three months of the project completion date;

• an explanation is provided for any deviation from the SWMP;

• an estimate of cost savings is recorded at the end of the project.

Guidance can be found in *“Site Waste Management Plans - A guide for the construction industry and supply chain”* published on the WRAP website by EnviroWise.

483 AIRBOURNE CONTAMINANTS

All wagons other than flat bed or fully enclosed wagons must be sheeted to reduce airborne contamination

484 VEHICLE HYGIENE

Allowances must be made for wagons to have their wheels washed by high pressure hose before leaving site

485 CONTROLLED WASTE (OTHER THAN HAZARDOUS WASTE)

If applicable, the landscape contractor will provide a written description of this waste in their SWMP to satisfy his requirements under the Waste (England and Wales) Regulations 2011.

486 CONTROLLED WASTE / C.O.S.H.H. GUIDELINES – (CONTAMINANTED MATERIAL)

The following option exists for compliance with the Guidelines:

**1)** **The Environment Agency has previously commissioned a site investigation**.

* The soil analysis results of the tests will be included as part of the Pre-Contract Information provided to the contractor. There are no known contaminants exceeding the thresholds. In the event of abnormally high results in any particular element, additional testing may be required on direction of the Landscape Architect/CA.
* An Interpretative Report will be commissioned by the Agency to accompany the soil analysis results of the tests and will comment on the nature and quality of the soils encountered and their suitability for habitat creation purposes including the establishment of grass and shrub planting and as relevant the establishment of species-rich grassland.

Written recommendations for the respective survey area will be produced relating to best practice for soil handling operations and for soil preparation operations.

487 WASTE CARRIER’S LICENCE AND WASTE TRANSFER NOTE

The responsibility for transferring waste material for disposal will pass to the Landscape Contractor on commencement of works. The Contractor must provide a copy of the waste carrier’s licence on being awarded a contract. Copies of waste transfer notes should be retained for inspection by the CA as requested.

488 HAZARDOUS WASTE

The Landscape Contractor must include a written description of this waste in an appendix for each contract, if applicable, to satisfy his requirements under the Waste (England and Wales) Regulations 2011. Where excess concentrations are proven through analysis, sample locations must be clearly referenced for presentation to the Landscape Architect/CA.

If a Landscape Contractor produces, stores or is organising hazardous waste removal, they must complete a consignment note before it leaves site. Unlike a waste transfer note for non-hazardous waste, the contractor must still complete a consignment note even when they are not immediately transferring the hazardous waste to someone else e.g. if carrying their own waste from one of their premises to another, for example.

The consignment note has five parts: A, B, C, D, and E. The different people or businesses involved in moving the waste will fill in different parts of the form.

489 WORKING METHODS

The Landscape Contractor shall provide for the approval of the Landscape Architect/CA at least 7 days before commencing work on site, a written statement, specific to the site, of his proposed working methods, in so far as they relate to:

1. Health and Safety of persons working on site and the general public.
2. Pedestrian/traffic management
3. Noise and other substances
4. Control of substances hazardous to health (including pesticides/herbicides)
5. Any regulations or legislation applicable to methods of working on the site.

The above written statement shall include a formal “COSHH Assessment” prepared by the Contractor’s Specialist Consultant in accordance with the current COSHH Regulations.

490 OILS AND GREASES/PLANT MAINTENANCE

Since June 2005 all Contractors, Plant Hire Companies or Contractors intending to tender for Environment Agency contracts utilising Plant to undertake all or part of the Environment Agency’s projects, schemes or contracts etc. of any type, location or duration have been required without exception to ensure that the hydraulic system of the intended plant is filled only with an environmentally considerate hydraulic fluid.

Hydraulic fluids shall be of a suitable synthetic ester or vegetable oil-based derivative. Traditional mineral oils and glycols are not acceptable.

The Agency reserves the right to extract a sample(s) of oil from an item of Plant whilst on site for analysis at an independent laboratory.

**Failure to comply with this mandatory requirement will result in that machine(s) not being permitted to work on the Agency’s contract(s).**

Where fuel is supplied by the Contractor it must be stored in a fully bunded fuel bowser / storage tank.

The Landscape Contractor should be prepared for the Environment Agency to request plant maintenance records and compliance with relevant legislation.

491 UK GOVERNMENT BUYING STANDARDS

The Environment Agency will assess compliance with Government Buying Standards at regular points throughout a contract.

**HYDRAULIC FLUIDS AND LUBRICANTS**

## Specifications for hydraulic fluids and chainsaw lubricants online

### Example equipment standards

|  |  |  |
| --- | --- | --- |
| **IMPACT AREA** | **MANDATORY** | **BEST PRACTICE** |
| Biodegradability | Must pass, or equivalent, the OECD 301B - Ready Biodegradability, CO2 evolution test (see from page 18) | Should meet the EU Green Public Procurement comprehensive criteria (see pages 14 and 19) |
| Ecotoxicity | Must pass or equivalent the OECD 201 - Alga, Growth Inhibition Test  | Should meet the EU Green Public Procurement comprehensive criteria (see pages 14 and 19) |
| Ecotoxicity | Must pass or equivalent the OECD 202 - Daphnia sp. Acute Immobilisation Test and Reproduction Test  | Should meet the EU Green Public Procurement comprehensive criteria (see pages 14 and 19) |
| Ecotoxicity | Must pass or equivalent the OECD 203 - Fish, Acute Toxicity Test  | Should meet the EU Green Public Procurement comprehensive criteria (see pages 14 and 19) |

Please also refer to Government Buying Standards for hydraulic fluids and chainsaw lubricants. The mandatory standards for lubricants follow established Organisation for Economic Cooperation and Development (OECD) can be found at:

[Government Buying Standards for hydraulic fluids and chainsaw lubricant (publishing.service.gov.uk)](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/482147/gbs-hydraulics-2015.pdf)

Where information is contained within the wider specification clauses, in particular clause Q34:490, the expected standard to be adhered to will be that of the criteria in the above web link, except where the standard of the specification exceeds it in which case that standard shall apply.

**HORTICULTURAL AND PARK SERVICES**

|  |  |
| --- | --- |
| Soil improvers | Soil improvers must not contain peat or sewage sludge Bidders must provide the detailed composition of the product, the origin of organic matter and a declaration of compliance with the above requirements. Products carrying the EU Ecolabel will be deemed to comply. Other appropriate means of proof, such as a technical dossier of the manufacturer or a test report of an independent body, will also be accepted. |
| Media Products | Growing media must not contain peat |
| Invasive non-native species | All products and services procured should comply with the latest version of the Horticultural Code of Practice covering invasive non-native plants <https://secure.fera.defra.gov.uk/nonnativespecies/index.cfm?pageid=299> |
| Hazardous Substances | Growing media should meet quality standards as set out in PAS100 and the Quality Protocol. See <http://www.wrap.org.uk/content/bsi-pas-100-compost-specification> |
| Plants | From 2015 plants must not be supplied in or with growing media containing peat. It is accepted that a residual amount of peat may remain from its use in the original propagation of a plant. **Verification**: Bidders must provide a signed declaration that they will meet this criterion. |

|  |  |
| --- | --- |
| **IMPACT AREA** | **BEST PRACTICE/How Landscape Contractors can ensure compliance with the Government Buying Standards** |
| Organic Ingredients | Organic matter content must be derived from the processing and/or re-use of waste (as defined in Council Directive 2006/12/EC of 5 April 2006 on waste and its Annex I);(Non-sewage) sludges are allowed only if they are identified as one of the following wastes according to the European list of wastes (as defined by Commission Decision 2001/118/EC of 16 January 2001amending Decision 2000/532/EC as regards the list of wastes and when these have not been mixed with effluents or sludge outside the specific production process): 020305 sludges from on-site effluent treatment in the preparation and processing of fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco; conserve production; yeast and yeast extract production, molasses preparation and fermentation;020403 sludges from on-site effluent treatment in sugar processing;020502 sludges from on-site effluent treatment in dairy products industry;020603 sludges from on-site effluent treatment in baking and confectionery industry;020705 sludges from on-site effluent treatment in the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa).Maximum concentrations of heavy metals in the waste before treatment (mg/kg dry weight) must meet the requirements of the next criterion on hazardous substances.**Verification (for specifications 1 & 2):** Bidders must provide the detailed composition of the product, the origin of organic matter and a declaration of compliance with the above requirements. Products carrying the EU Ecolabel will be deemed to comply. Other appropriate means of proof, such as a technical dossier of the manufacturer or a test report of an independent body, will also be accepted.**Hazardous substances:**In the final product, the content of the following elements shall be lower than the values shown below, measured in terms of dry weight: **Element – mg/kg (dry weight)**Zn – 300; Cr – 100; Cu – 100; Mo (\*) – 2; Ni – 50; Se (\*) – 1.5; Cd – 1; As (\*) – 10; Pb – 100; F (\*) – 200; Hg – 1**Verification:**Bidders must provide the relevant test reports (EN 13650, ISO 16772 or equivalent) demonstrating that the above criterion is met. Products carrying the EU Ecolabel will be deemed to comply. Other appropriate means of proof, such as a technical dossier of the manufacturer or a test report of an independent body, will also be accepted.**The Ecological requirements** for the EU Ecolabel for soil improvers must be met – see [full criteria documents](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_325/l_32520061124en00280034.pdf) (pdf).**Verification:** The EU Ecolabel will be accepted as proof of compliance, as will any other appropriate means of proof, such as a technical dossier of the manufacturer or a test report from a recognised body. |
| Ornamental Plants | **Plant containers**Plants must be delivered in reusable, recyclable or biodegradable containers. If plant containers are reusable, the company must take them back after the planting of the plants/trees. If plant containers are biodegradable, they must: * be made of 100% biodegradable (compostable) substances, such as straw, cork, wood flour, maize starch.
* not contain synthetic plastic materials, plasticisers or biocide substances, such as found for example in biocides or preservatives.

**Verification:** If containers are reusable, bidders must present a signed declaration stating that they will take back the plant containers selectively collected by gardening staff. If containers are biodegradable, bidders must provide a list of the product ingredients and their respective shares together with a declaration that the specifications are met. Plant containers carrying a type I ecolabel meeting the above requirements will be deemed to comply as well as products classified as biodegradable and compostable according to the EN 13432:2000 standard or equivalent.**Packaging**Small plants must be supplied in returnable crates or boxes.**Verification:** Bidders must provide a signed declaration that they will meet this criterion. |
| Irrigation Systems | The irrigation system must be adjustable in terms of volume of dispensed water by zones.The irrigation system must have adjustable timers, to programme the watering period.The irrigation system must have hygrometers that measure soil humidity levels and automatically block irrigation when the humidity level of soil is high enough (for example after rain).**Verification (for specifications 1, 2 & 3):**Bidders must provide appropriate technical documentation demonstrating that these criteria are met. |
| Garden Machinery | **Note:** The following criteria apply only to the following gardening machines: * Lawn-mowers (incl. lawn tractors) and scarifiers
* Brush saws
* Chainsaws
* Strimmers
* Trimmers and hedge trimmers
* Leaf collectors and leaf blowers
* Auto-scythes
* Auto-hoes
* Rotary cultivators
* Compost shredders

**1. Fuel types**If the machine has a combustion engine, this shall be designed so that it can be run on one or more of the following fuel grades: unleaded petrol with a benzene content of <1.0 % by volume, alkylate petrol, class A diesel oil, or biofuel-based engine fuel.**Verification:** Bidders must present a signed declaration of compliance. Machines carrying a type I Eco label meeting the above requirement will be deemed to comply.**2. Noise emissions**The noise emission level of the machine shall be below the noise levels outlined in the table below. The machine shall be tested for noise output in accordance with the general standard specified in the EU Noise Directive (2000/14/EC), EN-ISO 3744/1995 and by a testing laboratory qualified under Article 15 of the same Directive.

|  |  |  |
| --- | --- | --- |
| **Machine** | **DetailsL = cutting width** | **Maximum admissible value of sound power level LWA** |
| Lawn-mowers (including lawn tractors), scarifiers | L < 50 cm 50 < L < 120 cmL < 120 cm | 94 dB/1pW 98 dB/1pW103 dB/1pW |
| Brush saws | 1.5 kW 1.5 kW | 107 dB/ 1pW 110 dB/1pW |
| Chainsaws | 2.5 kW 2.5 kW | 105 dB/ 1pW 110 dB/ 1pW |
| Strimmers | Electric engine Combustion engine | 94 dB/ 1pW 104 dB/1pW |
| Trimmers and hedge-trimmers | Electric engine Combustion engine | 96 dB/ 1pW 103 dB/1pW |
| Leaf collectors and leaf blowers | For professional use | 105dB/1pW |
| Auto-scythes | 1.5 kW 1.5 kW | 107 dB/ 1pW 110 dB/1pW |
| Auto-hoes |  | 96 dB/1pW |
| Rotary cultivators |  | 93 dB/1pW |

**Verification:**The bidder must present the laboratory test results or an appropriate technical dossier demonstrating compliance. Machine carrying a type I Eco label meeting the above requirements will be deemed to comply. |

**PAINTS AND VARNISHES**

|  |  |
| --- | --- |
| **IMPACT AREA** | **MANDATORY / How Landscape Contractors can ensure compliance with the Government Buying Standards** |
|  |  |
| All other paints and coatings (such as varnishes) | Must comply with the maximum VOC content limits in Directive 2004/42/CE (Annex II) In addition, Other paints and all other products (varnishes, etc.) must have a ‘Medium’ VOC content of 24.99% or less. |
| All other paints and coatings (such as varnishes) | Over and above those excluded by the maximum VOC content limits in Directive 2004/42/CE as above, the following products shall not be used: Indoor paints and varnishes with a content of solvents (VOCs with a boiling point of 250oC maximum) higher than:For other paints with a spreading rate of at least 15 m2/l at a hiding power of 98% opacity: 250g/l (minus water)- For all other products (including paints that are not wall paints and that have a spreading rate of less than 15 m2/l, varnishes wood stains, floor coatings and floor paints, and related products): 180g/l (minus water) |

492: NOTICE OF ACCIDENTS / INCIDENTS

* ACCIDENTS / INCIDENTS

If there is any accident/incident resulting in injury to persons or damage to property or the environment, immediate notice must be given to the Environment Agency CA and PM by telephone, and confirmed in writing.

The procedure for reporting SHE Accidents and Incidents, Near Miss Notification and Review is set out in the Environment Agency Safety, Health, Environment and Wellbeing (SHEW) Code of Practice (COP), Section 2.15.

SHERMS is the Environment Agency’s health, safety and wellbeing and internal environment management reporting and learning tool. SHERMS2.1 is the latest version, for logging near misses, hazards and brilliant behaviours which will help keep us safe and well and manage our impact on the environment.

* ENVIRONMENTAL INCIDENTS

An Environmental Incident is defined as either a failure to meet an environmental target or an adverse environmental occurrence not included in the Environmental Action Plan (EAP).

All personnel on site will have a duty to report any incident immediately to the Contractor Site Manager. The Contractor’s Site Manager will be responsible for ensuring that the Project Manager and CA is informed immediately of any incident on site, and the Project Manager will then be responsible for informing the relevant parties and advising on an appropriate course of action.

All environmental incidents must be reported to the Environment Agency Incident Hotline 0800 80 70 60 at the earliest opportunity and then to the Landscape Contract Administrator. In addition, near misses must be reported via the hotline where there was/is the potential for a significant impact and where lessons can be learned.

The Environment Agency Project Manager or Landscape Architect will register the environmental incident on SHERMS.

493: CONTRACTOR’S SITE PERSONNEL

The Contractor will ensure that all personnel, either directly employed or sub-contracted, are fully competent and have all the necessary working procedures, tools and equipment to undertake the work effectively and in a safe and environmentally friendly manner.

A relevantly qualified and experienced supervisor must be on site at all times, If there is a change to the named provision given at the pre-start meeting, the CA must be notified by the contractor in writing giving 2 working days’ notice.

Prior to undertaking any work on site, the contractor’s personnel will be required to complete an induction to ensure that they are fully aware of the hazards and risks associated with working on the specific site or carrying out the activities being undertaken. This will include a full Risk Assessment and Method Statement (RAMS) for the works to be undertaken, and will include a specific H&S and Environmental induction.

The contractor’s personnel must comply with all the site specific health and safety and environmental control measures for the specific site.

The standard tasks/activities undertaken by the contractors’ site personnel must be covered by health and safety and environmental risk assessments. Site personnel must have access to copies of these assessments and have full knowledge and understanding of control measures.

Contractor’s personnel must have the following PPE as a minimum;

* High visibility jacket;
* Suitable footwear with toe and sole protection;
* Hard hat;
* Suitable gloves;
* Suitable eye protection.

Prior to commencing work, the landscape contractor will need to produce site specific Risk Assessments and Method Statements and comply with any site specific safety procedures. For sites deemed to be “construction works”, where there is more than one contractor or concurrent working with a Principal Contractor, the RAMS will be produced and forwarded for review by the Principal Designer. The landscape contractor will be expected to provide additional information as requested and take part in relevant toolbox talks.

 **PROTECT THE FOLLOWING**

505 DILAPIDATIONS:

The Contractor shall, on the date of possession, take a comprehensive series of photographs of the site to establish the level of dilapidations. A copy of all photographs taken shall be submitted to the CA.

508 WORK IN ALL SECTIONS: Adequately protect all types of work and all parts of the Works, including work carried out by others, throughout the Contract. Wherever work is of an especially vulnerable nature or is exposed to abnormal risks provide special protection to ensure that damage does not occur. Any work damaged or spoiled by weather, traffic or other causes due to inadequate protection shall be taken down and re-executed or otherwise made good by and at the cost of the Contractor.

510A EXISTING SERVICES:

* The Environment Agency shall provide copies of services information to the landscape contractor as part of the Pre-Contract Information;
* Notify all service authorities or private land owners of proposed works not less than one week before commencing site operations;
* Notwithstanding any information which the Environment Agency may make available to the Contractor, either verbally or by the production of record plans purporting to show the position of existing water, gas, electricity, telephone, TV or computer cable, service ducts, conduits, drains, service connections, private pipelines etc. It shall be the responsibility of the Contractor to satisfy himself by his own independent observations and enquiries as to any omission from, or the accuracy or otherwise (and for determining the depth of such service, sewer or other apparatus by means of trial holes where required) of the information provided in so far as it affects his contract area;
* Take all measures reasonably required by a Public or Statutory authority for the full protection of its services, sewers, or apparatus during the progress of the works, and afford facilities to the properly accredited agents of such Authorities for access to their apparatus situated in or under the site as may be necessary for inspecting, repairing, maintaining, renewing, removing or for any other purpose;
* If any damage to services results from the execution of or consequence of the works, notify the Landscape Contract Administrator and appropriate service authority without delay. Make arrangements for the work to be made good without delay to the satisfaction of the service authority or private owner, as appropriate, at the expense of the Contractor;
* Replace any marker tapes or protective covers disturbed during site operations to the service authority’s recommendations;
* The Contractor shall make provision for the temporary protection of any such services required for the purpose of the contract or otherwise, and shall allow for upholding any such services, if and as encountered during the progress of the works, pending the decision of the employer concerned as to their diversion or otherwise as may be appropriate. No scaffolding, props, staging, ropes, or supports other than required for the temporary support of such services, shall be fixed or attached to them, and the Contractor shall accept responsibility arising from the presence of such mains, cables etc.

520A ROADS AND FOOTPATHS:

Duty: Adequately maintain roads and footpaths within and adjacent to the site and keep clear of mud and debris.

Damage caused by site traffic or otherwise consequent upon the Works: Make good to the satisfaction of the Employer, Local Authority or other owner. The landscape contractor shall bear any costs arising.

530 EXISTING TOPSOIL/SUBSOIL:

• Duty: Prevent over compaction of existing topsoil and subsoil in those areas which may be

damaged by construction traffic, parking of vehicles, temporary site accommodation or

storage of materials and which will require reinstatement prior to completion of the Works.

• Protection: Before starting work submit proposals for protective measures.

540A RETAINED TREES/HEDGES/SHRUBS/GRASSED AREAS:

Adequately protect and preserve, except those which are to be removed. Trees to be retained which are so specified shall be protected in accordance with BS 5837 and BS 3998 or as agreed with the Landscape Architect/CA

* Replace to approval or treat as instructed any species or areas damaged or removed without approval.
* Mature trees and shrubs which, due to the Contractor's negligence, are uprooted, destroyed, or in the opinion of the CA, damaged beyond reasonable chance of survival in their original shape, must be replaced with those of a similar type and age at the Contractor's expense.

550A TREES TO BE RETAINED:

Protected area: Unless agreed otherwise by the CA, **do not**:

* Dump spoil or rubbish, excavate or disturb topsoil, park vehicles or plant, store materials or place temporary accommodation within the branch spread;
* Sever roots exceeding 25mm in diameter;
* Change level of ground;
* Light bonfires;
* Use rippers or rotovator to break up the ground, or machinery which will cause compaction;
* Use the tree as an anchor for ropes;
* Alter the drainage characteristics or water table by any site operations under the control of the Contractor within an area 3m beyond the branch spread.

560 EXISTING FEATURES:

Protection: Prevent damage to existing buildings, fences, gates, walls, roads, paved areas and other site features which are to remain in position during the execution of the Works.

Special requirements: NA

565 EXISTING WORKS:

Prevent damage to existing property undergoing alteration or extension. Protect parts which are to be retained. Cut away and strip out the minimum necessary and with care to reduce the amount of making good to a minimum.

570 MAINTENANCE OF EXISTING LANDSCAPE

Existing planting beds and grassed areas to be retained shall be maintained throughout the area of the works including along fence lines for the contract period.

Planting shall be kept weed free, grass shall be kept less than 75mm length and the whole site shall be kept litter free to the satisfaction of the Landscape Architect/CA. A final grass cut shall be undertaken immediately prior to completion.

625A ADJOINING PROPERTY RESTRICTIONS: Prevent trespass of workpeople and plant, machinery or equipment. Take all reasonable precautions to prevent damage to adjoining property. Obtain permission as necessary from the owners if requiring to gain access to or to use adjoining property, and pay all charges. The Contractor shall see that these indemnify the Employer against any claim or action for damages on account of any trespass or other misconduct of his employees. Clear away and make good on completion or when directed. Bear the cost of repairing any damage arising from execution of the Work.

628 LIABILITY FOR DAMAGE:

All costs associated with the repair of damage consequent on the works or caused by the Contractor or his agents will be borne by the Contractor unless otherwise stated.

690 WATERCOURSES: The Contractor’s attention is drawn to the current form of the following legislation:

Rivers (Prevention of Pollution) Act 1974, Water Resources Act 1991, Control of Pollution Act; Environmental Permitting Regulations 2010, Salmon and Freshwater Fisheries Act; Natural Environment and Rural Communities Act 2006 (and Nature Conservancy Council Act where relevant); and the Wildlife and Countryside Act.

The Contractor shall at all times observe all regulations and conditions relating to the watercourse.

* All costs arising from working adjacent to the watercourse are to be allowed for in the rates and prices.
* No deleterious discharge, either solid or liquid, into the watercourse will be allowed and the Works shall not be done in such a manner as to cause pollution.

# A35 Specific Limitations on Method / Sequence / Timing

110 SCOPE:

General: The limitations described in this section are supplementary to limitations described or implicit in information given in other sections or on the drawings.

115 FIRES

No fires may be lit on site.

140 ACCESS TO THE SITE: See section A12.

150 USE OF THE SITE: See section A12.

170 WORKING HOURS:

* Specific limitations: Monday to Friday inclusive, except Public Holidays, between 8.00am and 6.00pm or as directed by the CA.

180 PARTIAL POSSESSION

• General: Where the Employer is to take possession of any part of the Works and such part

will, after its practical completion, depend for its adequate functioning on work located

elsewhere on the site: Complete such other work in time to permit such possession to take

place.

• Remainder of the Works: During execution, ensure that completed parts of the Works have

continuous and adequate provision of services, fire precautions, means of escape and safe

access.

# A36 Facilities / Temporary Work / Services

**GENERALLY**

110 SPOIL HEAPS, TEMPORARY WORKS AND SERVICES

Location: Inform CA of the intended siting.

Maintenance: Alter, adapt and move as necessary. Remove when no longer required and make good.

111 The Contractor shall provide accommodation as is necessary to complete the works.

**SERVICES AND FACILITIES**

420A LIGHTING AND POWER: Provide and allow for all electricity and other power required for the Works.

430A WATER: The Contractor will be responsible for providing a sufficient supply of clean fresh water for the execution of the Works. Subject to suitability, the contractor should seek to use rainwater procured via rainwater saving devices wherever possible. Obtain CA's approval before using a supply other than potable mains water. No claim for delay or costs will be accepted in respect of this clause. The contract sum will be inclusive of all fees and charges relating to providing an adequate water supply. Receipts for payment of water used to be produced at settlement of account where specifically measured and included for in the priced schedules.

435 WATER RESTRICTIONS: If the water supply is or is likely to be restricted by emergency legislation, inform the CA without delay and ascertain the availability and additional cost of water from alternative sources.

 Suitability: Check pH value of water from the new source and ensure that it is suitable for the plans/ soil/ turf being watered.

 Cost: TBC

540 METER READINGS:

Charges for service supplies: Where to be apportioned ensure that:

Meter readings are taken by relevant authority at possession and/or completion as appropriate.

Copies of readings are supplied to interested parties.

# A37 Operation / Maintenance of the Finished Works

120 THE HEALTH AND SAFETY INFORMATION

• Content: Obtain and provide the following information: Any operation or maintenance manuals for completed works, or any information requested by the Contract Administrator.

• Submit:

- To: Contract Administrator.

- Number of copies: Two.

- No later than: The end of the rectification period or date specified by the Contract Administrator.

180 MAINTENANCE INFORMATION

• Content: Include:

- Printed instructions of procedures to be adopted by the Employer for the maintenance of

the Works.

- Copies of manufacturers current literature for all products for which the particular

proprietary brand has been chosen by the Contractor, including where appropriate

COSHH dated data sheets and manufacturers recommendations for cleaning and

maintenance.

- Copies of all guarantees, warranties and maintenance agreements offered by

subcontractors and manufacturers.

- Copies of all test certificates and reports required in the specification.

• Submit: At end of maintenance period.

220 TRAINING

• Objective: Before Completion, explain and demonstrate the operation of the following to

the Employer's maintenance staff:

- To be confirmed by CA.

# Q31 External planting

 To be read with Preliminaries/General Conditions.

 **GENERAL INFORMATION/ REQUIREMENTS**

 112 SITE CLEARANCE GENERALLY

 • General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated

 topsoil.

 • Stones: Remove those with any dimension exceeding 50 mm.

 • Contamination: Remove material containing toxins, pathogens or other extraneous

 substances harmful to plant, animal or human life.

 • Vegetation: Clear scrub and herbaceous material to ground level using suitable approved tools and remove arisings.

 • Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.

 • Additional requirements: Apply a suitable non-residual herbicide to all planting areas.

118 SOIL CONDITIONS

 • Soil for cultivating and planting: Moist, friable and (excepting aquatic/ marginal planting) not

 waterlogged.

 • Frozen or snow covered soil: Give notice before planting. Provide additional root

 protection. Prevent planting pit sides and bases and backfill materials from freezing.

 120 CLIMATIC CONDITIONS

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

* Strong winds: Do not plant.

121 INSPECTION OF PLANT MATERIAL

* CA shall retain the right to inspect and pass all plant material before delivery to site at source of supply (bare root stock prior to lifting at nursery) unless otherwise agreed;
* If so specified, the contractor will arrange for the CA or a representative to select and tag specimen trees and/or shrubs at the nursery of origin. Any such tags are to be retained intact on the tree or shrub until removed by the CA or a representative after planting;
* The contractor shall collect together and/or label all specified stock ready for inspection by the CA prior to delivery to site, excepting those previously selected and tagged by the CA;
* The CA or a representative shall be invited to inspect the plant stock thus assembled at least 3 days prior to delivery on site;
* Any seeds or plants selected for planting schemes must comply with local provenance standards stipulated by Flora Locale or other competent authorities such as Natural England or the Forestry Commission and must not include non-native species particularly those listed within [Schedule 9, Wildlife & Countryside Act 1981](https://www.legislation.gov.uk/ukpga/1981/69/schedule/9). The design and detail of soft landscaping projects should be agreed well ahead of the expected planting date. This allows suppliers time to collect and multiply suitable stock if required. A supplier should be selected who can identify the origin of their stock;
* The CA reserves the right to reject any plants which in his/her opinion do not meet the specification requirements;
* The contractor will replace material rejected at no extra cost.

122 IDENTIFICATION OF PLANT MATERIAL

* The CA reserves the right to mark for identification purposes using aerosol paint or such other method as he/she thinks necessary, any materials which in his/her opinion are not in accordance with the Contract.
* No claims will be entertained for losses alleged to have resulted from such marking.

123 GUARANTEES

* All plants including replacements are to be guaranteed for one month from the date of planting, or until the end of the rectification period, whichever is the later.
* Prices quoted are to include supply and plant initially and any necessary replacement planting. All tree stakes and ties are to be replaced immediately if in the opinion of the CA they are defective at any time during the contract period.
* On termination of the general rectification period, all continuing guarantees shall be assigned to the Environment Agency.

124 SETTING OUT

* The contractor is responsible for setting out planting beds and tree pit positions of all trees, large feathered and above, prior to planting on site according to drawings and any other relevant information supplied.
* The outline of planting beds and their internal dimensions are as indicated.
* The CA reserves the right to adjust the exact position of plants after setting out prior to planting.
* The contractor is to report any apparent discrepancy immediately to the CA. Work only to resume on such an area after the error is resolved. Any error in setting-out is to be made good at the contractor’s expense.

 125 TIMES OF YEAR FOR PLANTING

 • Deciduous trees and shrubs: Late October to late February.

 • 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.

* + - Spring flowering dried bulbs, corms and tubers in early autumn, - 2nd week September to end of October inclusive or as approved

 • Summer and Autumn flowering bulbs at the time approved by the CA.

 • Colchicum (crocus): July/ August.

 • Green bulbs: After flowering in spring.

 • Wildflower plugs: Late August to mid-November or March/ April.

 • Aquatic plants: May/ June (preferred) or September/ October.

130A MECHANICAL TOOLS

 • Restrictions: Do not use within 500 mm of tree and plant stems.

Use hand tools around trees and plants and in confined spaces where it is impractical to use machinery.

* Specialist mechanical equipment may be required for the planting and setting out of aquatic/ marginal material, which should be agreed prior to commencing the works.

 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.

 - Give notice before ordering or using.

 200A PLANTS/ TREES - GENERAL

 • Condition: Materially undamaged, sturdy, healthy and vigorous.

 • Appearance: Of good shape and without elongated shoots.

 • Hardiness: Grown in a suitable environment and hardened off.

 • Health: Free from pests, diseases, discoloration, weeds and physiological disorders.

 • Budded or grafted plants: Bottom worked.

 • Root system and condition: Balanced with branch system.

 - Standard: The National Plant Specification or as otherwise agreed.

 • Species: True to name.

 • Origin/ Provenance: Regional or British provenance.

 Definition: Origin and Provenance have the meaning given in the National Plant

Specification and should comply with the local provenance standards stipulated by Flora Locale. Written evidence of British provenance shall be provided to the CA prior to planting. If regional provenance plant material of the same quality can be secured this should take precedence.

205 BULBS/CORMS AND TUBERS - GENERAL

 To BS3936, Part 9

* Supplied free from obvious pests, diseases and physiological disorders, materially undamaged, not shriveled and true to name;
* Each bulb or corm is to exhibit one central crown or predominant shoot and be of a mature and well ripened age, (i.e. capable of flowering in first season’s growth);
* Bulb and corm size is to be representative of the mature species and the size (circumference) given in the schedule of quantities;
* 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.

215A PLANTS/ TREES - SPECIFICATION CRITERIA

 • Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the

 National Plant Specification or as otherwise agreed.

235 CONTAINER GROWN PLANTS/ TREES

 • Growing medium: With adequate nutrients for plants to thrive until permanently planted.

 • Plants: Centred in containers, firmed and well watered.

 • Root growth: Substantially filling containers, but not root bound, and in a condition

 conducive to successful transplanting.

 • Hardiness: Grown in the open for at least two months before being supplied.

 • Containers: With holes adequate for drainage when placed on any substrate commonly

 used under irrigation systems.

245 LABELLING AND INFORMATION

 • General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar

 with supplier's labelling for delivery to site, showing:

 - Full botanical name.

 - Total number.

 - Number of bundles.

 - Part bundles.

 - Supplier's name.

 - Employer's name and project reference.

 - Plant specification, in accordance with scheduled National Plant Specification

 categories.

 • Additional information: Submit on request: Impact of pest/ disease and propagation method and dates. Details of origin.

 246 LABELLING AND INFORMATION

 • Standard: To BS 3936.

 255 PLANTS/ TREES RESERVED AT SUPPLIER'S PREMISES

 • Types/ Species: As plant schedule.

 • Pre-delivery inspection: Give notice.

 • Labelling: Identify inspected plants/ trees as reserved for use on this project.

 260A PLANT/ TREE/ AQUATIC/ MARGINAL SUBSTITUTION

* The contractor is to inform/advise the CA at the time of tendering any difficulty in supply of specified plant material.
* The contractor is to tender a realistic price for any such plant material at the time of tender.
* Acceptable and written approval of species or variety substitutions of equal quality and cost are to be determined between the CA and contractor immediately after tender.
* If between the date of tendering and date of planting, certain plants are no longer available, it is the contractor’s responsibility to provide satisfactory evidence to the CA at the earliest opportunity. Substitutions are to be determined as above and approved in writing.

 • 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: Black polyethylene bags.

 • Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped.

 • Planting: Upright or well balanced with best side to front.

265A PLANT/TREE HANDLING STORAGE AND TRANSPORT:

1. Comply with CPSE 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part I, Part II and Part III, paragraphs 1.3.3 to 1.3.6, 3.0, and 4.0.
2. Handle plants/trees with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle. Trees and shrubs to be carefully and adequately packed and protected to survive transport to the site without damage in loading, transit or unloading. Prices Tendered to include for packing, delivery to site and unloading.
3. No plants or trees are to be delivered to site until the preparation of their planting areas and positions are practically complete. 48 hours’ notice of expected delivery shall be given to the CA. Where there is unavoidable delay between delivery and planting, heel-in bare-rooted plants in a prepared trench and pack moist soil around the roots.
4. Pots and other protective materials not to be removed until immediately prior to planting and plants shall not be subjected to adverse conditions such as exposure to drying winds. Plants which suffer damage through any cause or which suffer drying of roots prior to planting will not be accepted and shall be replaced. Pots and other protective materials shall be disposed of after planting. Where delay in planting means that plants in containers are likely to dry out, watering must be carried out as necessary and as agreed by the CA before the plants are removed from their containers.
5. Dip all bare-root transplants in root dip according to supplier's recommendations, immediately after lifting and placed/stored in plastic bags until immediately prior to planting, in accordance with Q31:362.
6. Spread roots out evenly of bare root stock
7. Backfill for bare root plants to be firmly heeled around the plant collar.
8. All plant material in full leaf, (i.e. all evergreens at all times and late spring planted for deciduous material) to have all the leaf area fully dipped in containers full of approved anti-desiccant solution mixed according to the manufacturer's instructions. Carry out immediately the plants arrive on site or at the nursery immediately prior to their collection. Provide evidence that this operation has been carried out on request.
9. Carefully prune damaged roots, branches or shoots. Replace trees or shrubs if major damage has occurred.
10. Refirm all plants if lifted by frost during the contract period.
11. Protect plant roots between lifting and delivery from adverse conditions such as water logging or prolonged exposure to drying winds or frosts.

280 TREATMENT OF TREE WOUNDS

 • Cutting: Keep wounds as small as possible.

 - Cut cleanly back to sound wood using sharp, clean tools.

 - Leave branch collars. Do not cut flush with stem or trunk.

 - Set cuts so that water will not collect on cut area.

 • Fungicide/ Sealant: Do not apply unless instructed.

 285 PROTECTION OF EXISTING GRASS

 • General: Protect areas affected by planting operations using boards/ tarpaulins.

 - Excavated or imported material: Do not place directly on grass.

 - Duration: Minimum period.

 290 SURPLUS MATERIAL

 • Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish,

 prunings and other arisings: Remove.

 **PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS**

 300 HERBICIDE TO CLEAR OVERGROWN BEDS

 • Locations: All planting areas.

 • Type: Suitable for suppressing perennial weeds.

 • Timing: Allow fallow period before cultivation.

 Duration (minimum): As manufacturer's recommendation.

 305 WEED CONTROL FOR INVASIVE NON-NATIVE WEEDS

 • Locations: All planting areas.

 • General: Prevent weeds from seeding and perennial weeds from becoming established, by

 Methods approved by CA and in accordance with EA code of practice where applicable.

 335 GENERAL FERTILIZER- SLOW RELEASE

 • Locations: All planting areas.

 • Manufacturer: Contractor's choice for CA’s approval.

 - Product reference: Contractor's choice.

 • Application: Spread evenly.

 - Timing: Immediately before cultivation.

 - Rate: to manufacturer’s recommendation, or as outlined below to approval of CA:

* 70 grams/m2 for tree and shrub seeded areas.
* 70 grams/m2 for shrub beds as a top dressing.
* 50 grams/bare root shrub at time of planting.
* 70 grams/whip or transplant at time of planting.
* 100 grams/small feather.
* 100 grams/light feather or large feather.
* 140 grams/standard or selected standard.
* 250 grams/extra heavy standard or heavy standard

 341 PEAT

 • Do not use peat or products containing peat.

 361 PEAT FREE COMPOST PART OF BACKFILL MATERIAL

 • Locations: All planting areas.

 • Type: Sanitized and stabilized compost.

 • Manufacturer/ Supplier: Contractor's choice.

 - Product reference: Contractor's choice.

 • Standard: To PAS 100.

 • Horticulture 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: Required.

 • Application: Spread evenly.

 - Timing: Apply prior to cultivation.

 - Rate: 270 litres per extra heavy tree pits

 80 litres per 5m2 planting bed.

 Or as otherwise directed by CA.

 • Other requirements: Local source.

362 ROOT DIP AT PLANTING

* Product name: Alginure root dip or similar equivalent approved by the CA.
* Manufactured by Alginure Products Ltd or similar approved
* All bare root plants to be dipped (entire root system and lower 150mm of stem) in root dip solution prior to planting in accordance with manufacturer’s recommendations.

375 CULTIVATION

 • Compacted topsoil: Break up to full depth. Avoid disturbance of subsoil.

 • Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm size.

 - Depth: 300mm.

 - Timing: Within a few days before planting.

 - Weather and ground conditions: Suitably dry.

 • Surface: Leave regular and even.

 • Levels: As shown on drawings to suit final levels.

 • Incorporate compost at a rate of 12 litres per m2 by mechanical means or by hand.

 • Incorporate slow release fertilizer into the top 300mm of topsoil at a rate of 70 grams per m2 by mechanical means or by hand.

 • Undesirable material brought to the surface: Remove visible weeds, roots and large stones

 with any dimension exceeding 38 mm.

 • Reduce top 50mm of topsoil to a fine tilth.

 • Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

385 MULCH MATTING/ GEOTEXTILE FABRIC

• Manufacturer: Contractor’s choice.

- Product reference: Contractors choice.

• Type: As stated on drawings.

• Recycled content: To be approved by CA.

• Timing: Lay before planting.

• Watering: Water soil thoroughly before laying.

• Laying: In close contact with soil surface. Lap or butt joints as recommended by

manufacturer, with no gaps.

• Planting: Cut neat slits or flaps. Refit closely around plant stems.

• Overlay: To be approved by CA.

 390 GEOTEXTILE FABRIC LINING FOR AQUATIC/ MARGINAL PLANTING

 • Manufacturer: Contractor’s choice

 - Product reference: Contractor’s choice

 • Lining: to manufacturer’s recommendation.

 • Timing: Lay before planting.

 • Laying: In close contact with soil surface. Lap or butt joints as recommended by

 manufacturer, with no gaps.

 • Planting: Cut neat slits or flaps. Refit closely around plant stems.

 **PLANTING SHRUBS/ AQUATICS/ MARGINALS/ HERBACEOUS PLANTS/ BULBS**

 400 RANDOM PLANT LAYOUT TO SHRUB PLANTING

 • Spacing: Random groups of plants of the same species as shown on drawings.

 • Density: As shown on planting schedule

 405 SHRUB PLANTING PITS

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

 • Sizes: Sufficient size to accommodate roots when fully spread or root ball and 75mm deeper than root system.

 • Pit bottom improvement. Break up to a depth of 150 mm, incorporating 25 g of slow release

 fertilizer per planting pit.

 • Backfilling material: Reuse excavated material.

420 CLIMBING PLANTS

• Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.

- Branches: Lightly secured to supports.

• Climber supports: Stainless steel wire.

- Base height: 600mm above ground.

- Extent: As drawings.

- Centres: 300mm

- Distance from wall: As drawings.

• Fixings: Contractors choice.

- Centres: 1m.

457 PLANTING AQUATIC/ MARGINAL PLANT PLUGS

 • Handling: Keep plants watered and in shade until planted. Do not allow to dry out.

 • Preparation: Remove coarse weeds etc. from planting sites.

 • Planting sites: As shown on drawings.

 • Waterproofing membrane below soil: Do not puncture.

 • Planting: Into a hole to suit plug size and shape. Create a cleft at bottom of hole to improve

 rooting. Gently firm the plant into hole to ensure good root hold into substrate.

459 NOTCH PLANTING BARE ROOT AQUATIC PLANTS

 • Notching: Make a vertical 'I', 'L', 'T' or 'H' notch.

 - Depth: To accommodate full depth of roots.

 • Waterproofing membrane below soil: Do not puncture.

 • Planting: Insert plant at specified water depth, close notch and firm surrounding soil to

 ensure good root hold into substrate.

461 PLANTING CONTAINERIZED, BAGGED AND WEIGHTED BUNCH AQUATIC PLANTS

 • Preparation: Remove coarse weeds, debris, etc.

 • Waterproofing membrane below soil: Do not puncture.

 • Planting sites: Form level, stepped or gently sloping areas as scheduled and/ or

 appropriate to planting water depths and container/ bag sizes and shapes.

 • Planting: Lower containers/ bags/ bunches gently into place, keeping plants upright.

462 BALLASTING AQUATIC AND MARGINAL PLANTING

 • Requirement: Where containers/ bags are not pre-weighted, cover with sufficient ballast to

 prevent flotation and keep plants secure against likely maximum water flow.

 Ballast: Contractor’s choice to be approved.

463 PREPLANTED MATS

• Manufacturer: Contractors choice.

- Product reference: Contractors choice.

• Substrate preparation: To manufacturers recommendations.

• Fixing/ Jointing: To manufacturers recommendations.

- Restraint on slopes: To manufacturers recommendations.

• Establishment/ Aftercare: TBC by the CA.

471 NATURALIZED HEDGES

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

474 INSTANT HEDGING

 Supplier: To be approved by the CA

Product: Instant Hedge, species to be confirmed.

 Spec: Continuous root strips of well knitted flat-sided hedging in 1m lengths or individual pots dependant on size specified

Height and species: As specified

Planting: In trenches large enough to take full spread of roots.

475 BACKFILLING MATERIAL

 • A previously prepared 50:50 mixture of topsoil and peat free compost to PAS100 to depths as shown on drawings.

 480 AFTER PLANTING

 • Watering: Immediately after planting, thoroughly and without damaging or displacing plants

 or soil.

 • Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots,

 to a fine tilth with gentle cambers and no hollows.

• Ameliorant / Conditioner: TBC by CA.

• Fertilizer: TBC by CA.

 485A MULCHING PLANTING BEDS

 • Material: Amenity grade bark mulch.

 - Purity: Free of pests, disease, fungus and weeds.

 • CA to inspect sample load which shall be retained for comparison with subsequent loads. No mulch shall be spread prior to sample being approved. The CA shall reserve the right to reject the sample or any subsequent loads which do not in his/her opinion match the approved sample.

 • Preparation: Clear all weeds. Only spread when the soil is moist. Water soil thoroughly if the weather is dry.

 • Coverage: 75 mm depth.

 • Finished level of mulch: to suit final topsoil levels or as directed on site.

486 SHRUB PROTECTION

 • Manufacturer: Contractor's choice.

 - Product reference: Contractor's choice.

 • Type: Round.

 • Material: Polyethylene.

 • Size: 0.6 m high x 175 mm diameter.

 • Colour: Green.

 • Support: Single timber stake.

 • General: Ensure that protection methods do not impede natural movement of shrubs or

 restrict growth.

487 SHRUB PROTECTION – Shelters

Manufacturer: Green-tech or other to be approved by CA

 Type: Shrub shelters, in the form of biodegradable tubes, shall be used where specified

 Material: 100% biodegradable

 Size: 0.6m high

 Colour: To be approved by CA

 Support: Bamboo cane inside the guard, 300mm into the ground or as approved by the CA

 The top edge of shelters shall be formed to prevent abrasion damage to the enclosed plants. Shelters shall be fixed with releasable ratchet ties to softwood or hardwood stakes, 25 mm x 25 mm in cross section and 1m long. Overall height above ground level shall be approved prior to use.

Ensure that protection methods do not impede natural movement of shrubs or restrict growth.

During the 5 year aftercare period, adjust, refix or replace shelter and / or stake to original

specification and to prevent chafing.

 During or at the end of the 5 year establishment aftercare period as part of the contracted works, shelters shall be removed from plants and industrially composted off site by the contractor, as instructed by the CA. Cane supports shall be removed from plants and recycled.

488 SHRUB PROTECTION – Spirals

 Manufacturer: Green-tech or other to be approved by CA

 Type: Spiral rabbit guards

 Material: 100% biodegradable

 Size: 0.6m high

 Colour: To be approved by CA

 Support: Bamboo cane inside the guard, 300mm into the ground or as approved by the CA

During or at the end of the 5 year establishment aftercare period as part of the contracted works, spiral guards shall be removed from plants and industrially composted off site by the contractor, as instructed by the CA. Cane supports shall be removed from plants and recycled.

489 PLANTING BULBS:

* Planting carried out by the use of a trowel, bulb auger or spade. On no account must a dibber be used, to prevent a hollow triangular cavity remaining under the bulb after planting.
* Prior to planting, take all necessary measures to prevent fungal and eelworm attack during the first growing season.
* Depth guide – soil covering of 2 x depth of bulb as measured from crown, to be used for planting depth.
* Bulbs etc to be arranged in natural groups and care taken to ensure same depth planting for each group of bulbs, to promote uniform flowering.
* Bulbs etc to be placed on a layer of coarse sand and tree planting compost/topsoil mixture.

490 INDIVIDUAL MULCH MATS

• Manufacturer: To approval of CA.

- Product reference: To approval of CA.

- Type/ Size: As detailed on drawings.

• Recycled content: To approval of CA.

• Timing: Lay after planting.

• Watering: Water soil thoroughly before laying.

• Laying: In close contact with the soil surface. Position pre-slit mats closely around plant

stems.

• Fixing: Pegged.

• Overlay: TBC.

491 NETTING EXISTING HEDGEROWS TO PROTECT FROM NESTING BIRDS

• Description and need: Vegetation clearance such as hedgerow removal, should ideally be timed to avoid the bird breeding season, which runs from March to September (inclusive). This is to prevent adverse impacts to any active bird nests present and therefore ensures wildlife legislation is not breached.

• In some circumstances a hedgerow may have been identified as requiring removal (possibly to permit an anticipated development), however the hedgerow cannot be removed prior to the bird breeding season as the relevant permissions or land access consents have not been granted. It may therefore be deemed appropriate to try and prevent birds from nesting within a hedgerow, and one method to stop birds from nesting is to cover the hedgerow in netting. The netting prevents birds from nesting within the hedgerow, and therefore should the consent to remove the hedgerow be granted during the bird breeding season, the hedgerow can then be removed without affecting any active nests.

•The netting process isolates the hedgerow (or hedgerow section) that is required to be removed and approximately an additional 3m either side (this will ensure no birds nest close to the section to be removed). The netting used is similar to debris netting used on building sites (often to cover scaffolding), and is secured at both the sides and edges of the hedgerow with pegs and cable ties. It is important to ensure that no gaps, raised sections or tears occur in the netting itself, or where the netting meets the ground. Any such gaps could allow access for birds to enter the netted hedgerow and build nests.

• Although no method can guarantee birds will not be able to nest within a hedgerow (gaps and tears can occur in the netting), this process can successfully allow hedgerows to be removed during the bird breeding season, and therefore avoid major delays.

• Timing: Hedgerow netting can be carried out between October and February (i.e. outside the bird breeding season), however February is considered the most suitable time, as when netting is left in place for a significant period of time, the chances of gaps or tears occurring increases. The netting is also highly visible and therefore possibly subject to vandalism, and can be susceptible to damage by stock (and is some circumstances may not be suitable). Hedgerow netting can however be carried out during the bird breeding season if an experienced ecologist can confirm that there are no active nests present.

• Preparation: Prior to being netted the hedgerow should ideally be flailed (outside the bird breeding season), as this makes the netting process more straightforward and therefore easier (and faster) to complete. Where a section of hedgerow is to be removed, it is normally necessary to cut a thin strip through the hedgerow to allow the ends to be sealed effectively. Where this flailing and cutting cannot be undertaken the process takes longer and therefore becomes more costly.

• Precise measurements of the hedgerow that will require netting (including maximum height, width and length)

**PLANTING TREES**

 505A TREE PITS

Shall be excavated to at least the minimum dimension for the size of tree as indicated on the table below (unless detailed differently on project specific drawings, if so, confirm size with CA):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Tree size** | **Semi-mature** | **Extra heavy standard** | **Heavy standard** | **Selected standard** | **Standard** | **Light standard** | **Large feather** |
| **Minimum tree pit size** | 1500 x 1500 x 1000 | 1200 x 1200 x 750mm | 1000 x 1000 x 750mm | 900 x 900 x 600mm | 900 x 900 x 600mm | 750 x 750 x 600mm | 750 x 750 x 600mm |

 • Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum

 depth throughout.

 • Pit bottoms: With slightly raised centre. Break up to a depth of 200 mm.

 • Pit sides: Scarify.

 • Backfilling material: 50:50 mix of topsoil to peat free compost to PAS100. Backfilling to be carried out in layers of 150 – 200mm depth, each layer firmly consolidated to eliminate air pockets.

 • Where there is a delay between the creation of tree pits and planting of trees, each tree pit shall be marked by a 1000 x 50 x 50mm softwood stake driven 800mm deep. Top to be painted white.

 • Accessories: Fit irrigation / ventilation tube with cap and chain (to be approved) to each tree.

 Additional accessories to be provided as shown on drawings.

511 ROOT DEFLECTING RIBS

 Locations: As shown on drawings

 Manufacturer: To be approved by CA

 Product reference: To be approved by CA

 Type: To manufacturer’s recommendation

 Depth of top of root barrier below finished soil level: As per manufacturer’s recommendations

 Installation: With sides vertical

 512 TREE PIT ACCESSORIES

 • Locations: As shown on drawings.

 • Manufacturer: To be approved by CA

 - Product reference: To be approved by CA

 • Type: To manufacture’s recommendation.

513 LINER TO TREE PITS

Tree pits within 3 metres of underground gas pipes or drains shall be lined to prevent root damage with the following:

 Product: Tektaroot or similar approved 1500mm dia x 900mm deep x 3mm thickness

 1200mm dia x 900mm deep x 3mm thickness

514 IRRIGATION PIPE

* During backfilling operations, install a 100mm diameter perforated UPVC flexible pipe with sealed/stoppered lower end and a removable upper cap, black colour, connected with a proprietary fixing to the pipe.
* Coil once around the rootball at half its depth.
* Open end to protrude 50mm above finished soil level.
* Pipe to be filled with fresh water to overflowing.

 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: 200 mm.

 • Drainage pipes:

 - Type: Contractor’s Choice.

 - Diameter: Contractor’s Choice.

 - Position: Lay around perimeter of pit within aggregate layer.

 - Discharge: As shown on drawings.

 • Geotextile filter:

 - Manufacturer: Contractor’s Choice.

 - Product reference: Contractor’s Choice.

 - Position: Lay over aggregate before installing tree or backfill.

 • Completed pits: Test for free drainage before planting.

516 UNDERGROUND GUYING

 • Locations: As shown on drawings.

 • Manufacturer: To be approved by CA or detailed on drawings

 - Product reference: To be approved by CA or detailed on drawings

 • Type: To be approved by CA or detailed on drawings

 525 SEMI MATURE TREES

 • Standard: Prepare roots and transplant to BS 4043.

 • Backfilling material: As clause 586 unless otherwise directed.

 • Support: Underground guying or as specified on drawings.

 • Protection: Not required unless specified on drawings.

 535A STAKING GENERALLY

 • Stakes: To BS 4043. Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.

 Preservative treatment: Pressure impregnated with timber preservative suitable for timber in ground and non-toxic to plants. Neutral colour.

 • Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.

 • Stake sizes as per table below:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Tree size** | **Semi-mature\*** | **Extra heavy standard** | **Heavy standard** | **Selected standard** | **Standard feather** | **Light feather** | **Large feather** |
| **Minimum diameter** | *125mm* *half round* | *100mm* | *100mm* | *75mm* | *75mm* | *75mm* | *75mm* |
| **Overall length** | *2.0m* | *2.0m* | *2.0m* | *1.8m* | *1.8m* | *1.6m* | *1.6m* |
| **Height above ground** | *0.5m* | *0.5m* | *0.5m* | *0.5m* | *0.3m* | *0.3m* | *0.3m* |
| **No. of stakes per tree (As per Clauses 555 and 575)** | *2* | *1-2* | *1-2* | *1* | *1* | *1* | *1* |

\*Staking not required if underground guying is used.

555 SHORT SINGLE STAKING FOR BARE ROOT TREES

 • Staking: Position stake close to tree on windward side and drive vertically at least 600 mm

 into bottom of pit before planting.

 - Backfilling: Consolidate material around stake

 • Height of stakes: Cut to approximately 500 mm above ground level.

 • Ties: J.Tom's rubber or plastic webbing with spacer or similar.

 • Tying: Secure tree firmly but not rigidly to stake with one tie within 25 mm of top of stake.

 575 SHORT DOUBLE STAKING FOR ROOT BALLED TREES

 • Staking: Drive stakes vertically at least 600 mm into bottom of pit on either side of tree

 position before planting.

 - Backfilling: Consolidate material around stakes.

 - Firmly fix on windward side of tree and as close as possible to stem.

 • Ties: Reinforced rubber buckle ties with spacers.

 • Tying: Secure tree firmly but not rigidly to cross bar.

586A TREE BACKFILLING MATERIAL

 • Composition: Previously prepared 50:50 mixture of topsoil and peat free compost to PAS100.

 • Fertilizer: Slow release fertilizer.

 - Application rate: To manufacturer’s recommendations.

 590 MULCHING TREES

 • Material: Amenity grade bark mulch.

 - Purity: Free of pests, disease, fungus and weeds.

 • Preparation: Clear all weeds. Water soil thoroughly.

 • Coverage: In a circular area of 500 mm radius measured from the tree stem.

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

 595 TREE PROTECTION

 • Manufacturer: As specified on drawings or to approval.

 - Product reference: Contractor’s Choice.

 • Type: To be approved by CA.

 • Material: Polypropylene.

 • Size: As shown on drawings or to approval.

 • Colour: To be approved by CA.

 • Support: Manufacturers recommendations.

 • General: Ensure that protection methods do not impede natural movement of trees or

 restrict growth.

596 TREE PROTECTION – Shelter

Manufacturer: Green-tech or other to be approved by CA

 Type: Tree shelters, in the form of biodegradable tubes, shall be used

 Material: 100% biodegradable

 Size: 0.6m high

 Colour: To be approved by CA

 Support: Bamboo cane inside the guard, 300mm into the ground or as approved by the CA

 The top edge of shelters shall be formed to prevent abrasion damage to the enclosed plants. Shelters shall be fixed with releasable ratchet ties to softwood or hardwood stakes, 25 mm x 25 mm in cross section and 1m long. Overall height above ground level shall be approved prior to use.

Ensure that protection methods do not impede natural movement of trees or restrict growth.

During the 5 year aftercare period, adjust, refix or replace shelter and / or stake to original

specification and to prevent chafing.

 During or at the end of the 5 year establishment aftercare period as part of the contracted works, shelters shall be removed from plants and industrially composted off site by the contractor, as instructed by the CA. Cane supports shall be removed from plants and recycled.

597 TREE PROTECTION – Spirals

 Manufacturer: Green-tech or other to be approved by CA.

 Type: Spiral rabbit guards

 Material: 100% biodegradable

 Size: 0.6m high

 Colour: To be approved by CA.

 Support: Bamboo cane inside the guard, 300mm into the ground or as approved by the CA

During or at the end of the 5 year establishment aftercare period as part of the contracted works, spiral guards shall be removed from plants and industrially composted off site by the contractor, as instructed by the CA. Cane supports shall be removed from plants and recycled.

598 PARKLAND TREE GUARDS

 Type: Wooden posts and four rails with wire mesh as Q40 Clause 143, with run of barbed wire at top and bottom.

 Height: Top rail no less than 1.2m high from ground to rail.

 Posts: 3no or 4no to be confirmed by CA (3no if within flood zone). At least 1.8m long. Guard to be tapered from 2m at the bottom to 3m at the top.

 Wood: Timber. See earlier timber procurement policy.

 Mulch mat: Manufacturer, to be agreed with CA. Location, pegged down inside guarded area.

**TRANSLOCATING TREES**

599 The landscape contractor should seek and utilise the services of an experienced specialised firm to undertake the tree translocation operation.

The landscape contractor will organise and provide assistance to the specialist translocation contractor to undertake appropriate preparation and measures for lifting, transporting and replanting the semi-mature trees.

This should include the implementation of a suitable underground guying system and irrigation tube and cap, together with ongoing establishment aftercare including watering for up to a five year period. The operation shall be undertaken by the use and application of a mechanical tractor mounted tree spade. For situations where the use of tree-spades is not practical, other methods such as the Newman® Frame or similar approved may be applied.

Tree pit size

|  |  |  |
| --- | --- | --- |
| **Type** | **Dimension of excavation** | **Depth of cultivation at the base of pits or trenches** |
| Translocated | Measurement of rootball + 400mm in any direction | 200mm |

Tree pits should be carefully located and excavated in advance in order to ensure that the size is suitable for the rootball of each individual translocated tree specimen.

**WOODLAND/MATRIX/BUFFER ZONE PLANTING**

600 WOODLAND WORK GENERALLY

 • Services: Check for below and above ground services, including land drainage, in the vicinity. Give notice if they may be affected and obtain instructions before proceeding.

 • Safety: Comply with Arboriculture and Forestry Advisory Group Safety leaflets.

605 EXISTING VEGETATION/ WEED CLEARANCE

 • Surface vegetation clearance: In areas shown on drawings, using suitable non-residual

 herbicide to form tree circles measuring 1m diameter or if directed screen an area 1m diameter around each planting location.

 • Arisings: Remove.

 625 CULTIVATION

 • General: Cultivate along planting lines or general areas as directed to make suitable for planting.

 • Soil within root spread of trees to be retained: Do not plough or cultivate.

 635 NOTCH PLANTING IN UNCULTIVATED GROUND

 • Notching: Make a vertical 'I', 'L', 'T' or 'H' notch adjacent to ripping furrows at spacing specified.

 - Depth: To accommodate full depth and spread of roots.

 • Planting: Soak all bare root plants in water/root dip solution immediately before planting, in accordance with Q31:362. Scatter 50 grams slow release fertilizer in accordance with Q31:335 into the planting notch at the time of planting.

 Plant tree upright at nursery level, close notch with the root collar at ground level and firm well in.

 Prune all plants back to bud nearest 200mm at planting or as agreed with CA.

 All plants to be well watered in within 72 hours of planting.

 680 SETTING OUT

 • Planting density: As shown on plant schedule.

* + - * Layout: Random groups of no less than 3 or more than 7 of the same species, ensuring that no three plants are aligned in any one direction.. Group sizes as indicated on drawings or as directed on site.

**PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS**

 701A PRACTICAL COMPLETION CERTIFICATE FOR EXTERNAL PLANTING

 Before a Certificate of Practical Completion or letter accepting ‘The Works as complete’ is issued, the following conditions must be fulfilled:

1. All work must be fully completed and in accordance with the specification on the day named in the Certificate. Sectional Completion will only be at the discretion of the CA.

2 The contractor is responsible for any protection and maintenance as specified herein, required before practical completion at his own cost. The work shall be completely in accordance with the specification in a weed free and clean and tidy condition on the day named in the certificate.

3. All planted material shall be healthy and correctly located.

4. All hard surfaces should be swept and litter free.

702 RECTIFICATION PERIOD (DEFECTS LIABILITY PERIOD)

 All soft landscape works will be subject to a rectification period (formerly known as the defects liability period) as stated under section A20 Clause 2.10A of the Conditions of Contract from the date of Practical Completion. During these periods the contractor will be required to carry out maintenance operations as specified, and make good all defects and work which in the opinion of the CA is unsatisfactory.

 703 FAILURES OF PLANTING

Post Practical Completion maintenance of the planting is to be carried out by the landscape contractor as specified in this section and also in section Q35. Any trees/shrubs/plants which are dead, dying, or otherwise defective at the end of the rectification period will be regarded as defects due to materials or workmanship not in accordance with the contract. They must be replaced by approved equivalent trees/shrubs/plants at the next suitable planting season unless otherwise instructed. This will not apply if the defects are caused by malicious damage after Practical Completion.

704 WARRANTY OF SEMI MATURE AND EXTRA HEAVY TREES

* The contractor is to provide a five (5) year warranty on the survival of trees to cover the cost of their replacement in the event of death by natural causes.
* Evidence of the warranty to be provided to the Environment Agency on in advance of the commencement of maintenance operations.
* Trees to be replaced to species, sizes and form as originally specified/supplied.
* Commencement of warranty shall be at Practical Completion.
* This clause is additional to clause 703.

710A MAINTENANCE DURING RECTIFICATION PERIOD

 • Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period or as otherwise directed.

 • Frequency of maintenance visits: In accordance with the agreed maintenance schedule.

 720 FAILURES OF PLANTING

 • Defects due to materials or workmanship not in accordance with the Contract: Plants/

 trees/ shrubs that have failed to thrive.

 - Exclusions: Theft or malicious damage after completion.

 - Rectification: Replace with equivalent plants/ trees/ shrubs.

 • Replacements: To match size of adjacent or nearby plants of same species or match

 original specification, whichever is the greater.

 • Timing of making good: During the next suitable planting season.

 730 PROTECTIVE FENCING (Refer to respective clauses in Q40)

 • Fencing type: As specified on drawings.

 - Height: 1.1m.

 • Erection: On completion of planting.

 • Removal: After planting is well established or as otherwise directed.

740 CLEANLINESS

 • Soil and arisings: Remove from hard surfaces and grassed areas.

 • General: Leave the works in a clean tidy condition at completion and after any

 maintenance operations.

 750A PLANTING MAINTENANCE 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 use of approved non-residual herbicides.

 • 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.

 - Allow for removal of stakes, cross bars and ties upon completion of the maintenance operations upon direction of the CA

 • Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/

 shrubs.

 • Trees: Spray crown when in leaf during warm weather if directed to do so.

 - Timing: After dusk.

 • Watering: During establishment, ensure that sufficient water is applied to maintain healthy growth, this shall be included in the Contractor’s rates.

755 PLANTING MAINTENANCE - FERTILIZER

 • Time of year: March or April.

 • Fertilizer: Slow release.

 - Manufacturer: Contractor’s choice to be approved.

 - Product reference: Contractor’s choice to be approved.

 • Application: Evenly spread, carefully incorporating below mulch materials.

 • Application rate: As per Clause Q31: 335 or 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: In accordance with the agreed maintenance schedule.

 - Trees: Favour a single central leading shoot.

 • Arisings: Remove.

780 MAINTENANCE INSTRUCTIONS

 • General: Before end of the maintenance period, submit printed instructions recommending

 procedures to be established by the Employer for maintenance of the planting work for one

 full year: Provide a schedule of any ongoing maintenance problems experienced during the

 rectification period.

 790 FINAL MULCHING

 • Timing: At end of the maintenance period.

 • Watering: Ensure that soil is thoroughly moistened prior to re-mulching, applying water

 where necessary.

 • Planting beds: Re-mulch.

 Depth (minimum): 75 mm.

 • Trees: Re-mulch.

 Depth (minimum): 75 mm.

# Q35 Landscape maintenance

To be read with Preliminaries/ General conditions. This maintenance specification is for work post Practical Completion.

 **GENERALLY**

100 MAINTENANCE PROGRAMME

The Contractor shall supply a site-specific maintenance programme to the Supervisor for acceptance. The maintenance programme shall include proposed frequency of maintenance visits and key operations envisaged at each visit.

* The Contractor shall confirm that there are no nesting birds prior to undertaking maintenance work.
* The Contractor shall complete each maintenance visit to specification within one week of each programmed visit date specified in the accepted maintenance programme.

101 MAINTENANCE SCHEDULE SHEET

* A standard Maintenance Schedule Sheet is provided in Appendix A.
* Within three (3) working days of completion of each programmed visit, the Contractor shall complete and return a signed copy of the Maintenance Schedule Sheet to the Supervisor
* Any items on the signed Maintenance Schedule Sheet that are not confirmed by the Supervisor as having been satisfactorily undertaken will be deemed to be a Defect.

110 NOTICE

• Give notice before:

- Application of herbicide.

- Application of fertilizer.

- Grass cuttings.

- Watering.

- Each site maintenance visit.

• Period of notice: One week minimum.

115 UNAUTHORISED MAINTENANCE VISITS

 Any additional maintenance visit for which the contractor has not received a specific written request from the CA shall not be authorised for payment.

120 PLANTING MAINTENANCE GENERALLY

The Contractor shall carry out maintenance of the contract areas as follows:

* Make visits defined in the accepted maintenance programme.
* Additional visits: In addition to the foregoing visits, the Contractor may be required to make such other visits as may be deemed necessary for rectification of damage or as may be necessary to maintain the planted areas in a healthy and thriving condition; and
* Any damage to planting by the Contractor shall be made good.

125 WEED CONTROL

* Tree pits and hedgerows shall be kept free from annual and perennial weeds by manual and/or chemical methods.
* Proprietary brands of contact translocated and residual herbicides only to be used.
* Amenity grass, species rich grassland and the Biodiversity Improvement Areas: Keep area free of serious infestations of undesirable broad-leaved weeds by spot application or weed wiping of suitable broad-leaved herbicide. Undesirable weeds include Broad leafed dock, Curled dock, Common ragwort, Creeping thistle, Spear thistle, Himalayan Balsam, Giant hogweed and Japanese knotweed. Other species which may be a nuisance locally that require control should also be removed.

 130 REINSTATEMENT

 • Damage or disturbance to trees, hedges or grass: Reinstate to original condition.

 140 CONTROL OF MAMMALIAN PESTS

 • Specialist firms: Submit proposals.

 - Method: Submit proposals.

 155A MAINTENANCE WATERING OF PLANTING

* The Contractor shall inspect the site at regular intervals and water as necessary for the establishment of all planting.
* Water the beds until entire depth of topsoil / subsoil / backfill mixture is saturated.
* Application: Do not damage or loosen plants.

158 WATERING OF SEMI MATURE TREES

The Contractor shall inspect each tree at 2 week intervals throughout the maintenance period and at each visit shall water each tree as necessary to ensure healthy growth.

 160A WATER RESTRICTIONS

The Contractor shall notify the Supervisor if water supply required for watering is, or is likely to

be, restricted by emergency legislation (e.g. drought).

170 DISPOSAL OF ARISINGS

Unless agreed otherwise in writing, the Contractor shall dispose of all arisings off site. The Contractor shall supply a copy of any such written agreement to the Supervisor.

 180A CHIPPING OR SHREDDING

 • General: Not permitted on site unless requested and approved by CA.

 181 MECHANICAL EQUIPMENT

The Contractor shall comply with the following regarding mechanical equipment for maintenance: General:

* Minimise nuisance noise (Timing/Volume).
* Prohibited equipment: Flails shall not to be used on tree planting.

190A LITTER

 • During the course of each maintenance visit, the contractor is responsible for removal and disposal of all deleterious items, litter, fallen branches, and other rubbish leaving the site in a clean and tidy state.

 • Hard surfaces adjoining planted areas shall be swept clear of soil, mulch, other arisings and litter at each maintenance visit.

 • Graffiti and fly posted bills shall be removed as directed and instructed by the CA.

 195 PROTECTION OF EXISTING GRASS / OTHER SURFACES

 • General: Protect areas affected by maintenance operations using boards/tarpaulins. Do not

 place excavated or imported materials directly on grass.

 197 CLEANLINESS

General: The Contractor shall leave the works in a clean, tidy condition after any maintenance

operations.

 198 CONTROL OF JAPANESE KNOTWEED

1. Any treatment, removal, or excavation works in the vicinity of Japanese Knotweed must be undertaken in conjunction with a Management Plan for Japanese Knotweed. This will be provided to the contractor by the CA prior to the commencement of works.

2. The Contractor will be required by the Management Plan to provide a schedule for control and monitoring activities. Relevant information will also need to be provided by the contractor for recording in the Herbicide records and Waste records sections of the Management Plan.

3. The Environmental Protection Act 1990 (EPA 1990) contains a number of provisions concerning “controlled waste”, which are set out in Part II. Any Japanese Knotweed contaminated soil or plant material that is to be discarded is likely to be classified as controlled waste. The most relevant provisions are in sections 33 and in section 34 (Duty of Care). Refer to the Environment Agency Code of Practice “Managing Japanese Knotweed on development sites”.

4. Avoid spreading rhizomes by following the guidance given within the Code of Practice. If you spread rhizome into the environment, you may be liable to prosecution under the Wildlife and Countryside Act 1981.

5. • Operations: Spot treat in August-September during suitable weather conditions and

when plants are growing vigorously to the approval of the CA, or as otherwise identified in the Management Plan.

 • Herbicide: To be approved.

 • Application: To manufacturer’s recommendations.

 • Arisings: Remove to licensed tip in accordance with current C.O.S.H.H. Regulations and the EPA 1990.

6. The contractor is reminded that the Control of Pesticides (Amendment) Regulations 1997 requires any person who uses a pesticide to take all reasonable precautions to protect the health of human beings, creatures and plants, safeguard the environment and in particular avoid the pollution of water. For application of pesticides in or near water, approval from the Environment Agency must be sought before use, allowing appropriate time for a licence to be obtained.

 **GRASSED AREAS**

 210 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.

 - Water logging 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.

211 MAINTENANCE OF GRASSED AREAS

Standard: To BS 7370-3. Carry out maintenance appropriate to each category of turf, as follows:

- Objectives: To BS 7370-3, table 6.

- Programme: To BS 7370-3, clause 11.

- Mowing methods: To BS 7370-3, table 3.

 220 GRASS CUTTING GENERALLY

The Contractor shall comply with the following for all grass cutting:

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

225 TREE STEMS

 • Precautions: Do not use mowing machinery closer than 500 mm to tree stems. Use nylon

 filament rotary cutters and other hand held mechanical tools carefully to avoid damage to

 bark.

 226 TREE STEMS

 • Precautions: Do not allow nylon filament rotary cutters and other mechanical tools closer

 than 100 mm to the stem of any tree.

 Operations close to stems: Complete using hand tools.

 235 BULBS AND CORMS IN GRASSED AREAS

Before flowering: Do not cut bulbs, allow bulbs to die down naturally

 240A MOWING MARGIN

 • Location: As existing alongside structures.

 • Width (approximate): 150 mm.

 • Operations: Remove overgrowth by manual or chemical means and edge as appropriate.

 250 LEAF REMOVAL

 • Operations: Collect fallen leaves.

 • Special requirements: To approval of CA.

 • Disposal: Off site.

 260A MOWING LAWNS

 • Refer to Q30: 623

 262 MOWING SPORTS FIELDS

 • Grass height: Maximum 50mm.

 • Arisings: Remove.

265A MOWING GENERAL AREAS

 • Refer to Clause Q30: 620A. (Refer also to clause Q35:220)

272 MAINTAINING GRASSED AREAS WITH PERENNIAL WILD FLOWERS

 • Preparation: Before each cut remove litter and debris.

 • Height and frequency of cut in first growing season:

 - Time of first cut: June/July.

 - Height of first cut: 50mm.

 - Frequency of subsequent cutting (minimum): Twice per year.

 - Height of growth permitted (maximum): 150 mm until established.

 • Height and frequency of cut in second growing season:

 - Time of cut: Single cut in October.

 - Height of cut: 50 mm.

 • Trimming: All edges.

 - Arisings: Remove.

 • Watering: As required.

 273 MAINTAINING GRASSED AREAS WITH ANNUAL WILD FLOWERS

 • Preparation: Before each cut remove all litter and debris.

 • Timing of first cut: To approval of CA.

 • Height of first cut: 75mm.

 • Subsequent cutting: Cut as necessary, so the height of growth does not exceed 75 - 100mm.

 • Trimming: All edges.

 - Arisings: Remove from site.

 • Watering: As required.

 275A CUTTING SPECIES RICH GRASSLAND AND BIODIVERSITY IMPROVEMENT AREAS (N6 CLAY SOILS MEADOW MIXTURE AND N4 SUMMER FLOWERING BUTTERFLY & BEE MEADOW MIXTURE)

* Height and frequency of cuts in first growing season:
	+ Time and height of first cut: In accordance with Q30 Clause 530B,
	+ Frequency of cutting (minimum): Mow when sward reaches 100mm during the establishment period to avoid the grass species suppressing wildflower species, final cut late August/Early September.
	+ Height of cut: 50mm.
	+ The type of machine to be used shall be a rear or side discharge rotary type, a motor scythe with reciprocating blades or a nylon cord strimming device, whichever shall be applicable.#
	+ All arisings shall be removed and disposed of off-site.

280A CUTTING SPRING FLOWERING WILD FLOWER MEADOWS

* The Contractor shall mow during the first week of July and continue thereafter at one monthly periods until the end of September.
* The first cut shall be down to 50mm and for the rest of the season shall be 75 – 100mm.
* The type of machine to be used shall be a rear or side discharge rotary type, a motor scythe with reciprocating blades or a nylon cord strimming device, whichever shall be applicable.
* Arisings from the first cut shall be allowed to lie on site until such time as the “hay” has dried and shed seed. Arisings should then be removed using a springbok rake or similar hand or mechanical tool and disposed of by the contractor to tip.
* All arisings from subsequent cuts shall be removed immediately, using springbok rake or similar hand or mechanical tool and disposed of by the Contractor to tip.

 285A TOP DRESSING

 • Refer to clause Q30:680A

 290 ROLLING

 • Location: As directed.

 • Timing: After first cut of season.

 • Roller: Type to be approved by CA.

 • Operations: Consolidate turf and reduce frost heave.

 295 SPIKING

 • Location: As directed.

 • Timing: To approval of CA.

 • Operations: Aerate the soil and improve surface water penetration.

 • Depth (minimum): 75mm.

300 SCARIFYING

 • Location: As directed.

 • Timing: To approval of CA.

 • Operations: Relieve thatch conditions and remove dead grass.

 • Depth (maximum): 50mm.

 • Arisings: Remove from site.

 305 HARROWING

 • Location: As directed.

 • Timing: As approved by CA.

 • Operations: Aerate soil and remove worm casts.

 • Type of harrow: Chain harrow or drag mat.

 307 HOLLOW TINING

 • Location: As directed.

 • Timing: As approved by CA.

 • Depth: 125mm.

 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.

 310 RE-FORMING GRASS EDGES

 • Location: As directed.

 • Edges: Draw back soil and re-form edges to clean straight lines or smooth flowing curves,

 sloping slightly back from vertical.

 311 RE-FORMING GRASS EDGES

 • Location: As directed.

 • Standard: To BS 7370-3.

 • Finishing: To approval of CA.

 - Support: As required.

 320 LEVELLING HOLLOWS AND BUMPS IN TURF

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

 325 RELIEVING SURFACE COMPACTION IN TURF

 • Standard: To BS 7370-3.

 • Method: Terra-venting or similar approved.

 • Top dressing: Only if required to approval of CA.

 - Depth: 300mm.

 330 SELECTIVE HERBICIDE

 • Location: As directed.

 • Herbicide: Suitable herbicide for use and as notified to CA.

 • Areas not to be sprayed: As directed.

340 SPOT WEEDKILLING IN ROUGH GRASS AREAS

 • Herbicide: Suitable for use.

 • Operations: Spot treat injurious weed species listed in the Weeds Act 1959 and Wildlife

 and Countryside Act 1981.

**FERTILIZER APPLICATION**

 350 FERTILIZER - SPRING APPLICATION

 • Type: Slow release to be approved.

 • Application rate: As per Clause Q31: 335 or to manufacturer’s recommendation.

 360 FERTILIZER - AUTUMN APPLICATION

 • Type: Slow release to be approved.

 • Application rate: As per Clause Q31: 335 or to manufacturer’s recommendation.

 370 WORM CONTROL

 • Location: As directed.

 • Manufacturer: Suitable supplier to be notified to CA.

 - Product reference: As applicable.

 • Timing: To be approved by CA.

 375 PEST CONTROL

 • Location: As directed.

 • Treatment: To be notified to CA.

 - Manufacturer: Suitable supplier to be notified to CA. .

 Product reference: As applicable.

 • Timing: To be approved by CA.

 380 REINSTATEMENT OF DAMAGED LAWNS

 • Damaged turf: Remove to a depth of 150mm.

 • Preparation: Cultivate substrate to a fine tilth.

 • Reinstatement: Contractor's choice of returfing or top soiling and reseeding:

 - Returfing: Quality and appearance to match existing.

 - Reseeding: Fill with fine topsoil to BS 3882 multi purpose class, free from stones,

 debris and weeds. Reseed with a seed mix to match existing grass in quality and

 appearance.

 • Protection and watering: Provide as necessary to promote successful germination and/ or

 establishment.

 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.

**SHRUBS/TREES/HEDGES/WETLAND AREAS**

 500 ESTABLISHMENT OF TREE AND HEDGEROW PLANTING

* Duration: Until the defects date.
* Weed control:
* Area: Maintain a weed free area around each plant, minimum diameter the larger of 1000mm or the surface of the original planting pit.
* Aggressive weed species (species included in the Weeds Act, section 2 or the Wildlife and Countryside Act, Schedule 9, part II): Spot spray and remove and dispose of all material off site.

502 ESTABLISHMENT OF NEW PLANTING - FERTILIZER

* Time of year: March or April.
* Type: Slow release Enmag or similar accepted
* Spreading: Spread evenly.
* Application rate: As per manufacturer’s recommendation.

510 TREE STAKES AND TIES

* Inspection/ Maintenance times: As scheduled and immediately after strong winds.
* Stakes:
	+ Replace loose, broken, and decayed stakes to original specification.
* Ties: Adjust, refix, and replace loose or defective ties, allowing for growth and to prevent chafing.

Where chafing has occurred, reposition, or replace ties to prevent further chafing.

515A TREE GUY WIRES (OVERHEAD OR UNDERGROUND GUYING)

 • Inspection/ Maintenance times: After strong winds, frost heave and other disturbances.

 • Operations:

- Replace or resecure loose or missing guy wires.

- Adjust to suit stem growth and to provide correct and uniform tension.

 • Refirming: Tread around the base until firmly bedded. Otherwise as clause 520 below.

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.

523 SHRUB PROTECTION

Loose or defective tubes / protection: Adjust, refix or replace to original specification and to prevent chafing.

Removal: When instructed or on final maintenance visit. Confirm with CA before removal.

525 TREE GUARDS

 • Loose or defective guards: Adjust, refix or replace to original specification and to prevent

 chafing.

 • Removal: When instructed or on final maintenance visit. Confirm with CA before removal.

530 TREE SHELTERS

 • Loose or defective shelters: Adjust, refix or replace shelter and / or stake to original specification and to prevent chafing.

 • Removal: When instructed or on final maintenance visit. Confirm with CA before removal.

 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.

* Arisings: Remove off site to suitably licensed recycling facility or tip unless otherwise instructed.

 545 PRUNING OF EXCESSIVE OVERHANG

 • Timing: When instructed.

 • Operations: Remove growth encroaching onto grassed areas, paths, roads, signs,

 sightlines and road lighting luminaires.

 • Special requirements: None.

 555 PRUNING TREES AND SHRUBS

 • Standard: To BS 7370-4.

 • Special requirements: None.

 570 FORMATIVE PRUNING OF YOUNG TREES

 • Standard: Type and timing of pruning operations to suit the plant species.

 • Time of year: Do not prune during the late winter/ early spring sap flow period.

 • Young trees up to 4 m high:

 - Crown prune by removing dead branches and reducing selected side branches by one

 third to preserve a well-balanced head and ensure the development of a single strong

 leader.

 - Remove duplicated branches and potentially weak or tight forks. In each case cut back

 to live wood.

 • Whips or feathered trees: Do not prune.

 • Operatives: Approved specialist contractor.

 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.

 615 HEDGE MAINTENANCE

* The Contractor shall liaise with adjacent landowners regarding the access arrangements and

 working hours described in order to carry out hedge maintenance. All arisings shall be disposed

 of by the Contractor to a suitably licenced recycling facility or tip unless otherwise specified.

* No trimming, laying, or clipping shall take place during the bird nesting season. The frequency

 and timing of cutting shall be submitted to the Contract Administrator for acceptance.

* All cutters and blades shall be sharpened and set according to the manufacturer’s recommendations.

Where growth to be cut is up to two years old hedgerow planting may be maintained with tractor mounted side arm flails, provided that they cut cleanly without leaving ragged ends. For ornamental hedges and hedges where hard growth over two years old is to be cut, only reciprocating blade cutting machinery shall be used. Large leafed evergreen hedges shall be pruned with secateurs to avoid half cut leaves.

Growth shall be reduced to the point of the previous cut and on completion, both sides of the hedge shall be perpendicular and the top shall be level and at right angles to the sides. Exceptions to this shall be notified to the contractor.

All clippings lodged in the top or sides of the hedge shall be removed off-site. During the cutting operation all litter and debris within the structure of the hedge shall be removed off-site.

All hedge laying works shall be carried out in a manner to ensure that the newly laid hedge possesses a neat, uniform appearance of even density. The work shall be carried out ensuring that the cut hedge plants are able to re-grow vigorously.

All hedge laying work shall only be carried out during the dormant season, but not during periods of extreme frost.

The terms for the component parts of a cut and laid hedge are as follows:

(i) Stakes - pointed greenwood stems or hardwood cleft driven vertically into the ground to provide support to the laid hedge plants;

(ii) Binders - flexible greenwood stems woven together along the top of the hedge to hold it down and provide support to the stakes (applicable to Midland Hedge only);

(iii) Cut-Side - the side of the hedge from which the hedge plants are cut (applicable to Midland Hedge only);

(iv) Brash Side - the side facing the adjoining field or forestry plantation through which the hedge brash protrudes (applicable to Midland Hedge only);

(v) Stoving - the exposed stump of a laid hedge plant;

(vi) Coppice Stool - the cut stump of a hedge plant;

(vii) Pleacher - a live hedge plant which has been cut and laid to form the body of the hedge.

If required that hedges are to be laid, the work shall be carried out in one of the following styles:

(i) Midland Hedge - All the pleachers shall be cut from one side of the hedge and laid diagonally across the line of the hedge so that all the brash protrudes on the opposite side. The hedge shall be supported by greenwood stakes and binders;

(ii) Straight Hedge - All the pleachers shall be cut and laid along the line of the hedge and inter-woven between hardwood, cleft stakes spaced at 1 m intervals;

(iii) Any other regional variation specified.

All cutting tools used on the hedge laying works shall be maintained in a sharp condition to ensure that cut surfaces are smooth and made cleanly without tearing the wood grain. The cuts which facilitate the laying of a pleacher shall be made with an axe or billhook only. Chainsaws shall only be used in the preparation of the hedge and the trimming of hedge stovings.

When a mixed species hedge is to be laid, the individual species shall be treated in one of the following ways:

(i) Cutting and laying; or

(ii) Coppicing - hedge plants shall be felled at a height not exceeding 100 mm above ground level leaving their stumps with an angled surface to shed water and in a form to promote vigorous regrowth; or

(iii) Removal - unwanted hedge plants shall be felled to ground level and their stumps either physically grubbed out or chemically treated to prevent regrowth; or

(iv) Retention - certain young hedge plants which are either self-set seedlings or growing from a healthy coppice stump may be selected to be retained to grow on as hedgerow trees.

Unless otherwise stated, the following materials shall be used for staking and/or binding:

(i) Midland Hedge

(a) Stakes shall be obtained from broadleaved species such as Castanea sativa, Quercus robur, Fraxinus excelsior or Acer pseudoplatanus. Stakes from any Salix or Populus species shall not be used. The stakes shall be pointed and cut from live greenwood stems not more than twelve weeks prior to being used. They shall be at least 1.5 m in length and of 30 mm to 60 mm diameter throughout.

(b) Binders shall be cut from live greenwood stems of Corylus avellana, Fraxinus excelsior or Salix viminalis not more than six weeks prior to being used and shall be at least 2.5 m in length and 10 mm to 30 mm diameter throughout. Binders shall not be trimmed until immediately prior to use.

(ii) Straight Hedges

(a) Stakes shall be cleft and of a hardwood species, pointed at one end, 1.8 m in length and 75 mm to 100 mm in width throughout.

All side branches from any hedge plants which may impede or obstruct the laying operation or detract from the style and appearance of the completed hedge shall be removed.

Any branches which are tangled or interwoven with other hedge plants shall be removed to ensure that the hedge plant to be laid is free to be guided into position. Any dead, damaged or diseased wood, along with any other foreign objects and debris, shall also be removed before the plant is laid.

All plants shall be laid in the same direction unless a gap is likely to occur. All laid hedge plants shall, as far as possible, be interwoven into each other and the supporting hedge stakes to ensure maximum stability. On sloping ground, all hedge plants shall be laid in an uphill direction except when back laying is required to fill a gap. On level ground the direction of laying shall be in the direction of traffic flow on that side of the carriageway except when back laying is required to fill a gap.

Stakes shall be driven centrally down the line of the hedge to offer support to the newly laid hedge plants in accordance with the following staking requirements, specific to the two different styles of hedge described, or as otherwise specified:

(i) Midland Hedges - greenwood stakes of sufficient length to ensure that at least 150 mm protrudes above the top of the laid hedge shall be driven in to a minimum depth of 300 mm at 0.5 m intervals along an even, straight line. When the binders have been fitted along the top of the hedge, the stakes shall be cut off 75 mm above the binders with a sloping cut, which shall face the cut side of the hedge.

(ii) Straight Hedges - Cleft stakes of sufficient length to ensure that 100 mm protrudes above the top of the laid hedge shall be driven in to a minimum depth of 300 mm at 1.0 m intervals along a straight line.

Only greenwood binders shall be used along the top of the hedge. These shall be tightly twisted around themselves and each stake in order to hold the laid hedge down and offer support to the line of stakes. A minimum of four binders shall be included at any one point and additional binders introduced at each stake in order to maintain the required number.

When the hedge laying works at any location are complete, any loose branch or twig ends shall be trimmed from the cut side and top of Midland Hedges and also from the brash side if necessary and from both sides and the top of Straight Hedges, to leave a neat and compact appearance.

All cut material and other arisings shall be removed off Site by the end of each working day, unless otherwise required.

Where any significant gap exists in the hedge after it has been laid, it shall be planted up with new hedge plants. The size of the plants, species and planting density/pattern shall be as specified.

 620A 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.

 • Removal: Within one week of notification.

 • Replacement: Wholly dead plants shall be retained until the rectification site visit for replacement in the next suitable planting season, unless otherwise advised by the CA.

 625 CLIMBING PLANTS

 • Pruning: Remove excess growth, to ensure that signs, light fittings, doors and windows are kept clear at all times

 635 REINSTATEMENT OF TREES AND SHRUBS

Replacement: Dead and/or dying plants shall be treated as a Defect. Replace in the next planting season.

 640 THINNING BY REMOVAL OF SURPLUS PLANTS

 • Plants to be thinned: At specified rates.

 • Standard: BS 7370-4.

 • Timing: As instructed.

 • Roots:

 - Disturbance to adjacent plants: Minimise.

 - Soil: Refill holes with topsoil to leave an even graded surface.

 - Mulch: Maintain mulch as original specification.

 - Adjacent plants: Make good any minor damage immediately.

 • Plants for retention: Select plants with a strong healthy habit.

 • Mature planting density: As instructed.

• Arisings shall be neatly stacked on site or chipped/extracted as scheduled

 645 WEED CONTROL GENERALLY

 As per Clause Q35:125. In addition:

 • Weed tolerance: At all times, weed cover less than 5% and no weed to exceed 100 mm

 height.

 • 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.

 655 WEED CUTTING BY HAND OR MACHINE

 • Undesirable grass, brambles and herbaceous growth: Cut down cleanly to a maximum

 height of 75mm.

 • Herbicides: Await sufficient re-growth before applying suitable herbicide.

 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 weeds.

 665 WEED CONTROL WITH WINTER HERBICIDE

 • Type: Suitable residual soil acting herbicide.

 • Time of year: Unless otherwise agreed, complete before end of March.

 • Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.

 670 WEED CONTROL WITH SUMMER HERBICIDE

 • Type: Suitable foliar acting herbicide.

 • Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.

 680 SOIL AERATION

 • Compacted soil surfaces:

 - Prick up: To aerate the soil of root areas and break surface crust.

 - Size of lumps: Reduce to crumb and level off.

 - Damage: Do not damage plants and their roots.

690 MAINTENANCE OF LOOSE MULCH

 Refer to Clause Q31: 485A and 590.

 • Thickness (minimum): 75 mm.

 - Top up: As scheduled and/or instructed.

 • Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.

 • Weeding: Remove weeds growing on or in mulch by hand weeding. This operation shall occur on the last maintenance visit prior to handover and completion. If fertiliser is specified, it should be applied prior to mulching in accordance with Clause Q31: 335.

 695 FERTILIZING ESTABLISHED TREES AND SHRUBS

 • Time of year: During April/May to Q31:335.

 • Type of fertilizer: To be approved.

 • Application: Spread evenly.

 - Rate: To manufacturer’s recommendation.

698 PROTECTIVE FENCING

* Refer to Clause Q40: 145.
* The contractor shall during each visit check the condition of any protective fencing and shall replace broken or missing items and re-strain if necessary.
* During the final visit, unless otherwise approved, the contractor should remove all temporary protective fencing.

 710 WOODLAND PLANTING MAINTENANCE

 • Watering: In exceptional circumstances to prevent plants dying.

 • Loose Plants: Re-firm surrounding soil, without compacting.

• Vegetation: Except tree’s and coppice shoots to be retained, cut down to 100mm above ground level within the plantation area.

 - Arisings: Leave between rows.

 • Ditches and drains: Keep clear.

720A THINNING AND COPPICING

Thinning operations shall be undertaken by means that avoid the need for pruning or crown lifting of retained plants, particularly to those on the outer edges. Trees or shrubs to be coppiced shall be new native bare root planting 1m-4m height, 3-6 years old. Species to include willow spp, hawthorn, blackthorn, hazel, birch and dog rose or as directed. Thinning should be undertaken in maximum 5 year cycles.

Thinning shall be carried out throughout the identified planted areas. Unless otherwise stated, thinning shall favour the retention of the strongest trees and those that offer the longest future useful life.

Adequate spacing shall be created between the trees and shrubs to promote healthy future development of the crowns of the remaining trees. Edge treatment shall favour the maximum retention of lower branches and an understorey of younger trees or shrubs where these are present. All plants to be thinned shall be cut down to between 25 - 30 mm of ground level parallel with the slope of the ground.

Plants to be coppiced shall be cut down to 50 mm above ground level if being coppiced for the first time. If coppiced previously, the plants shall be cut back to the previous point of coppicing but with the cuts positioned outside the branch collar. The final wound surface shall be smooth and angled to allow water runoff. Cut surfaces shall not be treated with herbicide.

Coppiced arisings shall be neatly stacked on site or chipped/extracted as scheduled.

**TREE WORK**

 810 TREE WORK GENERALLY

 • Identification: Before starting work agree which trees, shrubs and hedges are to be

 removed or pruned.

 • Protection: Avoid damage to neighbouring trees, plants and property.

 • Standards: To BS 3998 and Health & Safety Executive (HSE) 'Forestry and arboriculture

 safety leaflets'.

 • Removing branches: Cut as Arboricultural Association Leaflet 'Mature Tree Management'.

 Cut vertical branches similarly, with no more slope on the cut surface than is necessary to

 shed rainwater.

 • Appearance: Leave trees with a well balanced natural appearance.

 • Chain saw work: Operatives must hold a Certificate of Competence.

 • Tree work: ***To be carried out by an approved member of the Arboricultural Association following the good practice and guidance in BS 5837***.

**811** ARBORICULTURE: GENERALLY

All work specified in this Clause shall be undertaken in accordance with BS 3998, except that cuts and wounds shall not be treated with a fungicidal sealant, bitumen or latex paint, unless otherwise stated.

Where permission has been obtained to carry out any work under this Contract on trees covered by a Tree Preservation Order or in a Conservation Area. A copy of the consent will be made available to the contractor.

The Contractor shall comply with the current Forestry and Arboriculture Safety & Training Council

(FASTCO) recommendations in relation to all aspects of the arboricultural works.

If any defect is found within a tree during the course of carrying out work which would render the specified work inappropriate or inadequate, the Contractor shall cease work and notify the Contract Administrator who shall agree any appropriate alternative action which is to be taken. Where such a defect constitutes an imminent threat to public safety or property, the Contractor shall take appropriate action to exclude the public from the area of danger, notify the Contract Administrator immediately, and protect the location until the CA issues further instructions.

No tree work shall be carried out during periods of extreme weather except in emergency situations. Except in an emergency incident, the removal of live wood from any species shall not be undertaken during periods of severe frosts. In such cases, the work carried out shall be the minimum required to render the tree safe or to allow removal from the carriageway.

Except in an emergency incident, tree surgery, felling, thinning and coppicing operations shall only be undertaken within the dormant season and outside the bird nesting season.

All mature trees shall be checked for bat roosts in any cavities, before arboricultural works are carried out. Any bat roosts shall be reported to the Contract Administrator and no works shall be carried out on any tree in which bat roosts are located without further written instructions from the Contract Administrator. The inspection for bat roosts and any subsequent action thereon must be carried out by appropriately licensed personnel.

All tools shall be surface sterilised with methylated spirits after use on trees which are known or suspected to be diseased.

When using tower wagons or cranes the Contractor shall ensure that manufacturer’s safety limits are not exceeded. Demountable towers shall have all fastening brackets secured and shall only be used on the appropriate vehicle.

Climbing irons shall not be used in the pruning of live trees and shall only be used during felling or dismantling operations when this is necessary during emergency works.

No trees are to be used as winch anchors without the prior consent of the Contract Administrator and these shall be protected. Alternative types of winch anchor may be used provided they are appropriate for the conditions prevailing at the Site and the task to be undertaken and are of a recognised arboricultural type.

812 TREE SIZE CATEGORIES

(Category A to G) reflect the extent to which tree surgery and felling works will be regarded under the Contract as being affected by the tree size and habit. Trees are categorised by Tree Size Factor, which is calculated from the following formula:

Tree Size Factor = Height x Mean Crown Spread x Branch Density Factor

Height and Mean Crown Spread measurements should be taken to the nearest metre, as follows:

(a) Height of tree measured in metres from ground level to the apex of the crown;

(b) Mean Crown Spread is calculated by adding the measurements in metres of the spread of the tree’s crown along the north-south and east-west axes and dividing by two. The Branch Density Factor is 1.0 or 1.25 depending on species, as listed below:

**Normal species: Branch Density Factor = 1.0**

Maples (Acer species & cultivars)

Horse-chestnut (Aesculus species & cultivars)

Alder (Alnus species & cultivars)

Birch (Betula species & cultivars)

Sweet Chestnut (Castanea species & cultivars)

Beech (Fagus species & cultivars)

Ash (Fraxinus species & cultivars)

Walnut (Juglans species & cultivars)

Pine (Pinus species & cultivars)

Plane (Platanus species & cultivars)

White poplar (Populus alba)

Black Poplar (Populus nigra)

Aspen (Populus tremula)

Balsam Poplar (Populus balsamifera)

Wild Cherry (or Gean) (Prunus avium & cultivars)

Japanese Cherry (Prunus ‘Kanzan’)

Pear (Pyrus species & cultivars)

Pedunculate Oak (Quercus robur)

Turkey Oak (Quercus cerris)

Red Oak (Quercus rubra)

False Acacia (Robinia pseudoacacia)

Willow (Salix species & cultivars)

Larch (Larix species & cultivars)

**Heavy species: Branch Density Factor = 1.25**

Hornbeam (Carpinus betulus)

Hawthorn (Crataegus species & cultivars)

Cypress (Chamaecyparis species & cultivars)

Crab Apple (Malus species & cultivars)

Columnar poplar (Populus alba ‘Fastigiata’)

Italian Poplar (Populus nigra ‘Italica’)

Japanese Cherry (Prunus ‘Amanogawa’)

Purple Cherry (Prunus cerasifera ‘Nigra’)

Bird Cherry (Prunus padus & cultivars)

Holm Oak or Holly Oak (Quercus ilex)

Columnar Pedunculate Oak (Quercus robur ‘Fastigiata’)

Rowan and Whitebeam (Sorbus species & cultivars)

Lime (Tilia species & cultivars)

Yew (Taxus baccata & cultivars)

The species lists above reflect average circumstances and should be used for all evaluation and other purposes in connection with the Contract.

**Tree Size Factors**

The Tree Size Factors should be classified into the following categories which take into account how proportionate increases in tree size affect tree surgery:

Tree Size Factor Tree Size Category

|  |  |
| --- | --- |
| **Tree Size factor** | **Tree Size Category** |
| 34 | A |
| 35 - 70 | B |
| 71 - 125 | C |
| 126 - 200 | D |
| 201 - 340 | E |
| 341 - 450 | F |
| 451 - 650 | G |

Trees may be identified for arboricultural works by contract documentation and/or using numbered metal identity tags or paint marks.

The specification calls for thinning to favour the most vigorous trees. Whilst this is normal practice in production forestry it may be inappropriate depending on its location. In some places vigorous species, such as Sycamore or Goat Willow, may have been planted as a nurse, a windbreak or to offer an early screen, with the intention of removing them when more desirable slower-growing species have established. In other cases the most suitable species for the local landscape setting may not have been considered at the time of planting. Where available, reference should be made to the planting designer’s long-term intentions or management plan when specifying species for retention. Otherwise, the most typical species in the local landscape should generally be retained.

Typical subjects for Scrub Control may include:

(i) Shrubs such as bramble, gorse, broom, hawthorn, rose, goat willow, privet and snowberry.

(ii) Tree species including sycamore, poplar, willow and ash, and pine and birch in heathland areas.

813 TREE SURGERY

Tree size categories reflecting the extent to which tree surgery and felling works shall be carried out are provided in the contract documentation.

Each tree shall be individually considered and the general description of work to be undertaken shall be interpreted in relation to the species, shape, size, character and condition of each individual tree.

All operations shall be carried out so as to leave a well-balanced tree crown.

The Contractor shall prune back all dead, damaged or diseased wood to its point of origin. The cutting of the branch shall not damage the branch collar if taken off at a main limb or on the bole. The triple cut method shall be used when carrying out the pruning operation and the final wound shall be smooth and free of snags.

All damage to main limbs or boles shall be cleaned to remove damaged or diseased tissue back to, but not into, live wood or bark. The final wound shall be smooth and free of snags.

The repair of major bark wounds (over 75 mm in diameter or length) shall consist of the removal of dead, damaged and loose bark and in addition any splintered wood back to the line of newly forming callus growth ensuring that no live tissue is damaged. The size of the wound shall be kept to a minimum and its final shape shall be, as far as possible, rounded and free from sharp corners.

Both wet and dry cavities shall be inspected and probed to determine the extent of decay and ascertain their significance in relation to the structure and safety of the tree or branch. Where possible, all accumulated debris and loose decayed wood shall be removed from such cavities and where specified, the opening of the cavity covered with a fine mesh wire netting to prevent a further build-up of debris. This covering shall be secured with felt tacks in such a way that it does not prevent natural callus formation but allows easy removal for future inspection.

Regulative pruning shall be carried out in accordance with the Arboriculture Research Note 48/83/PATH and Arboriculture Research Note 116/93 as issued by the Arboricultural Advisory and Information Service. Pruning cuts shall wherever possible be made at a fork or at the main stem. All wounds shall be kept as small as possible. The final pruning cut shall be made so that both the branch, branch bark ridge and branch collar remain intact.

The Contractor shall carry out as part of tree pruning operations any of the following works as may be necessary on an individual tree:

(i) Removal of basal sucker growths and epicormic growth from the trunk at ground level up to the base of the tree’s natural crown.

(ii) Repair of minor bark wounds on the trunk and main branches by the removal of any dead, damaged or loose bark back to undamaged tissue or to the line of newly forming callus growth. In either case the size of wound shall be kept to a minimum.

(iii) Removal of any foreign objects from the tree where this can be done without inflicting any undue damage to the tree concerned.

(iv) Removal of reverted branches from cultivars of tree species.

(v) Severance of undesirable climbing plants at base of trunk.

Where crown lifting is directed, the lower branches and branchlets of the tree shall be removed to the height stated in order to increase the clearance under the canopy of the tree.

Where crown thinning is required, a proportion of secondary and small live branch growth throughout the crown shall be removed to produce as far as possible an even density of foliage around a well spread and balanced branch structure. Crossing, weak, duplicated and damaged branches shall be removed where this will not spoil the overall shape.

Where crown reduction or reshaping is required, the crown shall be reduced in size, whilst preserving as far as possible a natural shape. This may involve cutting back both main and subsidiary branches to a side bud or branch, to leave a flowing line without stumps.

 815 ADDITIONAL WORK

 • Defective, diseased, unsafe or weak parts of trees additional to those scheduled for

 attention: Give notice if detected.

 820 PREVENTION OF WOUND BLEEDING

 • Standard: To BS 3998, clause 8.

 825 PREVENTION OF DISEASE TRANSMISSION

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

 830 CLEANING OUT AND DEADWOODING

 • Remove:

 - Dead, dying, or diseased wood, broken branches and stubs.

 - Fungal growths and fruiting bodies.

 - Rubbish, wind blown or accumulated in branch forks.

 - Wires, clamps, boards and metal objects, if removable without causing further damage

 and not part of a support structure that is to be retained.

 - Other unwanted objects, e.g. tree houses, swings.

 - Climbing plants if instructed to do so.

 835 CUTTING AND PRUNING GENERALLY

 • Tools: Appropriate, well maintained and sharp.

 • Final pruning cuts:

 - Chainsaws: Do not use on branches of less than 50 mm diameter.

 - Hand saws: Form a smooth cut surface.

 - Anvil type secateurs: Do not use.

 • Removing branches: Do not damage or tear the stem.

 • Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth

 surface, and angled so that water will not collect on the cut area.

 • Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.

 Large branches: Remove only with prior approval.

 - Remove in small sections and lower to ground with ropes and slings.

 • Dead branches and stubs: When removing, do not cut into live wood.

 • Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in

 adverse weather conditions.

 • Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless

 instructed.

840 CROWN REDUCTION/ SHAPING

 • General: Cut back selectively to lateral or sublateral buds or branches to retain flowing

 branch lines without leaving stumps.

 • Operations: As agreed and approved by CA.

 845 CROWN LIFTING

 • Clearances: Remove branch systems to give clearance.

 - Height: As agreed and approved by CA.

 • Removing branches: Remove whole branches back to the stem, or cut lower portions of

 branches back to lateral or sublateral buds or branches. Do not leave stumps.

 850 CROWN THINNING

 • Removing branches: Remove inward growing, crossing, rubbing, dead and damaged

 branches.

 • Thinning: Selectively remove secondary and small live branch growth evenly throughout

 the crown.

 - Quantity: As agreed and approved by CA.

 • Cutting: Make no cuts of more than as agreed and approved by CA.

 - Branches: Cut back to lateral or sublateral buds or branches without leaving stumps.

 • Appearance: Leave a uniform and well balanced structure of branches and foliage.

 855 CUTTING TREE ROOTS

 • Excavating: Use hand tools only.

 • Protected area: Do not cut roots within an area which is the larger of:

 - The branch spread of the tree.

 - An area with a radius of half the tree's height, measured from the trunk.

 • Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut

 without approval.

 • Cutting:

 - Cutting: Make clean smooth cuts with a hand saw.

 - Wounds: Minimize. Avoid ragged edges.

 - Finishing: Pare cut surfaces smooth with a sharp knife.

 • Backfilling:

 - Protection: Cover cut roots with clean sharp sand.

 - Material: Backfill with original topsoil.

860A REMOVING TREES, SHRUBS AND HEDGES

 • Standards: To BS 3998, Appendix A and Health & Safety Executive (HSE)/ Arboricultural

 and Forestry Advisory Group Safety Leaflets.

 • Existing services: Check for below and above ground services. Give notice if they may be

 affected.

 • Shrubs and smaller trees: Cut down and grub up roots.

 • Tree stumps:

 - Removal: If specified. Tree stumps shall be grubbed out or chipped in-situ (to approval of CA). Ground levels shall be made good with consolidated fill approved by the CA.

 • Protection: As appropriate unless otherwise instructed.

 • Work near retained trees: Where tree canopies overlap and in confined spaces generally,

 take down trees carefully in small sections to avoid damage to adjacent trees that are to be

 retained.

 • Filling holes:

 - Material: Use as-dug material and/ or imported soil as required.

 Finishing: Consolidate and grade to marry in with surrounding ground level.

 • Removal of arisings: Refer to clause A31:375. All arisings shall be carted away to a licensed tip. Prior to commencement of the works, the waste haulier’s waste registration certificate or an authorised copy shall be presented for inspection by the CA. All relevant highway and waste control regulations and local byelaws shall be observed.

861 TREE FELLING

Where straight felling is required, the whole tree shall be felled to within 100 mm of ground level, where necessary with the assistance of a powered or hand winch.

Where sectional felling is required, the tree shall be felled in sections of a size appropriate to the location, using ropes where necessary to lower the sections.

The height at which the stump shall be cut shall be as stated, either:

(i) as close to the ground level as possible; or

(ii) where the tree is growing in a hedge or fence line the stump shall be left level with the top of the hedge or fence; or

(iii) at any other height stated.

The final cut shall leave the stump with a smooth, level surface.

Where required, stump treatment shall be carried out within 24 hours of felling. A stump-killing herbicide with colouring agent, shall be applied by means of drilling or frill girdling in the cambium zone of the cut stump. Any re-growth from the cut stump shall be treated during the following season.

Where required, the complete root, including buttress and surface roots arising from or near to its base, shall be removed, either by:

(i) stump grinding to a minimum depth of 300 mm; or

(ii) stump grubbing by means of excavation or winching.

Following removal of stumps by any means, the void shall be filled with topsoil to match existing levels in grassed areas. In paved areas the material shall be removed down to formation level to allow full reinstatement of the paved area. All arisings shall be disposed of as required.

862 CHIPPING ARISINGS

 Dead or fallen branches and arisings from grubbing out, pruning and tree work may be chipped prior to removal, but only upon prior approval from the CA. Note that due to certain species releasing toxins on chipping, take all necessary protective measures for the safety of staff and the general public.

**Arisings from Pruning, Cutting or Felling of Woody Plants**

Any infected (diseased or pest) prunings or timber arisings shall be removed off Site immediately

after cutting and burned or buried at a depth of no less than 2.0 m in a location to be approved in writing by the Contract Administrator, except diseased arisings affected by diseases described in Arboriculture

Research Notes or Arboriculture Research and Information Notes issued by the Arboricultural

Advisory and Information Service, which shall be dealt with in accordance with the advice published in these Notes.

In the event of a plant disease epidemic, diseased arising shall be disposed of in accordance with the current recommendations of the Department for Environment, Food and Rural Affairs (DEFRA), or the Forestry Commission.

Healthy arisings shall be dealt with in one or more of the following ways, as required:

(i) Removed off Site without chipping first;

(ii) Chipping. All arisings shall be processed immediately using a wood chipper. All remaining arisings from thinning/coppicing that cannot be chipped shall be removed off Site;

(iii) All arisings from chipping shall be removed off Site;

(iv) Where chippings are to be retained on the Site, the chipper shall produce chippings in the size range 0-75 mm;

(v) Where chippings are to be spread back onto the Site within areas of existing vegetation, without intending to suppress or kill the existing ground vegetation, the chippings shall be returned to within the boundary of the areas stated in Appendix 30/10 and spread to an even consolidated depth of 25 mm maximum;

(vi) Where chippings are intended to act as a weed-suppressant mulch, they shall be spread over the pruned or coppiced plantations to a depth of 75 mm;

(vii) Chippings which are excess to the requirements specified shall be removed off Site;

(viii) Arisings of greater than 150 mm diameter shall be securely placed on Site in the locations stated for nature conservation purposes;

ix) Where directed, the arisings from thinning and coppicing shall be windrowed on the centre of embankments or cuttings within the boundary of the area in which the work has taken place. Material shall not be dragged from one area to another. With cross-cutting and cut branches only the timber shall be windrowed. All side branches from the cut timber shall be removed and the timber reduced to 1 m lengths.

Windrows shall be formed in one of the following patterns, as required, keeping the arisings at least 500 mm away from the retained trees and shrubs:

(a) For younger plantations windrows shall be 7m apart and a minimum of 3m from the edges of the plantation. The windrows shall be secure, with the material tightly packed and stacked to a height and width of between 0.5 and 1m;

(b) For older plantations, windrows shall be 7 m apart and a minimum of 10 m from the edges of the plantation. The windrows shall be secure, with the material tightly packed and stacked to a height and width of between 1 and 1.5 m.

863 BURNING ARISINGS: No fires will be permitted on site.

864 DAMAGE TO EXISTING WORKS

 The contractor shall reinstate or replace, to the satisfaction of the Contract Administrator, any work previously carried by others and damaged by the contractor, at his own expense. The contractor shall replace at his own expense any tree, shrub or other plant damaged as a result of non compliance of the above. The replacement shall be of a comparable size of the same species and variety and of a similar shape.

 865 BARK DAMAGE

 • Wounds:

 - Do not attempt to stop sap bleeding.

 - Bark: Remove ragged edges using a sharp knife.

 - Wood: Remove splintered wood from deep wounds.

 - Size: Keep wounds as small as possible.

 • Liquid or flux oozing from apparently healthy bark: Give notice.

 870 CAVITIES IN TREES

 • Investigation: Remove rubbish and rotten wood. Probe the cavity to find the extent of any

 decay, and give notice.

 • Water filled cavities: Do not drain.

 • Sound wood inside cavities: Do not remove.

 • Cavity openings: Seek approval of CA.

872 MAINTENANCE OF ESTABLISHED TREES AND SHRUBS

Details available to the Contractor should include:

1. Locations of plants and planting areas to be maintained. Period(s) of time over which plants and planting areas shall be maintained (in months);

2. Any particular requirements for method of weed removal in cultivated beds and any alternative frequency for removal operations;

3. Method(s) and locations for disposal of healthy arisings;

4. Frequency of coppicing species grown for their colour;

5. Locations of any overgrown shrubs to be coppiced back;

6. Frequency of hedge cutting;

7. Extent of cutting back required if hedges have previously been unmanaged (i.e., if hedge is to be cut back more than “to previous cut”. Any alternative shapes required for hedge cutting profiles and the locations where they are required;

8. Style of hedge laying required and locations where hedges are to be laid;

9. List of hedge species likely to be encountered in hedges on the Site and the manner in which they shall be treated;

10. Any alternative materials to be used for staking and/or binding;

11. The hardwood species to be used for stakes in straight hedges;

12. Any required staking arrangement for an alternative style of hedge laying;

13. Alternative method of disposing of hedge-laying arisings if they are not to be removed daily from Site;

14. Species and size of plants and planting density/pattern required to fill any significant gaps remaining in a hedge after it has been laid;

15. Species, size and locations of other ‘individual trees’ to be maintained in accordance with sub-Clause;

16. Any requirement for tree wounds to be treated with a sealant; if so, state type to be used;

17. Record of any trees protected by Tree Preservation Order or located in a Conservation Area on which arboricultural works are to be carried out. Details of consultations with the Local Planning Authority and permissions obtained should be given;

18. Tree size categories which reflect the extent to which tree surgery and felling works shall be carried out;

 19. State whether cavities are to be covered with a fine mesh wire netting;

20. Locations and identification of trees which require crown lifting and the height to which the lower branches and branchlets of the tree shall be removed;

21. Locations and identification of trees which require crown thinning;

22. Locations and identification of trees which require crown reduction or reshaping;

23. Locations and/or identification of trees which shall be straight felled;

24. Locations and/or identification of trees which shall be felled in sections;

25. Heights at which stumps shall be cut;

 26. Locations and/or identification of trees where stump treatment is required;

895 CLEARANCE OF WATERCOURSES

 • Clearance: Remove litter, debris, accumulated silt and excessive vegetation causing an

 obstruction. Stop nets should be used to prevent weed propagules from floating downstream

 • Frequency: As Scheduled.

 • Time of year: As instructed.

 • Method: To be approved.

 - Access: From one bank only.

 - Position: At least 1 m from the top of the bank.

 - Include the “check-clean-dry” campaign actions (Q35:875)

 • Phasing: Single operation unless otherwise instructed.

**HARD LANDSCAPE AREAS/FENCING**

 910 HARD SURFACES AND GRAVEL AREAS

 • Herbicide: Apply a suitable foliar acting or residual herbicide. Allow recommended period

 for herbicide to take effect before clearing arisings.

 • Hard surfaces: Remove litter, leaves and other debris. Keep free of weeds and moss by the use of a suitable and approved chemical or physical means as appropriate.

 • Surface gutters and channels: Remove mud, silt and debris.

 • Drainage gullies: Empty traps and flush clean.

 • Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.

 • Repairs to flexible bituminous pavings: In accordance with the original paving specification

 or BS 7370-2, clause 4.12.

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

 915 PAVING SEALANT

 • Type: Contractor’s choice to approval of CA.

 • Manufacturer: To be approved.

 - Product reference: To be approved.

 • Application method: To manufacturer’s recommendations.

 - Coats: To manufacturer’s recommendations.

 - Coverage: To manufacturer’s recommendations.

 920 FENCING

 • Fences: Inspect and repair to maintain protection against rabbits/livestock.

 930 GRAFFITI REMOVAL

 • Method: To approval of CA.

 • Subsequent treatment: To approval of CA.

 - Finish: To approval of CA.

940 MECHANICAL SWEEPING

 • Hard surfaces: Keep free of accumulations of mud, silt, debris, weeds and moss by the use of a suitable mechanical sweeper. Contractor’s choice of sweeper to approval of CA. Remove arisings from site to a licensed disposal facility.

#  Q40 Fencing

 To be read with Preliminaries/ General Conditions.

 **FENCING SYSTEMS**

All timber fencing is to be in accordance with the EA Timber Policy.

126 OPEN MESH STEEL PANEL SECURITY FENCING

• Manufacturer: Steelway Fensecure, or similar approved

Queensgate Works, Bilston Road, Wolverhampton, West Midlands, WV2 2NJ

 Tel: 01902 490919

 Email: sales@fensecure.co.uk

- Product reference: Steelway Dualmesh fencing system, or similar approved, with twin 6mm horizontal wires sandwiched either side of the single 5mm vertical wires to create a 200mm x 50mm aperture.

Standard: To manufacturer’s specifications using mild steel materials.

• Height: Available in standard heights of 1.8m, 2.0m and 2.4m.

• Mesh and wire: Twin 6mm horizontal wires sandwiched either side of the single 5mm vertical wires to create a 200mm x 50mm aperture

• Posts: Rectangular hollow section.

• Maximum centres of posts: To manufacturer’s recommendations, nominally 3m.

• Method of setting posts: In concrete foundations to comply with the design loading

requirements specified by BS 1722-14 for this category fence.

• Bottom of fencing: 50mm above ground level.

• Accessories: Secured with tamper resistant fittings as standard to minimize theft

• Treatment: All materials galvanized after manufacture and polyester powder coated to BS EN 13438: 2013. RAL colour to be advised. Secured with tamper resistant fittings as standard to minimize theft.

• Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.

142 STRAINED WIRE MESH FENCING: (For general planting bed protection).

* To BS 1722:Part 2- 2006
* Drawing reference detail: Refer to specific project drawing.
	+ - * + Mesh: BS1722 Part 2, Table 2, Type 7/10/15 - Rectangular wire mesh, 7 horizontal wires, 1000mm high, 150 mm vertical spacing.
* Height of top line wire: 1050mm. Line wire shall conform to BS 4102 zinc coated mild steel or zinc coated high tensile wire. Minimum nominal wire diameter of 2.5mm.
* Staples: to be 3cm 8g galvanised.
* Posts and struts:

 Intermediate posts - 75mm diameter round, pointed for driving.

 Straining posts - 150mm diameter round, pointed for driving.

 Struts – 80mm to 100mm diameter round, pointed for driving, set at 45 degrees.

* Maximum centres of posts:

Straining posts – 80m in straight runs and at all ends, corners, changes in direction over 25 degrees and acute variations in level.

 Intermediate posts – at 3.5m centres.

* Method of setting posts:

Straining posts driven to a minimum depth of 750mm. Struts set at 45 degrees, notched one third of the distance from the top of the strainer and driven to a minimum depth of 450mm.

Intermediate posts driven to a minimum depth of 750mm.

* Treatment of timber: Preservative in accordance with BS 1722-7: 2006, Annex A.3.
* Posts and struts: Round timber conforming to BS 1722 Part 7: 2006

 Method of setting all posts: Driven to minimum depth using "drival" or similar style tool. Start hole with iron spike.

 Setting out of fencing: The landscape contractor shall locate and install the fencing before

 commencing planting.

Installation of fencing: The fencing shall be set out and erected in straight lines or smoothly flowing curves as shown on the contract drawings, with tops of posts following the profile on the ground. Posts set rigid and plumb and to specified depth, or greater where necessary to ensure adequate support; with correct fastenings and all components securely fixed.

Associated fixings: Include for mild steel winding bolts/eyebolt strainers and associated fixings, all hot dipped galvanised to BS EN ISO 1461. Burr bolt threads to prevent removal of nuts. Cut off bolt heads, not more than 5mm to protrude beyond nuts.

143 STRAINED STOCK PROOF WIRE MESH FENCING: (For sheep or cattle protection).

 To BS 1722: Part 2 - 2006

* Drawing reference detail: Refer to specific project drawing.
* Height:1350mm
* Mesh: BS 1722 Part 2, Table 2, Type HT 7/10/15 – Rectangular wire mesh, for sheep or cattle. (Type HT 8/80/15 for pigs or lambs - 1000mm high).
* Top line wires: Height of top line wire – 1350mm. 8 horizontal wires. Line wire shall conform to BS 4102 zinc coated mild steel or zinc coated high tensile wire. Minimum nominal wire diameter of 2.5mm.
* Barbed wire: To prevent damage to the fence by animals, 2No. 2xply strands of 16.5 gauge high tensile barbed wire to BS 4102, strained to 100-150kg tension should be attached to straining posts and intermediate posts by the means specified for line wire, i.e. using winding brackets and eyebolt strainers to straining posts and a single staple to intermediate posts. Care should be taken to avoid any untwisting of the wire as a result of overstraining.
* Staples: to be 3cm x 8g galvanised.
* Posts and struts:

 Intermediate posts - 75mm diameter round, pointed for driving.

 Straining posts - 150mm diameter round, pointed for driving.

 Struts – 80mm to 100mm diameter round, pointed for driving, set at 45 degrees.

* Maximum centres of posts:

Straining posts – 80m in straight runs and at all ends, corners, changes in direction over 25 degrees and acute variations in level.

 Intermediate posts – at 3.5m centres

* Method of setting posts:

 Straining posts driven to a minimum depth of 1000mm.

Struts set at 45 degrees, notched one third of the distance from the top of the strainer and driven to a minimum depth of 600mm.

Intermediate posts driven to a minimum depth of 750mm.

* Treatment of timber: Preservative in accordance with BS 1722-7: 2006, Annex A.3.

Setting out of fencing: The landscape contractor shall locate and install the fencing before

 commencing planting.

* Installation of fencing: The fencing shall be set out and erected in straight lines or smoothly flowing curves as shown on the contract drawings, with tops of posts following the profile on the ground. Posts set rigid and plumb and to specified depth, or greater where necessary to ensure adequate support; with correct fastenings and all components securely fixed.

 Associated fixings: Include for mild steel winding bolts/eyebolt strainers and associated fixings,

 all hot dipped galvanised to BS EN ISO 1461. Burr bolt threads to prevent removal of nuts. Cut

 off bolt heads, not more than 5mm to protrude beyond nuts.

144 STRAINED WELDMESH PROTECTIVE FENCING:

 To BS 1722: Part 2 - 2006

* Drawing reference detail: As per specific project drawing.
* Height:1350mm
* Mesh: Weldmesh - 50 x 50mm x 1.6mm diameter x 900mm high in 25mm x 30 metre roll, galvanised after manufacture.
* Straining wire: 3.15mm (10 gauge) diameter galvanised high tensile steel wire, fixed to mesh using galvanised split connecting links at 300mm intervals, strained using galvanised eyebolt strainers with washers and nuts at ends and changes of direction. Burr bolt threads to prevent removal of nuts. Cut off bolt heads, not more than 5mm to protrude beyond nuts.
* Fixing of Weldmesh: Weldmesh fixed to each post with 8Nr x 2.55mm diameter x 30mm long galvanised barbed staples.
* Posts and struts:

 Intermediate posts - 100mm diameter round, pointed for driving.

 Straining posts - 125mm diameter round, pointed for driving.

 Struts - 80mm to 100mm diameter round, pointed for driving, set at 45 degrees.

* Maximum centres of posts:

Straining posts – 80m in straight runs and at all ends, corners, changes in direction over 25 degrees and acute variations in level.

 Intermediate posts – at 3.5m centres

* Method of setting posts

 Straining posts: driven to a minimum depth of 1000mm.

Struts: set at 45 degrees, notched one third of the distance from the top of the strainer and driven to a minimum depth of 600mm.

Intermediate posts: driven to a minimum depth of 750mm

* Treatment of timber: Preservative in accordance with BS 1722-7: 2006, Annex A.3.
* Setting out of fencing: The landscape contractor shall locate and install the fencing before

 commencing planting.

* Installation of fencing: The fencing shall be set out and erected in straight lines or smoothly flowing curves as shown on the contract drawings, with tops of posts following the profile on the ground. Posts set rigid and plumb and to specified depth, or greater where necessary to ensure adequate support; with correct fastenings and all components securely fixed.
* Associated fixings: Include for mild steel winding bolts/eyebolt strainers and associated fixings, all hot dipped galvanised to BS EN ISO 1461. Burr bolt threads to prevent removal of nuts. Cut off bolt heads, not more than 5mm to protrude beyond nuts.

145 STRAINED LINE WIRE / BARBED WIRE FENCING:

* To BS 1722: Part 2 - 2006
* Drawing reference detail: As per specific project drawing.

Height to top wire: 1160mm.

Wire: Project specific - see detail.

Either strained 5mm mild steel galvanised wire,

Or barbed wire: 2 strand 12.5 gauge barbed wire to BS 4102, strained to 100-150kg tension. Care should be taken to avoid any untwisting of the wire as a result of overstraining. Attached to straining posts and intermediate posts by the means specified for line wire, i.e. using winding brackets and eyebolt strainers to straining posts and a single staple to intermediate posts.

Top line wires: Height of top line wire – 1090mm. 8 horizontal wires. Line wire shall conform to BS 4102 zinc coated mild steel or zinc coated high tensile wire. Minimum nominal wire diameter of 2.5mm.

 Posts and struts:

 Intermediate posts - 100mm diameter round, pointed for driving.

 Straining posts - 125mm diameter round, pointed for driving.

 Struts - 80mm to 100mm diameter round, pointed for driving, set at 45 degrees.

. Maximum centres of posts:

Straining posts: 150m in straight runs and at all ends, corners, changes of direction over 25 degrees and acute variations in level.

Intermediate posts: 3m.

* Method of setting posts:

Straining posts: driven to minimum depth of 750mm.

Struts: driven to a minimum depth of 450mm.

Intermediate posts: driven to a minimum depth of 600mm.

Treatment of timber: Preservative in accordance with BS 1722-7: 2006 Annex A.3.

Setting out of fencing: The landscape contractor shall locate and install the fencing before

 commencing planting.

Installation of fencing: The fencing shall be set out and erected in straight lines or smoothly flowing curves as shown on the contract drawings, with tops of posts following the profile on the ground. Posts set rigid and plumb and to specified depth, or greater where necessary to ensure adequate support; with correct fastenings and all components securely fixed.

Associated fixings: Include for mild steel winding bolts/eyebolt strainers and associated fixings, all hot dipped galvanised to BS EN ISO 1461. Burr bolt threads to prevent removal of nuts. Cut off bolt heads, not more than 5mm to protrude beyond nuts.

146 TIMBER POST AND RAIL FENCING:

* To BS 1722: Part 7, Type SPR 13/4, table 1.

Drawing reference detail: As per specific project drawing

Height: 1300mm from ground to top of top rail. Rails to follow level of the ground along the line of the fence.

* Timber: Rough sawn softwood. Preservative to BS 1722: Part 7, Annex A.3.
* Posts: 2.10m length, cross section of 75 x 150mm to section 5.3.1 of this Standard.
* Maximum centres of posts: 1.8 m.

Method of setting posts: 300 x 300mm x 700mm holes with ST4 mix concrete foundations.

Rails: 4No.with cross-section of 38 x 87mm fixed to posts with 2 x 4mm x 100mm sheradised annular ring shank nails to section 8.1.3.3 of this standard. Rails may alternatively be bolted for a more secure fixing.

* Prick posts: 1.8m length, cross section of 38 x 87mm to section 8.1.2.2 of this standard.

 Setting out of fencing: The landscape contractor shall locate and install the fencing before

 commencing planting.

Installation of fencing: The fencing shall be set out and erected in straight lines or smoothly flowing curves as shown on the contract drawings, with tops of posts following the profile on the ground. Posts set rigid and plumb and to specified depth, or greater where necessary to ensure adequate support; with correct fastenings and all components securely fixed. Also in accordance with section 8.1.1 of this standard.

Associated fixings: All hot dipped galvanised to BS EN ISO 1461. Burr bolt threads to prevent removal of nuts. Cut off bolt heads, not more than 5mm to protrude beyond nuts.

Conformity: Submit manufacturer's/supplier’s and installer's certificates of conformity to BS 1722-7 to section 9 of this standard.

147 CLEFT CHESTNUT PALE FENCING:

* To BS 1722:Part 4, type CW120
* Height: 1200mm to top of pales.
* Posts and struts:

 Intermediate posts - 100mm diameter round, pointed for driving.

 Straining posts - 125mm diameter round, pointed for driving.

 Struts - 80mm to 100mm diameter round, pointed for driving, set at 45 degrees.

. Maximum centres of posts:

Straining posts: 70m on straight runs and at all ends, corners, changes of direction over 25 degrees and acute variations in level.

Intermediate posts: 3m.

* Method of setting posts:

Straining posts: driven or set in rammed earth to a minimum depth of 750mm.

Struts: driven or set in rammed earth to a minimum depth of 450mm.

Intermediate posts: driven or set in rammed earth to a minimum depth of 600mm.

Treatment of timber: Preservative in accordance with BS 1722-7: 2006 Annex A.3.

Setting out of fencing: The landscape contractor shall locate and install the fencing before

 commencing planting.

Installation of fencing: The fencing shall be set out and erected in straight lines or smoothly flowing curves as shown on the contract drawings, with tops of posts following the profile on the ground. Posts set rigid and plumb and to specified depth, or greater where necessary to ensure adequate support; with correct fastenings and all components securely fixed.

215 FENCE TERMINUS AT RIVER BANK:

Drawing: To specific project drawing detail.

218 TIMBER TRIP RAIL FENCING

 • Height: 450mm from ground level to top of rail unless otherwise specified.

• Timber: Rough sawn softwood. Preservative to BS 1722: Part 7, Annex A.3.

 • Posts: 900mm length, cross section 200mm x 200mm. Part rebated to accept rails and weathered top to 15 degrees.

• Rails: 150 x 125mm bolted to posts

 • Maximum centres of posts: 2.75m.

 • Method of setting posts: Set in earth and backfilled (to be approved by CA).

 • Accessories: As specified on drawings.

• Associated fixings: All hot dipped galvanised to BS EN ISO 1461. Burr bolt threads to prevent

 removal of nuts. Cut off bolt heads, not more than 5mm to protrude beyond nuts.

340A 2.1m MILD STEEL VERTICAL BAR FENCING

 • Standard: To BS 1722-9.

 • Height: 2100mm unless otherwise specified.

 • Verticals: 10mm diameter round bar,

 • Posts: max 2.8m centres.

 • Treatment: galvanised, primed and powder coated finish to approved RAL colour.

 • Method of setting posts/ stays/ legs: Set in 300 x 300 x 450mm ST4 mix in-situ concrete foundation.

 • Accessories: as specified on drawings.

 • Conformity: Submit manufacturer's and installer's certificates, to BS 1722-9.

 • Allow for extra posts and non-standard panel widths to accommodate changes in level and also any radii shown on the layout drawings.

345 1.2m ROUND BAR BOW TOP FENCING

 • Height: 1200 mm unless otherwise specified.

 • Verticals: 16 mm diameter round bar bow top, 22 per panel, welded to 2No. 40 x 10mm flat horizontal rails complete with 2 no. intermediate support legs.

 • Centres of verticals: 100mm.

 • Posts: 102 x 44 RSJ 2.8m long without base plates; max 2.75m centres.

 • Treatment: galvanised, primed and powder coated finish to approved RAL colour.

 • Method of setting posts/ stays/ legs: Set in 300 x 300 x 350mm ST4 mix in-situ concrete foundation.

 • Accessories: as specified on drawings.

 • Conformity: Submit manufacturer's and installer's certificates, to BS 1722-9.

 • Allow for extra posts and non-standard panel widths to accommodate changes in level and also any radii shown on the layout drawings.

430 PROPRIETARY FENCING Roll top fencing

 • Manufacturer: to approval of CA.

 - Product reference: N/A.

 • Height: 1200 mm.

 • Materials: Mild steel.

 - Treatment: galvanised, primed and powder coated finish

 - Finish: To approved RAL colour.

 • Centres of posts (maximum): 2.75.

 • Method of setting posts: as specified on drawings.

 • Accessories: as specified on drawings.

**GATES, POSTS AND STILES**

525 OPEN MESH STEEL PANEL GATE TO ACCOMPANY SECURITY FENCING (Q40:126)

• Manufacturer: Steelway Fensecure, or similar approved

Queensgate Works, Bilston Road, Wolverhampton, West Midlands, WV2 2NJ

 Tel: 01902 490919

 Email: sales@fensecure.co.uk

- Product reference: Steelway Dualmesh Single Leaf Gate, or similar approved, with twin 6mm horizontal wires sandwiched either side of the single 5mm vertical wires to create a 200mm x 50mm aperture.

Standard: To manufacturer’s specifications using mild steel materials. TheSteelway Single leaf Mesh Panel gates are available to suit all heights of Mesh Panel fencing and are typically supplied up to 1.5m wide. Available with a sliding locking bar as standard.

• Height: Available in standard heights of 1.8m, 2.0m and 2.4m.

• Mesh and wire: Twin 6mm horizontal wires sandwiched either side of the single 5mm vertical wires to create a 200mm x 50mm aperture

• Posts: Rectangular hollow section.

• Maximum centres of posts: To manufacturer’s recommendations to suit 1.5m wide gate.

• Method of setting posts: In concrete foundations to comply with the design loading

requirements specified by BS 1722-14 for this category fence.

• Bottom of gate: 50mm above ground level.

• Accessories: Secured with tamper resistant fittings as standard to minimize theft.

• Treatment: All materials galvanized after manufacture and polyester powder coated to BS EN 13438: 2013. RAL colour to be advised. Secured with tamper resistant fittings as standard to minimize theft.

• Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.

530 STEEL KISSING GATE

* Manufacturer: Jackson’s Fencing or similar approved.

 Stowting Common, Ashford, Kent, TN25 6BN

 Tel: 01233 750393

* Product Code ref. [264600BM](https://www.jacksons-fencing.co.uk/product/sc_264600bm/galvanised-metal-kissing-gate-with-self-closing-hinge-arrangement.aspx?tpc=BD&fmc=BK&fnc=AX&timber=1).
* Standard: To BS 5709.
* Format: Self closing six rail kissing gate to specific project drawing detail.
* Size: To manufacturer’s specification.
* Materials: Manufactured from 25 x 25mm rectangular hollow section (RHS) steel.
* Treatment: hot dip galvanised steel

Finish: Galvanised finish unless a project specific finish is required.

* Fittings: Supplied partly assembled with fittings by the manufacturer.

 Method of setting posts: 450 x 450 x 600mm ST4 concrete foundation.

* Accessories: Project specific - see details where required.

531 TIMBER KISSING GATE

* Manufacturer: Jackson’s Fencing or similar approved.

 Stowting Common, Ashford, Kent, TN25 6BN

 Tel: 01233 750393

* Product Code ref. 299900BM
* Format: Timber kissing gate set.
* Size: To manufacturer’s specification.
* Materials:
* 1.05m wide, five bar Jakcured Uni Field Gate.
* Hung on galvanised double band hinges with adjustable bottom eye.
* Gate hanging post 2.4m long x 125 x 100mm section, weathered four ways.
* Two slam posts 1.8m long x 125 x 100mm section.
* The ‘V’ shaped enclosure fence has four rails of 100 x 38mm section morticed into each side of the corner post, which is also 1.8m long x 125 x 100mm section.
* All manufactured from Jakcured softwood.
* Treatment: All manufactured from Jakcured softwood.

Finish: As supplied unless a project specific finish is required.

* Fittings: Supplied partly assembled with fittings by the manufacturer.

 Method of setting posts: 450 x 450 x 450mm ST4 concrete foundation for each post.

* Accessories: Project specific - see details where required.

532 TIMBER “ACCESS FOR ALL” KISSING GATE

* Manufacturer: Jackson’s Fencing or similar approved.

 Stowting Common, Ashford, Kent, TN25 6BN

 Tel: 01233 750393

* Product Code ref. 299800BM
* Format: Timber mobility kissing gate set.
* Size: To manufacturer’s specification.
* Materials:
* 1 x 1.5m Wide Field Gate
2 x 2.1m x 125 x 75mm Intermediate Posts
2 x 2.1m x 125 x 125mm Corner Posts
1 x 2.1m x 125 x 100mm Kissing Gate Post
4 x 1810 x 95 x 36mm Mobility Gate Rails
4 x 1280 x 95 x 36mm Mobility Gate Rails
4 x 1210 x 95 x 36mm Mobility Gate Rails
1 x Adjustable Hinge Set galvanised
1 x Gate Slam Band galvanised
1 x Fitting of Irons to gate
* Treatment: All manufactured from Jakcured softwood.

Finish: As supplied unless a project specific finish is required.

* Fittings: Supplied partly assembled with fittings by the manufacturer.

 Method of setting posts: 450 x 450 x 450mm ST4 concrete foundation for each post.

Accessories: Project specific - see details where required

533 TIMBER SINGLE LEAF “EASY ACCESS” GATE

* Manufacturer: Centrewire Ltd. or similar approved.

 Mossfield Road, Adderley Green, Stoke-on-Trent. ST3 5BW

 Tel: 01782 339348
 sales@centrewire.com

* Product Code ref. XX F010011001

Format: One-way 90 degree self-closing timber gate set. Suitable for users of mobility vehicles due to the extra strength of the bottom two rails. An “Easy Latch” trombone handle provides easier access for all.

* Size: To manufacturer’s specification.
* Materials: Planed softwood
* 1.2m high x 1.5m wide single leaf gate with two posts, weathered 4x ways
* 2-way “easy latch” with trombone handle as standard
* 90 degree hinge kit as standard
* Hung on galvanised hinges with adjustable bottom eye.
* Treatment: Preservative in accordance with BS 1722-7: 2006 Annex A.3
* Finish: As supplied unless a project specific finish is required.
* Fittings: Supplied with galvanised hinges and fittings by the manufacturer.

 Method of setting posts: 450 x 450 x 450mm ST4 concrete foundation for each post.

* Accessories: An optional gate stop should be incorporated into the hinge system to ensure the
* gate cannot be left open.
* A stock proof handle is available to replace the normal EASY LATCH trombone handle for an
* extra cost.

540 TIMBER STILE WITH SIDE DOG ACCESS GATE

Drawing reference: To specific drawing detail.

Posts: Three - 75 x 125mm x 1.8m. Two morticed to take 4 rails.

Step treads: Two - 50 x 175mm x 1.2m fixed with countersunk screws.

Lower step posts: Two - 100 x 100mm x 1.05m

Upper step posts: Two – 100 x 100mm x 1.35m

Rails: Four rails - 38 x 100 x 1150mm

Timber: Softwood - project specific - see detail and earlier timber policy.

Treatment of timber: Preservative in accordance with BS 1722-7: 2006 Annex A.3.

* Finish: As supplied unless a project specific finish is required.

Method of setting posts: Excavate 525mm depth holes and install/backfill posts with well rammed excavated earth

Dog gate (if required): Comprises a top rail for nailing between the posts, with a handle attached to the exterior grade plywood gate, which is fitted within the slides, made of four x 1.2m lengths of 37 x 25mm softwood batons.

542 TIMBER 3.6m WIDE FIELD GATE / GATE POSTS

* Drawing reference(s): Six bar gate x 3.6m wide. To specific project drawing detail.
* Timber to BS EN 942, Class J40.

Species: Project specific - see detail and earlier timber policy.

* Materials:

3.6m Universal Hanging Field Gate, Planed Finish
2.1m High 275 x 275mm Fine Sawn with 4 way weathered top gate post
2.1m x 250mm x 250mm Fine Sawn with 4 way weathered top slamming post
Field Gate adjustable hinge set including bolts and screws.

* Preservative treatment: As section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C3.

Type and desired service life: CCA, 40 years.

* Adhesive: Synthetic resin to BS EN 301, type 1.
* Joinery workmanship: As section Z10.
* Fittings: Heavy duty cattle proof auto catch latch with striker, all galvanised.

Method of fixing: 500 x 500 x 750mm concrete foundation over 100mm hardcore.

543 STEEL 3.6m WIDE FIELD GATE / GATE POSTS

* Standard: To BS 4092.
* Manufacturer: to approval of CA.
* Product reference: N/A.
* Materials and workmanship: As section Z11.
* Format: 3.6m wide x 6 bar galvanised steel field gate
* Size: To manufacturer’s specification.
* Materials:
* Steel hanging post, 88.9mm diameter
* Steel slamming post, 88.9mm diameter
* Jointing: Welded.
* Treatment: Hot dip galvanized to BS EN ISO 1461 after fabrication.
* Finish: Galvanised finish unless a project specific finish is required.
* Fittings: Heavy duty cattle proof auto catch latch with striker, all galvanised unless otherwise
* specified on drawings.
* Method of fixing: as specified on drawings.
* Accessories: Project specific - see details where required

 Method of setting posts: 450 x 450 x 600mm ST4 concrete foundation.

544 STEEL “RADAR” ACCESS GATE

 Gate: As specified

 Locations: As specified on drawings

Lock mechanism: Accessible gate with lock that can be opened by RADAR keys held by ‘Blue Badge’ holders.

545 REPTILE / GREAT CRESTED NEWT FENCING

### Fencing specification will follow The Great Crested Newt Mitigation Guidelines Section 8.2 (English Nature, 2001) and DMRB Volume 10 Section 4 PART 7 HA 116/05 Annex B guidelines for exclusion fencing. Natural England guidance to take precedence if there are any inconsistencies.

Prior to installation, vegetation within a 1m wide strip along the line of the fence will be strimmed. This will be carried out by hand to ensure vegetation height is a maximum of 100mm above ground level. Installation of the fence will be supervised by the ECoW.

A record of fence inspection and damage repair work should be kept by the licence holder as evidence that the newt-proof barrier has been properly maintained.

Vegetation within 300mm of the exclusion fence on the non-construction side of the fence line will be maintained at a height less than 150mm above ground level throughout the duration of the works.

550 WOOD

 • Standard: To BS 5709.

 • Wood: See earlier timber policy.

 • Treatment: As section Z12 and British Wood Preserving and Damp-proofing Association

 Commodity Specification C3.

 - Type: N/A.

 • Adhesive: Synthetic resin to BS EN 301, type 1.

 • Workmanship: As section Z10.

 • Fittings: N/A.

 • Method of fixing: As specified on drawings.

 • Accessories: As specified on drawings.

560 STEEL

 • Standard: To BS 4092.

 • Manufacturer: to approval of CA.

 - Product reference: N/A.

 • Materials and workmanship: As section Z11.

 • Jointing: Welded.

 • Finish as delivered: Hot dip galvanized to BS EN ISO 1461 after fabrication.

 • Fittings: as specified on drawings.

 • Method of fixing: as specified on drawings.

 • Accessories: as specified on drawings.

 570 GATES

 • Manufacturer: to approval of CA.

 - Product reference: N/A.

 • Sizes: as specified on drawings.

 • Posts: as specified on drawings.

 • Finish as delivered: as specified on drawings.

 • Fittings: as specified on drawings.

 • Method of fixing: as specified on drawings.

 • Accessories: as specified on drawings.

 580 WROUGHT IRON

 • Standard: Traditional blacksmith's methods.

 - Documentation: Submit certification of training and experience.

 • Samples: Submit on request an executed piece of work carried out by the proposed

 blacksmith.

 • Materials: Best quality true wrought iron.

 - Mild steel or other substitutes: Not permitted.

 - Consistency: Tough, ductile and fibrous in character and of even texture.

 - Submit: Invoices or certificate of authenticity to confirm provenance, on request.

 • Workmanship:

 - Ornamental work: Carefully forged, hand wrought and incised where required to produce

 the design and effect desired.

 - Free ornament: Forged from substantial iron and forge welded where connected to other

 ironwork.

 - Accuracy: Substantially framed together and closely fitted.

 - Cast parts: Not permitted other than as indicated on the approved design drawings.

 • Electric welding: Not permitted.

 • Joints: Neatly tenoned and riveted or forge welded.

 - Heads of tenons and rivets: smooth finish.

 • Method of fixing: as specified on drawings.

 • Treatment: as specified on drawings.

 • Accessories: as specified on drawings.

**EXECUTION**

 710 INSTALLATION GENERALLY

 • Set out and erect:

 - Alignment: Straight lines or smoothly flowing curves.

 - Tops of posts: Following profile of the ground.

 - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure

 adequate support.

 Fixings: All components securely fixed.

715 COMPETENCE

 • Operatives: Contractors must employ competent operatives.

 • Qualifications: Submit certification of training.

720 SETTING POSTS IN CONCRETE

 • Standard: To BS 8500-2.

 • Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less

 than ST2.

 • Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250

 kg 20 mm nominal maximum size coarse aggregate, medium workability.

 • Admixtures: Do not use.

 • Holes: Excavate neatly and with vertical sides.

 • Filling: Position post/ strut and fill hole with concrete to not less than the specified depth,

 well rammed as filling proceeds and consolidated.

 • Backfilling of holes not completely filled with concrete: Excavated material, well rammed

 and consolidated.

 730 EXPOSED CONCRETE FOUNDATIONS

 • Filling: Compact until air bubbles cease to appear on the upper surface.

 • Finishing: Weathered to shed water and trowelled smooth.

 760 NAILED WOOD RAILS

 • Length (minimum): Two bays, with joints in adjacent rails staggered.

 • Fixing: Nail each length of rail to each post with two 100 mm galvanized nails.

 • Rails with split ends: Replace.

 770 SITE CUTTING OF WOOD

 • General: Kept to a minimum.

 • Below or near ground level: Cutting prohibited.

 • Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution

 recommended for the purpose by main treatment solution manufacturer.

 780 MAKING GOOD GALVANIZED SURFACES

 • Treatment of minor damage (including on fasteners and fittings): Low melting point zinc

 alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint

 to BS 4652.

 • Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to

 the original layer.

 790 SITE PAINTING

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

**COMPLETION**

 910 CLEANING

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

 • Surfaces: Clean immediately before handover.

 920 FIXINGS

 • All components: Tighten.

 Timing: Before handover.

930 GATES

 • Hinges, latches and closers: Adjust to provide smooth operation. Lubricate where

 necessary.

 Timing: Before handover.

# Q50 Site / street furniture / equipment

 To be read with Preliminaries/ General Conditions.

 **GATES, BARRIERS AND PARKING CONTROLS**

 190 BOLLARDS

 • Manufacturer: Broxap or similar approved.

 - Product reference: N/A.

 • Material: stainless steel.

 - Finish: brushed.

 - Colour: as cast.

 • Height above ground: as specified on drawings.

 • Special features: as specified on drawings.

 • Method of fixing: as specified on drawings.

 **SITE AND STREET FURNITURE**

 220 BENCHES

Benches shall comply with:

* Manufacturer: Wybone.
* Product reference: VMB/6 Bench Seat (Welded ends; not plastic inserts).

Method of fixing: Fixed to manufacturer’s recommendations.

230 TABLES

 • Manufacturer: to approval of CA.

 - Product reference: N/A.

 • Material: Timber. See earlier timber policy for timber if appropriate

 - Finish: as specified on drawings.

 - Colour: as specified on drawings.

 • Size: manufacturer’s specification.

 • Accessories/ Special requirements: N/A.

 • Method of fixing: ground fixed.

240 LITTER BINS

 • Manufacturer: Broxap or similar approved.

 - Product reference: N/A.

 • Material: as specified on drawings. See earlier timber policy for timber if appropriate

 - Finish: as specified on drawings.

 - Colour: as specified on drawings.

 • Accessories/ Special requirements: N/A.

 • Method of fixing: ground fixed.

 262 TREE GRILLES

 • Manufacturer: to approval of CA.

 - Product reference: N/A.

 • Material: as specified on drawings.

 - Finish: as specified on drawings.

 - Colour: N/A.

 • Size: as specified on drawings.

 • Accessories/ Special requirements: N/A.

 • Method of fixing: to manufacturer’s specification.

270 HANGING BASKETS

 • Manufacturer: As noted on drawings.

 - Product reference: As noted on drawings

 • Material: as specified on drawings.

 - Finish: N/A

 - Colour: Black unless noted on drawings

 • Accessories/ Special requirements: N/A.

 • Method of fixing: TBC.

 275 INTERPRETATION BOARDS

 • Manufacturer: As stated on drawings.

 - Product reference: As stated on drawings.

 • Material: As specified on drawings. See earlier timber policy for timber if appropriate.

 - Finish: as specified on drawings.

 - Colour: as specified on drawings.

 • Size: As specified on drawings.

 • Accessories/ Special requirements: N/A.

 • Method of fixing: Manufacturers recommendation, setting out to be agreed with CA.

 • Treatment: Manufacturers recommendation.

280 REPTILE / GREAT CRESTED NEWT HIBERNACULA

In accordance with The Great Crested Newt Mitigation Guidelines Section 8.2 (English Nature, 2001) and DMRB Volume 10 Section 4 PART 7 HA 116/05 Annex D. Natural England guidance to take precedence if there are any inconsistencies.

1. Hibernacula will be constructed above areas susceptible to flooding on sloping ground if found suitable.
2. Hibernacula will be 1.5m x 1m (minimum) mounds constructed from site arising material such as piled up rocks, logs, and dead wood. Log diameters will be between 50-600mm and lengths between 200-750mm. Soil can be loosely filled between layers during construction.
3. The mounds will be capped with a layer (50 - 100mm thick) of topsoil, turf or moss. Gaps will be left in the capping material at ground level to allow access (figure SD/601).
4. A geotextile membrane may be added, if required by the CA to prevent capping material from collapsing into the voids below.

**INSTALLATION**

 510 CONCRETE FOUNDATIONS GENERALLY

 • Standard: To BS 8500-2.

 • Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less

 than ST2.

 • Admixtures: Do not use.

 • Foundation holes: Neat vertical sides.

 • Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to

 receive overlying soft landscape or paving finishes.

 515 SETTING COMPONENTS IN CONCRETE

 • Holes: excavated to dimensions as shown on drawings.

 • Components: Accurately positioned and securely supported.

 • Concrete fill: Fully compacted as filling proceeds.

 • Concrete foundations exposed to view: Compacted until air bubbles cease to appear on

 the upper surface, then weathered to shed water and trowelled smooth.

 • Temporary component support: Maintain undisturbed for minimum 48 hours.

 530 PRESERVATIVE TREATED TIMBER

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

 coats of a solution recommended for the purpose by main treatment solution manufacturer.

 • Heavily worked sections: Re-treat.

550 DAMAGE TO GALVANIZED SURFACES

 • Minor damage in areas up to 40 mm² (including on fixings and fittings): Make good.

 - Material: Low melting point zinc alloy repair rods or powders made for this purpose or at

 least two coats of zinc-rich paint to BS 4652.

 - Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

 560 SITE PAINTING

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

# SPECIFICATION APPENDICES

APPENDIX 1: Landscape Establishment Aftercare Schedule Sheet

# Appendix 1: Landscape Establishment Aftercare Schedule Sheet

SITE NAME: ………………………………………………………………………………………………………..

ESTABLISHMENT MAINTENANCE YEAR No.: 1 2 3 4 5 (Circle)

VISIT NUMBER: ………… CONTRACTOR: …………………………………………………

|  |  |  |  |
| --- | --- | --- | --- |
| **Operations required by specification** | **Specification Clause guide** | **Date operation carried out by contractor** | ***Operation checked (Office use only)*** |
| Weed control to trees, shrubs and hedgerows. Annual mulch maintenance and top-up. | Q35: 125Q35: 645-670 Q35: 690  |  |  |
| Trimming operations, and pruning of dead and damaged tissue to trees, shrubs and hedgerows | Q35: 540-615  |  |  |
| Checking tree accessories | Q35: 510-530  |  |  |
| Litter/rubbish removal | Q35: 190A  |  |  |
| Protective fencing | Q31: 732, Q35: 698  |  |  |
| Grass maintenance:Include all necessary operations specific to the following, contained in Q35 Clauses 285A-381*- Lawns*:*- General grassed areas*:*- Wildflower meadows*: | Generally: Q30:605-752 and Q35: 210-250Q30: 540A and Q35: 260AQ30: 530A and Q35: 265AQ35: 272-280A |  |  |
| Maintenance of bulbs, plugs and herbaceous grasses | Q35: 235 and Q35: 635 |  |  |
| Hard landscape areas | Q35: 910-930 |  |  |
| Control of Japanese Knotweed | Q35: 198 |  |  |
| Wetland areas | Q31: 731-732, Q35:880-899 |  |  |
| List additionally agreed operations including intermittent operations required by the specification and/or as instructed. |  |  |  |
| The above operations are complete and ready for inspection.Signed by contractor…………………………………………………...For and on behalf of…………………………………........ | Return this sheet to the Delegated CA (*insert name*) at the following address:…………………………………………………………...…………………………………………………………...…………………………………………………………... |

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)