

murray & associates  
landscape architecture

# LANDSCAPE WORKS SPECIFICATIONS and MANAGEMENT PLAN

## Clonburris Urban Core T2

Clonburris SDZ

CLIENT:

**Cairn Homes Properties Ltd.**

December 2022

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**CONTROL SHEET**

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## *A General Comments*

### **A13. Description of the Work**

#### **PRELIMINARIES**

In addition to Preliminaries/General Conditions identified by the Employer's Agent (EA), the contractor shall provide the following:

Identify the tree and shrub nurseries from which it is intended to supply the plants.

Prior to delivering shrubs and groundcover to site, images shall be provided showing container size, root growth and size of the plant.

Prior to delivering to site, images shall be provided of all hedge planting pre-grown and field grown showing container size or through size, root growth and height.

Prior to delivering trees to site, images shall be provided showing height, container size or root ball size, clear stem height (person standing on root ball).

All planting shall be inspected prior to planting and checked for damage that may have occurred during transit. Damaged plants will be rejected, and a replacement shall be provided.

The contractor needs to be aware that the bare rooted planting season is from the 1st of November till the 17th of March. Dependant on the construction phasing, the planting of bare-root plants may be completed post construction to tie in with the following bare-root season. If the contractor's program does not tie in with these dates the trees may need to be priced as container grown or spring ringed a minimum of 8 months in advance. Any cost if any for out of season planting will need to be included for within the tender.

Any costs associated with offsite maintenance will need to be included for in the tender.

When existing topsoil is no longer available on site, the contractor shall be responsible for importing the necessary remaining topsoil. Topsoil quality to comply with the specification clauses outlined in Q28.

#### **SCOPE OF WORKS**

##### **GENERAL DESCRIPTION OF WORKS:**

The works described in this document comprise hard works including granite paving, limestone paving, soft works including shrub and tree planting, landscape maintenance and street furniture.

##### **PAVING SPARES:**

The contractor shall provide an additional quantity of 5% of all paving materials / finishes included within the works at the completion of the development to the Employer's Agent (EA) for storage to a location to be agreed in writing.

Street furniture items to be supplied and installed as part of the site works area proposals shall include, but is not limited to the following:

- Timber benches and seats.
- Playground equipment.
- Cycle stands.

The defects liability period for hard elements shall is given in the contract preliminaries. For specific items the following shall apply:

- All paving and street furniture items: 12 months.
- All soft landscape areas including shrub planting and wildflower meadows: 12 months.
- All trees: 12 months.

The Contractor shall provide to the Employer all information that he may reasonably require to monitor and assess the Contractor's performance against the targets for those performance indicators.

Where the Employer considers that a target for any of those performance indicators may not be met, he may inform the Contractor who shall submit his proposal for improving his performance against that target to the employer.

## **MATERIALS**

### **MATERIALS – GENERAL:**

Where and to the extent that materials, products and workmanship are not fully detailed or specified they are to be:

- of a standard appropriate to the Works and suitable for the purposes stated in or reasonably to be inferred from the project documents;
- in accordance with good building practice, including provisions of building standards, Codes of Practice and British Standards and in accordance with the Specification for Highway Works.

### **MATERIALS – SUPPLIERS:**

The Contractor shall submit to the EA's a list of suppliers from whom he proposes to purchase the materials necessary for the execution of the Works. Each supplier must be willing to admit the EA, or his Representative, to his premises during ordinary working hours for the purpose of inspecting materials and obtaining samples of the materials proposed. Alternatively, if directed by the EA, the Contractor shall deliver samples of the materials to the EA's office without charge.

The Contractor shall inform the EA of any subsequent additions to be made to the list and shall not change any source of supply without the EAs prior approval. Should the Contractor require to change any source of supply he shall inform the EA of this and supply a sample of the material from the new source for approval.

Samples of materials approved will be retained at the EA's office until the completion of the Contract.

A sample palette of 5sq.m of all paving to be laid out on site one month prior to commencement of contract works.

Materials to be equal to samples - all material incorporated in the Works after approval of samples shall be equal to the approved samples.

The Contractor shall produce written evidence of sources of supply when requested by the EA.

### **BRITISH STANDARDS**

Where British Standard Specifications (hereinafter abbreviated to BS) and British Standard Codes of Practice (hereinafter abbreviated to CP) published by the British Standards Institution are referred to in the Specification the references shall be taken as referring to the latest editions including all amendments and additions thereto issued up to one month prior to the date of this document unless the year and/or Clause is given in the Specification.

Where any BS or CP provides for alternatives and no reference is made in the Specification or Drawings to the alternative required for the Works, then the Contractor shall request the EA to issue an instruction specifying the applicable alternative. If such instruction is not requested, then any resulting alterations subsequently required by the EA to materials and workmanship shall be at the Contractor's expense.

#### BRITISH STANDARD KITE MARKS

All products or installations specified to confirm to a British Standard or other accredited Quality Assurance scheme shall be clearly marked with the appropriate kite mark or other approved symbol.

#### TEST CERTIFICATES

Where materials are to comply with the relevant British Standards the Contractor shall arrange for the appropriate test certificates to be submitted free of charge to the EA or the EA's Representative prior to the materials being incorporated in the Works. All paving materials or walkable surfaces shall require to be tested for slip resistance by a Pendulum test and PTV values to be provided prior to handover. Anywhere a contrast is required an LRV test (Light Reflective Value) is required (steps nosing and risers, corduroy paving to top and bottom of stepped approach to buildings) the LRV requires to differ 30 units to be considered contrasting.

#### INSPECTION AND DESPATCH OF MATERIALS OFF THE SITE

Where inspection of materials off the Site is referred to in the Contract, the Contractor shall, having regard to the location of the material and the nature of the test, inspection or examination required, give to the EA or his representative at least one week's notice of such materials being ready for inspection, test or examination.

Delay to the Works arising from the late submission of such notice will not be acceptable as a reason for delay in the completion of the Works. On the previous working day to each such test or inspection the Contractor shall confirm that the material is ready for inspection. Where materials are to be inspected off the Site, such materials shall not be despatched to the Site or elsewhere without written authority from the EA or the EA's Representative.

#### STORAGE OF MATERIALS

All materials to be used in the Permanent Works shall be stored neatly and orderly on racks, on supports, in bins under cover or in like manner as appropriate to prevent deterioration or damage from any cause whatsoever to the entire satisfaction of the EA's Representative.

Materials to be stored in such a manner to:

Prevent over-stressing, distortion and any other type of physical damage.

Keep materials free from contamination.

- Prevent staining, chipping, scratching or other disfigurement, particularly of products exposed to view in the finished work.
- Keep materials dry and in a suitably low humidity atmosphere to prevent premature setting, moisture movement and similar defects. Where appropriate store off the ground and allow free air movement around and between stored products.
- Protect material adequately from rain, damp, frost, sun and other elements as appropriate.
- Keep different types and grades of products separately and adequately identified.



- So far as possible keep products in their original wrappings, packings or containers, with unbroken seals, until immediately before they are used.
- Ensure that protective measures are fully compatible with and not prejudicial to the products/materials.

#### USE OF PERMANENT MATERIALS FOR TEMPORARY WORKS

No materials to be incorporated in the Permanent Works shall be used for Temporary Works prior to their incorporation in the Permanent Works unless otherwise directed in this Specification or approved in writing in each case by the EA.

#### DISCREPANCIES

It is the Contractor's responsibility to report any inconsistencies on the drawings or between drawings and the Bill of Quantities or this Specification to the EA as soon as they become apparent. The Contractor shall request clarification and instruction from the EA before proceeding.

#### ACCEPTANCE OF WORK

The checking, approval or confirmation of works by the EA or the EA's Representative does not relieve the Contractor of his responsibility for the correctness thereof.

#### WORK BY HAND

Works around the base or within the root spread of existing trees or other plants to be retained shall be undertaken by hand.

#### BUILDING STANDARDS

All works installed and executed shall be in accordance with the relevant Building Regulations Technical Guidance Documents (TGD's) prepared by the Department of the Environment. Refer to website [www.envron.ie](http://www.envron.ie)

### **A33. Quality Standards / Control**

#### **STANDARDS OF PRODUCTS AND EXECUTIONS**

##### 110 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.

##### 120 WORKMANSHIP SKILLS

- Operatives: Appropriately skilled and experienced for the type and quality of work.
- Registration: With Construction Skills Certification Scheme.
- Evidence: Operatives must produce evidence of skills/ qualifications when requested.

##### 130 QUALITY OF PRODUCTS

- Generally: New. (Proposals for recycled products may be considered).
- Supply of each product: From the same source or manufacturer.
- Whole quantity of each product required to complete the Works:
- Consistent in kind, size, quality and overall appearance.
- Source of supply: Submit evidence when requested.

##### 170 MANUFACTURER'S RECOMMENDATIONS/ INSTRUCTIONS

- General: Comply with manufacturer's printed recommendations and instructions current on the date of the Invitation to tender.
- Changes to recommendations or instructions: Submit details.
- Ancillary products and accessories: Use those supplied or recommended by main product manufacturer.
- Agrément certified products: Comply with limitations, recommendations and requirements of relevant valid certificates.

##### 180 WATER FOR THE WORKS

- Mains supply: Clean and uncontaminated.
- Other: If proposed, provide evidence of suitability.

#### **SAMPLES/ APPROVALS**

##### 220 APPROVAL OF PRODUCTS

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to a sample of the product and not to the product as used in the Works.
- Do not confirm orders or use the product until approval of the sample has been obtained.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.

### 230 APPROVAL OF EXECUTION

- Submissions, samples, inspections and tests: Undertake or arrange to suit the Works programme.
- Approval: Relates to the stated characteristics of the sample. (If approval of the finished work as a whole is required this is specified separately). Do not conceal, or proceed with affected work until compliance with requirements is confirmed.
- Complying sample: Retain in good, clean condition on site. Remove when no longer required.

## **D Groundwork**

### **D20 Excavating and filling**

To be read with Preliminaries/General conditions

#### **Generally/the site**

##### **145** Variations in ground water level

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

##### **150** Existing services, features and structures

1. Services: Refer to the appointed Engineer's drawings for details.
2. Site features to be retained: See drawing 1738\_C\_P\_01.1/01.2 for details.
3. Structures: None.

#### **Clearance/excavating**

##### **164** Tree Roots

1. Protected area: Do not cut roots within precautionary protection area.
  - 1.1. Size of area: As drawing no. 1738\_PLC\_TPP\_01
2. Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
3. Cutting
  - 3.1. Make clean smooth cuts with no ragged edges
  - 3.2. Pare cut surfaces smooth with a sharp knife.
  - 3.3. Treatment of cut roots.

##### **164** Tree Roots

1. Trench: Sever all roots.
  - 1.1. Depth:
2. Root barrier:
3. Cutting roots: As clause 164.
4. Root barrier installation: Full depth of excavation. Fit closely to trench wall nearest the tree.
5. Backfill material: As dug material excavated from trench.
6. Backfilling: Lay and compact thoroughly in layers not more than 300 mm thick.

##### **168** Site clearance

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

**170** Removing small trees, shrubs, hedges and roots

1. Identification: Clearly mark trees to be removed.
2. Small trees, shrubs and hedges: Cut down.
3. Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
4. Safety: Comply with Forest Industry Safety Accord safety leaflets.

**175** Felling large trees

1. Definition: Girth over 600 mm.
2. Identification: Clearly mark trees to be removed.
3. Safety: Comply with Forest Industry Safety Accord safety leaflets.
4. Felling: As close to the ground as possible.
5. Work near retained trees: Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.

**180** Chipping and shredding

1. General: Permitted, remove arisings from site

**220** Stripping topsoil

1. General: Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, paving/ roads and other areas shown on drawings.
2. Depth
  - 2.1. Remove to an average depth of 250 mm.
  - 2.2. Give notice where the depth of topsoil is difficult to determine.
3. Handling: Handle topsoil for reuse or sale in accordance with clause 225.
4. Site storage: Keep separate from excavated sub-soil

**221** Treating topsoil

1. Treatment: Apply a suitable translocated nonresidual herbicide.
2. Timing: Not less than two weeks before excavating topsoil.

**225** Handling topsoil

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

#### **240** Adjacent excavations

1. Requirement: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto, must be completed before the higher excavation is made.
2. Angle of line below horizontal: To be agreed on an individual area by area basis.
3. Backfill material: To be agreed on an individual area by area basis.

#### **242** Excavations adjacent to existing backfilled trenches

1. Proximity: When width of undisturbed ground between the two excavations will be less than 1m.
2. Action: Assume that the ground between the trenches is unstable and provide side support accordingly.

#### **244** Excavations adjacent to existing foundations

1. Prior to commencing excavation
  - 1.1. Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
  - 1.2. Allow for inspection of trial pits.
  - 1.3. Allow time for amendment of details if required.
    - 1.3.1. Time period: 5 working days
2. Backfill material to new excavation: To be agreed on an individual area by area basis.

#### **250** Permissible deviations from formation levels

1. Beneath mass concrete foundations:  $\pm 25$  mm.
2. Beneath ground bearing slabs and r.c. foundations:  $\pm 15$  mm.
3. Embankments and cuttings:  $\pm 50$  mm.
4. Ground abutting external walls:  $\pm 50$  mm, but such as to ensure that finished level is not less than 150 mm below dpc.

#### **255** Accuracy – linear dimensions

1. Permissible deviations from linear dimensions generally: +/- 15mm

#### **260** Inspecting formations

1. Give notice: Make advance arrangements for inspection of formations for foundations and filling formations; service trenches; roads and pavings.
  - 1.1. Notice (minimum): 3 days
2. Preparation: Just before inspection remove the last 150 mm of excavation. Trim to required profiles and levels.
  - 2.1. Loose material: Remove
3. Seal: Within 4 hours of inspection, seal formations with concrete.

#### **270** Foundations generally

1. Give notice if
  - 1.1. A natural bearing formation of undisturbed subsoil is not obtained at the depth shown on the drawings.
  - 1.2. The formation contains soft or hard spots or highly variable material.

### **280** Trench fill foundations

1. Excavation: Form trench down to formation in one operation.
2. Safety: Prepare formation from ground level.
3. Inspection of formations: Give notice before commencing excavation.
  - 3.1. Period of notice: Three working days
4. Shoring: Where inspection of formation is required, provide localised shoring to suit ground conditions.
5. Concrete fill: Place concrete immediately after inspection and no more than four hours after exposing the formation.

### **290** Foundations in made up ground

1. Depth: Excavate down to a natural formation of undisturbed subsoil.
2. Discrepancy: Give notice if this is greater or less than depth given.

### **310** Unstable ground

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

### **330** Unrecorded features

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

### **350** Existing watercourses

1. Diverted watercourses which are to be filled: Before filling, remove vegetable growths and soft deposits.

### **360** Excess excavation

3. Excavation taken wider than required
  - 3.1. Backfill: Foundation bearing
4. Excavation taken deeper than required
  - 4.1. Backfill: Foundation bearing

### **370** Underground structures in landscape areas

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

### **Disposal of materials**

#### **410** Excavated topsoil storage

1. Storage: Stockpile in temporary storage heaps location to be agreed .

**415** Excavated topsoil removal

1. General: Remove from site.

**420** Topsoil storage heaps

1. Location: to be agreed
2. Standard: To BS 3882.
3. Protection
  - 3.1. Do not place any other material on top of storage heaps.
  - 3.2. Do not allow construction plant to pass over storage heaps.
  - 3.3. Prevent compaction and contamination.

**421** Topsoil storage heap treatment

1. Treatment: Apply a suitable herbicide at appropriate times to prevent seeding of weeds

**441** Surplus subsoil

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

**450** Water

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

**454** Ground water level, springs or running water

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

**457** Pumping

1. General: Do not disturb excavated faces or stability of adjacent ground or structures.
2. Pumped water: Discharge without flooding the site or adjoining property.
3. Sumps: Construct clear of excavations. Fill on completion.
  - 3.1. Locations: to be agreed.

**Filling**

**500** Proposed fill materials

1. Details: Submit full details of proposed fill materials to demonstrate compliance with specification, including:
  - 1.1. Type and source of imported fill.



- 1.2. Proposals for processing and reuse of material excavated on site.
- 1.3. Test reports as required elsewhere.
2. Timing: 2 weeks prior to starting on site.

**510 Hazardous, aggressive or unstable materials**

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

**520 Frost susceptibility**

1. General: Except as allowed below, fill must be non frost-susceptible as defined in the 'Specification for highway works', clause 801.8.
2. Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are non frost- susceptible:
  - 2.1. Fine grained soil with a plasticity index less than 20%.
  - 2.2. Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
  - 2.3. Crushed chalk.
  - 2.4. Crushed limestone fill with average saturation moisture content in excess of 3%.
  - 2.5. Burnt colliery shale.
3. Frost-susceptible fill: May only be used:
  - 3.1. At depths below the finished ground surface greater than: 500 mm
  - 3.2. Within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
  - 3.3. Where frost heave will not affect structural elements.

**530 Placing fill**

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

**535** Compaction generally

1. General: Compact fill not specified to be left loose as soon as possible after placing.
2. After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.
3. Defective areas: Remove and recompact to full thickness of layer using new material.

**540** Benching in fill

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

**550** Geotextile sheet

1. Manufacturer: Contractor's choice, compliant to BS 8661.
  - 1.1. Product reference: Terram T1000
2. Type: Nonwoven
3. Polymer type: Polypropylene
4. Jointing: 300 mm overlap
5. Preparation of subgrade: Before laying sheet, remove humps and sharp projections. Fill hollows
6. Protect from
  - 6.1. Exposure to light.
  - 6.2. Contaminants.
  - 6.3. Materials listed as potentially deleterious by geotextile manufacturer.
  - 6.4. Wind uplift.

**610** Compacted filling for landscape areas

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

**615** Loose tip filling for landscape areas

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

**650** Protection of compacted filling

1. Temporary protective filling: Before allowing construction traffic, raise level of compacted cohesive soil filling at least 150 mm above formation level using properly compacted temporary filling.
2. Removal: Remove temporary protective filling from site before permanent construction.

**700** Backfilling around foundations

1. Under oversite concrete and pavings: Hardcore as clause 710.
2. Under grassed or soil areas: Material excavated from the trench, laid and compacted in 300 mm maximum layers.

## **710** Hardcore filling

1. Fill: Granular material, free from excessive dust, well graded, all pieces less than 75 mm in any direction:

1.1. Test requirements

1.1.1. Minimum 10% fines value tested in a soaked condition to BS 812-111 50 kN.

2. Material

2.1. Permitted materials in any one layer

2.1.1. Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.

2.1.2. Crushed concrete, crushed brick or tile, free from plaster, timber and metal.

2.1.3. Crushed non-expansive slag.

2.1.4. Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.

2.1.5. Well-burned non-plastic colliery shale.

2.1.6. Natural gravel.

2.1.7. Natural sand.

3. Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer.

## **F Masonry**

### **F10 Brick/ block walling**

To be read with Preliminaries/ General conditions

#### **Types of walling**

##### **110** Clay facing brickwork

1. Description: general clay brickwork
2. Bricks: To BS EN 771-1.
3. Mortar: As section Z21.
  - 3.1. Standard: To BS EN 998-2
  - 3.2. Additional requirements: Coloured mortar to match bricks
4. Joints: Recessed
5. Features: Brick capping

##### **255** Concrete facing blockwork

3. Description: Concrete facing blockwork
4. Blocks: To BS EN 771-3.
  - 4.1. Manufacturer: Submit proposals
    - 4.1.1. Product reference: Submit proposals
  - 4.2. Finish/ colour: Concrete render finish to public realm
5. Mortar: As section Z21.
6. Joints: as per appointed engineer's specifications

#### **Workmanship generally**

##### **430** Conditioning of clay bricks/ blocks

1. Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
2. Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

##### **440** Conditioning of concrete bricks/ blocks

1. Autoclaved concrete bricks/ blocks delivered warm from manufacturing process: Do not use.
2. Age of nonautoclaved concrete bricks/ blocks: Do not use until at least four weeks old.
3. Avoidance of suction in concrete bricks/ blocks: Do not wet.
  - 3.1. Use of water retaining mortar admixture: Submit details.

##### **500** Laying generally

1. Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
2. AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
3. Clay block joints
  - 3.1. Thin-layer mortar: Lay blocks on a full bed.
  - 3.2. Interlocking perpend: Butted.
4. Bond where not specified: Half-lap stretcher.

5. Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

**520 Accuracy**

1. Courses: Level and true to line.
2. Faces, angles and features: Plumb.
3. Permissible deviations
  - 3.1. Position in plan of any point in relation to the specified building reference line and/ or point at the same level:  $\pm 10$  mm.
  - 3.2. Straightness in any 5 m length:  $\pm 5$  mm.
  - 3.3. Verticality up to 3 m height:  $\pm 10$  mm.
  - 3.4. Overall thickness of walls:  $\pm 10$  mm.

**545 Levelling of separate leaves**

1. Locations for equal levelling of cavity wall leaves: As follows:
  - 1.1. Every course containing vertical twist type ties or other rigid ties.
  - 1.2. Every third tie course for double triangle/ butterfly ties.
  - 1.3. Courses in which lintels are to be bedded.

**560 Coursing brickwork**

1. Gauge: Four brick courses including bed joints to 300 mm.

**615 Brickwork to receive asphalt dpc**

1. Substrate: Mortar bed finished flush, smooth and level.

**635 Jointing**

1. Profile: Consistent in appearance.

**645 Accessible joints not exposed to view**

1. Jointing: Struck flush as work proceeds.

**665 Pointing**

1. Description:
2. Joint preparation: Remove debris. Dampen surface.
3. Mortar: As section Z21.
  - 3.1. Standard: To BS EN 998-2
  - 3.2. Mix: To Eng Spec
4. Profile: Recessed

**671 Fire-stopping**

1. Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.

**690 Adverse weather**

1. General: Do not use frozen materials or lay on frozen surfaces.

2. Air temperature requirements: Do not lay bricks/ blocks:
  - 2.1. In cement-gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
  - 2.2. In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising, or as manufacturer's/ supplier's recommendations.
  - 2.3. In thin-layer mortars when outside the limits set by the mortar manufacturer.
3. Temperature of walling during curing: Above freezing until hardened.
4. Newly erected walling: Protect at all times from:
  - 4.1. Rain and snow.
  - 4.2. Drying out too rapidly in hot conditions and in drying winds.

### **Additional requirements for facework**

#### **710** The term facework

1. Definition: Applicable in this specification to brick/ block walling finished fair.
  - 1.1. Painted facework: The only requirement to be waived is that relating to colour.

#### **730** Brick/Concrete block samples

1. General: Before placing orders with suppliers submit for approval of appearance labelled samples.
2. Selection of samples: Representative of the range in variation of appearance.

#### **750** Colour consistency of masonry units

1. Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
2. Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
3. Facing bricks should be blended on site from a minimum of three packs to ensure an even distribution of colour and texture variation.
4. Finished work: Free from patches, horizontal stripes and racking back marks.

#### **760** Appearance

1. Brick/ block selection: Do not use units with damaged faces or arrises.
2. Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
3. Quality control: Lay masonry units to match relevant reference panels.
  - 3.1. Setting out: To produce satisfactory junctions and joints with built-in features and components.
  - 3.2. Coursing: Evenly spaced using gauge rods.
4. Lifts: Complete in one operation.
5. Methods of protecting facework: Submit proposals.

#### **780** Ground level

1. Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

**790** Putlog scaffolding

1. Use: Not permitted in facework.

**800** Toothed bond

1. New and existing facework in same plane: Bond together at every course to achieve continuity.

**830** Cleanliness

1. Facework: Keep clean.
2. Mortar on facework: Allow to dry before removing with stiff bristled brush.
3. Removal of marks and stains: Rubbing not permitted.

Ω End of Section

### **F31 Precast concrete sills/ lintels/ copings/ features**

#### **Types of component**

##### **105 Precast**

1. Description: precast concrete in general
2. Concrete: Components manufacturer's 'proprietary' concrete.
  - 2.1. Identity: To Eng spec
3. Conformity: To BS 8500-2 and the recommendations of
  - 3.1. BS 8500-1, Annex A.4 for the specified exposure class.

#### **General requirements**

##### **220 Concrete generally**

1. Specification: To BS 8500-2 and BS EN 206.
2. Producer: Accredited to BS 8500-2 requirements where product conformity certification is required.

##### **250 Reinforcement**

1. Carbon steel reinforcement: As appropriate to BS 4449, BS 4482 and BS 4483.
  - 1.1. Cutting and bending: To BS 8666.
2. Galvanized reinforcement: Galvanized to BS EN ISO 1461 after cutting. Chromate treated.
3. Stainless steel reinforcement: To BS 6744.
  - 3.1. Designation 1.4301.
  - 3.2. Cutting and bending: To BS 8666.
4. Non-structural reinforcement: Include to resist shrinkage and handling stresses.
5. Bimetallic corrosion and staining: Prevent by appropriate selection and use of materials.
6. Condition at time of placement: Clean, free of corrosive pitting, loose materials and substances that adversely affect reinforcement, concrete, or bond between the two.
7. Fixing: Accurate and secure.
  - 7.1. Method: Wire tying, approved steel clips or tack welding if permitted.
  - 7.2. Concrete cover: Maintain free of all tying wire or clips.

##### **260 Casting and curing**

1. Placing of concrete: Thoroughly compact.
2. Protection against drying out: Methods and duration to BS EN 13369.
3. Immature components: Avoid movement, vibration, overloading, physical shock, rapid cooling and thermal shock.
4. Delivery to site: Minimum 14 days after casting.

##### **261 Cutting**

1. Cutting of precast concrete components: Not permitted.

#### **Fair-faced components - Not Used**

#### **Installation**

##### **420 Laying**

6. Mortar for bedding and jointing: As section Z21.



- 6.1. Type: To Eng spec
- 6.2. Mix: To Eng spec
- 6.3. Packing: If required use slate.
7. Bedding components: On full bed of mortar.
8. Removal of marks, stains and extraneous mortar on visible faces: Rubbing not permitted.

## **L Window/Doors/Stairs**

### **L37 External stair, ramps, handrail, and balustrades systems**

To be read with Preliminaries/General conditions.

#### **General**

##### **110 Stair systems**

1. Description: All external stairs as per drawings
2. Type: Built in situ
3. Base/ Fabric: In situ concrete, as section E10
4. Surface: Precast concrete slabs, as section Q25
5. Unobstructed width:
6. Accessories: 'Corduroy' hazard warning surface, as section Q24; Handrail system

##### **120 Ramp systems**

1. Description: Throughout site
2. Type: Built in situ
3. Base/ Fabric: as per Eng. specs
4. Gradients
  - 4.1. Going: as per drawings
5. Accessories: Handrail system if required

##### **150 Handrail systems**

1. Description: TO STAIRS AND RAMPS IF REQUIRED, as per drawings
2. System manufacturer: Larkin or similar and approved

#### **System performance**

##### **210 Design**

1. Description: OF STAIR AND RAMP SYSTEMS
2. Inclusive design: Complete detailed design in accordance with Building Regulations (Eng) Approved Document M, volume 2 and BS 8300-1; highlight discrepancies and outcomes
3. Structure and associated features: Complete detailed design to BS EN 1991-1-1
4. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

##### **220 Design**

1. Description: OF HANDRAIL SYSTEM
2. Inclusive design: Complete detailed design in accordance with Building Regulations (Eng) Approved Document M, volume 2
3. Structure and associated features: Complete the design to meet structural and safety requirements of BS 6180 and in accordance with BS 8300-2
4. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

## **Fabrication**

### **510** Fabrication generally

1. Design: Complete the detailed design and obtain approval prior to commencing fabrication.
2. Shop drawings: Submit.
3. Structural calculations: Submit.
4. Frameworks: Assemble and brace, including temporary members required for installation.
5. Contact between dissimilar metals: Avoid.
6. Fixings: Fully bolt together. Tighten bolts.
7. Temporary support: Do not subject members to non-design loadings.

## **Execution**

### **610** Loading

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

### **620** Concrete foundations generally

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

### **640** Concrete foundations generally

1. 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.
2. Heavily worked sections: Re-treat.

### **650** Installation generally

1. Fasteners: To section Z20.
2. Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
3. Temporary support: Do not use finished work as temporary support or strutting for other work.
4. Applied finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

### **662** Adverse weather

1. General: Do not use frozen materials and do not lay on frozen surfaces.
2. Working limits: Do not lay blocks/ dressings:
  - 2.1. Cement gauged mortars: When the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of not less than 4°C when laid and work is thoroughly protected).

- 2.2. Hydraulic lime:sand mortars: When the air temperature is at or below 5°C and falling or below 3°C and rising.
3. Temperature of the work: Maintain above freezing until mortar has fully set.
4. Newly erected work: Protect from precipitation; Prevent rapid drying in hot conditions.
5. Remedial work: Rake out and replace mortar damaged by frost.
  - 5.1. Damaged work: Rebuild.

**670** Installation of tread inserts/ nosings

1. Treads: Fully cured, sound and level.
2. Fixing
  - 2.1. Location/ position: In accordance with BS 8300-1
  - 2.2. Fixings: As manufacturer's recommendations

## **Q Paving/Planting/Fencing/Paving accessories**

### **Q10 Kerbs/edgings/channels/paving accessories**

#### **Types of kerbs/edgings and channels**

##### **170** Linear slot drainage channel systems

1. Manufacturer: Submit proposals
  - 1.1. Product reference: Submit proposals

#### **Roads/paving accessories/markings/demarcation**

##### **305** Tree grilles and surrounds

1. Manufacturer: Castit or similar
  - 1.1. Product reference: Square Starburst Tree Grille or Similar and Approved
2. Size: 1200×1200 mm, central hole of ø450 mm. Formed by 4 pieces, width 1200mm, length, 1200
3. Material: Cast iron
4. Colour: Black

#### **Laying**

##### **510** Laying kerbs, edgings and channels

1. Cutting: Neat, accurate and without spalling. Form neat junctions.
  - 1.1. Long units (450 mm and over) minimum length after cutting: 300 mm.
  - 1.2. Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
2. Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
3. Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

##### **520** Adverse weather

1. Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

##### **530** Concrete for foundations, races and haunching

1. Standard: To BS 8500-2.
2. Designated mix: Not less than GEN0 or Standard mix ST1.
3. Workability: Very low.

##### **540** Cement mortar bedding

1. General: To section Z21.
2. Mix (Portland cement:sand): 1:3.
  - 2.1. Portland cement: Class CEM I 42.5 to BS EN 197-1.
  - 2.2. Sand: to BS EN 12620, grade 0/4 or 0/2 (MP).
3. Bed thickness: 12-40 mm.

### **570 Channels**

1. Installation: To an even gradient, without ponding or backfall.
2. Lowest points of channels: 6 mm above drainage outlets.

### **580 Drainage channel systems**

1. Installation: To an even gradient, without ponding or backfall. Commence laying from outlets.
2. Silt and debris: Removed from entire system immediately before handover.
3. Washing and detritus: Safely disposed without discharging into sewers or watercourses.

### **590 Drainage channel systems with built in fall**

1. Installation: Top of channels level, installed in correct sequence to form an even gradient without ponding or backfall. Commence laying from outlets.
2. Silt and debris: Removed from entire system immediately before handover.
3. Washings and detritus: Safely disposed without discharging into sewers or watercourses.

### **600 Radius kerbs/ channels**

1. Usage: Radii of 15 m or less.

### **610 Angle kerbs**

1. Usage: Internal and external 90° changes of direction.
2. Cutting of mitres: Not permitted.

### **620 Accuracy**

1. Deviations (maximum)
  - 1.1. Level:  $\pm 6$  mm.
  - 1.2. Horizontal and vertical alignment: 3 mm in 3 m.

### **625 Regularity of paved surfaces**

1. Maximum undulation of (non-tactile) paving surface: 3 mm.
  - 1.1. Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
2. Difference in level between adjacent units (maximum)
  - 2.1. Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
  - 2.2. Recessed, filled joints: 2 mm.
    - 2.2.1. Recess depth (maximum): 5 mm.
  - 2.3. Unfilled joints: 2 mm.
3. Sudden irregularities: Not permitted.

### **630 Narrow mortar joints**

1. Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.
  - 1.1. Joint width: 3 mm.

### **Q21 In situ concrete roads/ pavings/ bases**

To be read with Preliminaries/General conditions.

## **Types of paving**

### **115** Brushed Concrete

1. Description: Brushed Concrete in general
2. Granular sub-base: Well compacted Clause 804 stone to falls/crossfalls required
  - 2.1. Compacted thickness: 250 mm
3. Separation membrane: Polyethylene sheet 125 micrometres thick, edges lapped 300 mm.
4. Embedded metal: R252 Reinforcing Mesh in centre of slab
5. Concrete: To BS 8500-2.
  - 5.1. Designation: Concrete as per Engineer's details and specifications
6. Slab thickness (minimum): 150 mm
7. Finish: Brushed with trowelled edges (50mm)

## **General/ preparation**

### **140** Ready-mixed concrete

1. Production plant: Currently certified by a body accredited by UKAS to BS EN ISO/IEC 17065 for product conformity certification.
2. Source of ready-mixed concrete: Obtain from one source if possible. Otherwise, submit proposals.
  - 2.1. Name and address of depot: Submit before any concrete is delivered.
  - 2.2. Delivery notes: Retain for inspection.
3. Declarations of nonconformity from concrete producer: Notify immediately.

### **145** Admixtures

1. Calcium chloride and admixtures containing calcium chloride: Do not use.

### **155** Project testing of concrete - general

1. Testing: To BS EN 206-1, annex B and BS 8500-1, annex B.
2. Recording: Maintain complete correlated records including:
  - 2.1. Concrete designation.
  - 2.2. Sampling, site tests, and identification numbers of specimens tested in the laboratory.
  - 2.3. Location of the parts of the structure represented by each sample.
  - 2.4. Location in the structure of the batch from which each sample is taken.
3. Testing laboratory: Accredited by UKAS or other national equivalent.
4. Tests results
  - 4.1. Submission of reports: Within one day of completion of each test.
    - 4.1.1. Number of copies:
  - 4.2. Reports on site: A complete set, available for inspection.
5. Nonconformity:

### **240** Sub-base preparation

1. Surface: Sound, free of debris, mud and soft spots, and suitably close textured.
2. Levels and falls: Within specified tolerances:
  - 2.1. Vehicular areas:  $\pm 20$  mm.
  - 2.2. Pedestrian areas:  $\pm 12$  mm.

2.3. Drainage outlets: +0 to -10 mm of required finished level.

3. Kerbs and edgings: Complete, adequately bedded and haunched, and to required levels.

#### **260 Steel formwork**

1. Side forms: Steel, drilled for dowel bars, free from warping and kinks.
2. Fixing
  - 2.1. To required line,  $\pm 10$  mm.
  - 2.2. To required level,  $\pm 3$  mm.
3. Locking plates: Use where necessary to ensure rigidity and prevent movement during laying and compaction of concrete.
4. Removal of forms: Six hours (minimum) after completing compaction. Treat exposed edges with waterproof compound.

#### **265 Timber permanent formwork**

1. Side forms: Softwood board.
  - 1.1. Fixing: Galvanized nails to 50 x 50 x 450 mm long softwood pegs driven into the ground at 1200 mm centres.
2. Preservative treatment: As section Z12 and Wood Protection Association, Industrial wood Preservation Commodity Specification C4.
  - 2.1. Type: Contractor's choice

### **Laying concrete**

#### **310 Transporting concrete**

1. General: Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability. Protect from heavy rain.
2. Entrained air: Anticipate effects of transport and placing methods in order to achieve specified air content.
3. Placing: Use suitable walkways and barrow runs for traffic over reinforcement and freshly placed concrete.

#### **320 Laying concrete generally**

1. Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction. After discharge from the mixer do not add water or retemper.
2. Temperature of concrete at point of delivery
  - 2.1. In hot weather (maximum): 30°C.
  - 2.2. In cold weather (minimum): 5°C.
3. Cold weather
  - 3.1. Do not use frozen materials.
  - 3.2. Do not place concrete against frozen or frost covered surfaces.
  - 3.3. Do not place concrete when air temperature is below 3°C on a falling thermometer. Do not resume placing until rising air temperature has reached 3°C.
4. Surfaces on which concrete is to be placed: Free from debris and standing water.
5. Placing in final position: Place in one continuous operation up to construction joints.
  - 5.1. Do not place concrete simultaneously on both sides of movement joints.
6. Spreading: Spread and strike off with surcharge sufficient to obtain required compacted thickness.



7. Adjacent work: Form neat junctions and prevent damage. Keep clean all channels, kerbs, inspection covers, etc.

### **330 Compacting**

1. General: Fully compact concrete to full depth (until air bubbles cease to appear on the surface) especially around reinforcement, cast-in accessories, into corners and at joints.
2. Poker vibrators: Do not use to make concrete flow into position. Do not allow to come into contact with fabric reinforcement.
3. Wet formed joint grooves: Rectify any irregularities by means of a vibrating float.
4. Finish: A dense, even textured surface free from laitance or excessive water.
  - 4.1. Excess concrete: Remove from top of groove formers.

### **340 Manhole cover and gully grating frames**

1. General: Set frames in independent concrete slabs placed over, but slightly larger than, exterior of manhole shaft or gully pot and any concrete surround.
2. Positioning of joints in main slab: Set out so that manhole/ gully slabs are adjacent to a main transverse joint, wherever possible.
3. Joints: Separate the independent slabs from main slabs with 25 mm thick joint filler board. Set board 20 mm below top of slab to form a sealing groove.

### **350 Levels**

1. Lines and levels of finished surface: Smooth and even, with regular falls to prevent ponding.
2. Finished surfaces: Within  $\pm 6$  mm of required levels (+6 or -0 mm adjacent to gullies and manholes).

### **360 Surface regularity**

1. General: Where appropriate in relation to the geometry of the surface, the variation in gap under a 3 m straightedge (with feet) placed anywhere on the surface to be not more than 5 mm.
2. Sudden irregularities: Not permitted.

## **Joints**

### **410 Joints generally**

1. Layout: All joints to be accurately located, straight and well aligned.
2. Construction joints made at end of working day: Form as contraction joints.
3. Modifications to joint design or location: Submit proposals.
4. Temporary support: Prior to concreting, set formwork, dowel bars, tie bars, joint filler boards, sealing groove fillets and the like rigidly in position and support to prevent displacement. Maintain support until concrete has set.
5. Keep clean
  - 5.1. Do not allow concrete to enter gaps or voids in formwork or to render movement joints ineffective.
  - 5.2. Do not allow concrete to impregnate or penetrate materials used as compressible joint fillers.

### **470 Expansion joints**

1. Joint filler board
  - 1.1. Type: Two layers of bituminous felt for full slab depth at 3m centres as per Engineer's details and specifications.

- 1.2. Standard: To Highway Agency 'Specification for Highway Works', clause 1015.
  - 1.3. Thickness: 25 mm.
  - 1.4. Depth: Joint filler board must extend from underside of sealing groove fillet to full depth of slab to provide complete separation of adjacent slabs.
  - 1.5. Holes for dowel bars: Accurately bored or punched holes to form a sliding fit for dowel bars.
2. Completion: Round upper edges of slabs at joints to 5 mm radius. Do not overwork concrete.

### **Surface finish**

#### **530** Brushed finish

1. Direction: Generally at right angles to the longitudinal direction of the slab
2. Texture depth: Approximately 1 mm with finished surface having an overall even texture.

#### **550** Power trowel finish

1. Preparation: Float concrete to an even surface with no ridges or steps, then immediately commence curing.
2. Surface finish: Uniform, smooth and free from trowel marks and other blemishes.
3. Completion: Resume specified curing without delay.

### **Curing/ protection/ finishing**

#### **660** Protection

1. Prevent damage to concrete
  - 1.1. From rain, indentation, physical damage, dirt, staining, rust marks and other disfiguration.
  - 1.2. From thermal shock.
  - 1.3. In cold weather, from freezing expansion of water trapped in pockets, etc.
  - 1.4. By use as a building platform or for storing, mixing or preparing materials.

#### **670** Opening to traffic

3. Light vehicles: as per contractor's decision
4. Heavy vehicles: Paving not suitable for heavy vehicles

## **Q23 Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays**

To be read with Preliminaries/ General conditions.

### **Types of surfacing**

#### **110** Hard binding gravel

1. Description: Self-compacting gravel surface
2. Surface course: Angular gravel, free from clay, with sufficient grit to enable compaction.
  - 2.1. Type: Ballyslusk sourced
  - 2.2. Source: Ballyslusk
  - 2.3. Colour: Buff
  - 2.4. Size: dust to 10mm (max.)
  - 2.5. Compacted thickness: 50 mm
3. Completion: Compact to produce a firm, regular surface, stable in use.

#### **230** Play bark mulch surfaces

1. Description: PS2 - Safety Surfacing - Playground Surface
2. Subgrade improvement layer: Submit proposals
3. Geotextile: Sheet
4. Surface course
  - 4.1. Manufacturer: Connaught Timber or similar
    - 4.1.1. Product reference: Playground Wood Chip or similar and approved
  - 4.2. Type: Softwood free from pests, disease, weeds, and any additives.
  - 4.3. Wood content (minimum): Wood fibre manufactured using 100% seasoned, recycled softwood fibres
  - 4.4. Thickness after at least 10% settlement and 30 days: 300mm

### **Laying**

#### **310** Timber edging

1. Softwood board
  - 1.1. Size: 175 x 38 mm.
  - 1.2. Fixing: Galvanized nails into softwood pegs.
2. Softwood pegs
  - 2.1. Size: 50 x 50 x 600 mm long
  - 2.2. Fixing: Drive into ground.
  - 2.3. Centres: 1200 mm

#### **315** Materials

1. Compatibility: Chippings suitable for use with respective binders/ emulsions/ resin/ epoxy.

#### **340** Laying generally

1. Channels, gullies, etc: Keep clear.
2. Finished surfaces
  - 2.1. Lines and levels: To prevent ponding.

- 2.2. Overall texture: Even.
- 2.3. State at completion: Clean.

**350** Cold weather working

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

**360** Drainage falls

- 1. Sealed surfaces
  - 1.1. Falls and cross falls (minimum): 1:40.
  - 1.2. Camber (minimum): 1:50.
- 2. Unsealed surfaces (minimum): 1:30.

**380** Laying granular surfaces in pedestrian areas and cycle tracks

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

**390** Protection from traffic and plant

- 1. Paved areas: Restrict access to prevent damage.

## **Q24 Interlocking brick/ block roads/ pavings**

To be read with Preliminaries/ General conditions.

### **Types of paving**

#### **115 Permeable concrete block paving**

1. Description: Car Parking Spaces
2. Laying course
  - 2.1. Compaction: In accordance with BS 7533-3. Determine by trial the depth of loose bedding material needed to ensure specified bedding course thickness after final compaction of paving.
  - 2.2. Nominal thickness after compaction: 50 mm
3. Blocks: To BS EN 1338.
  - 3.1. Manufacturer: Tobermore or similar approved
    - 3.1.1. Product reference: Submit proposals
  - 3.2. Sizes: 200 x 100 x 80
  - 3.3. Special blocks: Edgings
  - 3.4. Arrises: Chamfered
  - 3.5. Colour/ Finish: Silver / Textured Granite
  - 3.6. Recycled content: as per supplier's product standards and requirements
4. Jointing
  - 4.1. Material: Single size 5 mm washed aggregate
  - 4.2. Joint width: 6 mm
5. Setting out
  - 5.1. Bond: 45° herringbone

### **Execution**

#### **200 Execution generally – concrete block and clay paver paving**

1. Standard: In accordance with BS 7533-3.

#### **220 Samples**

1. General: Before ordering, submit samples of all blocks/ pavers/ setts that are representative of colour and appearance.

#### **230 Control samples**

1. General: Carry out sample area of finished work:
  - 1.1. Location: Site
  - 1.2. Size (minimum): 1.5 x 1.5 m
2. Give notice: When ready for inspection.
3. Timing: Obtain approval of appearance before proceeding.

#### **240 Adverse weather**

1. General: Do not use frozen materials or lay bedding on frozen or frost covered sub-bases.

#### **250 Laying geotextile sheet for conventional paving**

1. Location: Immediately below laying course.

2. Jointing: Lap by 300 mm
3. Laying: Fit neatly at edge restraints and other features that interrupt the sand laying course, e.g. drainage fittings, channels, manholes and kerbs.
  - 3.1. Edge detail: Turn sheet up to form an upstand against features.
    - 3.1.1. Height (minimum): Thickness of sand laying course

**451** Laying geotextile sheet for permeable paving

1. Jointing: 300mm

**485** Laying blocks/ pavers/ setts

1. Setting out: Start from an edge restraint.
2. Cutting: Cleanly, accurately and vertically, without spalling. Do not mark or damage visible surfaces.
3. Cut edges: Turn inwards where possible; do not position against edge restraints or other features.
4. In situ mortar or concrete infill: Do not use
5. Compaction: Vibrate to produce thoroughly interlocked paving of even overall appearance with regular joints and accurate to line, level and profile. Do not mark or damage paving units, kerbs and adjacent work.
  - 5.1. Concrete blocks and clay pavers: In accordance with BS 7533-3, Annex F, to site category required for laying course material.

**490** Laying permeable paving

1. General: Do not fill joints with sand, except for a 300 mm strip along restraining edges and around features and the like, to hold cut blocks in place

**500** Regularity of paved surfaces

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

**505** Regularity of paved surfaces

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

**Completion**

**600** Sealer/ Stabilizer for new blocks and setts

1. Surface preparation: Random Stretcher

2. Sealer/ Stabilizer

2.1. Manufacturer: Submit proposals

2.1.1. Product reference: Submit proposals

**615** Completion of paving

1. Final compaction of the surface course: In accordance with BS 7533-3.
2. Vacuum cleaning machines: Not allowed.

**620** Slip resistance testing

4. Surfaces to be tested: All proposed surfaces
  - 4.1. Surface condition: Dry and wet
5. Timing: As agreed with contract administrator
6. Period of notice (minimum): 3 working days.

## **Q25 Slab/ brick/ sett/ cobble pavings**

To be read with Preliminaries/ General conditions.

### **General**

#### **120\_A** Permeable Flag Paving

1. Description: Main Street Axis & Block C Drop Off
2. Subgrade improvement layer: to Eng. Specs
3. Granular sub-base: to Eng. Specs
4. Base: to Eng. Specs
5. Laying course: to Eng. Specs
6. Paving units: Concrete flags
7. Flags:: To BS EN 1339.
  - 7.1. Manufacturer:: Tobermore or other approved
    - 7.1.1.Product reference:: Hydropave Textured Flags
    - 7.1.2.Sizes:: 400 x 400 x 65mm
    - 7.1.3.Colour/Finish:: Charcoal / Natural

#### **120\_B** Permeable Mottled Paving

1. Description: Local Streets, Residential Courtyards, Thresholds and Private Paths
2. Subgrade improvement layer: to Eng. Specs
3. Granular sub-base: to Eng. Specs
4. Base: to Eng. Specs
5. Laying course: to Eng. Specs
6. Paving units: Concrete flags
7. Flags:: To BS EN 1339.
  - 7.1. Manufacturer:: Tobermore or other approved
    - 7.1.1.Product reference:: Hydropave Pedesta
    - 7.1.2.Sizes:: 200x100x60mm
    - 7.1.3.Colour/Finish:: Bracken / Natural

#### **120\_F** Tactile Paving

1. Description: Tactile Paving
2. Subgrade improvement layer: to Eng. Specs
3. Granular sub-base: to Eng. Specs
4. Base: to Eng. Specs
5. Laying course: to Eng. Specs
6. Paving units: Tactile concrete flags
7. Flags:: To BS EN 1339.
  - 7.1. Manufacturer:: Kilsaran
    - 7.1.1.Product reference:: Corduroy
    - 7.1.2.Sizes:: 400x400x50mm
    - 7.1.3.Colour/Finish:: Buff Blister pattern



**180** RG1 Plastics grass reinforcing paving system

1. Description: Fire / maintenance routes
2. Subgrade improvement layer: to Eng's Specifications
3. Geomembrane: to Eng's Specifications
4. Granular sub-base: to Eng's Specifications
5. Water collection: to Eng's Specifications
6. Laying course: Sand/ fine aggregate
7. Paving units: Plastics pavers (Ritter; Prograss - 500 x 390 x 45 mm)
  - 7.1. Bond: In accordance with manufacturer's recommendations
  - 7.2. Filling: Submit proposals

**System performance**

**220** Design – concrete flag paving system

1. Design: Complete the design of the concrete slab paving system in accordance with BS 7533-4.
2. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

**280** Design - plastics grass reinforcing paving system

1. Design: Complete the design of the plastics grass reinforcing paving system in accordance with manufacturer's instructions.
2. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

**Products**

**305** Granular material for layer over existing bases

1. Material: to Eng. Specs

**Execution**

**610** Material samples

1. Samples representative of colour and appearance of designated materials: Submit before placing orders.
  - 1.1. Designated materials: All pavings

**615** Control samples

1. Sample areas: Complete as part of the finished work.
  - 1.1. Types of paving: Concrete slab paving
  - 1.2. Location: on site
  - 1.3. Size (minimum): 1.5 x 1.5 m
2. Approval of appearance and surface: Obtain before proceeding.

**620** Adverse weather

1. General
  - 1.1. Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.

- 1.2. Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
2. Paving with mortar joints and/ or bedding
  - 2.1. Protect from frost damage, rapid drying out and saturation until mortar has hardened.
3. Paving laid and jointed in sand/ fine aggregate
  - 3.1. Stockpiled laying course sand/ fine aggregate: Protect from saturation.
  - 3.2. Exposed areas of unbound laying course and uncompacted areas of unbound paving: Protect from heavy rainfall.
  - 3.3. Saturated unbound laying course: Remove and replace, or allow to dry before proceeding.
  - 3.4. Laying dry sand/ fine aggregate jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

#### **625** Laying pavings – general

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

#### **630** Levels of paving

1. Permissible deviation from specified levels
  - 1.1. Generally:  $\pm 6$  mm.
2. Height of finished paving above features
  - 2.1. At gullies: +6 to +10 mm.

#### **635** Regularity of paved surfaces

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

#### **637** Regularity of paved surfaces

1. Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
2. Joints between paving units or utility access covers
  - 2.1. Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).

- 2.2. Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
- 2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

#### **645** Protection

1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Mortar bedded pavings: Keep free from traffic after laying:
  - 4.1. Pedestrian traffic (minimum): 4 days
  - 4.2. Vehicular traffic (minimum): 10 days
5. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

#### **650** Cementitious bases and sub-bases

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

#### **655** Condition of sub-bases/ bases before spreading laying course

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

#### **675** Laying geotextile sheet edging strips

1. Location: Immediately below the laying course, abutting features which interrupt the laying course, including:
  - 1.1. Perimeters/ Edge restraints/ Kerbs.
  - 1.2. Other types of paving.
  - 1.3. Drainage fittings, e.g. channels and manholes.
2. Edge detail: Turn sheet up to a height not less than thickness of the laying course to form an upstand fitted neatly against features.
3. Width: 4.5m
4. Jointing: Lap by 300 mm.

**715** Laying flag and slab paving – mortar laying course and jointing

1. Standard generally: In accordance with BS 7533-4.
2. Flag installation and cutting: To Interpave 'Concrete flag paving'.
3. Laying course
  - 3.1. Nominal thickness: 25 mm after compaction

**Completion**

**920** Completion of grassed pavings

1. Protection: Protect from traffic for 6-8 weeks or until grass can tolerate traffic.

**930** Slip resistance testing

5. Surfaces to be tested: All proposed surface treatments
  - 5.1. Surface condition: Dry and wet
6. Timing: Two weeks prior to handover, but after initial cleaning
7. Period of notice (minimum): 3 working days.
8. Test standard: To BS 7976-2
  - 8.1. Testing authority: An approved laboratory
  - 8.2. Report: Submit.
    - 8.2.1.Format: As required under BS 7976

## **Q28 Topsoil and soil ameliorants**

To be read with Preliminaries/ General conditions.

### **System outline - Not Used**

#### **Products**

##### **300** Preparation materials generally

1. Purity: Free of pests and disease.
2. Foreign matter: On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
3. Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
  - 3.1. Corrosive, explosive or flammable.
  - 3.2. Hazardous to human or animal life.
  - 3.3. Detrimental to healthy plant growth.
4. Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
5. Objectionable odour: None.
6. Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

##### **310** Materials not permitted

1. Materials: Products containing peat  
River and canal dredgings

##### **315** Imported topsoil to BS 3882 (SITE WIDE)

1. Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
2. Standard: To BS 3882.
3. Classification: Multipurpose
  - 3.1. Soil textural class to BS 3882, Figure 1: Any class
4. Source: Enrich Environment Limited
  - 4.1. Product reference: Screened topsoil with 10% compost blend

##### **355** Organic materials

1. Type: Bark
2. Source: Contractor's choice
  - 2.1. Product reference: Contractor's choice

#### **Execution**

##### **620** Importing topsoil

1. Give notice: Before stripping topsoil for transfer to site.
  - 1.1. Notice period: 7 days

##### **625** Sample loads

1. Deliver to site a sample load: of not less than 5 m<sup>3</sup>

2. Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
  - 2.1. Notice period: 5 days

**630** Documentation for imported topsoil

1. Timing: Submit at handover.
2. Contents
  - 2.1. Full description of all soil components.
  - 2.2. Record of source for all soil components.
  - 2.3. Record drawings showing the location and depth of all soils by type and grade.
  - 2.4. Declaration of analysis: in accordance with BS 3882, clause 6 and Table 1.
3. Number of copies: Two

**635** Documentation for compost and composted materials

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

**650** Notice

1. Give notice before
  - 1.1. Setting out.
  - 1.2. Spreading topsoil.
  - 1.3. Applying herbicide.
  - 1.4. Applying fertilizer.
  - 1.5. Visiting site during maintenance period.
2. Period of notice: 3 working days

**655** Mechanical tools

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

**660** Grading subsoil for:

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

**670** Inspecting formations

1. Give notice: Before spreading topsoil for site wide.
2. Notice period: 1 week

**680** Surplus topsoil to be retained

1. Generally: Spread and level on site:
  - 1.1. Locations: TBC
  - 1.2. Protected areas: Do not raise soil level within root spread of trees that are to be retained.

**685** Surplus materials to be removed

1. Topsoil removal from site: Topsoil remaining after completion of all landscaping work
2. Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

**690** Topsoil storage heaps

1. Location: Submit proposals
2. Height (maximum): 1.5 m
3. Width (maximum): 3.0 m
  - 3.1. Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
4. Protection
  - 4.1. Do not place any other material on top of storage heaps.
  - 4.2. Do not allow construction plant to pass over storage heaps.
  - 4.3. Prevent compaction and contamination, by fencing and covering as appropriate.

**700** Grading of topsoil

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

**705** Handling topsoil

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

**710** Spreading topsoil on:

1. Standard: In accordance with BS 3882.
2. Temporary roads/ surfacing: Remove before spreading topsoil.
3. Layers
  - 3.1. Depth (maximum): 150 mm.
  - 3.2. Gently firm each layer before spreading the next.
4. Depth after firming and settlement: 450 mm

5. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

**710** Spreading topsoil on tree pits

1. Standard: In accordance with BS 3882.
2. Temporary roads/ surfacing: Remove before spreading topsoil.
3. Layers
  - 3.1. Depth (maximum): 150 mm.
  - 3.2. Gently firm each layer before spreading the next.
4. Depth after firming and settlement: 1000 mm
5. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

**715** Loose tipping of topsoil

1. Standard: In accordance with BS 3882.
2. General: Do not firm, consolidate, or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

**720** Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: 75 mm below
2. In relation to dpc of adjoining buildings: Not less than 150 mm below.
3. In relation to adjacent grass areas: 50 mm above
4. Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
5. Sportsfields: To even levels and within the following permitted deviations:
  - 5.1. From levels or gradients shown on drawings:  $\pm 75$  mm.
  - 5.2. From line between boning rods 30 m apart:  $\pm 25$  mm.
6. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
7. Adjoining soil areas: Marry in.
8. Thickness of turf or mulch: Included.

**810** Applying compost

1. Description: 10% Compost to be applied together with topsoil. 1 m<sup>3</sup> of topsoil conditioner will service an area of 20 m<sup>2</sup> when spread to a depth of 50mm

**820** Applying general fertilizer

1. Application: Spread evenly, carefully incorporating below mulch materials.
  - 1.1. Timing: Immediately before cultivation.
  - 1.2. Application rate: 10 g/m<sup>2</sup>

**845** Applying loose mulch on planting beds and trees pits

1. Timing: Immediately after planting
2. Preparation: clear all weeds and soil as per proposed levels
3. Coverage of mulch (minimum)
  - 3.1. Planting beds (depth): 50 mm depth
  - 3.2. Trees: In a circular area of 500 mm radius measured from the tree stem
  - 3.3. Container planting: 50 mm depth



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

### **Completion**

#### **920** Applying mulch

3. Timing: At end of the maintenance period
4. Watering: Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.
5. Planting beds: Re-mulch.
  - 5.1. Depth (minimum): 50 mm
6. Trees: Remulch.
  - 6.1. Depth (minimum): 75 mm
7. Container planting: Remulch.
  - 7.1. Depth (minimum): 50 mm
  - 7.2. 50 mm

### **Q30 Seeding/ turfing**

To be read with Preliminaries/ General conditions.

#### **General information/requirements**

##### **115 Seeded and turfed areas**

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

##### **120 Climatic conditions**

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

##### **145 Watering**

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

##### **146 Watering**

1. Quantity: Wet full depth of topsoil.
2. Application: Even and without displacing seed, seedlings or soil.
3. Frequency: a detailed programme if works will be agreed with Contractor prior to maintenance

##### **150 Water restrictions**

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

##### **160 Notice**

1. Give notice before
  - 1.1. Setting out.
  - 1.2. Applying herbicide.
  - 1.3. Applying fertilizer.
  - 1.4. Preparing seed bed.
  - 1.5. Seeding or turfing.
  - 1.6. Visiting site during maintenance period.
2. Period of notice: 3 working days

##### **170 Setting out**

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

#### **Preparation**

##### **210 Herbicide**

1. Type: Suitable for suppressing perennial weeds.
2. Timing: Allow fallow period before cultivation.

2.1. Duration: As manufacturer's recommendation

**212** Seed bed cleaning before sowing

1. Operations: As seed supplier's recommendations.

**Seeding**

**310** Grass seed at public open space

1. Mixture: 35% Chewings fescue, 35% Slender red fescue, 20% Smooth stalked meadow grass, 10% Brown top bent
2. Application rate: Supplier's recommendations

**312** Wildflower seed mixture

1. Supplier: Submit proposals
  - 1.1. Mixture reference: Submit proposals
2. Origin of each species (as defined in Flora Locale's Code of practice for collectors, growers and suppliers of native flora): Local origin
3. Application rate: Supplier's recommendations

**319** Quality of seed

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

**320** Quality of seed

1. Freshness: Produced for the current growing season.
2. Certification: Blue label certified varieties.
  - 2.1. Standard: EC purity and germination regulations and Department for Environment, Food and Rural Affairs Higher Voluntary Standard.
  - 2.2. Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
3. Samples of mixtures: Submit when requested.

**322** Quality of wildflower seed

1. Standard: In accordance with Flora Locale's 'Code of practice for collectors, growers and suppliers of native flora'.
2. Samples: Submit when requested.

**352** Edges to seeded areas

1. Timing: After seeded areas are well established.
2. Edges: Clean straight lines or smooth curves.
  - 2.1. Mulch and soil: Draw back to permit edging.
3. Arisings: Remove.

4. Completion: Respread soil and mulch.

### **Turfing - Not Used**

### **Protecting/cutting**

#### **590 Cleanliness**

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

### **Maintenance**

#### **610 Failures of seeding/ turfing**

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

### **Q31 External planting**

To be read with Preliminaries/ General conditions.

#### **General information/ requirements**

##### **112 Site clearance generally**

1. General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
3. Vegetation: Clear scrub to ground level by flail mowing and remove arisings; retain and protect trees indicated on drawings
4. Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.

##### **118 Soil conditions**

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

##### **120 Climatic conditions**

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

##### **125 Times of year for planting**

1. Deciduous trees and shrubs: Late October to late March.
2. Conifers and evergreens: September/ October or April/ May.
3. Herbaceous plants (including marginal): September/ October or March/ April.
4. Container grown plants: At any time if ground and weather conditions are favourable.
  - 4.1. Watering and weed control: Provide as necessary.
5. Dried bulbs, corms and tubers: September/ October.
6. Colchicum (crocus): July/ August.
7. Green bulbs: After flowering in spring.
8. Wildflower plugs: Late August to mid November or March/ April.
9. Aquatic plants: May/ June or September/ October.

##### **130 Mechanical tools**

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

##### **145 Watering**

1. Quantity: Wet full depth of topsoil.
2. Application: Even and without damaging or displacing plants or soil.
3. Frequency: As necessary to ensure establishment and continued thriving of planting.

#### **146** Watering

1. Quantity: Wet full depth of topsoil.
2. Application: Even and without damaging or displacing plants or soil.
3. Frequency: As maintenance schedule

#### **150** Water restrictions

1. General: If water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.

#### **160** Notice

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

#### **170** Soil requirements

1. Type
  - 1.1. Planted beds: Planting bed soil system, as section Q28
  - 1.2. Tree pits, shrub pits and other backfilling: Plant pit backfilling soil system, as section Q28
  - 1.3. Mulch applied after planting: Mulching and top dressing system, as section Q28

#### **200** Plants/ Trees – general

1. Condition: Materially undamaged, sturdy, healthy and vigorous.
2. Appearance: Of good shape and without elongated shoots.
3. Hardiness: Grown in a suitable environment and hardened off.
4. Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
5. Budded or grafted plants: Bottom worked.
6. Root system and condition: Balanced with branch system.
  - 6.1. Standard: The relevant parts of BS 3936
7. Species: True to name.
8. Origin/ Provenance: As plant schedule
9. Definition: Origin and Provenance have the meaning given in the National Plant Specification.

#### **215** Plants/ Trees – specification criteria

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

**216** Plants/ Trees – specification criteria

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

**225** Bulbs/ Corms/ Tubers

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

**235** Container grown plants/ Trees

1. Growing medium: With adequate nutrients for plants to thrive until permanently planted.
2. Plants: Centered in containers, firmed and well watered.
3. Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
4. Hardiness: Grown in the open for at least two months before being supplied.
5. Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

**245** Labelling and information

6. 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:
  - 6.1. Full botanical name.
  - 6.2. Total number.
  - 6.3. Number of bundles.
  - 6.4. Part bundles.
  - 6.5. Supplier's name.
  - 6.6. Employer's name and project reference.
  - 6.7. Plant specification, in accordance with scheduled National Plant Specification categories.
  - 6.8. categories.

**246** Labelling and information

1. Standard: To BS 3936.

**255** Plants/ Trees reserved at supplier's premises

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

**260** Plant/ Tree substitution

1. Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
  - 1.1. Price.

- 1.2. Difference from specified plants/ trees.
2. Approval: Obtain before making any substitution.

#### **265** Plant handling, storage transport and planting

1. Standard: To CPSE 'Handling and establishing landscape plants'.
2. Frost: Protect plants from frost.
3. Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
4. Plant packaging: as per nursery's specifications
5. Planting: Upright or well balanced with best side to front.

#### **280** Treatment of tree wounds

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

#### **285** Protection of existing grass

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

#### **290** Surplus material

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

### **Preparation of planting beds/ planting materials**

#### **305** Weed control

1. Locations: All planting areas
2. General: Prevent weeds from seeding and perennial weeds from becoming established, in accordance with the Environment Agency 'Managing Japanese knotweed on development sites. The knotweed code of practice'.

### **Planting shrubs/ herbaceous plants/ bulbs**

#### **401** Regular plant layouts to shrub, ornamental grasses and perennial planting

1. Spacing: to be determined at later stage (Specifications to be provided by Landscape Architect
2. Density: As plant schedule

#### **405** Shrub planting pits

1. Timing: Excavate 1-2 days (maximum) before planting.
2. Sizes: Wide enough to accommodate roots when fully spread and 75 mm deeper than root system
3. Pit bottom improvement Break up to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m<sup>2</sup>.



#### **420 Climbing plants**

1. Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
  - 1.1. Branches: Lightly secured to supports.
2. Climber supports: Metal climbing structure along bin stores facades  
Stainless steel wire trellis; Supplier: Jakob Rope Systems or similar approved

#### **435 Climbing plants used as ground cover**

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

#### **445 Planting bulbs/ Corms/ Tubers**

2. Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
3. Backfilling: Finely broken soil. Lightly firm to existing ground level.
4. Naturalized planting in existing grassed areas
  - 4.1. Scattering: Random. Plant bulbs/ corms/ tubers where they fall.
  - 4.2. Planting: Neatly remove a plug of turf and replace after planting.
  - 4.3. .

#### **470 Formal hedges**

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

#### **471 Naturalized hedges**

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

#### **472 Fencing support for new hedges**

1. Type: Timber post and general pattern wire mesh, as section Q40
2. Timing: Before planting hedge.
3. Support: Lightly secure hedge plants to fence wires at appropriate intervals.

#### **480 After planting**

1. Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
2. Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
3. Top dressing: Mulching and top dressing system, as section Q28
  - 3.1. Depth: 50 mm

### **Planting trees**

#### **500 Tree planting**

1. Standard: Prepare trees and transplant in accordance with BS 4428

### **505** Tree pits

1. Sizes: as drawings and details
2. Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. Excavated material: Remove arisings
4. Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 150 mm.
5. Pit sides: Scarify.
6. Backfilling material: Mulching and top-dressing system, as per Q28 Topsoil and soil ameliorants

### **510** Tree pit root barriers

1. Locations: As drawing details
2. Manufacturer: Greenleaf
  - 2.1. Product reference: ReRoot200/RootStop, Ref.: RER220x1.5Ax1500mm
3. Thickness: 2.0 mm
4. Barrier depth: 1500 mm
5. Top of root barrier in relation to finished topsoil level: 50 mm below ground level
6. Installation: With sides vertical. Remove all sharp objects adjacent to barrier.

### **526** Underground guying for:

1. Description: Multistem tree - Rootballed Trees
2. Manufacturer: Contractor's choice
  - 2.1. Product reference: Contractor's choice
3. Anchoring system: Contractor's choice
4. Installation: Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.

### **535** Tree stakes

1. Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
  - 1.1. Preservative treatment: Not required
2. Stake size (minimum): 75 mm diameter
3. Stake length (minimum): 1800 mm

### **550** Double staking for rootballed trees (standard)

1. Staking
  - 1.1. Position: Either side of tree position and perpendicular to wind direction.
  - 1.2. Driving: Vertically at least 300 mm into bottom of pit before planting.
  - 1.3. Backfilling: Consolidate material around stake.
  - 1.4. Firming: Sufficiently firm to prevent movement of the rootball/ rootstock.
2. Height of stakes: Cut off to approximately 600 mm above ground level
3. Horizontal bracing: Crossbar
4. Ties: Adjustable
5. Nails for fixing ties, belts and webbing: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.

**576** Tree pit surfacing – loose fill

1. Surfacing material: as per Q28 Topsoil and soil ameliorants
2. Area: 600 mm radius circle
3. Depth: 75 mm
4. Watering: Water soil thoroughly before laying.
5. Installation: Ensure the base of the tree stem is kept free from loose filled material.

**Woodland/ matrix/ buffer zone planting**

**600** Woodland work generally

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

**615** Woodland work generally

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

**617** Removing trees and hedges

1. Identification: Clearly mark trees and hedges to be removed.
2. Work near retained trees: Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
3. Arisings: Remove.
4. Tree stumps: Remove mechanically to a minimum depth of 300 mm below ground level

**635** Notch planting in uncultivated ground

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

**665** Setting out

1. Distance between trees: As drawing

**680** Setting out

1. Planting density: As plant schedule
2. 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.

**Protecting/ maintaining/ making good defects**

**710** Maintenance

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

**720** Failures of planting

1. Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.

- 1.1. Exclusions: Theft or malicious damage after completion.
- 1.2. Rectification: Replace with equivalent plants/ trees/ shrubs.
2. Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
3. Timing of making good: During the next suitable planting season

#### **730** F2 Protective Fencing along existing Hedgerow

1. Fencing type: Cleft chestnut pale fencing, as section Q40
2. Erection: along existing hedgerow

#### **740** Cleanliness

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

#### **750** Planting maintenance generally

1. Weed control: Maintain weed free area around each tree and shrub.
  - 1.1. Diameter (minimum): The larger of 1 m or the surface of original planting pit.
  - 1.2. Keep planting beds clear of weeds: By maintaining full thickness of mulch
2. Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
3. Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. Trees: Spray crown when in leaf during warm weather.
  - 5.1. Timing: After dusk.
6. Tree accessories: Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
  - 6.1. Broken or missing items: Replace.
  - 6.2. Loose stakes: Re-firm in the ground or replace as necessary to provide support to the tree.
  - 6.3. Loose guys: Re-firm anchor points and adjust as necessary to provide support to the tree.
  - 6.4. Ties: Adjust to accommodate growth and prevent constriction or abrasion.
  - 6.5. Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
  - 6.6. Frequency of checks: At each scheduled maintenance visit
7. Watering: As required for healthy establishment, depending on weather conditions

#### **760** Planting maintenance – pruning

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

#### **770** Woodland planting maintenance

1. Watering: Only as necessary to prevent plants wilting.

2. Loose plants: Refirm surrounding soil, without compacting.
3. Weed control: Cut down and remove weeds prior to setting seed in a 1 m diameter area around each tree.
4. Vegetation except trees and coppice shoots to be retained: Cut within the plantation area.
  - 4.1. Arisings: Leave between rows.
5. Mechanical, chemical or mulching methods of vegetation control: Submit proposals.
6. Ditches and drains: Keep clear.

**780** Maintenance instructions

1. 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

1. Timing: At end of the maintenance period.
2. Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
3. Planting beds: Remulch.
4. Depth (minimum): 50 mm
5. Trees: Remulch.
6. Depth (minimum): 75 mm

### **Q35 Landscape maintenance**

To be read with Preliminaries/ General conditions.

#### **Generally**

##### **110 Notice**

1. Give notice before
  - 1.1. Application of herbicide.
  - 1.2. Application of fertilizer.
  - 1.3. Watering.
  - 1.4. Each site maintenance visit.
2. Period of notice: 7 days

##### **130 Reinstatement**

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

##### **155 Watering**

1. Supply: Potable mains water
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: As necessary for the continued thriving of all planting

##### **160 Water restrictions**

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

##### **170 Disposal of arisings**

1. General: Unless specified otherwise, dispose of arisings as follows:
  - 1.1. Biodegradable arisings: Remove to recycling facility
  - 1.2. Grass cuttings: Leave for two to three days after cutting and then remove
  - 1.3. Tree roots and stumps: Remove from site
  - 1.4. Shrub and tree prunings: Remove to recycling facility
  - 1.5. Litter and nonbiodegradable arisings: Remove from site

##### **181 Mechanical equipment**

1. General: Minimize.
2. Prohibited equipment:
3. Timing: Use of mechanical equipment allowed between the hours of 10:00 am and 4:00 pm only

##### **190 Litter**

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

### **195** Protection of existing grass

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

### **197** Cleanliness

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

### **Grassed areas**

#### **210** Performance-based maintenance of grassed areas

1. General: Maintain turf in a manner appropriate to the intended use.
2. Soil and grass
  - 2.1. Condition: Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
  - 2.2. Waterlogging and compaction: Prevent.
  - 2.3. Damage: Repair trampling, abrasion or scalping.
3. Ornamental lawns: Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
  - 3.1. Edges: Neat and well defined, in clean, straight lines or smooth-flowing curves.
4. Litter and fallen leaves: Remove regularly to maintain a neat appearance.

#### **211** Maintenance of grassed areas

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

#### **220** Grass cutting generally

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

#### **225** Tree stems

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

#### **235** Bulbs and corms in grassed areas

1. Before flowering: Do not cut.
2. Interval between end of flowering and start of grass cutting (minimum): 6 weeks

**250** Leaf removal

1. Operations: Collect fallen leaves.
2. Special requirements: None
3. Disposal: Remove from site for recycling

**260** Mowing lawns

1. Grass height: 75 mm maximum
2. Arisings: Spread evenly over cut areas

**273** Maintaining grassed areas with annual wildflowers

1. Preparation: Before each cut remove all litter and debris.
2. Timing of first cut: After flowers have set seed.
3. Height of first cut: 75 mm
4. Subsequent cutting: Cut as necessary, so the height of growth does not exceed 125 mm.
  - 4.1. Height of cut: 75 mm
5. Trimming: All edges.
  - 5.1. Arisings: Spread evenly over cut areas
6. Watering: Contractor's choice

**309** Edges to seeded areas

1. Location: Adjacent to planting beds and around trees
2. Timing: After seeded areas are well established.
3. Method: Cut to clean straight lines or smooth curves. Draw back soil to permit edging.
4. Arisings: Remove.

**345** Control of Japanese knotweed

1. Operations: Spot-treat in June and September during suitable weather conditions and when plants are growing vigorously.
2. Herbicide: In accordance with the INNSA 'Code of practice. Managing Japanese knotweed'
3. Application: In accordance with the INNSA 'Code of practice. Managing Japanese knotweed'
4. Arisings: In accordance with the INNSA 'Code of practice. Managing Japanese knotweed'

**380** Reinstatement of damaged lawns

1. Damaged turf: Remove to a depth of 40 mm.
2. Preparation: Cultivate substrate to a fine tilth.
3. Reinstatement: Contractor's choice of returfing or topsoiling and reseeding:
  - 3.1. Returfing: Quality and appearance to match existing.
  - 3.2. Reseeding: Fill with fine topsoil to BS 3882 multipurpose class, free from stones, debris and weeds. Reseed with a seed mix to match existing grass in quality and appearance.
4. Protection and watering: Provide as necessary to promote successful germination and/ or establishment.



## **Flower beds/seasonal beddings**

### **460** Beds of perennials or perennials and annuals

1. Gaps in planting: Refill by replanting.
2. Watering
  - 2.1. New plants: Before and after planting out.
  - 2.2. Ongoing: As necessary for the continued thriving of all planting.
3. Operations at end of growing season
  - 3.1. Trim: Older flowering stems of herbaceous perennials.
  - 3.2. Remove: Redundant plant supports, litter, debris and arisings.
  - 3.3. Cultivate: Fork over the soil, taking care not to cause undue disturbance to plants.

### **470** Flower beds generally

1. Operations
  - 1.1. Remove: Dead flower heads, fallen leaves, litter and debris.
  - 1.2. Weeds: Thoroughly hand-weed.
  - 1.3. Cultivate: Lightly hoe.
  - 1.4. Trim: Clip grass edges.

## **Shrubs/trees/hedges**

### **500** Establishment of new planting

1. Duration: One year
2. Weed control
  - 2.1. Method: Keep planting beds clear of weeds by Use of suitable herbicides.
  - 2.2. Area: Maintain a weed-free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
3. Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
4. Watering: As schedule and when instructed

### **502** Establishment of new planting – fertilizer

1. Time of year: March or April.
2. Type: Organic
3. Spreading: Spread evenly.
  - 3.1. Application rate: As manufacturer's recommendations

### **510** Tree stakes and ties

1. Inspection/ maintenance times: As scheduled and immediately after strong winds
2. Stakes
  - 2.1. Replace loose, broken or decayed stakes to original specification.
  - 2.2. If longer than half of clear tree stem height, cut to this height in spring. Retie to tree firmly but not tightly with a single tie.
3. Ties: Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
  - 3.1. Where chafing has occurred, reposition or replace ties to prevent further chafing.

4. Removal of stakes and ties: When instructed
  - 4.1. Fill stake holes with lightly compacted soil.

**520** Refirming of trees and shrubs

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

**535** Tree grilles

1. Operations: Lift grilles, remove weeds, adjust levels as necessary and lightly compact. Refit grilles, refill interstices and lightly compact to correct level.

**540** Pruning generally

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

**545** Pruning of excessive overhang

1. Timing: As instructed
2. Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.

**555** Pruning trees and shrubs

1. Standard: To BS 7370-4.
2. Special requirements: Growth retardents not permitted

**570** Formative pruning of young trees

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

**575** Pruning ornamental shrubs

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

**580** Pruning flowering species of shrubs and roses

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

**600** Trimming rapidly establishing hedges

1. General: Allow to reach planned height as rapidly as possible.
  - 1.1. Form: Trim back lateral branches moderately.

**605** Trimming slowly establishing hedges

1. Operations
  - 1.1. Timing: Cut back hard in June and September to encourage bushy growth down to ground level.
  - 1.2. Form: Allow to reach planned dimensions only by gradual degrees, depending on growth rate and habit.

**620** Removal of dead plant material

1. wood, and broken or damaged branches and stems.

**625** Climbing plants

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

**630** Dead and diseased plants

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

**635** Reinstatement of shrub/ Herbaceous areas

1. Dead and damaged plants: Remove.
2. Mulch/ matting materials
  - 2.1. Carefully move to one side and dig over the soil, leaving it fit for replanting.
3. Do not disturb roots of adjacent plants.
4. Replacement plants
  - 4.1. Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
  - 4.2. Additional requirements: Submit details and cost of plants before ordering
5. Dressing: Slow-release fertilizer:
  - 5.1. Type: Organic

5.2. Application rate: 50 g/m<sup>2</sup>

**645** Weed control generally

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

**650** Hand weeding

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

**655** Weed cutting by hand or machine

1. Undesirable grass, brambles and herbaceous growth: Cut down cleanly to a maximum height of 50 mm.
2. Herbicides: Give notice before use

**657** Herbicide to kill regrowth

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

**665** Weed control with winter herbicide

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

**670** Weed control with summer herbicide

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

**675** Digging over

1. General: Dig over beds. Do not damage existing plants, bulbs and roots.
  - 1.1. Depth of dig (minimum): 75 mm

**680** Soil aeration

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

**685** Soil level adjustment

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

**690** Maintenance of loose mulch

1. Thickness (minimum): 50 mm
  - 1.1. Top up: Twice per year
2. Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
3. Weeding: Remove weeds growing on or in mulch by Hand-weeding.

**695** Fertilizing established trees and shrubs

1. Time of year: April through July
2. Type of fertilizer: Organic
3. Application: Spread evenly.
  - 3.1. Rate: 60 g/m<sup>2</sup>

**700** Snow removal from shrubs/ Trees

1. Standard: To BS 7370-4.
2. Plants subject to snow removal: All evergreens
3. Timing: Within 24 hours of snowfall

**705** Winter leaf removal

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

**710** Woodland planting maintenance

1. Watering: In exceptional circumstances to prevent plants dying.
2. Loose plants: Refirm surrounding soil, without compacting.
3. Vegetation: Except trees and coppice shoots to be retained, cut down to 100 mm above ground level within the plantation area.
  - 3.1. Arisings: Leave between rows.
4. Ditches and drains: Keep clear.

**Tree work**

**810** Tree work generally

1. Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
2. Protection: Avoid damage to neighboring trees, plants and property
3. Standard: To BS 3998.
4. Removing branches: Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
5. Appearance: Leave trees with a well-balanced natural appearance.
6. Chain saw work: Operatives must hold a certificate of competence.
7. Tree work: To be carried out by an approved member of the Arboricultural Association.

**815** Additional work

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

**820** Prevention of wound bleeding

1. Standard: To BS 3998.

**825** Prevention of disease transmission

1. Standard: To BS 3998.

**830** Cleaning out and dead wooding

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

**835** Cutting and pruning generally

1. Tools: Appropriate, well maintained and sharp.
2. Final pruning cuts
  - 2.1. Chainsaws: Do not use on branches of less than 50 mm diameter.
  - 2.2. Hand saws: Form a smooth cut surface.
  - 2.3. Anvil type secateurs: Do not use.
3. Removing branches: Do not damage or tear the stem.
4. 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.
5. Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
6. Large branches: Remove only with prior approval
  - 6.1. Remove in small sections and lower to ground with ropes and slings.
7. Dead branches and stubs: When removing, do not cut into live wood.
8. Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
9. Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

**840** Crown reduction/ Shaping

1. General: Cut back selectively to lateral or sublateral buds or branches to retain flowing branch lines without leaving stumps.
2. Operations: Reduce crown by 15%

**845** Crown lifting

1. Clearances: Remove branch systems to give clearance.
  - 1.1. Height: 2.5 m above footpaths
2. 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.

**860** Removing trees, shrubs and hedges

1. Standard: To BS 3998.

2. Existing services: Check for below and above ground services. Give notice if they may be affected.
3. Shrubs and smaller trees: Cut down and grub up roots.
4. Tree stumps
  - 4.1. Removal by winching: Give notice. Do not use other trees as supports or anchors.
5. Protection: Avoid damage to neighboring trees, plants and property
6. Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
7. Filling holes
  - 7.1. Material: Use as-dug material and/ or imported soil as required.
  - 7.2. Finishing: Consolidate and grade to marry in with surrounding ground level.

#### **865 Bark damage**

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

#### **870 Cavities in trees**

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

### **Water areas - Not Used**

#### **Hard landscape areas/fencing**

##### **900 Snow clearance**

1. Clearance: On reaching a depth of 5 mm
2. De-icing: To roads and footpaths
  - 2.1. Material: Rock salt to BS 3247
  - 2.2. Timing: On snow reaching a depth of 5 mm
  - 2.3. Application rate: Spread evenly at a rate of As manufacturer's recommendations.

##### **910 Hard surfaces and gravel areas**

1. Herbicide: Apply a suitable foliar acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
2. Hard surfaces: Remove litter, leaves and other debris.
3. Surface gutters and channels: Remove mud, silt, and debris.
4. Drainage gullies: Empty traps and flush clean.
5. Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.

6. Repairs to flexible bituminous paving: In accordance with the original paving specification or BS 7370-2, clause 4.12.
7. Stain removal: In accordance with BS 7370-2, table 4.

**920** Fencing

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



## **Q40 Fencing**

To be read with Preliminaries/ General conditions.

### **Fencing systems**

#### **320 F2 Chestnut pale fencing - Along existing Hedgerow**

1. Manufacturer: Contractor's choice
  - 1.1. Product reference: Contractor's choice as per detail drawing
2. Height: 1.2 m
3. Posts and struts: Wood
  - 3.1. Treatment: To provide a 30-year service life
4. Centres of posts (maximum)
  - 4.1. Straining posts: 70 m in straight runs and at all ends, corners, changes of direction and acute variations in level.
  - 4.2. Intermediate posts: 2 m
5. Accessories: Three lines of barbed wire

#### **710 Installation generally**

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

#### **715 Competence**

1. Operatives: Contractors must employ competent operatives.

#### **720 Setting posts in concrete**

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

#### **730 Exposed concrete foundations**

1. Filling: Compact until air bubbles cease to appear on the upper surface.
2. Finishing: Weathered to shed water and trowelled smooth.

**740** Exposed concrete foundations

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

**770** Site cutting of wood

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

**780** Making good galvanized surfaces

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

**790** Site painting

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

**Completion**

**910** Cleaning

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

**920** Fixings

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

**930** Gates

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

Ω End of Section

## **Q41 Barriers/ guardrails**

To be read with Preliminaries/ General conditions.

### **Performance/ inspection/ testing**

#### **300 Contractor's structural design**

1. Requirement
  - 1.1. Generally: As section B51. Submit drawings and schedules in accordance with the designated code of practice and to satisfy the performance criteria specified in section B51.
2. Member sizes and locations: As drawing

#### **330 Verification of anchorages**

1. Certification: Four weeks prior to installation, submit certificates from a United Kingdom Accreditation Service (UKAS) independent laboratory, stating that for tests in accordance with BS 5080-1, anchorages are capable of resisting
2. Tolerance: Certification must include the maximum tolerance of hole size and evidence that load can be supported when anchor is installed in holes having these tolerances.

#### **340 Site testing anchorages in drilled holes**

1. Test parapet posts: Install on site.
2. Loading tests: To BS 5080-1.
3. Anchorage loadings: Incrementally in tension to 10% above the nominal tensile load determined
  - 3.1. Load holding periods
    - 3.1.1. Incremental loads: Not less than 30 seconds.
    - 3.1.2. Test loads: Not less than 5 minutes.
  - 3.2. Readings: Take after applying load and at the end of the time intervals stated.
  - 3.3. Movement: Total not to exceed 1 mm during test.
    - 3.3.1. Any evidence of slip during loading shall constitute failure.
4. Test results: Submit prior to full parapet installation.

### **Installation**

#### **410 Work on or adjacent to highways**

1. Requirement: Comply with the Department for Transport's 'Safety at street works and road works. A code of practice'. Retain a copy of this document on site at all times during the course of the works.

#### **420 Alignment**

6. Erection: Fences/ barriers to present a flowing alignment. Tops of posts to follow ground profile.
7. Tolerance:  $\pm 30$  mm of prescribed alignment and, within any 10 m length,  $\pm 15$  mm from the straight or required radius.

#### **430 Erection generally**

1. Protection: Coat all internal and external surfaces of aluminium and steel posts below and up to 150 mm above ground level, with two coats of bituminous paint to BS 6949 type 2, unless other applied surface finish is specified.

2. Prevention of electrolytic corrosion: Isolate dissimilar metals.
3. Steel components: Do not drill, cut or weld after galvanizing.

**480** Concrete foundations for posts

1. Excavations: To have vertical sides. Dispose of all arisings. Blind excavation bottoms with a 50 mm layer of concrete.
2. Concrete mix: To BS 8500-2, Designated mix not less than GEN 4 or Standard mix not less than ST5. Do not use admixtures.
3. Placing concrete: Fill holes to the specified depth and fully compact. Do not backfill for at least four days.
4. Temporary support to posts: Provide for a at least four days after placing concrete.

**490** Damage repair to galvanized surfaces

1. Areas of repair: Minor damage, including fixings and fittings.
  - 1.1. Total area of repair not to exceed 0.5% of total surface area.
  - 1.2. Each area not to exceed 1000 mm<sup>2</sup>.
2. Renovation: Use low melting point zinc alloy repair rods or powders or at least two coats of zinc-rich paint to BS 4652.

**500** Preservative treated timber

1. Surfaces exposed by minor cutting and drilling: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

**510** Preparation for site painting

1. Preparation and application: As soon as possible after installation of barriers/ guardrails.

**Completion**

**900** Documentation

1. Contents
  - 1.1. General product information.
  - 1.2. Installation information.
  - 1.3. Inspection and maintenance reports.

## **Q50 Site/ street furniture/ equipment**

To be read with Preliminaries/ General conditions.

### **Site and street furniture**

#### **190 Bollards**

1. Description: Main Street Axis
2. Manufacturer: Omos or similar approved
  - 2.1. Product reference: S29 or similar approved
3. Material: Stainless Steel Cap / galvanized steel
4. Height above ground: 1200 mm
5. Sectional size: 114 mm diameter

#### **210 Cycle stands**

1. Manufacturer: Hartecast or similar approved
  - 1.1. Product reference: Sheffield stand or similar approved
2. Type: Single stands
3. Material: 316 grade stainless steel
4. Method of fixing: concrete foundation under the proposed surface treatment

#### **220 Benches**

1. Manufacturer: Hartecast or similar approved
  - 1.1. Product reference: HC2033S Seat or similar approved
2. Material: Powder coated stainless steel
  - 2.1. Colour: Anthracite Grey RAL 7016 or similar approved
3. Size: 1800x360x460mm
4. Accessories/ Special requirements: To include back and arm rests
5. Method of fixing: To be fixed to concrete pad

#### **242 Bins**

1. Manufacturer: Omos or similar approved
  - 1.1. Product reference: t1 litter bin - 70 litre, or similar and approved
2. Material: Aluminium body with powder coated finish mounted on 316 grade stainless steel pole. Rain shield hood formed from aluminium with powder coated finish. Integrated ashtray (in pole) and heavy duty 70L moulded plastic liner.
  - 2.1. Colour: Anthracite Grey RAL 7016 or similar approved
3. Method of fixing: To be fixed to concrete pad

#### **262 Tree grilles**

1. Description: See drawing
2. Manufacturer: Castit or similar
3. Material: Cast iron
4. Size: 1200x1200mm

## **Installation**

### **510** Concrete foundations generally

1. Standard: To BS 8500-2.
2. Concrete: to eng. Specs
3. Admixtures: Do not use.
4. Foundation holes: Neat vertical sides.
5. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

### **515** Setting components in concrete

1. Components: Accurately positioned and securely supported.
2. Concrete fill: Fully compacted as filling proceeds.
3. Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
4. Temporary component support: Maintain undisturbed for minimum 48 hours.

### **520** Setting in earth

1. Holes: As small as practicable.
2. Components being fixed: Accurately positioned and securely supported.
3. Buried depth (minimum): to eng. Specs
4. Earth refill: Well rammed as filling proceeds.

### **530** Preservative treated timber

1. 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.
2. Heavily worked sections: Re-treat.

### **540** Building in to masonry walls

1. Components being built in: Accurately positioned and securely supported. Set in mortar and pointed neatly to match adjacent walling.
2. Temporary support: Maintain for 48 hours (minimum) and prevent disturbance.

### **545** Erection of timber and prefabricated structures

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

### **550** Damage to galvanized surfaces

1. Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings): Make good.
  - 1.1. 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.
  - 1.2. Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

### **560** Site painting

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