

HFSK_ Landscape Spec

15 August 2014

Table of Contents

Title		Page
Q	Paving/Planting/Fencing/Site furniture	3
Q10	Kerbs/ edgings/ channels/ paving accessories	5
Q25	Slab/ brick/ sett/ cobble pavings	9
Q28	Topsoil and growing media	13
Q31	External planting	17
Q40	Fencing	26
Q41	Barriers/ guardrails	30
Q50	Site/ street furniture/ equipment	32

Q

Paving/Planting/Fencing/Site furniture

Q10

Kerbs/ edgings/ channels/ paving accessories

Revision B

Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS

- 110 PROPRIETARY PRECAST CONCRETE KERBS TO PAVING/TARMAC AREA EDGES/PLANTBEDS
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls.
 - - Product reference: Marshalls (equal or approved).
 - Recycled content: As manufactured.
 - Designations: EF Edging, flat top.
 - Size (width x height x length): 50 x 150 x 915 mm.
 - Special shapes: None.
 - Finish: As cast.
 - Colour: Natural.
 - Bedding: Cement mortar.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: At 15 m (maximum) centres.
(Revised - Q10 revision B - 25th Apr 2014)
- 111 PROPRIETARY PRECAST CONCRETE KERBS TO CAR PARK
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls.
 - - Product reference: Standard).
 - Recycled content: As manufactured.
 - Designations: HB2 Kerb, half battered.
 - Size (width x height x length): 125 x 255 x 915 mm or to match existing..
 - Special shapes: Dropper kerbs DL2 and DR2 to footway crossings and Quadrant kerbs as shown on drawings.
 - Finish: As cast.
 - Colour: Natural.
 - Bedding: Cement mortar.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: At 15 m (maximum) centres.

ROADS/PAVING ACCESSORIES/MARKING

- 395 ROAD MARKING (THERMOPLASTIC)
- Standard: Road Safety Markings Association standard specification document for road marking and road studs (StanSpec).
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Colour: White for parking spaces
Blue for netball court
Red for basketball court
Yellow for tennis court
 - .
 - Retroreflectivity to BS EN 1436: Class R2.

LAYING

510 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat, accurate and without spalling. Form neat junctions.
 - Long units (450 mm and over) minimum length after cutting: 300 mm.
 - Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- 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.
- 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

- 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

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

540 CEMENT MORTAR BEDDING

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

547 BEDDING/BACKING OF UNITS ON FRESH CONCRETE RACES

- Standard: To BS 7533-6.

570 CHANNELS

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

580 DRAINAGE CHANNEL SYSTEMS

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

600 RADIUS KERBS/CHANNELS

- Usage: Radii of 15 m or less.

610 ANGLE KERBS

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

620 ACCURACY

- Deviations (maximum):
 - Level: ± 6 mm.
 - Horizontal and vertical alignment: 3 mm in 3 m.

Q10

630 NARROW MORTAR JOINTS

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

640 TOOLED MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
 - Joint width: 6 mm.

650 SEALANT MOVEMENT JOINTS

- Joint filler: Compressible cellular rubber or plastics compatible with specified sealant.
- Filler installation: Built in as work proceeds, extending through haunching and foundation. Filler positioned accurately to fully support sealant at the recommended depth below exposed faces of units.
- Joint width: 6 mm.
- Sealant: Submit proposals.
 - Colour: Natural.
- Sealant application: As section Z22.

Q25

Slab/ brick/ sett/ cobble pavings

Revision C

Q25 Slab/ brick/ sett/ cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL

120 CONCRETE FLAG PAVING SYSTEM TO EXTERNAL TEACHING AREAS

- Granular sub-base: Contractor's choice.
 - Thickness: to SE details.
- Base: concrete base with appropriate movement joints to SE specification.
 - Thickness: 150mm.
- Laying course: Ready mixed mortar.
 - Accessories: None.
- Paving units: Concrete paving slabs.
- Jointing: Ready mixed mortar.
 - Bond: As indicated on drawings.
- Accessories: Pin Kerbs, as section Q10.
(Revised - Q25 revision C - 15th Aug 2014)

PRODUCTS

305 GRANULAR MATERIAL FOR LAYER OVER EXISTING BASES

- Material: Highways Agency Type 1 granular material, as section Q20.

315 CONCRETE FLAGS TO EXTERNAL TEACHING AREAS

- Standard: To BS EN 1339.
 - Manufacturer: Marshalls plc..
Product reference: Saxon Concrete Flag Paving.
- Recycled content: see manufacturers information.
- Colour: Natural.
 - Finish: Exposed aggregate.
 - Nominal sizes: 400 x 400 x 50 mm or 450 x 450 x 50mm whichever is appropriate for the path width..
- Arrises: Chamfered.
- Water absorption and freeze/ thaw resistance class: see manufacturers information.
- Bending strength class: see manufacturers information.
- Abrasion resistance class: see manufacturers information.
- Breaking load class: see manufacturers information.
(Revised - Q25 revision C - 15th Aug 2014)

EXECUTION**620 ADVERSE WEATHER**

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

625 LAYING PAVINGS - GENERAL

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

630 LEVELS OF PAVING

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

635 REGULARITY

- 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): 10 mm.
- Sudden irregularities: Not permitted.
- Difference in level between adjacent blocks/ pavers/ setts (maximum): 2 mm.

640 COLOUR BANDING

- General: Unless premixed by manufacturer, select from at least 4 separate packs in rotation to avoid colour banding.

645 PROTECTION

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

Q25

650 CEMENTITIOUS BASES AND SUB-BASES

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

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

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

695 SITE MIXED MORTAR - LAYING COURSE FOR CONCRETE FLAG PAVING

- Mix: 1:3 cement:sand.
- Consistency: Workable.
- Admixtures: None.

716 LAYING SLAB PAVING - MORTAR LAYING COURSE AND JOINTING

- Standard generally: In accordance with BS 7533-4.
- Flag installation and cutting: To Interpave 'Concrete flag paving'.
- Laying course:
 - Nominal thickness: 30 mm after compaction.
- Laying and jointing: as specified in clauses.
- Joint width (nominal): 5 mm.

COMPLETION

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

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

Q28

Topsoil and growing media

Q28 Topsoil and growing media

To be read with Preliminaries/ General conditions.

- 200 GRADING SUBSOIL
- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
 - Areas of thicker topsoil: Excavate locally.
- 250 SUBSOIL SURFACE PREPARATION
- General: Excavate and/ or place fill to required profiles and levels, as section D20.
 - Loosening:
 - Light and noncohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
 - Remove Arisings, contaminants and debris and Builders rubble.
- 260 INSPECTING FORMATIONS
- Give notice: Before spreading topsoil for lawn areas and planting beds.
 - Notice period: 7 days.
- 310 PREPARATION OF UNDISTURBED TOPSOIL
- Standard: In accordance with BS 4428.
 - Grading and cultivation: Category A.
 - Hard ground: Break up thoroughly.
 - Clearing: Remove visible roots and large stones with a diameter greater than 50 mm.
 - Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
 - Fallow period (minimum): One month.
 - Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.
- 335 SURPLUS TOPSOIL TO BE REMOVED
- Generally: Remove from site topsoil remaining after completion of all landscaping work.
- 340 IMPORTED TOPSOIL TO BS 3882
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
 - Standard: To BS 3882.
 - Classification: Multipurpose.
 - Source: Contractor's choice.
 - Submit: Declaration of analysis in accordance with BS 3882, Annex E.
 - Additional analyses: Not required.

Q28

355 COMPOST

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

395 PEAT

- Peat or products containing peat: Do not use.

650 NOTICE OF IMPORTING TOPSOIL

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

670 CONTAMINATION

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

680 TOPSOIL STORAGE HEAPS

- Location: tba.
- Height (maximum): 1.0 m.
- Width (maximum): 2.0 m.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination, by fencing and covering as appropriate.

Q28

690 HANDLING TOPSOIL

- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
- Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.

700 SPREADING TOPSOIL

- Temporary roads/surfacing: Remove before spreading topsoil.
- Layers:
 - Depth (maximum): 150 mm.
 - Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum): 150 mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

710 LOOSE TIPPING OF TOPSOIL

- General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.
- Depths after settlement (minimum): 150 mm.

720 SPORTSFIELDS

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

910 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

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

920 DOCUMENTATION

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

Q31
External planting

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS

112 SITE CLEARANCE GENERALLY

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

118 SOIL CONDITIONS

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

120 CLIMATIC CONDITIONS

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

125 TIMES OF YEAR FOR PLANTING

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

130 MECHANICAL TOOLS

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

145 WATERING

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

150 WATER RESTRICTIONS

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

Q31

160 NOTICE

- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Delivery of plants/ trees.
 - Planting shrubs.
 - Planting trees into previously dug pits.
 - Watering.
 - Visiting site during maintenance period.
- Period of notice: One week.

165 PREPARATION, PLANTING AND MULCHING MATERIALS

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

200 PLANTS/ TREES - GENERAL

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

216 PLANTS/ TREES - SPECIFICATION CRITERIA

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

225 BULBS/ CORMS/ TUBERS

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

235 CONTAINER GROWN PLANTS/ TREES

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

Q31

260 PLANT/ TREE SUBSTITUTION

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

265 PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To HTA 'Handling and establishing landscape plants'.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Plant packaging: Black polyethylene bags.
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped.
- Planting: Upright or well balanced with best side to front.

280 TREATMENT OF TREE WOUNDS

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

285 PROTECTION OF EXISTING GRASS

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

290 SURPLUS MATERIAL

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

PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

305 WEED CONTROL FOR INVASIVE NON-NATIVE WEEDS

- Locations: All planting areas.
- General: Prevent weeds from seeding and perennial weeds from becoming established, by contractor's choice of herbicide.

335 GENERAL FERTILIZER - SLOW RELEASE

- Locations: All planting areas.
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Application: Spread evenly.
 - Timing: Immediately before cultivation.
 - Rate: As manufacturers recommendation.

341 PEAT

- Peat or products containing peat: Do not use.

Q31

- 361 COMPOST To be added to topsoil
- Locations: All planting areas.
 - Type: Sanitized and stabilized compost.
 - Manufacturer/ Supplier: Contractor's choice.
 - Product reference: Contractor's choice.
 - Standard: To PAS 100.
 - Horticulture parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter content (minimum): 25%.
 - Grading (air dried samples): 99% passing 25 mm screen, and 90% passing 10 mm screen mesh aperture.
 - Carbon:Nitrogen ratio (maximum): 20:1.
 - Texture: Friable.
 - Objectionable odour: None.
 - Composting Association certification: Required.
 - Application: Spread evenly.
 - Timing: Apply prior to cultivation.
 - Rate: 25 mm thick layer.
 - Other requirements: None.

- 375 CULTIVATION
- Compacted topsoil: Break up to full depth.
 - Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm.
 - Depth: 450 mm.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
 - Surface: Leave regular and even.
 - Levels:
 - 25 mm above adjoining paving or kerbs;
 - 50 mm above adjoining lawns; and
 - Minimum 150 mm below dpc of adjoining buildings.
 - Undesirable material brought to the surface: Remove visible weeds, roots and large stones with any dimension exceeding 50 mm.
 - Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

- 400 RANDOM PLANT LAYOUT TO ALL BEDS
- Spacing: Random groups of 3-5 plants of the same species..
 - Density: As plant schedule.
- 405 SHRUB PLANTING PITS
- Timing: Excavate 1-2 days (maximum) before planting.
 - Sizes: 150 mm wider than roots when fully spread and 200 mm deep.
 - Pit bottom improvement Break up to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m².
 - Backfilling material: Shrub planting backfilling material.

Q31

445 PLANTING BULBS/ CORMS/ TUBERS

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

472 FENCING SUPPORT FOR NEW HEDGES

- Type: Timber post and general pattern wire mesh.
- Standard: To BS 1722-2.
- Height: 600 mm.
- Timing: Before planting hedge.
- Support: Lightly secure hedge plants to fence wires at appropriate intervals.

476 SHRUB, HERBACEOUS AND BULB BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required:
- Ameliorant/ Conditioner: Sanitized and stabilized compost.
 - Application rate: 3 m³ per 10 m³ of topsoil.
- Fertilizer: Slow release.
 - Application rate: To manufacturer's/ supplier's recommendations.

480 AFTER PLANTING

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
- Top dressing: Sanitized and stabilized compost.
 - Depth: 25 mm.

485 MULCHING PLANTING BEDS

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

485A MULCHING ADVENTURE PLAY AREA

- Material: Play grade bark mulch.
 - Purity: Free of pests, disease, fungus and weeds.
 - Recycled content: Submit proposals.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 100 mm depth.
- Finished level of mulch: 30 mm below adjacent grassed or paved areas.

PLANTING TREES**505 TREE PITS**

- Sizes: 1200 mm x 1200 mm x750 mm deep.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 200 mm.
 - Treatment: Soil ameliorant worked into pit bottoms.
- Pit sides: Scarify.
- Backfilling material: Tree backfilling material.
- Accessories:
 - Tree pit drainage layer as clause 515;
 - Perforated plastics irrigation/ ventilation pipe; and
 - Underground guying to BS 4043.

510 TREE PIT ROOT BARRIERS

- Locations: Wherever the installed rootball will be within 2.0 m of a building foundation.
- Manufacturer: Terram.
 - Product reference: RootGuard.
- Depth of top of root barrier below finished soil level: 50 mm.
- Installation: With sides vertical.

515 TREE PIT DRAINAGE

- Depth of excavation: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - Depth: 200 mm.
- Drainage pipes:
 - Type: Perforated plastics.
 - Diameter: 100 mm.
 - Position: Lay around perimeter of pit within aggregate layer.
 - Discharge: tbc.
- Geotextile filter:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Position: Lay over aggregate before installing tree or backfill.
- Completed pits: Test for free drainage before planting.

535 STAKING GENERALLY

- Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
 - Preservative treatment: To provide a 40 year service life.
- Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
- Stake size (minimum): 50 x 50 mm.

565 LONG DOUBLE STAKING FOR HEAVY STANDARD TREES

- Staking: Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting.
 - Backfilling: Consolidate material around stakes.
- Height of stakes: Cut off just below lowest branch of tree.
- Cross bar: Wood, as stake.
 - Firmly fix on windward side of tree and as close as possible to stem.
- Ties: Expanding ties.
- Tying: Secure tree firmly but not rigidly to cross bar.

Q31

575 SHORT DOUBLE STAKING FOR WHIPS AND FEATHERED TREES

- Staking: Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting.
 - Backfilling: Consolidate material around stakes.
- Height of stakes: Cut to approximately 600 mm above ground level.
- Cross bar: Flexible webbing within 25 mm of top of stake.
 - Firmly fix on windward side of tree and as close as possible to stem.
- Ties: Expanding ties.
- Tying: Secure tree firmly but not rigidly to cross bar.

586 TREE BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.
- Ameliorant/ Conditioner: Sanitized and stabilized compost.
 - Application rate: 3 m³ per 10 m³ of topsoil.
- Fertilizer: Slow release.
 - Application rate: To manufacturer's/ supplier's recommendations.

617 REMOVING TREES AND HEDGES

- Identification: Clearly mark trees and hedges to be removed.
- 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.
- Arisings: Remove.
- Tree stumps: Remove mechanically to a minimum depth of 300 mm below ground level.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

710 MAINTENANCE

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period.
- Frequency of maintenance visits: To be confirmed.

720 FAILURES OF PLANTING

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

740 CLEANLINESS

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

750 PLANTING MAINTENANCE GENERALLY

- Weed control: Maintain weed free area around each tree and shrub.
 - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - Keep planting beds clear of weeds: By hoeing.
- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards.
 - Broken or missing items: Replace.
 - Rubbing: Prevent.
 - Ties: Adjust to accommodate growth.
 - Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - Frequency of checks: At each scheduled maintenance visit.
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
- Trees: Spray crown when in leaf during warm weather.
 - Timing: After dusk.
- Watering: When instructed.

755 PLANTING MAINTENANCE - FERTILIZER

- Time of year: March or April.
- Fertilizer: Organic.
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Application: Evenly spread, carefully incorporating below mulch materials.
- Application rate: To manufacturer's recommendations.

760 PLANTING MAINTENANCE - PRUNING

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

780 MAINTENANCE INSTRUCTIONS

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

Q40
Fencing
Revision E

Q40 Fencing

FENCING

- 23 CLEFT CHESTNUT PALE FENCING
- Standard: To BS 1722-4.
 - Height: 900 mm.
 - Posts and struts: Wood.
 - Setting: Concrete .
 - Accessories: As drawing.
- 26 HORIZONTAL TIMBER HIT & MISS FENCING TO BIN STORE
- Standard: To BS 1722-5.
 - Height: 1800 mm.
 - Wood: Contractor's choice.
 - Treatment: To provide a 15 year service life.
 - Posts: Wood.
 - Setting: Concrete.
 - Accessories: Double leaf gate at pedestrian entrance, with stays, bolts, 3no. hinges etc..
(Revised - Q40 revision E - 8th Aug 2014)
- 26A HORIZONTAL TIMBER HIT & MISS FENCING TO NURSERY PLAY
- Standard: To BS 1722-5.
 - Height: 1200 mm.
 - Wood: Oak (European and English).
 - Treatment: To provide a 15 year service life.
 - Posts: Wood.
 - Setting: Concrete.
 - Accessories: Double leaf gate at pedestrian entrance, with stays, bolts, 3no. hinges and heavy duty padlock hasp & staple..
- 27 OPEN MESH STEEL PANEL FENCING
- Standard: To BS 1722-14, category: 1.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Height: 1800 mm.
 - Mesh and wire: Green Plastics coated welded mesh.
 - Posts: Galvanized rectangular hollow section, plastics coated.
 - Setting: Concrete.
 - Accessories: Vehicular and pedestrian gates as shown on drawing L-OM 9000 and as clause Q40.40.
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.

Q40

- 27A OPEN MESH STEEL PANEL FENCING to surround fire escape stair as shown on drawing L-OM 9000 and to contain external social/teching space as shown on drawing L-OM 9000
Standard: To BS 1722-14, category: 1.
- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Height: 1100 mm.
 - Mesh and wire: Green Plastics coated welded mesh.
 - Posts: Galvanized rectangular hollow section, plastics coated.
 - Setting: Concrete/bolted to existing building wall.
 - Accessories: Gate with fire escape push bar openable from the stair side of the gates. Gates to open out from stair side and to be same width as the escape stair..
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.
- 27B OPEN MESH STEEL PANEL FENCING
- Standard: To BS 1722-14, category: 1.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Height: 1800 mm.
 - Mesh and wire: Plastics coated welded mesh.
 - Posts: Galvanized rectangular hollow section, plastics coated.
 - Setting: Concrete/bolted to timber sleeper wall.
 - Accessories: Vehicular and pedestrian gates as shown on drawing L-SH-900.
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.
- 40 STEEL GATES/ GATE POSTS
- Materials and workmanship: As section Z11.
 - Jointing: Welded.
 - Finish: Hot dip galvanized to BS EN ISO 1461 after fabrication.
 - Fittings: Heavy duty, powder coated, 2 self closing adjustable hinges, gate openers and a thumb latch for pedestrian gates.
Heavy duty, powder coated, with gates openers and manually closing latch with padlock hasp and staple for vehicular gates .
 - Post setting: Set in concrete.
- 60 INSTALLATION GENERALLY
- Expertise: By an experienced fencing contractor.
 - Alignment: Straight lines or smoothly flowing curves.
 - Tops of posts: Following profile of the ground.
 - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
 - Fixings: All components securely fixed.
- 70 SETTING POSTS IN CONCRETE
- Standard: To BS 8500-2.
 - Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
 - Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
 - Admixtures: Do not use.
 - Holes: Excavate neatly and with vertical sides.
 - Filling: Unless specified otherwise position post/ strut and fill hole with concrete to not less than half the depth, well rammed as filling proceeds and consolidated.
 - Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

Q40

80 WOOD RAILS

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

85 SITE CUTTING OF WOOD

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

90 MAKING GOOD GALVANIZED SURFACES

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

Q41

Barriers/ guardrails

Q41 Barriers/ guardrails

To be read with Preliminaries/ General conditions.

TYPES OF BARRIERS/ GUARDRAILS

240 HANDRAIL SYSTEMS TO RAMP - see drawing L-OM 9000

- System manufacturer: Contractor's choice.
- Material: Hardwood/galvanised steel brackets.
 - Cross section: 120 mm perimeter elliptical.
 - Finish: Not required, timber handrail must be free from splinters and rough areas.
- Height above ground surface (to upper surface of handrail):
 - Upper handrail: 1100mm.
 - Lower handrail: 600 mm .
- Accessories: none.

INSTALLATION

410 WORK ON OR ADJACENT TO HIGHWAYS

- 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

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

480 CONCRETE FOUNDATIONS FOR POSTS

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

500 PRESERVATIVE TREATED TIMBER

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

Q50
Site/ street furniture/ equipment
Revision B

Q50 Site/ street furniture/ equipment

To be read with Preliminaries/ General conditions.

- 190 BOLLARDS To areas as shown on drawing L-SH-900
- Manufacturer: Broxap or equal approved.
 - Product reference: Sheffield Stainless Steel BX47 0140 75 or equal or approved.
 - Material: Steel.
 - Finish as delivered: Stainless Steel.
 - Colour: None.
 - Height above ground: 1100 mm and 76mm dia.
 - Special features: Heavy Duty to withstand impact from parking vehicles.
 - Method of fixing: As Manufacturer recommends for car park installation..
(Added - Q50 revision B - 25th Apr 2014)

SITE AND STREET FURNITURE

- 210 CYCLE STANDS
- Manufacturer: Broxap or equal approved.
 - Product reference: Sofco Junior Cycle Shelter.
 - Material: Clearview PET panels.
 - Finish: Polyester powder coated as section Z31.
 - Colour: TBA.
 - Number of stands: Shelters with junior cycle stands. Positions and numbers as shown on drawings L-OM 9000 and L-SH-900.
 - Accessories: associated cycle stands.
 - Method of fixing: Base plate bolted to 400 x 400 x 400 mm concrete base 100 mm below paving surface.
- 210A CYCLE STANDS
- Manufacturer: Broxap or equal approved.
 - Product reference: Sofco Adult Cycle Shelter.
 - Material: Clearview PET panels.
 - Finish: Polyester powder coated as section Z31.
 - Colour: TBA.
 - Number of stands: Shelters with cycle stands. Positions and numbers as shown on drawings L-OM 9000 L-SH-900.
 - Accessories: associated cycle stands.
 - Method of fixing: Root, 300 mm below ground, set in concrete base.
- 240 LITTER BINS To external play areas as shown on drawings L-OM 9000 and L-SH-900
- Manufacturer: Broxap or equal approved.
 - Product reference: Derby Weyburn Steel Litter Bin BX45 2550-WBN.
 - Material: Steel.
 - Finish: Hot dip galvanized to BS EN ISO 1461 and Polyester powder coated as section Z31.
 - Colour: Black.
 - Accessories/ Special requirements: None.
 - Method of fixing: As manufacturer recommends.

INSTALLATION

510 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Concrete: As section E10.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

515 SETTING COMPONENTS IN CONCRETE

- Holes: 250 x 250 x minimum 300 mm deep.
- Components: Accurately positioned and securely supported.
- Concrete fill: Fully compacted as filling proceeds.
- Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
- Temporary component support: Maintain undisturbed for minimum 48 hours.

530 PRESERVATIVE TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
- Heavily worked sections: Re-treat.

545 ERECTION OF TIMBER AND PREFABRICATED STRUCTURES

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

550 DAMAGE TO GALVANIZED SURFACES

- Minor damage in areas up to 40 mm² (including on fixings and fittings): Make good.
 - Material: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
 - Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

560 SITE PAINTING

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