

**Q37 Green roofs****To be read with Preliminaries/General conditions****GENERAL****121 BROWN ROOF ON FLOORS 6 AND 7 - DRAWING 1418-119**

- Roof type: Brown.
  - Substrate: Varies between 80-150mm.
  - Slope: Max. 1:40.
- Waterproofing: To Architects specification.
- Thermal insulation: To Architects specification.
- Protection: to Architects specification.
- Moisture control layers: To Architects specification.
- Growing medium: Topsoil as section Q28.
  - Depth: 10-25mm.
- Vegetation: Planting as section Q31.
- Accessories: As drawing.

**PERFORMANCE****210 GENERAL DESIGN**

- Green roof and associated features: Complete the detailed design.
- Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
- Performance criteria: submit proposals .

**255 MAXIMUM PERMITTED GREEN ROOF LOADS**

- Dead loads:
  - Green roof layers: To Engineers specification.
- Imposed loads:
  - Activity: To Engineers specification.
  - Vegetation: To Engineers specification.
  - Allowance for additional loads during construction: To Engineers specification.
- Service loads: To Engineers specification.
- Requirement: Restrict site activities to ensure that design loads are not exceeded, or submit proposals for temporary supports.

**EXECUTION****710 INSTALLATION GENERALLY**

- Preparation: Clear all surfaces of debris.
  - Timing: After certification of waterproof membrane integrity.
  - Surface condition: Visually inspect waterproof membrane, report any damage.
- Faults in waterproof membrane: Report.
- Contamination: Do not use materials detrimental to healthy plant growth.
- Storage: Do not overload.
  - Point loads: Avoid.
- Outlets: Do not block.
  - Outlet grilles: Installed.

**720 ADVERSE WEATHER**

- Unfinished work: Secure from damage and wind uplift.
- Conditions: Do not install or work with frozen materials.

**790 GROWING MEDIUM INSTALLATION**

- Handling: Minimize.
  - Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
- Layers:
  - Depth (maximum): 150 mm.
  - Sequence: Gently firm each layer before spreading the next.

**COMPLETION****910 INSPECTION**

- Timing: Before handover.
  - Give notice (minimum): 3 days.

**920 COMPLETION**

- General: Leave the works in a clean, tidy condition.
- Surfaces: Clean immediately before handover.
- Outlets: Clean and clear of obstructions.
- Completed green roof: Protect from adjacent or high level working.

**930 DOCUMENTATION**

- Timing: Submit at handover.
- Contents:
  - Growing medium declaration of analysis.
  - Manufacturers' guarantees and warranties.
  - Procedures for maintenance of the green roof.
  - Record drawings showing the location of planting and associated features.
- Number of copies: 5 .

**Q41**

**Barriers/ guardrails**

## Q41 Barriers/ guardrails

To be read with Preliminaries/ General conditions.

### TYPES OF BARRIERS/ GUARDRAILS

- 130 PROTECTIVE BARRIERS HOOP BARRIER
- Standard: To BS 6180.
  - Height above datum: 500mm.
  - Material/ Protection: Steel, galvanized to BS EN ISO 1461 after fabrication.
  - Surface finish: Powder coating as section Z31.
    - Colour/ Texture: RAL 9010/ matt.
    - Minimum film thickness: 25 micrometres.
  - Fixings/ Foundations: Root fixed to manufacturers specification.
  - Other requirements: 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.
- 430 ERECTION GENERALLY
- 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.
  - Prevention of electrolytic corrosion: Isolate dissimilar metals.
  - Steel components: Do not drill, cut or weld after galvanizing.
- 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.
- 490 DAMAGE REPAIR TO GALVANIZED SURFACES
- Areas of repair: Minor damage, including fixings and fittings.
    - Total area of repair not to exceed 0.5% of total surface area.
    - Each area not to exceed 1000 mm<sup>2</sup>.
  - Renovation: Use low melting point zinc alloy repair rods or powders or at least two coats of zinc-rich paint to BS 4652.

**Q50**

**Site/street furniture/equipment**

**Q50 Site/street furniture/equipment**

To be read with Preliminaries/ General conditions.

**GATES, BARRIERS AND PARKING CONTROLS****SITE AND STREET FURNITURE**

- 220 BENCHES BESPOKE CURVED WOODEN BENCH TO WESTERN COURTYARD - DRAWING 1418-090
- Manufacturer: WOODSCAPE  
1 Sett End Road West,  
Shadsworth Business Park,  
Blackburn,  
Lancashire,  
BB1 2QJ  
Telephone: 01254 685185  
Fax: 01254 671237  
Email: sales@woodscape.co.uk.
  - Product reference: 1418-090.
  - Material: As drawing 1418-090 including:  
32mm Hard Wood Timber slats and facing board, GMS frame and base plate and curved stainless steel arm rest.
  - Finish: Timber smooth finish, with no catches or splinters etc. Frame as manufactured.  
Stainless steel brushed .
  - Colour: None.
  - Size: See Drawing 1418-090.
  - Accessories/ Special requirements: Stainless Steel Arm Rest brushed, Manufacturer to supply production drawings for comment by Landscape Architect.
  - Method of fixing: GMS Base Plate see 1418-090.
- 221 BENCHES BESPOKE CURVED WOODEN BENCH TO ROOF TERRACES - DRAWING 1418-100
- Manufacturer: WOODSCAPE  
Product reference: 1418-100.
  - Material: As drawing 1418-100 including:  
32mm Hard Wood timber slats and facing board and GMS frame and base plate, .
  - Finish: Timber smooth finish, with no catches or splinters etc. Frame as manufactured..
  - Size: See Drawing 1418-100.
  - Accessories/ Special requirements: Lighting under slats, to Lighting Designers Specification.  
Manufacturer to supply production drawings for comment by Landscape Architect.
  - Method of fixing: GMS Base Plate.
- 225 SEATS MODULAR SEATING BLOCKS TO EASTERN ROOF TERRACE
- Manufacturer: WOODSCAPE.
  - Product reference: Modular Seating Block.
  - Material: Wood.
  - Finish: As manufactured.
  - Colour: None.
  - Size: 675X700X450.
  - Accessories/ Special requirements: None.
  - Method of fixing: Not Required.

- 262A TREE GRILLES TO WATER FEATURE IN EASTERN COURTYARD - DRAWING 1418-026
- Manufacturer: TBC.
    - Product reference: N/a.
  - Material: TBC.
    - Finish: TBC, laser cut slots.
    - Colour: TBC.
  - Size: 2700mm dia. circle in 4 quadrants, 435mm centre hole for tree planting.
  - Accessories/ Special requirements: LED ring light to centre hole, see 1418-LFB-LS 01 for detail.
  - Method of fixing: Laid to GMS support frame split into two halves, as drawings 1418-026,1418-027.
  - Manufacturer to provide production drawings for approval by the Landscape Architect prior to fabrication.
- 350 NESTING BOXES SPARROW BOXES TO ROOF TERRACES
- Manufacturer: Garden Nature.
    - Product reference: CedarPlus Triple Sparrow House.
  - Material: Hardwood.
    - Finish: As manufactured.
    - Colour: None.
  - Accessories/ Special requirements: None.
  - Method of fixing: Wall-mounted.
- 351 INSECT BOXES INSECT HOTEL TO ROOF TERRACES
- Manufacturer: Bug Hotel.
    - Product reference: Two Tiered Bug Hotel.
  - Material: Recycled Hardwood.
    - Finish: Painted, as section M60.
    - Colour: RAL 6029.
  - Accessories/ Special requirements: Bamboo Entry Pipe.
  - Method of fixing: See Drawing 1418-106.
- 352 WATER BUTTS WATER BUTTS TO ROOF TERRACES
- Manufacturer: Ecosure  
 Efills Limited  
 T/A Ecosure  
 Unit 1  
 Whiting Way,  
 Melbourn  
 Hertfordshire  
 SG8 6NA  
 United Kingdom  
 Phone: 01763 261781  
 Email: sales@ecosure.co.uk.
    - Product reference: ECO500V3Millstone.
  - Material: Medium Density Polyethylene.  
 Size: 500Litre: H 1010mm, W 460mm, L 1250mm

**INSTALLATION**

## 510 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Concrete: Designated, not less than GEN 1.
- 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.

## 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 mm<sup>2</sup> (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.



**Q52**

**Play and sports equipment**

## Q52 Play and sports equipment

To be read with Preliminaries/ General conditions.

### GENERAL

### SYSTEM PERFORMANCE

- 210 DESIGN
- Design: Complete the design of the LANDFORM 01 TO WESTERN ROOF TERRACE, CLAUSE 360 AND LANDFORM 02 TO EASTERN ROOF TERRACE, CLAUSE 361.
  - Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
  - Performance criteria: To provide a minimum 20 year life expectancy.
- 355 IMAGINATIVE PLAY STRUCTURE TIMBER STEPPING STONES TO EASTERN ROOF TERRACE
- Standard: To BS EN 1176-1.
  - Manufacturer: BROXAP  
Broxap Ltd.  
Rowhurst Industrial Estate,  
Chesterton,  
Newcastle-under-Lyme,  
ST5 6BD  
United Kingdom  
t:0844 800 4085  
f:01782 565 357/562 546  
e:enquiries@broxap.com.  
- Product reference: BX/HMP 100017.
  - Age range: Under 7.
  - Components: N/a.
  - Materials: Wood.  
- Finish: None.  
- Colour: Manufacturer's standard.
  - Highest platform height: Variable Height Max 300.
  - Features: None.
  - Method of fixing: Set in concrete.

- 356 WOODEN BALANCE TRAIL TIMBER BALANCE TRAIL TO EASTERN ROOF TERRACE -  
DRAWING 1418-103
- Standard: To BS EN 1176-1.
  - Manufacturer: BROXAP  
Broxap Ltd.  
Rowhurst Industrial Estate,  
Chesterton,  
Newcastle-under-Lyme,  
ST5 6BD  
United Kingdom  
t:0844 800 4085  
f:01782 565 357/562 546  
e:enquiries@broxap.com.  
- Product reference: BX/HMP 100017.
  - Age range: Under 7.
  - Components: N/a.
  - Materials: Wood.  
- Finish: None.  
- Colour: Manufacturer's standard.
  - Highest platform height: Variable Height Max 500.
  - Features: See Drawing 1418-103.
  - Method of fixing: See Drawing 1418-103.
- 357 PLAY SPHERE PLAY SPHERE TO WESTERN ROOF TERRACE
- Standard: To BS EN 1176-1.
  - Manufacturer: PLAYTOP  
Playtop Licensing Limited  
Brunel House  
Jessop Way  
Newark  
Notts NG24 2ER  
UK  
Tel +44 (0) 1636 642461  
Fax +44 (0) 1636 642478  
E-mail headoffice@playtop.com.  
- Product reference: Playtop Spheres.
  - Age range: Children.
  - Components: NOT REQUIRED.
  - Materials: Rubber EPDM.  
- Finish: None.  
- Colour: Manufacturer's standard.
  - Method of fixing: Proprietary anchor plate bolted to concrete haunching.
- 360 NON-STANDARD PLAY STRUCTURE LANDFORM 01 TO WESTERN ROOF TERRACE -  
DRAWING 1418- 104
- Standard: To BS EN 1176-1.
  - Materials: Hardwood timber beam and posts, GMS sleeve and base plate, artificial turf, 20mm rubber foam bedding layer and polystyrene void filler.  
- Finish: Smooth landform with artificial turf, timber sanded/ planed smooth, with no catches or splinters etc..
  - Size: See drawing 1418-104.
  - Height: Max landform height not to exceed 500mm.
  - Method of fixing: Beam attached to posts via coach bolts, posts slotted into GMS sleeve and base bolted to thermo block foundation.  
See drawing 1418-104 .

- 361 NON-STANDARD PLAY STRUCTURE LANDFORM TO EASTERN ROOF TERRACE - DRAWING 1418-105
- Standard: To BS EN 1176-1.
  - Materials: Hardwood timber beam and posts, GMS sleeve and base plate, artificial turf, 20mm rubber foam bedding layer and polystyrene voidfiller.
    - Finish: Smooth landform with artificial turf, timber sanded/ planed smooth, with no catches or splinters etc..
  - Size: See drawing 1418-105.
  - Height: Max landform height not to exceed 363mm.
  - Method of fixing: Beam attached to posts via coach bolts, posts slotted into GMS sleeve and base bolted to thermo block foundation.  
See drawing 1418-105 .
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390 ROCKING EQUIPMENT JUMPING DISK TO ROOF TERRACES

- Standard: To BS EN 1176-1 and -6.
- Manufacturer: Timber Play.
  - Product reference: Jumping disk.
- Age range: 4+.
- Type: Wobble Board.
- Number of seats: N/a.
- Materials: Wood.
  - Finish: N/a.
  - Colour: Manufacturer's standard.
- Features: None.
- Method of fixing: Submit proposals.

#### **EXECUTION**

710 PLAY EQUIPMENT INSTALLATION GENERALLY

- Standard: To manufacturer's written instructions provided in accordance with BS EN 1176-1.

720 CONCRETE FOUNDATIONS GENERALLY

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

750 DAMAGE TO GALVANIZED SURFACES

- Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings): Make good.
  - Materials: 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.

#### **COMPLETION**

910 INSPECTION

- Standard: In accordance with equipment manufacturer's maintenance and inspection instructions.
- Timing: 2 weeks prior to date when work is expected to be practically complete.
- Period of notice (minimum): 3 working days.

## 920 CLEANING

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

## 930 TESTING

- Standard: To BS EN 1176-1.

## 950 DOCUMENTATION

- Standard: To BS EN 1176-1.
- Contents:
  - Copies of test reports.
  - General product information.
  - Installation information.
  - Inspection and maintenance information.
- Number of copies: 5.
- Submission: 2 weeks prior to date when work is expected to be practically complete.

## 970 OPERATING TOOLS

- Tools: Supply tools required for operation, maintenance and cleaning purposes.