

## Q37 Green Roofs

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Project: 6340 SP84287 Bayham Street, London  
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Q37  
Green Roofs

Extensive Green Roof Inc. Sedum Plug Plant

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**design • grow • supply • install • maintain**

All clauses with the suffix 'A' are either NBS Plus non-standard clauses and/or amended by Blackdown Greenroof.

**Q37** Green roofs: To be read in conjunction with related Architectural Sections, Preliminaries, and Contract Conditions.

## GENERAL

### 130 EXTENSIVE GREEN ROOF

- Roof type: Blackdown Sedum Plug Plant Roof.
- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).
  - Substrate: Root-resistant waterproofing or aluminium (by others).
  - Slope: 0-8 degrees.
- Waterproofing: As per Alumasc specification
- Root barrier: As per Alumasc specification
- Thermal insulation: As per Alumasc specification
- Protection: Root resistant waterproofing (As per Alumasc specification)
- Moisture control layers:
  - Blackdown PF300 Moisture Retention/Protection Mat as Clause 340.
  - Blackdown 20DWR920 Drainage/Retention Layer as Clause 350.
  - Blackdown FF120 Filter sheet as Clause 360.
- Growing medium: Blackdown Extensive Substrate as Clause 390.
  - Depth: 70mm + 20% settlement factor.
- Vegetation: Blackdown hardy succulent plug plant mix, 10 core and upto 15 additional species applied across the substrate area as Clause 400.
- Blackdown wildflower seed mix applied across the substrate area as Clause 400.
  - Irrigation: Plant material is to be thoroughly watered in and the substrate kept moist for a minimum of 6 to 8 weeks following installation, or longer if necessary, to allow the plants to become established.
- Accessories:
  - Upstand protection fleece: – as Clause 330
  - Nutrient – as Clause 390.
  - Edge retaining profile – as Clause 420.
  - Inspection chamber – as Clause 430.
  - Vegetation barrier – as Clause 440.

## PERFORMANCE

### 210A GENERAL DESIGN

- Green roof and associated features: Complete the detailed design.

- Proposals: Submit drawings, technical information, calculations, and manufacturer's literature.
- Performance criteria: Green coverage within 9-12 months
- The design must ensure that the continuity of the waterproof covering is maintained for a vertical height of at least 150mm above the finished roof level at all abutments, parapets etc.
- It is the responsibility of the client and/or their design professional to assess wind uplift forces ensuring that sufficient dead load is applied over extruded polystyrene insulation in accordance with all relevant standards and codes of practice, for final sign off prior to design approval.
- The building owner or their appointed design professional must have satisfied themselves that the roof structure and deck are suitable to receive the dead load of the proposed specification.
- It is strictly the responsibility of the client and/or their design professional to ensure compliance of the proposed specification with all relevant Building Regulations by consultation with Building Control. In the event of any doubt about the interpretation or application of the Building Regulations in relation to any particular new build or refurbishment works, clarification must be sought directly from Building Control.

## 255 CHARACTERISTIC ROOF LOADS

- Dead loads:
  - Roof structure, screed and waterproofing: \_\_\_\_\_.
  - Green roof layers: 0.95 kN per square metre (saturated).
- Imposed roof loads:
  - Activity: \_\_\_\_\_.
  - Vegetation: \_\_\_\_\_.
  - Allowance for additional loads during construction: \_\_\_\_\_.
- Service loads: \_\_\_\_\_.
- Long term dynamic wind loads: \_\_\_\_\_.
- Snow loads: \_\_\_\_\_.
- Other loads: \_\_\_\_\_.
- Requirement: Restrict site activities to ensure that design loads are not exceeded, or submit proposals for temporary supports.

## PRODUCTS

### 330 UPSTAND PROTECTION MAT

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).
  - Product reference: Blackdown 300UPF.
- Material: Blended polyester mat.
  - Thickness: 2mm
  - Weight: 300g/m<sup>2</sup>

### 340 MOISTURE RETENTION / PROTECTION MAT

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).
  - Product reference: Blackdown PF300
- Material: Non-rotting, bitumen-compatible geotextile fleece-backed, recycled polypropylene mat.
  - Capacity: 2 l/m<sup>2</sup>

### 350 DRAINAGE LAYER

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).
  - Product reference: 20DWR920
- Material: Thermoformed recycled polypropylene
  - Depth: 27 mm
  - Retention volume: 5.5 l/m<sup>2</sup>
  - Mass/unit area (saturated): 7.5 kg/m<sup>2</sup>
  - Size: 0.92 x 50m

### 360 FILTER MEMBRANE

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).
  - Product reference: Blackdown FF120 Filter Sheet
- Material: Thermally-strengthened polypropylene.
  - Mass: 0.120 kg/m<sup>2</sup>

### 390 EXTENSIVE GROWING MEDIUM

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.

Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).

- Product reference: Blackdown Extensive Substrate.
- Material: Lightweight site formulated, mineral & expanded clay growing substrate. Mineral & organic substrate consisting of clean virgin crushed brick, expanded clay, organic matter bark compost & greenwaste.
- Depth: 70 mm (plus settlement allowance of 20%)
- Ameliorant/conditioner: Osmocote Pro 8-9 months fertiliser by Blackdown
  - Coverage: 25 gm/m<sup>2</sup>
  - Declaration of analysis: Submit.
- Parameters:
  - pH Value: 6.5 – 7.5
  - Density: 950kg/m<sup>3</sup> (dry); 1,200kg/m<sup>3</sup> (saturated)
- Supply: 1m<sup>3</sup> bulk bag or 25 litre sack.

#### 400 VEGETATION

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).
  - Product reference: Sedum Plug Plants.
- Planting mix: 10 core and upto 15 additional sedum species in the form of plug plants, up to 5 species are native or naturalised to the UK
- Vegetation coverage (minimum): 5% on installation, approx. 50-90% after 9-12 months.
  - Product reference: Wildflower seed mix. (BHC-WF)
- Vegetation coverage (minimum): 0% on installation, approx. 50-90% after 12-15 months.

#### 420 EDGE RETAINING PROFILE

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk)
  - Product reference: Blackdown Aluminium Retaining Detail (BHC/DET/RA100)
- Material: 2mm machine finished aluminium.
- Feature: Perforated, 20mm rolled top
- Height: 100 mm
- Base width: 100mm
- Accessories:
  - Connection plates (BHC/DET/S100)
  - Corner plates (BHC/DET/C100)

#### 430 INSPECTION CHAMBERS

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk).

- Product reference: Standard base (BHC/DET/ICL).
- Product reference: Lockable lid (BHC/DET/ICL).
- Material: Black, powder-coated steel
- Size: 300 x 300 mm
  - Standard base depth: 50 mm
- Access cover: Black, powder coated steel.
- Features: 500 x 500 mm flange attached for stability and to lap filter sheet
- Accessories:
  - Parapet base (BHC/DET/ICL-B-PARA) depth 100mm.
  - Interlocking extension collars 50mm (BHC/DET/ICL-S50), 75mm (BHC/DET/ICL-S75), 100mm (BHC/DET/ICL-S100) & 200mm (BHC/DET/ICL-S200)

#### 440 VEGETATION BARRIER

- Manufacturer: Blackdown Greenroof, Street Ash Nursery, Combe St Nicholas, Chard, Somerset. TA20 3HZ. Tel: 01460 234582; Fax: 0845 076 0267.  
Web: [www.blackdown.co.uk](http://www.blackdown.co.uk)
  - Product reference: Blackdown Washed Pebble Ballast 20/40.
- Depth: 70mm
- Width: 300mm to external perimeter edge / 500mm to internal junctions and penetrations etc.

## 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.

#### 750 UPSTAND PROTECTION MAT INSTALLATION

- Extent: Loose lay continuously around perimeter, upstands & penetrations.
- Joints: Minimize.
  - Overlaps (minimum): 150 mm.

- Upstands: Blackdown 300UPF fleece to fit closely around penetrations and outlets.

#### 760 MOISTURE RETENTION / PROTECTION MAT INSTALLATION

- Extent: Loose lay continuously over entire roof area.
- Joints: Minimize.
  - Overlaps (minimum): 150 mm.
- Upstands: Blackdown 300UPF fleece to fit closely around penetrations and outlets.

#### 770 DRAINAGE LAYER INSTALLATION

- Extent: Loose lay continuously over entire roof area.
- Fitting: Closely butt-joint boards.
- Upstands: Cut to fit closely around penetrations and outlets, using a heavy duty knife or small-toothed saw.

#### 780 FILTER MEMBRANE INSTALLATION

- Joints: Minimize.
  - Overlaps (minimum): 150 mm.
- Fitting: Loose laid

#### 790 GROWING MEDIUM INSTALLATION

- Handling: Minimize handling. Deliver to roof in small sacks, bulk bag or pump.
  - Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
- Layers:
  - Depth: 70mm
  - Settlement factor: +20% post installation.
  - Sequence: Gently firm each layer before spreading the next. Grading bars are recommended to achieve the correct depth. Gently firm each layer before spreading the next. Apply pre-formulated nutrient regime according to planting plan and rake in.

#### 800 VEGETATION INSTALLATION

- Handling Sedum Plug Plants:
  - Extent: Continuous over area to be planted.
  - Excessive stacking: Not permitted.
  - Timing: Install 3-5 days after delivery, water regularly depending on climatic variation
  - Condition: Thoroughly water before installation
  - Removal from trays: With care as not to cause material loss or damage.
  - Growing medium condition: Thoroughly watered.
- Application:
  - 20 per sqm.
- Planting plug plants:



- Spacing: Mark roof areas for plug planting by means of a scribe tool into m<sup>2</sup> plots.
- Scope: Plug numbers and species patterns per m<sup>2</sup> according to the planting plan.
- Application: Plant plugs into the growing medium at the correct depth, so that the cultivation medium is completely covered. Make sure the vegetative material present in the plugs is visible and not covered by the growing medium.
- Watering: Thoroughly, after plug planting, account for climatic variation and seasonality.
- Handling Seed:
  - Extent: Continuous over area to be planted.
  - Timing: To be installed during the Spring or Autumn
  - Storage: must be stored in a cool and shaded area.
- Application:
  - Wildflower seed 0 - 4g per sqm. Seed to be stored in a sealed container in cool, dry conditions until required. Seeds then dispersed evenly into a suitable carrier and spread by hand or mechanically onto the surface of the growing medium.
- Watering: Thoroughly, after laying, account for climatic variation and seasonality.

## 820 EDGE RETAINING PROFILE INSTALLATION

- Cutting: Neat, accurate and without spalling.
  - Junctions: vertical, secured using proprietary connectors.
- Position: True to line and level. Smooth continuous lines.
- Fixing: Integrated to roofing system in accordance with manufacturer's recommendations.
  - Loose laid onto 300g protection fleece, ballasted by weight on foot plate.
  - Suitable for pitched roofs of 5 degrees or less.

## 830 INSPECTION CHAMBER INSTALLATION

- Location: Install centrally over drain outlet.
  - Orientation: Align parallel with adjacent features.
- Bedding: Position flanges on to crowns of drainage layer.
- Backfill: Ballast flanges with pebbles.
- Surround: 300 mm diameter circle / square of 20-40 mm round pebbles.

## 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: \_\_\_\_\_

Blackdown Greenroof standard NBS specifications are offered on the condition that the customer is responsible for ensuring that each specification is appropriate for its intended purpose and that conditions for its use are suitable. This specification may require adjustment in accordance with specific project requirements.

The substitution of any products (or installation by means other than those described) is strictly prohibited, unless agreed in writing, in advance, with Blackdown Greenroof.

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