



Q37 Green Roofs

Project: 2 Murray Street, London NW1

To be read with Preliminaries/General conditions

GENERAL

130 EXTENSIVE GREEN ROOF

- Roof type: Economy Roof Solution 1
 - Substrate: Plywood
 - Slope: 0-5°
- Waterproofing: Root resistant membrane (to FLL guidelines)
- Thermal insulation: TBC
- Protection: RMS 300, see clause 330
- Drainage layer: FKD 25, see clause 350
- Growing medium: Substrate Type M, see clause 390
 - Depth: 60 litres/m² (60mm)
- Vegetation: Sedum blanket, see clause 400
- Accessories: Inspection chambers, Edge Trims, vegetation barriers, see clauses 430, 420, 440
- Water for irrigation to be provided on site during initial establishment period

PERFORMANCE

210 GENERAL DESIGN

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

250 CHARACTERISTIC ROOF LOADS

- Roof structure: As engineer's schedule
- Allowance for additional loads during construction:
- Requirement: Restrict site activities to ensure that design loads are not exceeded, or submit proposals for temporary supports.

255 CHARACTERISTIC ROOF LOADS

Dead loads:

- Roof structure, screed and waterproofing: To be advised by structural engineer.
- Green roof layers: approx. 1.0kN/m²

Imposed roof loads:

- Activity: To be advised by structural engineer
- Vegetation: Included in Green roof layers
- Allowance for additional loads during construction: To be advised by structural engineer

Service loads: To be advised by structural engineer

- Long term dynamic wind loads: To be advised by structural engineer

Snow loads: To be advised by structural engineer

Other loads: To be advised by structural engineer

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

PRODUCTS

330 PROTECTION LAYER

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United Kingdom, +44 (0)845 565 0236
 - Product Reference: Optigreen Separation and Protection Mat RMS 300
- Material: Regenerated Synthetic Fibre
 - Thickness: Approx. 2,8 mm
 - Water storage: Approx. 2 litres/m²

350 DRAINAGE LAYER

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United Kingdom, +44 (0)845 565 0236
 - Product Reference: Optigreen Drainage Board FKD 25
 - Material: Recycled HDPE
- Depth: 25 mm
- Infill: Growing Medium, see clause 390

390 GROWING MEDIUM

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United Kingdom, +44 (0)845 565 0236
 - Product Reference: Optigreen Extensive Substrate Type M
- Material: Brick, expanded clay, pumice, green compost, blend depending on regional availability
 - Depth: 60 litres/m² (60mm)
- Declaration of analysis: Submit
- Parameters: According to current FLL-Guidelines

400 VEGETATION BLANKET

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United Kingdom, +44 (0)845 565 0236
 - Product Reference: Optigreen Sedum Blanket Type S/F
- Planting Mix: At least 5-7 Sedum species, with minor parts of grass and herbs
- Thickness: Approx. 15 - 20 mm
- Vegetation coverage (minimum): 75 % according to current FLL-Guidelines

420 RETAINING PROFILE

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United

- Kingdom, +44 (0)845 565 0236
- Product Reference: Optigreen Edge Trim ZP 80
- Material: Aluminium
- Thickness: 1 mm
- Height: 80 mm

430 INSPECTION CHAMBERS

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United Kingdom, +44 (0)845 565 0236
- Product Reference: Optigreen Triangle Inspection Chamber ABS
- Material: ABS-plastic
- Size: 350x350 mm
- Depth: 100 mm (100 mm increments to suit build up)
- Cover: Lockable
- Features: Side panels and cover with drainage slots, capability of connecting drainage channels

440 VEGETATION BARRIER

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United Kingdom, +44 (0)845 565 0236
- Product Reference: Gravel 20-40 mm
- Material: Gravel
- Width: 300 mm
- Depth: 80 mm

450 FERTILISER

- Manufacturer: Optigreen Ltd, 235 Old Marylebone Road, London, NW1 5QT, United Kingdom, +44 (0)845 565 0236
- Product Reference: Optigreen Opticote
- Application rate: 50 g/m²

EXECUTION

750 PROTECTION LAYER INSTALLATION

- Extent: Continuous over designated roof area
- Joints: Without joints
- Overlaps (minimum): 100 mm
- Upstands: Extend to top of growing medium/vegetation barrier

770 DRAINAGE LAYER INSTALLATION

- Extent: Continuous over designated roof area
- Fitting: Loose laid
- Overlaps (minimum): 1-2 corrugations
- Upstands: Fit closely around penetrations
- Cut out around outlets

790 GROWING MEDIUM INSTALLATION

- Extent: Continuous over designated roof area
- Handling: Minimize
- Conditions: Do not handle when frozen

- Depth: as stated in clause 390
- Level according to the depth required

800 VEGETATION BLANKET INSTALLATION

- Extent: Continuous over designated roof area

Handling blankets:

- Timing: Lay within 36 hours of lifting from growing position.
- Excessive stacking: Not permitted
- Material loss: 3-10% of total surface area
- Growing medium condition: Watered

Laying blankets:

- Level growing medium thoroughly before laying the blankets
- Lay manually, always 2 persons per mat required
- Dry, damaged, frosty or waterlogged blankets: Do not lay
- Orientation: Diagonal or perpendicular to slope of roof
- Joints: Stagger. Butt together to prevent gaps. Do not stretch blankets.
- Edges: Finish with whole blankets
- Consolidation: Firm as laying proceeds to ensure full contact with the growing medium.
Do not use rollers.
- Dressing: Brush in to fill joints
- Watering: Thorough, immediately after laying and dressing until entire build-up is water saturated (30 l/m²).
- Subsequent watering: 2-3 times with 30 l/m², thereafter keep moist until fully rooted in

820 EDGE RETAINING PROFILE INSTALLATION

- Cutting: Neat, accurate
- Junctions: vertical, secured using proprietary connectors
- Position: True to line and level. Smooth continuous lines
- Fixing: TBA by waterproofing manufacturer

830 INSPECTION CHAMBER INSTALLATION

- Location: Install centrally over drain outlet
- Orientation: Align parallel with adjacent features
- Surround: As clause 440

840 GRAVEL INSTALLATION

- Extent: Continuous along all edges and around roof penetrations and outlets at a minimum of 300 mm wide. Where installed as preventive fire protection (around all types of openings such as skylight, doors, etc.) at a minimum of 500 mm wide. On large roof areas, install a fire break every 40 metres at a minimum of 1 m wide.
- Depth: as stated in clause 440
- Level according to the depth required

841 FERTILISER APPLICATION

- Spread evenly before or after vegetation application
- Frequency: Once annually dependent on requirement

COMPLETION

910

- 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: As required.

940 COMPLETION CARE

- Period: 12 – 15 months after installation. After the agreed contract period, the ongoing maintenance of the green roof becomes the responsibility of the building owner.
- Frequency: 1-2 times annually
- Weeding: Removal of undesired growth
- Watering: As required, depending on weather
- Remove dead leaves and any refuse
- Cutting: Mowing or strimming as required
- Re-seeding or re-planting of any bare areas including re-filling of substrate where required
- Fertilise: Optigreen Opticote as clause 841
- Removal of plant growth from borders, gravel areas and paved areas
- Clean gutters, control chambers and roof outlets
- Water for irrigation to be provided on site