

Specification: **Q37 Green Roofing**  
Project: Regents Park Estate  
Date: 12<sup>th</sup> April 2016 rev 00

Radmat Building Products Ltd  
Esha House  
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LE16 7EB

**Q37 GREEN ROOFS**

To be read with Preliminaries/ General Conditions.

Section Q37 deals with the installation of the Green Roof System comprising drainage board, filter fleece, growing medium (substrate) and living plant materials. It includes where required, fire breaks and presumes the deck substrate and roof falls as stated within the specification below. Accessories are included where relevant.

It is intended for use on projects where the detailed design is completed by the specifier (architect or landscape architect) with technical assistance from the manufacturer as required and should be read in conjunction with any project specific drawings provided.

The details contained within this proposal are based on information available at the time of writing. It covers the installation of green roofing materials and the preparation work necessary to provide a suitable substrate.

A detailed method of work statement and programme of works should be agreed before the commencement of the works.

The requirements of all relevant British Standards and Industry Codes of Practice should be complied with at all times. A bibliography is available upon request.

**SCOPE OF WORKS**

- This section includes:
  - The green roof system
  - Related system accessories
  
- This section does not include:
  - Construction of the structural deck.
  - Proprietary rainwater drainage / plumbing – refer NBS Section R10
  - Lightning protection – refer NBS Engineering Services, Section W60.
  - Lead sheet coverings / flashings – See NBS Section H71.
  - The waterproofing system – See NBS Section J31, J41 or J42.
  - Thermal insulation
  - Internal rainwater outlets (but not the connected drainage/plumbing goods)

**GENERAL**

## 130 EXTENSIVE BIODIVERSE ROOF

- Roof type: Biodiverse.
- Base: Radmat ProTherm G insulation (see J31/340) Slope: Zero
- Waterproofing: TBC
- **Drainage layer:** Radmat D25 Drainage/Reservoir Board, 25mm deep HDPE with cusplate as clause 350.
- **Fleece:** Radmat G11 Polyester geo-textile filter fleece 100g/m<sup>2</sup> as clause 360.
- **Growing medium:** Radmat Vulkatec GM10 extensive growing medium as clause 390.
- Depth: minimum 80-150mm deep after settlement in undulations.
- Vegetation: Cast seeding as clause 400.
- Accessories:
- Vegetation breaks: 500mm wide, 80-150mm deep, 20-40mm rounded pebble margin.
- Inspection Chambers:
- PARA100 Aluminium Inspection Chamber as clause 430
- System Manufacture: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572 email: techenquiries@radmat.com, Web: www.radmat.com

## 130A EXTENSIVE SEDUM ROOF

- Roof type: Sedum.
- Base: Radmat ProTherm G insulation (see J31/340) Slope: Zero
- Waterproofing: TBC
- **Drainage layer:** Radmat D25 Drainage/Reservoir Board, 25mm deep HDPE with cusplate as clause 350.
- **Fleece:** Radmat G11 Polyester geo-textile filter fleece 100g/m<sup>2</sup> as clause 360.
- **Growing medium:** Radmat Vulkatec GM10 extensive growing medium as clause 390.
- Depth: minimum 80mm deep after settlement in undulations.
- Vegetation: SedumPlus pre-grown blanket as clause 401.
- Accessories:
- Vegetation breaks: 500mm wide, 80mm deep, 20-40mm rounded pebble margin.
- Inspection Chambers:
- PARA100 Aluminium Inspection Chamber as clause 430
- System Manufacture: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572 email: techenquiries@radmat.com, Web: www.radmat.com

**PERFORMANCE**

## 210 GENERAL DESIGN

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

## 255 MAXIMUM PERMITTED GREEN ROOF LOADS

- Dead loads:
- Green roof layers:
- Imposed loads:
- Activity:
- Vegetation: none
- Allowance for additional loads during construction:
- Service loads:
- Requirement: Restrict site activities to ensure that design loads are not exceeded, or submit proposals for temporary supports.

**PRODUCTS**

## 350 DRAINAGE LAYER

- Manufacturer: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572
- Product reference: Radmat D25 Drainage/Reservoir Board, 25mm deep HDPE with cusplate.
- Material: HDPE.
- Depth: 25mm.
- Infill: None

## 360 FILTER MEMBRANE

- Manufacturer: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572
- Product reference: Radmat G11 filter fleece.
- Material: Polyester geo-textile.
- Mass: 100g/m<sup>2</sup>

## 390 EXTENSIVE GROWING MEDIUM

- Manufacturer: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572
- Product reference: Radmat Vulkatec GM10 extensive growing medium.
- Material: Vulkaminerol (a combination of volcanic lava rock and natural pumice) blended with three organic components (green compost, composted bark and Xylith\*) to store high levels of the micronutrients required for healthy plant growth. Compliant with RAL-GZ 253 and RAL Certified. Peat free.
- Depth: minimum 80mm for pre-grown SedumPlus after settlement, rising to 150mm in undulations for biodiverse roof systems
- Ameliorant/conditioner: Not required.
- Coverage: n/a
- Declaration of analysis: Submit
- Parameters: manufacturer declared values.

## 400 VEGETATION BIODIVERSE

- Supplier: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572
- Product reference: S1 Wildflower Seed Mix
- Coverage: 4 grams/m<sup>2</sup>

## 401 VEGETATION SEDUM

- Supplier: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572
- Product reference: Radmat SedumPlus
- Coverage: 16nr Sedum varieties

## 430 INSPECTION CHAMBERS

- Manufacturer: Radmat Building Products Limited, Esha House, St Mary's Business Park, Albany Road, Market Harborough LE16 7EB Tel: 01858 410372, Fax 01858 410572
- Product reference: PARA100 Aluminium Inspection Chamber as clause 430
- Material: Aluminium.
- Size: 300 x 300mm.
- Depth: 100mm.
- Access Covers: fixed to frame and hinged.
- Features: security fastened.

## 440 VEGETATION BARRIER

- Material: 20-40mm rounded pebbles.
- Depth: 80 - 150mm.
- Width: 500mm.

## 450 ROOF DRAINAGE OUTLETS

- Manufacturer: Wade or similar approved with clamping ring arrangement. Cold metal.
- Product reference: As recommended by manufacturer.
- Material: Aluminium
- Size: To M&E engineers specification
- Fixing: As recommended by manufacturer.

**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.

## 730 INSTALLATION OF INVERTED ROOF INSULATION

- Preparation: Clear roof of other trades.
- Condition of substrate: Clean.
- Fitting: Loose lay.
- Joints: Butt Jointed using rebate in insulation boards.
  - End joints: stagger.
- Cutting: minimise.
  - Perimeters and upstands: Fit full size pieces.
  - Penetrations: Cut cleanly and fit closely.
- Stability: Springing and rocking not permitted.
- Protection: Cover to prevent wind uplift.

## 740 ROOT BARRIER

- Joints: Minimise.
  - Overlaps (minimum): 80mm.
- Upstands: Extend to top of growing medium.

## 770 DRAINAGE LAYER INSTALLATION

- Extent: Continuous over entire roof area except where omitted locally in build-up to increase diversity of habitat created.
- Fitting: Loose-laid, close-buttet.
- Upstands: Cut to fit closely against abutments, roof penetrations and where butt joints are required. Rainwater outlets must not be covered.

## 780 FILTER MEMBRANE INSTALLATION

- Joints: Minimise.
  - Overlaps (minimum): 150mm
- Fitting: Loose Laid
- Upstands: Extend to top of growing medium.

## 790 GROWING MEDIUM INSTALLATION

- Handling: Minimise. Deliver to Roof in Bulk Bag, spreading the specified depth on filter sheet, allowing for a settlement factor of 12%.
  - Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
- Layers:
  - Depth 80mm at perimeter rising to 150mm
  - Sequence: Gently firm each layer before spreading the next.

## 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: 300mm diameter circle/ square 20/40mm round washed 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.
  - The GRO Green Roof Code of Best Practice for the UK 2014.
  - FLL Guidelines for the planning, execution and upkeep of green-roof sites page 59 paragraph 11.6 titled Readiness for Handover DIN 18916 DIN 18917
- Number of copies: Contractor to define.