



Q37 NBS Specification for Royal College Of Ophthalmologists (SGV01) Wildflower Blanket Living Roof

Date: 11/03/14

This specification is based on current information available at the time of writing, if any aspects are revised prior to construction, or you require any additional details. Please contact our Technical Services Department who would be pleased to amend or update the information provided.

SYSTEM

130

EXTENSIVE GREEN ROOF

Roof type: As J31 (liquid), H31 (Standing Seam), J41 (Bitumen), J42 (Single Ply), J21 Mastic)

Substrate: As J31

Slope: As J31

Waterproofing: As J31

Thermal Insulation: As J31

Protection: Protection fleece clause 330

Moisture Control: Drainage layer as clause 350

Depth: Soil less substrate as clause 390

Vegetation: As clause 400

Accessories: Filter fleece as clause 360

Edge retaining profile as clause 420

Intermediate restraints as clause 820A

Border as clause 460

Roof finish contour as clause 391

Surface habitat creation as clause 392

Wall mounted habitats as clause 393

Aftercare as clause 402

Irrigation as clause 401

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 design requirements.

250

CHARACTERISTIC ROOF LOADS

Roof structure: The structural engineers are satisfied themselves that the roof structure and deck are suitable to receive the dead load of the proposed green roof system and landscape both during construction and on completion of the works.

Living Roof: **180.00kgs/m² max**

Allowance for additional loads during construction: To be advised

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

PRODUCTS

320

ROOT BARRIER To Extensive Roof

Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739

Product reference: NA

Material: NA

Thickness: NA

- 330 PROTECTION LAYER To Extensive Roof
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
*Product reference:*SGPL0102
Material: tensile geo-synthetic protection layer
Thickness: 2mm

350 DRAINAGE LAYER To Extensive Roof
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Product reference: SGRD0140
Material: Recycled PE rigid, load-tolerant drainage and water retention board.
Depth: 40mm
Infill: Shingle over

360 Q37/360 FILTER MEMBRANE To Extensive Roof
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Product reference: SGFF0102
Material: Non Woven Geotextile, factory bonded to drainage board.
*Thickness:*1mm

390 EXTENSIVE GROWING MEDIUM To Extensive Roof
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Product reference: SGBDS0180
Material: Virgin recycled crushed brick 50-5mm, topsoil and organic compost
Depth: 100 mm.
Ameliorant/ conditioner:
Coverage: total.
Declaration of analysis: Submit.
Parameters: consistent installation of product to filter layers provided.

391 ROOF FINISH CONTOUR To Extensive Roof
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Product reference: NA
Material: NA

392 SURFACE HABITAT CREATION To Extensive Roof
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739

Product reference: NA
Material: NA

393 WALL MOUNTED HABITATS To Extensive Roof Boundaries
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739

Product reference: NA
Material: NA

- 400 **VEGETATION To Extensive Roof**
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Product reference: SGWB0130
Planting mix: see Sky Garden Wildflower Blanket species list specification
Density: wildflower blanket. 38 species regional wildflower and grass mix.
Vegetation coverage at installation: minimum (90% coverage) at point of installation

401 **IRRIGATION**
The green roof will need thorough saturation following installation, immature systems will require a supplementary irrigation system to be available for at least the first 12 months of the establishment period.

402 **AFTERCARE**
A two visit inspection and remedial package for year 1 maintenance (unless longer agreed) will manage the roof establishment period. Aftercare programs do not cover watering but can cater for commissioning and de commissioning of the irrigation system.
Remedial aftercare covers failure of the green roof to establish under certain criteria but does not cover damage caused by others, birds, theft, vandalism or extreme weather damage.

420 **EDGE RETAINING PROFILE**
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Product Reference: SGME0102
Material: Aluminium
*Height:*100mm
Foot: 75mm
Note: NOT INCLUDED. PRICED AS EXTRA-OVER ITEM.

420/b **SEPARATION PROFILE**
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Product Reference: SGME01009
Material: Aluminium
*Height:*100mm
Foot: 75mm
Note: NOT INCLUDED. PRICED AS EXTRA-OVER ITEM.

460 **BORDERS**
Type: Riverstone Pebbles
Supplier: Sky-Garden Ltd, Unit 4 Beta, Orchard Industrial Estate, Toddington Glou, GL545EB
P:01242 620905 F: 01242620739
Size: 20-40mm round washed
Colour: Multi-colour mixed grade (minimal sharp edges but not guaranteed as stone damage during bagging and transport can occur)
Laying: 300mm borders around perimeters, penetrations and outlets (25kg units)

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.
- 740 **740 ROOT BARRIER INSTALLATION**
Joints: Minimize.
Overlaps (minimum): 100mm
- 750 **PROTECTION LAYER INSTALLATION**
Joints: Minimize.
Overlaps (minimum): 100mm
Up stands: Extend to top of growing medium.
- 770 **DRAINAGE LAYER INSTALLATION**
Extent: Continuous over entire roof area.
Fitting: Loose laid
Up stands: Fit closely around penetrations and outlets.
- 780 **FILTER MEMBRANE INSTALLATION**
Joints: Minimize.
Overlaps (minimum): 100mm
Fitting: Loose Laid
Up stands: Extend to top of growing medium.
- 790 **GROWING MEDIUM INSTALLATION**
Handling: Minimize.
Conditions: Handle in the driest condition possible. Do not handle or install wet or frozen.
Layers:
Depth (maximum): as per Q37 clause 390
Sequence: Gently firm each layer before spreading the next.
- 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.
Retention detail is used where there are system retention requirements and should be spot bonded in accordance with manufacturers approval or system ballasted.
Separation detail if for physical divide between system and slab or stone detailing and is system ballasted.

- 840A **INTERMEDIATE RESTRAINTS INSTALLATION**
Intermediate restraints should be fitted across the roof on pitches exceeding 10° – refer to specification and design detail or waterproof system manufacturer detail for type and fixing method.
- As a guide, retention battens on pitches from 10° – 20° should be installed at 2000mm increments up the roof slope with a mechanically fixed one at eaves. From 21° – 45° the spacing should be reduced to 1000mm. The height of the restraints should not exceed the combined height of the drainage and substrate layers.
- 840 **LAYING BORDER**
Condition of substrate: Clean.
Gravel guards: Fit to outlets.
Laying: 300mm borders around perimeters and outlets - spread evenly, do not pile to excessive heights
Depth (minimum): 50mm
Previously laid materials: Protect during the spreading of Riverstone 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.
Aftercare agreement
Aftercare guidelines
O&M manual
Irrigation guidelines
Number of copies: As required.
- 940 **MAINTENANCE**

This should consist of a minimum of two visits per year by the appropriate labour force, which will be dictated by the roof area. Irrigation is unlikely to be required once the plant layer is established.
- Establishment of immature systems 18-36 months and blanket systems 12-18 months.