



Q37

BIODIVERSE ROOF – Aster House

Products

Flow Control Layer (Blue Roof System)

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Material: Thermoformed recycled polypropylene
 - Depth: 4mm
 - Compressive Strength: 150 kN/m²
- Infill: Not required

Water Attenuation Layer (Blue Roof System)

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Material: Recycled polypropylene with non-woven polyester fleece
 - Depth: 100mm
 - Water Storage Capacity: 95 L/m²
 - Compressive Strength: 294 kN/m²

Drainage Layer (Biodiverse System)

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Material: Thermoformed recycled polypropylene
 - Depth: 10mm
 - Retention Volume: 4.3 L/m²
 - Horizontal Flow Rate: 1.25 L/s/m²
 - Vertical Flow Rate: 8 L/s/m²
 - Compressive Strength: 150kPa
- Infill: Not required

Filter Membrane

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Material: Thermally strengthened non-woven polypropylene
 - Mass: 0.120 kg/m²
 - Thickness: 2mm



Extensive Biodiverse Substrate

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Material: Lightweight crushed brick & expanded clay substrate. Inorganic and organic growing medium consisting of crushed brick, expanded clay and organic matter of composted bark fines
 - Depth: 80-200mm
- Declaration of analysis: Submit.
 - Porosity: 63%
 - Water Holding Capacity: 25-30%
 - Bulk Density DIN EN 1097-3: 1 T/m³
 - Density at Max Water Holding Capacity: 1.25 T/m³
 - PH Value: 7.0 – 8.0

Vegetation

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Planting Mix: Various wildflower species in plug plant and seed form
- Planting Density (plugs): 4 per m²
- Coverage Rate (seeds): Varies; n/e 3g/m²
- Vegetation Coverage: 5% minimum

Edge Retaining/Separating Profile

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Material: Aluminium
 - Description/Profile: Slotted; 3m length
 - Height: 80mm

Vegetation Barrier

- Material: Rounded washed pebbles (20-40mm)
 - Depth: Varies
 - Width: Varies

Ballast

- Material: Rounded washed pebbles (20-40mm)
 - Depth: 50mm
 - Width: N/A



Paving Slabs

- Material: Unpigmented, hydraulically pressed concrete
 - Colour: Natural / Buff
 - Dimensions: 600x600x50mm
 - Density: 2300 kg/m²
 - Support Framework: Non-adjustable pedestals

Blue Roof Restrictor Outlet / Chamber

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk
- Material: Aluminium
 - Description/Profile: Box chamber with restrictor slots to base and overflow slots to top
 - Height: Overflow slots to suit height of blue roof system
 - Restrictor slots: 20nr per unit; 3 x 8.91mm each

Execution

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 prior to commencement of works
- Contamination: Do not use materials detrimental to healthy growth of plants
- Storage: Do not overload – point loads avoid
- Outlets: Do not block
- Outlet grilles: Installed

Adverse Weather

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

Flow Control Layer (Blue Roof) Installation

- Extent: Loose lay continuously over entire roof area
- Fitting: Close butt-joint rolls; staggering joints
- Upstands: Cut to fit tight-butt to all abutments, penetrations and outlets, using a heavy duty knife or smooth-toothed saw

Water Attenuation Layer (Blue Roof) Installation



- Extent: Loose lay continuously over entire roof area
- Fitting: Close butt-joint boards
- Upstands: Cut to fit tight-butted to all abutments, penetrations and outlets, using a smooth-toothed saw

Drainage Layer (Biodiverse Roof) Installation

- Extent: Loose lay continuously over entire roof area
- Fitting: Close butt-joint rolls; staggering joints
- Upstands: Cut to fit tight-butted to all abutments, penetrations and outlets, using a heavy duty knife or smooth-toothed saw

Filter Membrane Installation

- Extent: Loose lay continuously over entire roof area
- Fitting: Loose laid (bonded to drainage board)
- Joints: Minimize
- Overlaps (minimum): 150mm overlap excess on drainage roll

Growing Medium Installation

- Handling: Minimize handling. Deliver to roof in small sacks, bulk bag or pump, spreading the specified depth on to filter sheet, allowing the settlement factor of 20%
- Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen
- Layers:
 - Depth: 80-200mm (varying / contoured)
 - Sequence: Gently firm each layer before spreading the next.

Vegetation Installation

- Handling Plugs / Seeds:
 - Extent: Continuous and even across area to be planted
 - Timing: Not to be installed if temperature is below 0°C
 - Storage: Must be stored in a cool and shaded area; not to be stacked excessively
- Application
 - Wildflower plugs / seeds to be installed within 48 hours of delivery. Irrigate to saturation
 - Watering: Thoroughly, after laying and account for climatic variation and seasonality



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: Loose laid onto fleece, ballasted by weight on foot plate, or secured to waterproof membrane using proprietary fixing system
- Suitable for pitched roofs of 5 degrees or less

COMPLETION

Inspection

- Timing: Prior to handover
 - Notice period (minimum): 3 working days

Completion

- General: Leave the works in a clean and tidy condition
- Surfaces: Clean immediately prior to handover
- Outlets: Clean and clear of any obstructions
- Completed green roofs: Protect from adjacent or high level working as best as possible

Documentation

- Timing: Submit at handover
- Contents:
 - Growing Medium declaration of analysis
 - Manufacturer's guarantees and warranties
 - Maintenance Procedures
 - Record Drawings showing the location of planting and associated features
- Number of copies: 1



Green Roofs Maintenance Procedure Based on 2-4 visits per Annum

This set of procedures is a guide outlining the minimum maintenance measures required to keep a green roof in its designed state.

An Eco Green Roofs Ltd system is designed to meet specific client requirements for any project and will provide a long-term solution with varying habitats at roof level. With some basic maintenance, the roof will continue to deliver the intended environmental benefits.

Most living roofs contain a plant community with a variety of native species to meet local planning and building code requirements. However, some roofs can also be designed to meet aesthetic design criteria.

General Maintenance

The plant selection on each project includes a species mix which will provide a balanced plant community on the roof. This will require basic maintenance to ensure a sustainable system for the long term.

Living roof maintenance is best carried out twice to four times annually, during springtime and in late autumn, or as required. Monitoring/controlling the effect of leaf litter to the vegetation is important; this can be deemed to be beneficial to biodiversity, but may need to be removed if this begins to affect plant life.

The following procedures should be carried out to ensure the roof is well maintained. Failure to provide maintenance may result in the invalidation of guarantee(s).

Note: - specifically-designed living roof areas should be disturbed as little as possible whilst maintenance is carried out. This is to try not to upset any microhabitats which may have colonised on the roof.

Preliminary Maintenance:

- Ensure safe access can be gained to the roof and that all relevant health and safety procedures are followed at all times.
- Eco Green Roofs Ltd recommends the removal of leaf litter which has fallen from any surrounding trees, particularly during spring and autumn. This is to prevent the leaves from smothering the vegetation.
- To remove excess bio-mass, strim any dead vegetation. This should be subsequently removed and disposed of at ground level.
- Check all trims are fixed securely.
- Ensure any new items of plant or machinery have a necessary fire break between them and the vegetation.
- Should there be any damage to the vegetation or green roof system generally, Eco Green Roofs Ltd should be contacted immediately.



- Ensure all outlets are unblocked and the roof is able to drain freely. This is of particular importance since 'waterlogging' can be as damaging to a wildflower sward as drought. Drainage outlets should be inspected regularly to ensure drainage outlets are working as designed. This will help keep the roof moist but not waterlogged.

Maintenance on the Vegetation and Green Roof System

- Removal of any unwanted vegetation that may have encroached the drainage outlets, walkways or Firebreaks.
- If any movement or settlements to the fire/vegetation break has occurred, these areas should be topped up with more pebbles.
- Remove any tree saplings.
- Green roofs are generally left to grow naturally, taking their own course. If there are certain plant types that are un-desirable, these can also be removed.
- Fertiliser can be added as a last resort if plants are looking distressed.
- We would suggest the removal of invasive plant types, including but not limited to tree saplings, nettles, wild grasses, thistles and buddleia.
- If the vegetation grows in excess of 250-300mm we recommend this should be trimmed back to 75-100mm. High growth suggests a high nutrient level present in the substrate; although this is blended to be low-nutrient or to stop such growth, this must be monitored to keep the biodiversity high (cuttings should be bagged up and removed from the roof to prevent the release of nutrients back into the substrates).
- Although irrigation is not needed regularly, a water point should be present at roof level. During particularly dry periods, watering the system may be necessary to avoid drought stress.

* These guidelines should be used for reference only. Eco Green Roofs Ltd will not accept any responsibility for a roof which is not under a maintenance contract with Eco Green Roofs Ltd.