

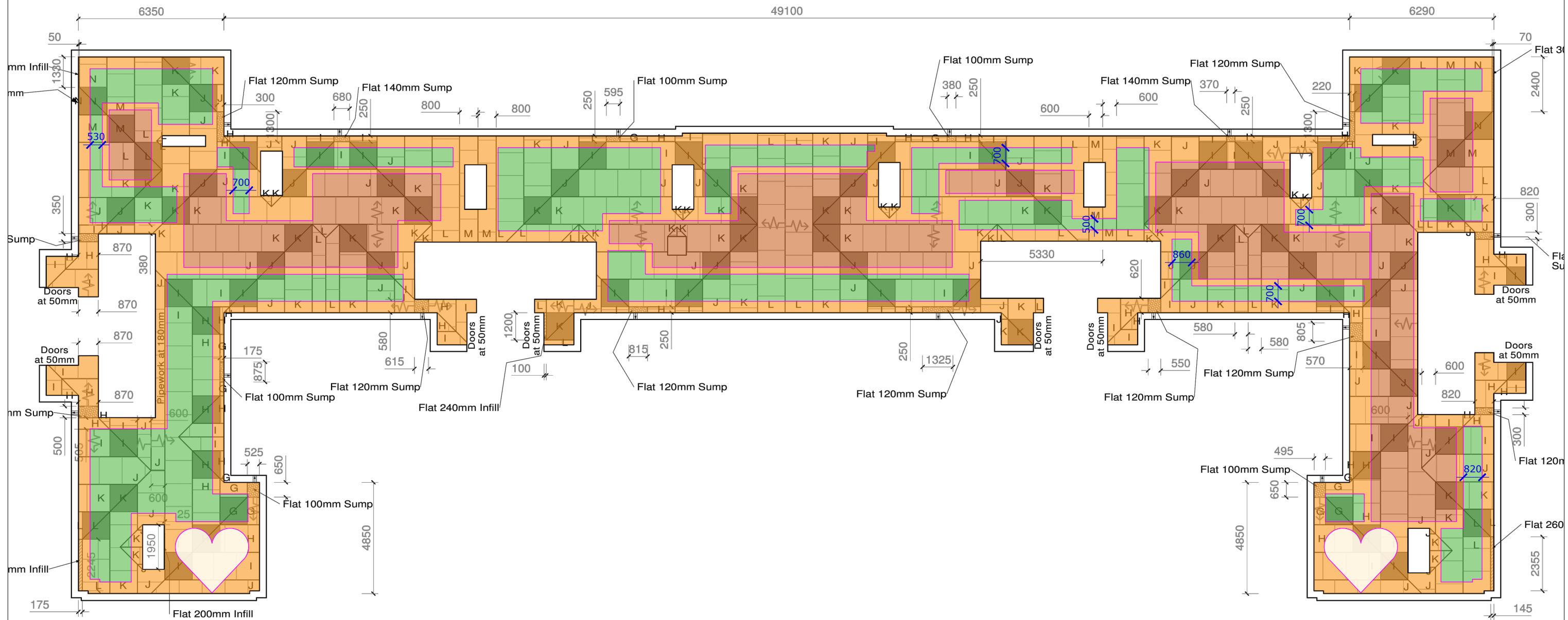







Q37 – Bramley House

Sedum Blanket & BioDiverse Green Roof System - Warm Roof Application

REV:01 DATE: 12/1/22

REV:02 DATE: 2/3/23 – New Layout



 Vegetation 1	 Cobbles 1
 Vegetation 2	 Cobbles 2
 Trim	

ECO GREEN ROOFS		3 Rays Farm Barns Roman Road - Ingatestone Essex CM4 9EH	
Project Name: Bramley House		EGR Revision Date: 09.02.23	EGR Revision: 06
Drawing Number: EGR-L42538		Drawing Revision: -	
Comments: -N/A			



Environmental Management Systems

EGR can demonstrate that their products are compliant and certified with the Environmental Certification Schemes.

BS EN ISO 14001 Environmental Management System (independently certified) for key processes and supply chain/extraction processes.

Products

Drainage Layer

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 01277 355705 Web: www.egr.co.uk
 - Material: HIPS
 - Depth: 20mm
 - Water Storage: 4L/m²
 - Dry Weight: 1.7kg/m²
 - Compressive Strength: 220 kN/m²
- Infill: Not required

Filter Membrane

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 01277 355705 Web: www.egr.co.uk
- Material: Thermally strengthened non-woven polypropylene
 - Mass: 0.120 kg/m²
 - Thickness: 2mm

Extensive Growing Medium

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH Tel: 01277 355705 Web: www.egr.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: 60mm deep substrate for Sedum - 80mm deep total root zone - 90mm deep for BioDiverse shaded Areas
- Declaration of analysis: Submit.
 - Porosity: 63%
 - Water Holding Capacity: 25-30%
 - Bulk Density DIN EN 1097-3: 850 T/m³
 - Density at Max Water Holding Capacity: 1.25 T/m³
 - PH Value: 7.0 – 8.0

Vegetation – Sedum Mat

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH
Tel: 01277 355705 Web: www.egr.co.uk
- Planting Mix: Various sedum species on a pre-established blanket; see Eco Green Roofs Ltd 'Sedum Blanket Species' planting list for details
- Vegetation Coverage: 90% minimum

Vegetation – BioDiversity Wildflower Grasses Seed Mix

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH
Tel: 01277 355705 Web: www.egr.co.uk
- Planting Mix: Various species sown into the substrate
- Vegetation Coverage: 3 g/m²

Edge Retaining/Separating Profile

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH
Tel: 01277 355705 Web: www.egr.co.uk
- Material: Aluminium
 - Description/Profile: Slotted; 2.4m length
 - Height: 80mm (subject to system build-up/depth)
 - Connectors (riveted)

Inspection/Access Chambers – N/A. hopper outlets

- Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatestone, Essex CM4 9EH
Tel: 01277 355705 Web: www.egr.co.uk
- Material: Aluminium
 - Dimensions: 300x300mm
 - Height: 100mm
 - Colour: Black
- Access Covers: Aluminium
- Features: 300x 300mm flange attached for stability and to lap filter sheet. 300mm cobble surround.

Vegetation Barrier

- Material: Rounded washed pebbles (20-40mm)
 - Depth: 50mm deep
 - Width: 500mm deep or where shown on drawings

Please note the systems above are designed for the minimum wind uplift requirement for inverted roof system of 80kg/m². Specific site and roof specific calculations may alter the above system depths.

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

Drainage Layer Installation

- Extent: Loose lay continuously over areas that will be vegetated
- Fitting: Close butt-joint boards or rolls; staggering joints if applicable
- Upstands: Cut to fit from penetrations and outlets, using a retractable knife

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 for a settlement factor of 20%
- Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen
- Layers:
 - Depth (Max): 60mm deep (sedum), 100mm (biodiverse)
 - Sequence: Gently firm each layer before spreading the next. Rake smooth and flat. Aerate before laying.

Vegetation Installation

- Handling Blankets
 - Extent: Continuous over 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 vertically or excessively
- Application

- Sedum blankets to be installed within 48 hours of delivery. Roll out already grown blankets. Irrigate to saturation.
- Watering: Thoroughly, after laying and account for climatic variation and seasonality
- Seed: Hand Cast 3g/m²

Irrigation

- Irrigation is highly recommended for 8-10 weeks of initial establishment and dry spells. EGR offer temporary and permanent irrigation systems. If temporary irrigation is taken out with EGR then ongoing irrigation after initial establishment will be the responsibility of others.

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 with cobbles ballasting the horizontal leg
- Suitable for pitched roofs of 5 degrees or less

Inspection Chamber Installation – N/A hopper outlets

- Location: Install centrally over rainwater 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 of 20-40 rounded pebbles

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: 2

Green Roofs Maintenance Procedure Based on 2 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.