

All levels and dimensions to be checked on site prior to construction/fabrication; report discrepancies immediately. Do not scale dimensions from this drawing. This drawing is copyright protected.

To be read in conjunction with relevant specifications. Where hazards and risks are noted on this drawing, refer to relevant Risk Information Schedule

Read in conjunction with General Notes and Legends drawing

Rev	Description	Date	Dr by	App by
A	Tender Issue	31.03.23	DD	DA
B	Issued for Construction	15.06.23	DD	DA
C	Notes added	21.07.23	DD	DA
D	PV area coverage update	18.08.23		DA

BIO DIVERSE ROOF

Vegetation area: 1527m²

Gravel strip 300mm wide: 72m²

Roof covering to Lift Overruns 64m²

Roofing membrane on Insulated metal deck: Roof area = 1599 m²

PV PANELS

PV-area 200m²

Refer to Specialist Specification

Total roof area - 1727m²

EGR Species Mix

[subject to specialist contractor design]

Wildflower species Flower

Birdsfoot Trefoil - Lotus corniculatus

Black Medick - Medicago lupulina

Common Knapweed - Centaurea nigra

Corn Chamomile - Anthemis arvensis

Corn Cockle - Agrostemma githago

Corn Marigold - Chrysanthemum segetum

Cornflower - Centaurea cyanus

Cowslip - Primula veris

Field Forget-Me-Not - Myosotis arvensis

Field Poppy - Papaver rhoeas

Foxglove- Digitalis purpurea

Goatsbeard – Tragopogon

Greater Knapweed- Centaurea scabiosa

Hoary Plantain- Plantago media

Lady's Bedstraw- Galium verum

Meadow Buttercup- Ranunculus acris

Musk Mallow - Malva moschata

Night-flowering Catchfly Silene noctiflora

Ox-eye Daisy- Leucanthemum vulgare

Red Campion- Silene dioica

Ribwort Plantain- Plantago lanceolata

Salad Burnet- Sanguisorba minor ssp minor

Self Heal Prunella- vulgaris

Sorrel- Rumex acetosa

White Campion- Silene alba

Wild Carrot- Daucus carota

Wild Clary- Agrimonia

Yarrow- Achillea millefolium

Companion grasses:

Common Bentgrass- Agrostis castellana

Crested Dogstail- Cynosurus cristatus

Sheep's Fescue- Festuca ovina

Smooth Stalked Meadow Grass- Poa pratensis

Strong Creeping Red Fescue- Festuca rubra rubra

Sedum species:

Sedum Acre Aureum

Sedum Album Athoum

Sedum Reflexum

Sedum Voodoo

Sedum Album Coral Carpet

Roof Plan

Scale - 1 : 100

NBS Specification : Q37

BIODIVERSE ROOF

EQUAL & APPROVED

Products

Drainage Layer

Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatstone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk

Material: Thermofomed 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, Ingatstone, 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, Ingatstone, 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: 80-150mm

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 - 8.0Vegetation

Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatstone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk

Planting Mix: Various wildflower species in plug plant trays and seed form

Root Ball Size (plugs): 50mm

Coverage Rate (seeds): Varies; up to 5g/m2

Coverage Rate (Plugs): 10 per m2

Vegetation Coverage: 5% minimum

Habitat Creation / Biodiversity Enhancements

Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatstone, Essex CM49EH

Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk

Log / Sand Piles

Edge Retaining/Separating Profile

Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatstone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk

Material: Aluminium

Description/Profile: Slotted; 3m length

Height: 100mm (subject to system build-up/depth)

Features: 300x300mm flange attached for stability and to lap filter sheet

Manufacturer: Eco Green Roofs Ltd Unit 3 Rays Farm Barns, Ingatstone, Essex CM4 9EH Tel: 0800 6347035 Web: www.ecogreenroofs.co.uk

Material: Plastic coated steel

Dimensions: 250x250mm

Height: 80mm

Colour: Black

Access Covers: Black, plastic coated steel with handle

Features: 300x300mm flange attached for stability and to lap filter sheet

Vegetation Barrier

Material: Rounded washed pebbles (20-40mm)

Depth: 70mm (subject to system build-up/depth)

Width: 300mm minimum

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 entire roof area

pH Value: 7.0 - 8.0Vegetation

Fitting: Close butt-joint boards or rolls; staggering joints if applicable

Upstands: Cut to fit 300mm from 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: 80-150mm

Sequence: Gently firm each layer before spreading the next.Vegetation Installation

Handling Seeds

Extent: Continuous and even across area to be planted

Timing: Not to be installed if temperature is below 10C

Storage: Must be stored in a cool and shaded area; not to be stacked excessively

Application

Wildflower 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

Inspection Chamber Installation

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

Manufacturers 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, trim 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.

CONSTRUCTION

SCALE	DATE	DRAWN	CHECKED
As indicated @A1	12.10.22	DD	DA

CLIENT

SHURGARD UK

PROJECT

Tottenham

DRAWING

Roof Plan

Threesixty

Architecture

The Garment Factory

10 Montrose Street

GLASGOW

G1 1RE

t 0141 229 7575

www.360architecture.com

DRAWING NO.

22007GA-20-010

REVISION

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