



GREEN ROOFERS

Green Roofers Ltd | 64 Victoria Road | Horley | Surrey | RH6 7PZ.



Q37 | GRBioD | Biodiverse System

Green Roofers Ltd'
GRBioD Green Roof System

NBS SPECIFICATION

Bio Diverse System

OVERVIEW

Prepared By: **Connor Deal**

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GUARANTEE PERIOD:

10 years with approved **Maintenance Contract**

GREEN ROOF SYSTEM COMPONENTS:

ROOF SUBSTRATE	<i>Unknown</i>
SLOPE	<i>Flat</i>
PROTECTION LAYER	<i>GRP300u under layer, 300g/m² supplied by Green Roofers Ltd (if required by waterproofing contractor).</i>
DRAINAGE / RETENTION LAYER	<i>GRD20 nominal 20mm rigid compression cell multi-flow drainage/water retention layer with mechanically fixed 105g/m² filtration layer supplied by Green Roofers Ltd.</i>
GROWING MEDIUM	<i>Growing Medium: GRBioD Green Roofers Ltd engineered lightweight biodiverse green roof substrate. The material will contain a mixture of pumice, expanded clay and crushed brick amongst other ingredients such as fillers of coarse sand. It contains organic peat free compost and has a bulk dry weight of 880kg/m³. Installed between 100mm - 150mm averaging 115mm in accordance with the GRO Code of Best Practice.</i>
VEGETATION LAYER	<i>- Wildflower Seeds. Species List available upon request. - Habitats (wood piles, sand & boulder piles)</i>
VEGETATION BREAK	<i>300mm wide, Coastal 20, 20/40mm washed rounded pebble margin, free from sharp edges and contaminants</i>
PERIMETER TRIM	<i>80mm & 120mm high aluminum slotted trim, mechanically fixed to under layer to serves as a separation barrier to perimeters. will be free-standing trim (weighed down by drainage board and growing medium). On pitched roofs, 15 degrees above, the aluminum trim will need to be mechanically fixed to the waterproofing.</i>

210 ROOF PERFORMANCE

- ❖ *General: Firmly adhered, free draining and completely weather tight*
- ❖ *Will have limited access for annual maintenance, be low maintenance and/or self-sustaining*
- ❖ *All vegetation be suitable for the location and climate*
- ❖ *May form part of the SUDs strategy within the scheme*

355 MOISTURE RETENTION & DRAINAGE LAYER

- ❖ *Green Roofers GR300u underlayer with 300g/m²*
- ❖ *GRD20 rigid compression cell multi-flow drainage layer, with mechanically bonded 105g/m² filtration fleece*
- ❖ *Manufactured containing recycled plastics*
- ❖ *20mm nominal thickness*
- ❖ *Water Storage capacity – approx 4.6 l/m²*

390 EXTENSIVE GROWING MEDIUM

- ❖ *Green Roofers Ltd , engineered bio diverse green roof substrate.*
- ❖ *100 - 150mm thickness*
- ❖ *Detailed nominal thickness as average thickness to allow biodiversity and for the seed mix to thrive*
- ❖ *Declaration that it contains no hazardous materials and comes from a peat free source*

400 VEGETATION

- ❖ *Green Roofers' Wildflower Seed Mix*
- ❖ *Supplied as a system by Green Roofers Ltd. Manufactured and grown from various sources*
- ❖ *- Habitats (wood piles, sand & boulder piles)*

420 STONE BALLAST / WHERE REQUIRED AS A VEGETATION BARRIER.

- ❖ *Green Roofers Ltd Coastal 20/40 Washed, rounded aggregate graded 20/40mm free from fines and sharp angles*
- ❖ *Ensure that aluminium gravel guards are fitted to all outlets*
- ❖ *Spread evenly to a minimum depth of 50mm*

It is assumed that the building owner or their advisors have satisfied themselves that the roof structure and deck are suitable to receive the dead load of the above-described system and any associated loadings.



710 INSTALLATION GENERALLY

- ❖ *Once waterproofing is complete, clear all surfaces of debris*
- ❖ *Visually inspect waterproofing and report any apparent defects or damage*
- ❖ *Do not use material which is detrimental to healthy plant growth*
- ❖ *Protect drainage outlets*
- ❖ *Do not store materials which may be too heavy for the anticipated roof loadings*

720 ADVERSE WEATHER

- ❖ *Secure all unfinished work and protect from wind uplift*
- ❖ *Do not install frozen materials*
- ❖ *Take care during a period of dry weather to ensure that any planting structure is kept sufficiently moist to all it to be worked with*

770 INSTALLATION ATTENUATION AND DRAINAGE LAYER

- ❖ *Loose lay drainage board in a stagger bond fashion over the entire roof*
- ❖ *Keep cuts to a minimum*

790 INSTALLATION OF THE SUBSTRATE

- ❖ *Undulated Substrate from 100mm - 150mm (Not Exceeding 150mm)*
- ❖ *Thoroughly water substrate and drainage board after completing this stage to ensure retained moisture within this system*

800 VEGETATION INSTALLATION

- ❖ *Wildflower Seeds to be planted sporadically in deeper substrate areas.*
- ❖ *INstall Habitats (wood piles, sand & boulder piles) AS agreed.*

910 INSPECTION

- ❖ Give a minimum of 3 days notice prior to handover

920 COMPLETION

- ❖ Leave area clean and tidy and free of obstacles and debris

930 DOCUMENTATION

- ❖ Growing medium declaration of analysis
- ❖ Maintenance procedures

NOTES:

- It is essential that the supporting build-up of the drainage layer, filter sheet, substrate and any hard landscaping is completed before seeding the roof.
- Thoroughly water the substrate prior to laying the wildflower seeds
- After handover gently water the wildflower seeds for a period of 12 weeks, or more as necessary, to ensure that the planting structure is allowed to adhere fully to the drainage board. Water and labour to be supplied by others unless agreed with Green Roofers as part of the agreed contract.
- Fertilise slow release nutrient fertilizer at a rate of 25 grams per square metre

GENERAL:

- Provision must be made to carry out a leak test before the landscape is installed. The method and responsibility for carrying out the test must be decided on and written into the tender documents.
- It is assumed that the building owner or his advisors have 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.
- Provision should be made to estimate the number of site visits required of the green roof contractor to enable them to complete the contract. The number of visits estimated should be entered into the tender documents in order to facilitate accurate pricing.
- it is advisable to allow for a water point to be installed for use in drought periods.
- The waterproofing should be taken up all upstands, protrusions etc. a minimum of 150mm above substrate level.



AFTERCARE / BIODIVERSE ROOF (Wildflower Seeds)

**A maintenance contract should be included with the Green Roof to ensure that the roof flourishes and performs as expected at the outset of the project. Alternatively, all tendering contractors should allow for a 2-year period of on-going maintenance to allow the roof to fully establish itself.*

GENERAL AFTERCARE (INCLUDES BUT NOT LIMITED TOO)

- *Autumn Cut - A cut between the end of August and late November removes the surplus growth and helps keep unwanted vegetation at bay to allow the wildflowers to persist. ALL cuttings must be removed from the roof.*
- *Removal of all weeds, thistles, tree saplings and general unwanted vegetation.*
- *General inspection of wildflower health, repairing any damaged areas and also bolstering slow progressing areas with wildflower cuttings & seeds (4g/m2).*
- *Inspection of the roof drainage (outlets, gutters, cobble borders, inspection chambers) to ensure these are functioning correctly / removing any debris to avoid potential drainage issues.*
- *Applying Green Roofers' fertilizer 25g/m2 - Recommended once per year - Best time for application Late April - Early September.*
- *Ensuring a general tidy up, ensuring cobble borders are neatly aligned .*
- *Inspection of Green Roofers' aluminum trim to ensure all securely fixed in place.*
- *We will ensure the roof receives a thorough soak by our maintenance operative whilst carrying out the above activities, roof level tap (2-bar) will need to be available above works. (Water outlet must be available within close proximity to roof level).*

T&C's

- Additional maintenance may be required depending on the type of Green Roof system installed.
 - Please be aware that we will not accept the responsibility of any green roof that is not maintained by Green Roofers Ltd.
 - Green Roofers Ltd are not responsible for the watering of the green roof or any damage caused by third parties.
 - Safe access must be provided by others.

IRRIGATION

- *Following on from the install we would recommend to soak the roof once every 2-3 days for 10/12 weeks. This will help the vegetation to fully establish. Whether you need to do this manually or establishment is done via the climate will depend on what time of year the green roof was installed.*
- *Watering on a living roof is project specific and the required level of watering will vary on the water demands of the vegetation, water storage on the roof and local micro climate.*
- *ALL Vegetation MUST be irrigated during prolonged dry periods. It's recommended that a form of automated irrigation is installed, this ideally is done during install but can basic irrigation can be installed following install. Manual watering must be carried out if an irrigation system is not present.*
- *Permitting roof drainage is sufficient a soak 2/4 times per week during drought periods will be needed to ensure the vegetation does not dry out.*
- *General Watering will ordinarily be needed during the Spring & Summer seasons, but it's always good to keep an eye on the living roof all year round, in case of any unexpected droughts.*
- *Ensure all watering is done morning or evening. When the weather is hot, we recommend you do not water your roof during peak hours.*

AFTERCARE DON'TS!

Sedum and wildflowers are species that do amazingly well adapting to various different climates, but there are a few things you should never do to your green roof.

- Leaving the vegetation for extended dry periods without water, this kind of neglect will be detrimental to the health and longevity.
- Constant traffic on the vegetation - By all means it's okay to walk on for activities such as maintenance or inspections but any constant traffic for prolonged periods will damage the vegetation. If this is a must, putting down a ply board or similar to walk on will limit damages but may not prevent them completely, same applies for heavy objects.
- Please also avoid any food being left on the roof and do not use any pesticides or chemicals.
- Unwanted vegetation removal should be done by hand or hand tools only.