



# Sustainable Roofing Systems

Green & Blue roof solutions for all sectors



## **Eco Green Roofs Ltd (EGR) and SIG Design & Technology**

SIG Design & Technology has partnered with EGR to provide reliable and sustainable roof system solutions that can transform both new and refurbishment projects.

Typical sector application includes:

- **Housing**
- **Schools and universities**
- **Offices**
- **Healthcare**
- **Military installation**
- **Leisure facilities**
- **Hotels**
- **Flat and condominium roof terraces**

## **Green and Biodiverse Roof Systems**

### **Science and the environment**

A green roof is a living system that cannot be treated as a typical building or roofing product; getting it right is a science.

### **Green Roof Benefits**

#### **Water quality**

Water is cleaned when passing through a green roof system and has the potential to remove pollutants and particles.

#### **Stormwater run-off**

Green Roofs have an important part to play in the urban environment as they can store water during heavy precipitation, relieving some of the strain put on city drainage systems.

We take pride in responsible build design, supplying, installation and the maintenance of sustainable roof solutions.



## Habitat for rare wildlife

Green roofs provide a stepping stone for many rare birds endangered by the lack of suitable habitats. They also provide a home for many rare insects, beetles, spiders and plant species.

## Energy Efficiency

Research has suggested that both air conditioning in summer months and heating in the winter could be reduced when utilising a green roof solution, combined with a reduction of the urban heat island effect; greened cities could see lowered electrical demand.

## Thermal Properties

Investigations into thermal properties of green roofs have revealed that plants themselves significantly reduce air temperature both inside the building and in the immediate environment.

## Roof Life Span

Studies have proven that a green roof can increase a roof's lifespan by up to 3 years as it protects the waterproofing element underneath the system from extreme weather conditions, such as frost, ice and UV rays.

## Planning Permission

Green roof factored into a building's design can help achieve planning permission, through Government and Local Council initiatives such as the London Plan. If a green roof is to be utilised on an existing building then planning permission for this solution is often rarely needed.

## Air Quality

Vegetation on green roofs reduce polluting air particles, this is achieved as plants absorb carbon dioxide and produce oxygen. It has been suggested it can assist in the removal of heavy metal and volatile organic compounds. The deposition of the substrate in which the vegetation is grown can also support this absorption.

## Sound Insulation

Research shows that a 20 - 100mm dry growing medium could achieve an extra SPL (Sound Pressure Level) attenuation of 10 - 40dB, depending on frequency.



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## Sedum Roofs

EGR's sedum systems have been designed with a minimum of eight sedum species per metre and grown for over twelve months to ensure the plant roots are well established and robust enough for roof level. Providing sedum systems in blanket, plug plant, cuttings and seeded options.



## Wildflower Roofs

Wildflower systems provide more diverse plant communities than sedum green roofs. They are particularly favoured when ecological, aesthetic and environmental function needs to be considered. Wildflower blankets are pre-established for a minimum of twelve months and include up to fifty UK native wildflower, herb and grass species. EGR's wildflower mats and plug planted systems are easily installed for immediate visual impact.

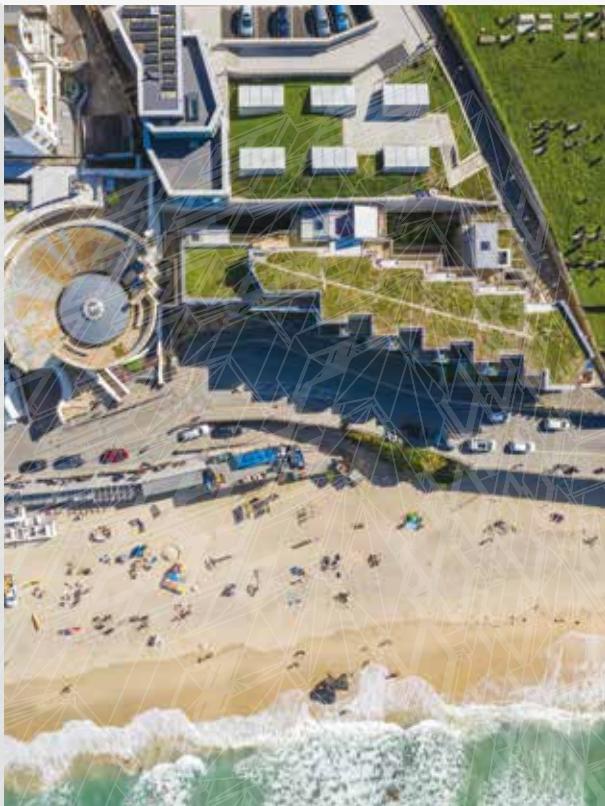


## Bio Diverse / Brown Roofs

Bio-diverse/brown roof systems are specifically designed for biodiversity by offering a broad range of annual and perennial wildflower and grass species, and providing a mosaic of habitat opportunities for important invertebrate and bird species. In particular these roofs are created for species important to the site or regional bio-diversity plan. They incorporate several different substrate types, placed at a different depth to produce undulations (or a contoured effect). Log, stone and sand piles are added for further interest and to give areas of shading on a micro level.

Specialist installation teams:

- In house installation teams
- CSCS and SSSTS certified
- Professional reporting system
- First aid trained
- LANTRA trained





## Blue Roof Systems

### What is a blue roof?

A blue roof is designed to attenuate water, typically rainfall, and release this water over a longer period. This eases the pressure on drainage systems particularly in times of severe rainfall. Today they form part of SuDs best practice.

Suitable for a wide range of build types from domestic to commercial, blue roofs place stormwater attenuation within the building footprint, making them ideal for urban environments where ground space is limited. Blue roofs can be situated above the waterproofing membrane in a warm roof system or above the water flow-reducing layer in an inverted application.

Introducing rainwater attenuation onto a roof and/or podium of a building can provide challenges with the potential for increased risk. Specifiers should seek a one-stop-shop approach to their design, manufacture and installation where possible.

SIG Design & Technology, in partnership with Eco Green Roofs, offer optimal roofscape water management solutions. Providing a comprehensive design and delivery service, including post-installation integrity tests for both the waterproofing and blue roof, as well as a guarantee for the complete system.



## Green Roof at Campwood Farm, Scotland

Working in partnership Eco Green Roof, SIG Design & Technology have created this environmentally sympathetic and sustainable green roof option for a domestic self-build project located within open Scottish farmland. The client wanted a roof which would have minimal aesthetic impact on its surroundings and would also improve the insulation of the building to reduce the cost of heating.

Eco Green Roofs specified a locally supplied green sedum roof system that provides habitats for wildlife and boosts local flora and fauna levels. The sedum blanket also improves insulation by trapping the heat that usually escapes through the roof.

The green roof addition, due to the nature of the new build, positively supported the building application in the picturesque area of Camp Wood Farm.

Build up:

- **20mm drainage board**
- **EGR pitched roof trays**
- **65mm trim**
- **Substrate**
- **20-40mm Caledonian washed cobbles**
- **Sedum blanket system**



On top of SIG's roof build up and waterproofing solution.

This partnership offering is available to all sectors across the UK.





## Green Roof Systems

### Drainage Layers

Drainage layers have the vital job of filtering water in a manner that means plant growth isn't uncontrollable yet the vegetation has consistent access to water. A well designed and installed drainage layer will slowly drain the water away from the substrate, reducing the risk of too much weight and stagnant water.

### Filter Layers

Filter layers are very important in a Green Roof system. They hold the nutrients and fines within the system and stop them from being washed away by the rain. The filter layer is made from a strong yet flexible polymer that is robust enough to protect against the elements yet can be moulded to fit into any design of Green Roof.

### Growing Media

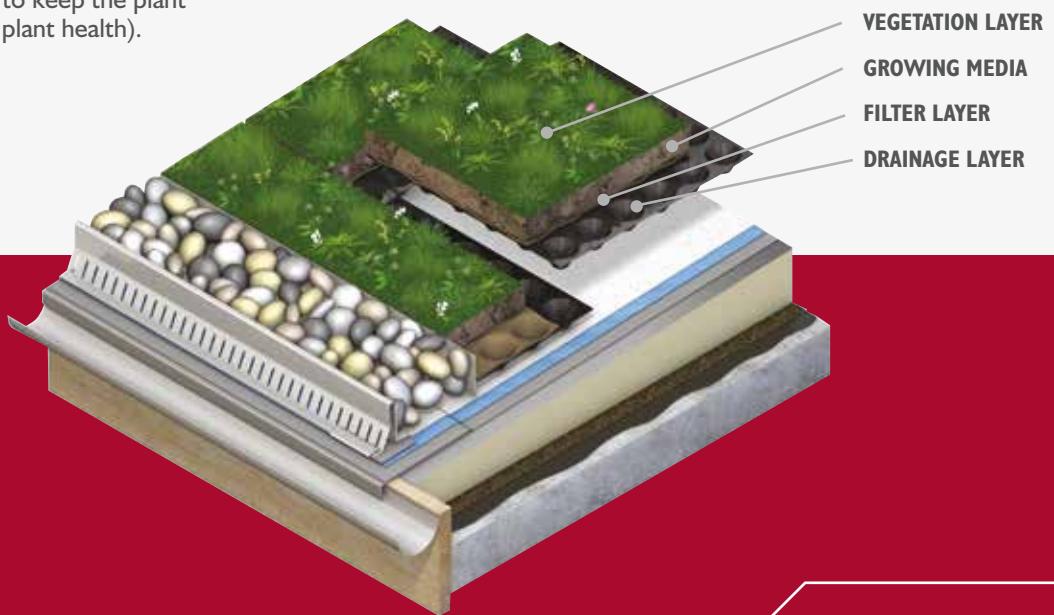
The growing media is an integral component of a Green Roof. Fundamentally it must contain low levels of nutrients to keep the plants easy-to-maintain, hold a certain level of water yet be free-draining to prevent root rotting, and have a granular texture to keep the plant roots well aerated (vital for plant health).

### Vegetation Layer

The vegetation layer of the green roof provides nature and life with a home best suited to its needs.

Green Roofs can have a variety of planting options; the system below is designed in accordance with this to ensure successful coverage is achieved. We supply many different vegetation layers ranging from fully established blankets (wildflowers or grasses) that roll out like turf, to plug plants, seeds, and cuttings.

The location and environment of the roof are paramount in considering the type of materials selected, taking sunlight, wind, regional considerations (such as coastal environments) and natural flora into account.



## About SIG Design Technology

SIG Design Technology is a part of SIG Roofing, a leading division of SIG plc, a FTSE listed company and the UK's market leading specialist supplier to professionals in the building and construction industry.

SIG Design Technology has put together an 8-step guide to identify the challenges and ensure that a roof's design meets a building's requirements.

Called **#PerfectRoof**, the eight steps follow the process from product selection and design expertise through to full guarantees and planned maintenance. Its know-how is just part of the service that is provided absolutely free to customers.



### Take the risk out of roof design...

#### ■ The right products for your project to meet requirements for:

- Carbon capture
- Insulation
- Roof longevity
- Energy generation
- Design covered by our PI insurance
- Genuine choice of waterproofing
- Part of a FTSE 250 company

