

Green roofs have become an established method of improving the environmental performance of flat and pitched roofs, providing a wide range of tangible benefits to built and natural environments.



Built-up Green Roof Systems

The term 'green roof' covers many terminologies: living roof, brown roof, biodiverse roof, Sedum roof, eco-roof, grass roof, turfed roof, vegetated roof etc. But, essentially, green roofs are roofs designed to support vegetative growth and can include hard landscaping solutions.

SIG Design & Technology, in conjunction with Blackdown green roofs, can provide guaranteed built-up systems that replicate the natural growing environment for plants, creating lush, vibrant, biodiverse environments that can transform both new and refurbishment projects.

Typical applications include:

- Schools
- Offices
- Healthcare
- Military installations
- Sports facilities
- Flats and condominium roof terraces
- Domestic properties

Benefits

- Substantially increases the life expectancy of the roof's waterproofing membrane (protecting it from UV degradation and climate extremes)
- Improves energy efficiency in a warm roof construction.
- Improves sound insulation by as much as 8dB compared with conventional roofs
- Reduces rainwater run-off - helping prevent localised flooding
- Reduces heat build-up in urban areas
- Provides an additional green space for wildlife
- Improves air quality by absorbing airborne pollutants
- Makes good use of space - optimising the 'structural footprint'
- Is aesthetically pleasing
- Only installed by DATA accredited contractors - trained to SIG Design & Technology's highest quality standards

Typical Greenroof by Blackdown built-up construction



Types of green roof

Green roofs are generally categorised as being either 'extensive', 'biodiverse' or 'intensive'. They vary in cost, usage, the level of maintenance required, but also components used in the construction of the green roof itself - and possibly the building's structure.



Extensive green roofs

Designed to reap the benefits that green roofs offer but at minimal cost and with very little maintenance. A shallow layer of growing medium is used to support low growing, stress-tolerant plants (e.g. mosses and sedums) that can generally look after themselves. Their lighter weight makes them suitable for use in both new and refurbishment roof construction.



Biodiverse roofs

Low maintenance roofs designed to create or replace natural 'habitats'. Biodiverse roofs can be specified to meet local Biodiversity Action Plans or to support specific flora and fauna, including Bats, Bees, Butterflies etc.



Intensive green roofs

Sometimes called 'roof gardens', these are at the other end of the scale and are often designed to provide recreational space for the building's occupants. They may contain a variety of plants, shrubs and trees, but will need as much care and maintenance as any garden. In addition, large plants need more growing medium which means the building's structure will have to be engineered to take the additional weight.



Planting layer options:



Pre-grown Blanket:

Through Blackdown's horticultural expertise green roof planting can be tailored to a specific project's requirements, be they enhanced BREEAM rating, local Biodiversity Action Plan (BAPs) or simply enhancing the local environment. Below are two examples of how planting can be achieved. For specific support contact SIG Design & Technology today.

NatureMat® sedum blanket, 25mm thick, consisting of 9 species with a minimum 90% mature cover on installation.

MeadowMat wildflower blanket, 25mm thick, consisting of various species with a minimum 90% mature cover on installation.



Plug Planted System:

Diverse species of hardy succulent plug plants and native wildflowers are installed at a density of 20 per m² to provide a maximum of 10% plant coverage at installation.

These are ideal for use on:

- green roofs with specific biodiverse objectives
- green roofs seeking a unique appearance, often serving a promotional purpose
- green roofs with pitches up to 20°
- green roofs on buildings where structural capacity is limited.



Seed System:

A mix of sedum cuttings, seeds, tacifier and fertiliser are applied, through hydroplanting, onto the prepared growing medium and drainage layer. The plant cover will germinate and grow (typically over 1 to 2 growing seasons) to deliver the long-term benefits of a green roof. Particularly suited to restricted budgets and large roof areas.

Consists of primed cutting and wildflower seed material distributed onto a substrate surface at a density of 100g to 150g per m². Finished with a mulch applied over surface to prevent wind scour and promote growth. 0% plant cover at installation.

Growing Medium: Vulkatec Extensive is a specialist mineral based plant growing medium consisting of natural pumice, lava, bark compost, green compost, peat and xylith. Factory blended and stabilised against de-mixing Vulkatec Extensive substrate provides a high total pore volume balanced with good nutritive substance buffering for exceptional plant germination and growth.

Retention and Drainage Board:

BHC25-920-comp factory laminated drainage and retention layer consisting of a UV resistant non-woven geotextile protection layer, 25mm deep cusped and perforated recycled HDPE core and UV stabilised non-woven polypropylene filter fleece top layer, each layer with a 100mm side lap.

Rhepanol hg: Rhepanol hg is a high quality single ply membrane with excellent green credentials, designed especially for green roofs.

With its hot air welded laps, Rhepanol hg is root and rhizome resistant to the full FLL certification and is the only single ply membrane to have a full life cycle assessment to 14040FF.

Design & Technology: SIG Design & Technology is a part of SIG Exteriors, a leading division of SIG plc, a FTSE 250 listed company and the UK's market leading specialist supplier to professionals in the building and construction industry. SIG Design & Technology is at the forefront of design, supply and guaranteeing exclusive 21st century roofing solutions. Every component is carefully tested and selected for its sustainability, functionality, longevity and/or aesthetic strengths to guarantee total roofing solutions from inspiration to installation.

Blackdown: Blackdown is a unique company consisting of horticultural, roofing and contracting experts working together to produce high quality green roofs. Growing plant material in Somerset and working with market leading green roof components such as Vulkatec substrate enable Blackdown to supply green roof systems for installation on primary waterproofing, supporting system supply with contractor training or through its own in house contracting arm.

DATAc accredited contractors: The DATAc scheme is a membership of expert and fully-trained contractors, with exclusive access to the specialist range of SIG Design & Technology high performance roofing products, systems and warranties that are not available to any other contractor. This ensures that SIG systems are installed to the highest standards. Only DATAc accredited contractors are allowed to install SIG built-up roofing systems.

For comprehensive design and specification support contract SIG Design & Technology or go to www.singleply.co.uk.



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SIG Built-up Green Roof Systems

Horticulturally engineered green roofing system by Blackdown

