



Making the roof work harder

Britain's population is predicted to grow by 10 million to 70 million by 2029. So, we cannot afford to 'waste' roof space. The fifth elevation can become an amenity to:

- Capture carbon
- Generate power
- Provide a green space and living zone
- Insulate the building
- Capture rainwater
- Provide a natural and bio-diverse, wildlife habitat

Left: Roof garden at The Cancer Centre, Churchill Hospital, Oxford.
Client: IMPREGILO consortium

SIG Modular Green Roof Systems

Pre-grown modules, easy to install and maintenance free



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About SIG 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.

Green roofs are becoming an increasingly popular method of finishing flat or low-pitched roofs. Apart from looking good, they provide tangible benefits for the owners of the building, for the environment and for wildlife.

Benefits of the green roof

- Substantially increases the life expectancy of the roof's waterproof membrane (protecting it from UV degradation and the extremes of climatic conditions).
- When used in a warm roof construction green roofs can act as a very effective method of insulation and have been shown to significantly reduce the need for air conditioning in summer.
- Improves sound insulation by as much as 8dB compared with a conventional roof system (especially in areas of high noise pollution such as airports and factories).
- Reduces rainwater run-off which helps to prevent localised flooding.
- Evaporation lowers the buildings temperature and provides a cooling effect that reduces heat build-up in urban areas.
- Helps manage the temperature of the living spaces beneath.
- Provides an additional green space for wildlife.
- Improves air quality by absorbing airborne pollutants through the plants removing them from the environment.
- Makes good use of space - optimising the 'structural footprint' of a building.
- Is aesthetically pleasing.

Cover: Cultural park restaurant, Gstadt, Germany. Client: Lego-Mailing

Below: Green roof to RIBA award-winning home, Manaton, Devon for private client



Types of green roof

Green roofs are generally defined as being either 'extensive', 'semi-extensive' or 'intensive', terms that indicate their cost, their use and the amount of maintenance the plants need. However, their use also affects the components used in the construction of both the roof itself and the structure of the building.



Delivered pre-grown Easy to handle modules Simple to install

SIG Modular Green Roof System

For extensive and semi-extensive green roofs, SIG Design & Technology offers the Modular Green Roof System.

This comprises of standard 1m x 0.5m module trays, which are pre-grown in a nursery, over a 9 month period, and supplied as fully established units. Planting is strong, established, healthy and well anchored into the growing medium. There is less risk of wind uplift or erosion in the crucial time period just after installation. In addition the plants are less likely to be 'shocked' once installed onto the roof and more likely to thrive.

Sedum or sedum/wildflower mixes are available as standard. Other bespoke vegetation is available.

The drainage layers are hard wearing and flexible. They can be cut and shaped around particular details.

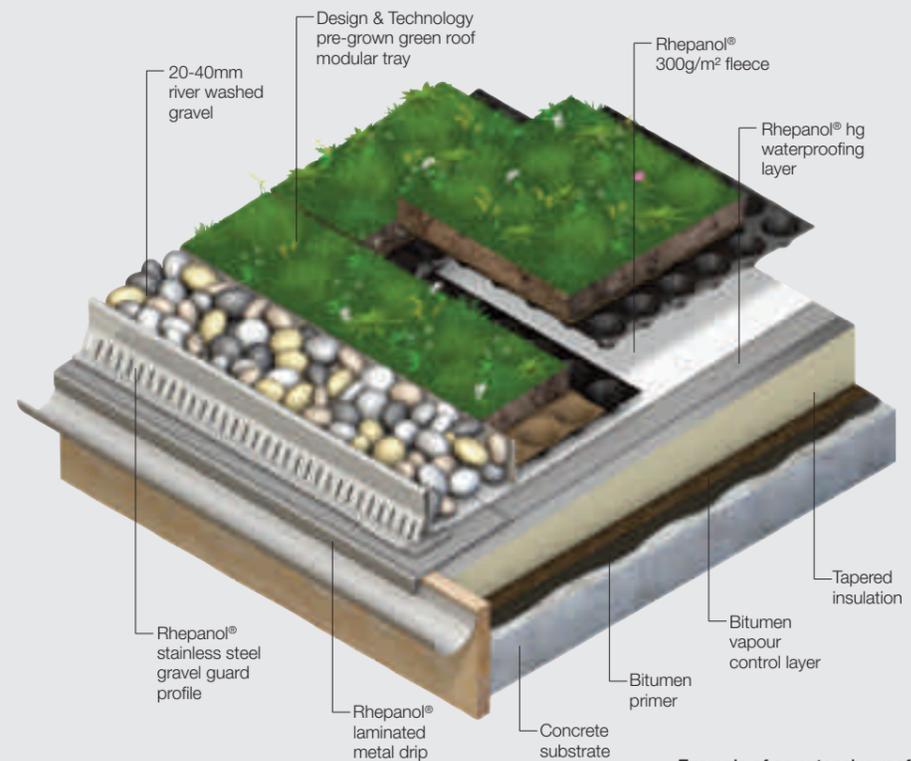
Each module weights approximately 25kg. SIG Design & Technology recommends two people to move and install.



Sedum roof to Hadley Learning Community, Telford. Client: Telford and Wrekin Borough Council



Skara Brae, Orkney Isles. Client: Historic Scotland



Example of an extensive roof

Components

Vegetation: Consists of sedum, or a mix of sedums, wild flowers and grasses. Varieties are dependent upon location and project purpose, but many different design options are available.

Media: The media mix used is a special substrate, but particular mixes can also be prepared depending on the planting and project requirement.

Bio-blanket: Made from recycled polyethylene and renewable hemp fibres, and performs the following roles: water retention, filter fabric, water distribution, root anchor layer for the planting.

Carrier: Made from recycled HDPE plastic, and performs the following roles: a water reservoir, drainage layer, protection from excessive drying of roots from the airspace below, the cups greatly improve product handling making it easier to install.