

Optigreen Ltd



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CPD Overview

Optigrun is one of the leading supply companies in the green roof industry, with 50 years of experience in the market. Offering a high-quality range of products and solutions and providing quality project-specific technical advice, they support clients during consultation, planning, execution and maintenance of green roofs.

Ecological Compensation

Our systems for optimum green roofs are an important contribution to climate compensation. As a recognised measure of the impact compensation regulation under nature protection law, green roofs offer new living spaces for people, plants and animals. The large storage capacity and evaporation of precipitation on the roof relieve pressure on the sewer system, especially in the event of heavy rainfall. At the same time, the green roof efficiently cools both the surrounding area and the building and also contributes to air humidification and fine dust filtration. As protection against extreme temperatures or hail, green roofs also extend the service life of waterproofing.

Multifunctional Roof Design

A green roof is an upgrade for any building. It looks good, offers multiple benefits with numerous functions and even saves money. In order to make the right decision, it is essential to identify the respective requirements and to use the best solution for each application. Our motivation is the idea of designing living spaces better, taking the next step for tomorrow today and further extending our technological lead. To do this, we develop innovative systems that impress with their functionality from both an ecological and an economic viewpoint.

A Green Roof System for Every Roof

The long-term and permanent functionality of green roofs depends upon multiple factors. Reliable and established products that comply with the guidelines of green roofing are important:

A sedum roof is a relatively low-cost option using a minimum 20mm depth drainage and reservoir board and 60mm depth extensive substrate if using a pre-cultivated vegetation mat or 80mm depth substrate if using plug planted vegetation. The vegetation will be alpines and sedums which are very robust and drought tolerant, but which will provide a low biodiversity level. It has a low maintenance requirement, typically twice yearly.

Often called a "biodiverse roof" this type of specification would be used where a greater level of biodiversity and habitat creation is required.

Vegetation will typically be native wildflowers, grasses and annuals. Sedums can also be included as part of the mix to provide winter leaf colour when other plant species are dormant.

It's also possible to create habitats for insects, birds and invertebrates by introducing additional features such as bird boxes, insect hotels and sand or cobble areas.

Through this type of planting and habitat creation it's possible to achieve a higher ecological value, particularly useful for the BREEAM rating of the building.

Although the needs of this type of roof are a little different the basic modular construction of the roof remains the same. i.e. protection fleece if required, drainage/reservoir board and substrate layers.

The vegetation can be quite varied from perennials through to shrubs and trees as well as recreational and ornamental lawns and will normally require an irrigation system.

It is possible to install green roofs on pitched, curved or waveform roofs as long as they are continuously waterproofed and have a flat and level roof surface. The pitch can be as much as 45 degrees.

The right solution will depend on the following-:

- Roof configuration (i.e. mono pitch, duo pitch, curved hips, valleys)
- Roof pitch
- Length of slope/s
- Perimeter detailing
- Proposed vegetation

Referred to as a "blue roof".

Works by replacing the normal drainage and reservoir board with a retention board, often referred to as a storage void.

This storage facility will work in conjunction with a restricted or adjustable outlet arrangement. The whole arrangement will be optimised for each individual project and will generally provide temporary and permanent water storage.

The temporary storage will typically drain away over 24 hours, the permanent water stored will be used by the vegetation

With this system the solar panel supports are secured by the superimposed load of the green roof build up. There are no fixings through the roof surface.

The solar supports are specially designed with a profiled base plate that works on the same principle as a typical drainage and reservoir board.

This solution allows vegetation to grow under the PV panels as well as around them so maximising the green roof area.

Suitable for sedum or wildflower vegetation the plants themselves will naturalise and shade loving species will thrive under the panels themselves.

The solution can be used where panel inclinations of between 10 and 20 degrees are required. Each project will require a layout to be prepared alongside a wind loading calculation to ensure that the dry weight of the green roof build up will be sufficient as ballast for the supports

An additional benefit of a solar green roof is that the local cooling effect of a green roof can increase the output of PV panels by up to 5% during hotter weather as it maintains a more ideal operating temperature for the panels

Available CPD Material (4)



Multiple formats

Green Roofs in Practice

This seminar is designed to provide a practical insight in to green and blue roof technology and offer the delegates essential design and specification considerations. It will help you to understand the following topics:

- The environmental benefits of a green roof
- Specification considerations
- How a green roof works and how to construct a green roof build
- The types of green roof in practice and how they can be used to achieve specific solutions
- Specialist green roofs
- Vegetation and planting methods
- Maintenance and green roof aftercare

This CPD can be delivered to you live and remotely.

Material type: Online Learning, Seminar

RIBA Core Curriculum: **Design, construction and technology**
Sustainable architecture

Knowledge level: General Awareness



Multiple formats

Achieving a Biosolar Specification

There are many advantages to the combination of green roofs and photovoltaics, often referred to as biosolar roofs. The evaporative cooling effect of the vegetation leads to an increase in the efficiency of the photovoltaic system.

At the same time, the green roof makes an important contribution to preserving the natural water balance and increasing biodiversity. The varying amounts of sunlight and water in front of, underneath and between the modules provide a varied habitat for different plant and animal species

This CPD session covers topics such as the principles of combining solar and green roofs, the benefits it can provide and the importance of the planning process.

By the end of this CPD delegates ought to know:

1. What is Biosolar.
2. How does Biosolar work.
3. Environmental and ecological benefits of combining solar with green roofs.
4. The importance of the planning process.
5. Fire safety and maintenance requirements.

Material type: Online Learning, Seminar

RIBA Core Curriculum: **Design, construction and technology**
Sustainable architecture

Knowledge level: General Awareness



Multiple formats

Understanding Blue Roofs - From design to application

Increases in our urban population, the density of urban development and the effects of climate change are all placing additional pressure on our public surface water drainage systems.

Designed and installed correctly a blue roof can provide a very successful surface water management solution for modern construction projects. This CPD session covers topics such as the principles of a blue roof, the benefits it can provide and the importance of the specification process.

Material type: Online Learning, Seminar

RIBA Core Curriculum: **Design, construction and technology**
Sustainable architecture

Knowledge level: General Awareness



Blue Roofs: What are they and how are they used

This article will explore blue roofs and their application. Changes in the way we receive rainfall in the UK because of climate change has led to rainwater management around buildings becoming a key consideration as part of the design process. Green roofs are already known for their ability to attenuate water, but this can now be enhanced with blue roof technology. Here the roof not only stores water but is also able to delay water discharge after a high intensity rainfall event and release it at a pre-determined rate. This CPD will look at how this can be achieved practically and why this type of specification is likely to become more commonplace in the future. By the end of the article you should have a greater understanding of:

- What a blue roof is
- Why and when they need to be specified
- How to provide accurate calculations for a successful blue roof specification
- The components that make up a blue roof system

Material type: Article

RIBA Core Curriculum: **Sustainable architecture**

Knowledge level: Microlearning

Classifications

Subject/Product Areas (CI/SfB)

Finishes

Roof finishes > Roofing membranes

Roof finishes > Roof garden systems

Special activities, requirements

Green applications, resources; sustainability > Flat roofing membranes

RIBA Core Curriculum areas

Design, construction and technology

Knowledge level: *General Awareness*

Sustainable architecture

Knowledge level: *General Awareness*