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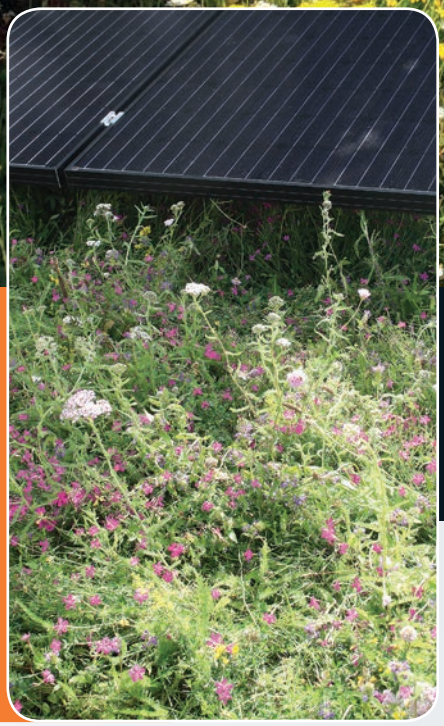

PHOTOVOLTAICS

BIOSOLAR GREEN ROOF PV SYSTEM

BAUDER BioSOLAR
Integrated Photovoltaic Green Roof

The construction and development of buildings in today's market is calling for rooftop solutions that include a duality of technologies for environmental advantage; a biodiverse green roof coupled with ecological and SUDS enhancement and a solar photovoltaic array. Bauder embraces this cohesive stance with our BioSOLAR solution designed to meet planning and BREEAM requirements.

Bauder BioSOLAR is an integrated mounting solution for photovoltaic renewable energy with a green roof where the substrate and vegetation provide the ballasted installation mechanism which removes the need for penetrating the waterproofing to secure the mounting units to the roof.

A key element of the BioSOLAR system is that the front edge of the PV panel is set at around 300mm above the level of the substrate which allows liberal growing room for the extensive vegetation without blocking light to the polycrystalline solar cells which would otherwise reduce the output and efficiency of the panels. This height setting also enables light and moisture to reach beneath the panel to support the plants below.

Improved Solar Panel Efficiency

A combined green roof with PV delivers advantages to the building as the cooling effect of the vegetation and water held within the green roof system preserves the ambient temperature around the photovoltaic array. Studies in Germany have shown that PVs work most efficiently with an ambient temperature of around 24°C and that when an array is combined with a green roof, the panels are expected to achieve around a 6% higher output.

Varied Habitats for Flora and Fauna

The mixture of sunny, shaded and sheltered areas together with a variable depth of FLL compliant extensive substrate gives a matrix of different habitats which allow a broader range of plant species to thrive, and small invertebrates to seek refuge from strong wind and rain. The broad mix of flowering vegetation provides a rich foraging environment for bees and insects.

Key Features

- Maximises solar output and allows entire roof to qualify as biodiverse green roof.
- No roof penetrations as the green roof substrate acts as ballast, ensuring that the waterproofing guarantee remains uncompromised.
- Quick and simple installation process.
- Cost competitive compared with a mechanically fixed alternative.
- Raised modules allow light and moisture under the panels so reduces the unproductive area.
- System can be retrofitted on many roofs without structural modification to the building.
- Single point responsibility for the waterproofing, green roof and PV installation.
- Increased module space between substrate and panels reduced risk of panel damage during green roof maintenance.

PHOTOVOLTAIC GREEN ROOF CONSTRUCTION

Mounted photovoltaic panels prior to the establishment of the seed mix vegetation.

Service

Bauder is renowned for its green roofs and our BioSOLAR system is an extension to this provision and as such you receive the service that accompanies all our project commitment, delivery and management.

We will work with you through the entire process from consultation and initial site survey, design the PV array and green roof construction with appropriate Bauder waterproofing, suitable substrate depths and vegetation, create a specification package for every element of the roof including detail design and wind uplift calculations, monitor the installation and handover to the client with full guarantee.

Quality of Installation

Our approved contractors, engineers and installers are the only people fully trained and certified to install our rooftop solutions as excellent workmanship is crucial to the guarantee that accompanies all works on the Bauder roof.

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