

Can you combine green and blue roofs with solar PV?

With modern planning conditions, most local authorities require new buildings to include both a green roof and a significant percentage of site sourced renewables; and if the construction is to be sited in a flood hazard area it must also incorporate a viable SuDS with defined allowable discharge rates. Architects are compelled to deliver a win-win scenario where the technologies are each given the full useable roof area. So, is this scenario too difficult to fulfil, or entirely possible? Tom Raftery, Bauder's Solar PV product manager, explains.

Bauder has a unique [solar photovoltaic \(PV\)](#) mounting system, [BioSOLAR](#), that is specifically designed to allow the combination of biodiverse green roofs and solar PV whilst having the ability to be installed atop our SuDS blue roof void construction.

The PV system utilises the green roof substrate as ballast removing the need for penetrating the waterproofing to secure the mounting units to the roof and ensuring that the entire roof area can be considered a biodiverse green roof. The void structure beneath allows free-flowing water movement to specifically engineered outlets that restrict the water discharge to meet planning requirements.

The PV system utilises the green roof substrate as ballast

The initial step into deciding what the significant design considerations are is to understand the weight loading of the attenuated rainwater to meet the project specific discharge rates of the SuDS report as well as including the BioSOLAR green roof loading. From there, more than any other type of flat roof, it is important to avoid, and wherever possible eliminate, penetrations through a blue roof.

The vegetation we recommend is our [BauderFlora 3 seed mix](#) which is a broad mix of low growing biodiverse, shade and drought tolerant species. A well vegetated ground cover is important to ensure that the green roof provides the habitat and nectar source it has been designed for, and also prevents erosion of the substrate which would have implications on the solar design and stability.

Using a Bauder BioSOLAR [blue roof](#) is best practice from all environmental perspectives as it provides habitat creation, reduces the buildings impact on local drainage systems (helping to meet SuDS requirements) and maximises site sourced renewables.

The unique V angle shape of the mounts ensures that a strimmer can be run beneath the edge of the panels, quickly cutting back vegetation with no risk to the operatives.

Regular checks of the outlets should be carried out following any significant storm event, notable traffic or remedial works as well as following leaf fall during the autumn months to verify that the drainage holes are free of debris or blockages.

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