



BIOSOLAR
HUB

BSH GUIDE

BIOSOLAR GLOSSARY

2026

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BIOSOLAR GLOSSARY

For architects, designers, specifiers, and contractors beginning early-stage biosolar roof planning.

A	
Annual Energy Yield	The total amount of electricity generated by a photovoltaic (PV) system over a typical year, expressed in kilowatt hours (kWh). Annual energy yield is influenced by system size, orientation, inclination, shading, geographic location and system losses, and is distinct from peak capacity (kWp).
Anchor Board	A rigid load-spreading board within green roof and biosolar build-ups, protecting the waterproofing layer and distributing loads from mounting systems.
B	
Ballast	Loose material, such as substrate or gravel, used to provide resistance to wind uplift in non-penetrative roof systems. In biosolar applications, ballast often serves a dual function by contributing to both structural stability and green roof performance.
Biodiverse roof	A green roof designed to maximise ecological value using varied substrates, depths and planting to support a wider range of species than standard sedum roofs.
Biodiversity Net Gain (BNG)	A UK planning requirement ensuring developments deliver a measurable improvement in biodiversity, assessed using the DEFRA Biodiversity Metric. Biosolar roofs can contribute where planting and access are appropriately designed.
BROOF(t4)	A European fire classification indicating resistance to external fire spread for roof systems. Biosolar roofs must be assessed as a complete tested build-up.
C	
Carbon Reduction	The reduction in greenhouse gas emissions achieved through renewable energy generation and nature-based solutions, including solar PV electricity generation and the carbon sequestration and cooling effects of green roofs.
Competent Contractor	A contractor with appropriate experience, technical knowledge, training and approvals to carry out specialist works in accordance with regulations, standards and manufacturer requirements.
Cooling effect	The reduction in solar panel operating temperature provided by vegetation and evapotranspiration from a green roof, which can improve PV efficiency.



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D

Drainage Layer	A functional roof layer that facilitates the controlled removal of excess water while retaining sufficient moisture for plant health. In biosolar systems, drainage performance also influences ballast behaviour and root zone conditions.
DC (Direct Current)	The form of electricity generated by PV modules before conversion to AC by an inverter.

E

East-West PV Layout	A photovoltaic arrangement where modules face east and west rather than south. This configuration typically reduces peak output but spreads generation more evenly throughout the day and can improve compatibility with green roof planting and access requirements.
Embodied Carbon	The carbon emissions associated with the manufacture, transport, installation, and replacement of materials used in a roof or biosolar system.
Extensive Green Roof	A lightweight green roof system characterised by shallow substrate depths, low nutrient demand and minimal maintenance, commonly planted with sedum or similar resilient vegetation.

F

Filter Fleece	A geotextile layer preventing fine substrate particles from clogging the drainage layer while allowing water to pass freely.
Fire Strategy	The coordinated approach to managing fire risk on a roof, including material selection, system layout, compartmentation, access routes and compliance with relevant guidance and regulations.

G

Green Roof	A roof system incorporating vegetation, growing medium, drainage and filtration layers installed above a waterproofing membrane to provide ecological, thermal and hydrological benefit
Growing Medium (Substrate)	An engineered material designed to support plant growth while meeting structural, drainage, moisture retention and fire performance requirements. Substrate composition directly affects vegetation health.



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G

Generation Profile	The pattern of electricity generation over time (daily or seasonal), influenced by system orientation and layout.
GRO (Green Roof Organisation)	The UK industry body representing green roof professionals. GRO publishes guidance including the Code of Best Practice for Green Roofs.

H

Hotspot	A localised area of overheating on a PV module, often caused by shading or defects, which can reduce efficiency and module lifespan.
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I

Integrated Biosolar System	A system where PV mounting components form part of the green roof build-up, sharing load paths and influencing warranty, maintenance, and sequencing responsibilities.
Inverter	An electrical device converting DC electricity from PV modules into AC electricity for building use or grid export.

K

kWp (Kilowatt-peak)	The maximum power output of a solar PV system under standard test conditions. It describes the size of the system, not how much energy it will actually produce. For example, a 100 kWp system has a higher potential output than a 50 kWp system, but real-world generation will vary depending on location, orientation and shading.
kWh (Kilowatt-hour)	A unit of energy that represents the amount of electricity generated or consumed over time. One kilowatt hour equals one kilowatt of power used or produced for one hour. Solar PV performance and energy savings are typically reported in kWh per year.
Difference between kWp and kWh	kWp describes the capacity of a solar PV system, while kWh describes the energy it actually produces. In simple terms, kWp is how big the system is, and kWh is how much electricity it generates over time.



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L	
Load Assessment	Structural analysis confirming that the roof can safely support dead loads, imposed loads, wind uplift, and maintenance access associated with biosolar systems.
M	
MCS (Microgeneration Certification Scheme)	A UK certification scheme for small-scale renewable energy technologies and installers, including solar PV.
Mounting Frame	The structural system supporting PV modules and transferring loads to the roof structure or ballast.
N	
Non-Penetrative System	A PV mounting approach that avoids fixing through the waterproofing membrane, commonly used on flat roofs to reduce leakage risk.
O	
Operational Carbon	Carbon emissions associated with building energy use during occupation. PV systems reduce operational carbon by offsetting grid electricity.
Overlay System	A PV system installed above a completed green roof, operating largely independently of the green roof build-up.
P	
Panel Inclination (Tilt)	The angle of a PV module relative to horizontal, affecting energy yield, wind loading, and shading between rows.
Photovoltaic (PV)	Technology that converts sunlight directly into electricity using semiconductor materials.
Protection Fleece	A protective layer installed above the waterproofing membrane to prevent mechanical damage during installation and operation.



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R	
RC62	A UK guidance document relating to the fire performance of green roofs, often referenced in roof design.
S	
Sedum	Drought-tolerant plant species commonly used on extensive green roofs due to resilience and low maintenance requirements.
Shading Analysis	Assessment of how obstructions, panel spacing, or vegetation may cast shadows on PV modules and reduce energy output.
Specific Yield	Annual energy generation per installed kWp (kWh/kWp/year), used to compare system efficiency across sites.
Substrate	An engineered growing medium designed to balance weight, drainage, water retention, and nutrient availability.
T	
Torque Setting	The specified tightening force for fixings and clamps, essential for structural integrity and warranty compliance.
U	
Urban Greening Factor (UGF)	A planning tool used by some local authorities, including London, to measure the amount and quality of green infrastructure in a development.
Uplift (Wind Uplift)	Vertical forces caused by wind that can destabilise roof-mounted systems if not adequately restrained.
V	
Vegetation Clearance Zone	An area around PV components kept free of excessive plant growth to maintain airflow, access, and electrical safety.
W	
Waterproofing Membrane	The primary layer preventing water ingress into the building, critical to long-term roof performance and warranties.





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We're here to accelerate the transition to buildings that give back more than they take – powering cities and restoring nature, one rooftop at a time.

Powering a sustainable future.