OPTIGRÜN®
ROOF GREENING

THE FUTURE IS ON THE ROOF. THE GREENING IS IN YOUR HANDS.

THE RIGHT GREENING FOR ANY ROOF.

Generally, any roof can be greened, and a green roof always enhances a building. As an important element against climate change, a green roof simultaneously offers new living space for people, wildlife and plants. A green roof also provides potential for energy efficiency – reductions in surface water discharge and heating costs are further positive effects.

The innovative systems from OPTIGRÜN are impressive aesthetically as well as functional – from an ecological and an economic viewpoint.

THE GREEN ROOF COMBINES MANY

- ✓ **RAINWATER RETENTION**
  Relieving of the sewer system and mitigation of climate change through evaporation.
- ✓ **ECOLOGICAL COMPENSATION**
  Green roofs can replace soft landscaping or habitat lost through construction.
- ✓ **REDUCTION OF FINE DUST AND NOISE**
  Improvement in local air quality and reduction in noise penetration.
- ✓ **PROTECTION AT EXTREME TEMPERATURES**
  Extension of the service life of the waterproofing.
- ✓ **CREATIVE AND VISIONARY**
  A contribution to sustainable construction and urban planning for improved quality of life.
- ✓ **EFFECTIVE AND EFFICIENT**
  Improvement in thermal insulation, cost savings for wastewater charges, increased yield with photovoltaics.

5 **Vegetation**
Perennials and sedum cuttings in combination with Optigrün seed mixes or biodiversity elements.

4 **Substrate**
With high water reservoir capacity and good air void volume, coordinated to the respective solution.

3 **Filter fleece**
To prevent fine particles from forming sludge in the drainage layer with high water permeability.

2 **Drainage element**
Water reservoir available to plants to prevent accumulation of water, lightweight superstructure with high drainage capacity.

1 **Separation and protection fleece**
Protection for the roof waterproofing against damage and separation layer for the waterproofing.

The basic principle of the green roof superstructure is always the same. However, differences may be necessary due to the type of building or the roof itself. **This is why we offer various system solutions and therefore the right solution for every requirement.**

Extensive green roofs

Extensive green roofs with a simple superstructure and low maintenance requirements for green roofs without further use.

Intensive green roofs

Intensive green roofs with a garden-like superstructure and higher maintenance requirements for use as additional living space.

Functional green roofs

Multifunctional green roofs with photovoltaics or in combination with intelligent rainwater management for water retention and use.

ALL THE IMPORTANT INFORMATION AT A GLANCE FOR A SUCCESSFUL GREEN ROOF.

PLANNING PERMISSIONS.

Retrofitting green roofs does not normally require specific permission from the local authority. However, for new build developments which require planning permission you should include a proposed green roof in any application. The relevant local authority may also have its own guidance on the design of green roofs and may in, some regions, encourage their inclusion.

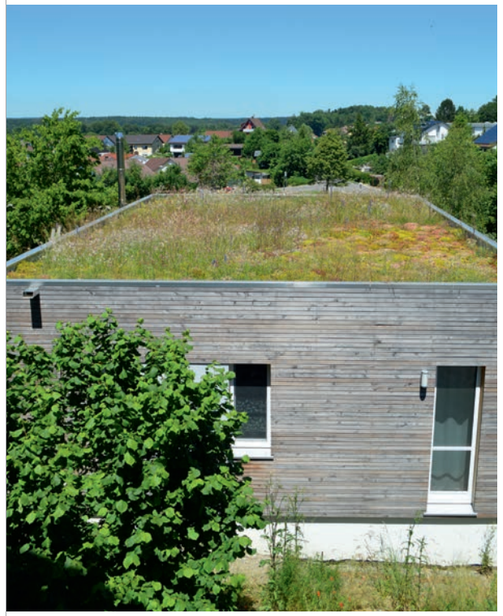
GOOD TO KNOW:
The building construction must be designed for the additional load of the green roof.

WEIGHT LOADING AND PITCHED ROOFS.

The additional load of the green roof naturally also has an effect on the static calculation. An extensive green roof, which is often used for flat roofs and garages, weighs around 120 kg/m² – based on its water-saturated state with vegetation. The Optigrün garage packages are designed for a roof pitch of 0° to 5°. For a roof pitch between 5° and 10°, Optigrün offers special solutions that provide a good balance between water storage and drainage performance. However, other measures are necessary for a roof with an incline of over 15°. In this case, it makes sense to seek advice from a trained landscape gardener.

ROOF WATERPROOFING AND ROOT PROTECTION MEMBRANE.

Ideally, the roofing contractor would have already installed root proof waterproofing according to FLL (Green Roof Organisation) when completing the building and you can immediately start constructing the green roof. Otherwise, a separate, full-surface root protection membrane must be applied for the green roof. Areas that are not directly being greened, such as a gravel strip or a terrace, should also be underlaid.



DRAINAGE

The roof edges should generally be at least 100 mm higher than the planned green roof layer structure. In the same way as non-green roofs, roof drainage usually takes place via an outlet in the surface, which is located at the lowest point of a sloping roof. The excess water from the green roof structure is then guided to the outlet via the drainage layer. An additional emergency overflow is also mandatory for every roof, but not necessary for carports and garages.

IMPORTANT:
Water well immediately after planting and and always keep the substrate moist in the first few weeks.

PLANTING AND BIODIVERSITY.

Sunny locations are best suited to extensive green roofs. However, semi-shady and shady positions can also be greened well by choosing plants accordingly. The plants are generally applied as sedum cuttings and seeds in the form of a mixture of various herbs and grasses. It then takes around a year until the plants have covered 80 – 100 % of the roof and it flourishes and blossoms over its entire surface. However, it is also possible to plant young plants that are adapted to drought directly into the substrate in the form of plug plants. This type of planting is somewhat more time-consuming, but immediately shows the visual effect of the green roof. The months April to September are recommended for applying plants.

A CALCULATION THAT ADDS UP: YOUR GREEN ROOF PAYS FOR ITSELF.

AN INVESTMENT THAT IS WORTHWHILE.

The costs for a green roof can differ significantly. Depending on the roof structure, the area to be greened and the type of green roof desired, the financial costs vary. An average price from 43 euros/m² can be estimated for a DIY extensive green roof on a carport or garage. But a green roof pays for itself. Alongside contributing to climate protection and biodiversity, the green roof also reduces precipitation water charges and can save heating costs.

COSTS AND SERVICE

You can obtain an offer directly from one of our partner companies or in our online shop at: www.dachbegruenung24.de

WHEN A GREEN ROOF MEETS PHOTOVOLTAICS.

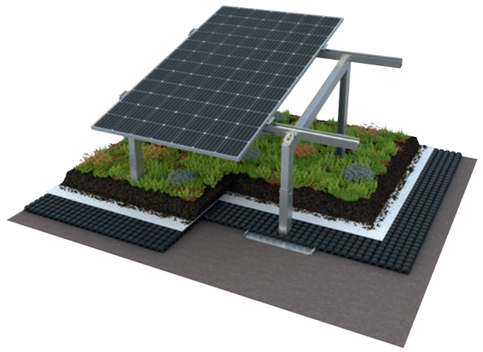
Climate change and energy transformation are the major challenges of our future. The intelligent use of roof areas makes a crucial contribution towards a solution.

OPTIGRÜN SOLAR – THE COMBINATION OF MANY ADVANTAGES:

- Increased efficency for the photovoltaics system
- Preservation of the natural water balance
- Increase in biodiversity
- Fulfilment of restrictions on discharge and minimisation of precipitated water fee

The load-supported solar mounting frame is fixed in position and protected from wind suction by the green roof structure. No roof penetration is necessary for the installation of the system, which reduces work and costs for the waterproofing.

Almost all standard solar modules, with inclines of 10°, 15° or 20°, can be mounted to the flexible substructure of OPTIGRÜN SOLAR. The modules can be attached both vertically (portrait) and horizontally (landscape) to the rows of modules in a south-facing or east-west orientation.



OPTIGRÜN®
ROOF GREENING

YOUR PLAN FOR THE GREEN ROOF WITH PRODUCTS FROM THE EXPERT.

As the market leader in Europe with over 50 years of experience, we offer high-quality products for all green roof systems. Discuss your ideas with an Optigrün partner company. If you would prefer to add greening to a flat roof such as a carport or garage yourself, you will naturally also benefit from the quality of our innovative product range. You can find a great deal of valuable information and all of the materials at: **www.dachbegruenung24.de** or at **www.dachbegruenung-ratgeber.de**

ECONOMY ROOF

LEIGHTWEIGHT ROOF

NATURE ROOF

RETENTION ROOF MEANDER

URBAN GARDENING

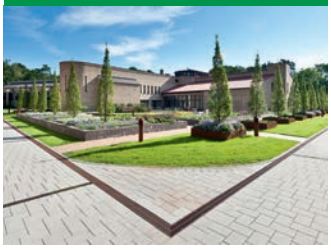
PITCHED ROOF

GARDEN ROOF

LANDSCAPE ROOF

RETENTION ROOF FLOW CONTROL

PUBLIC ROOF



SOLAR GREEN ROOF

SYSTEM ADDITIONS

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Subject to technical modifications.
OPTIGRÜN 02/2023