Harpo
verdepensile

MEDITERRANEAN GREEN ROOF

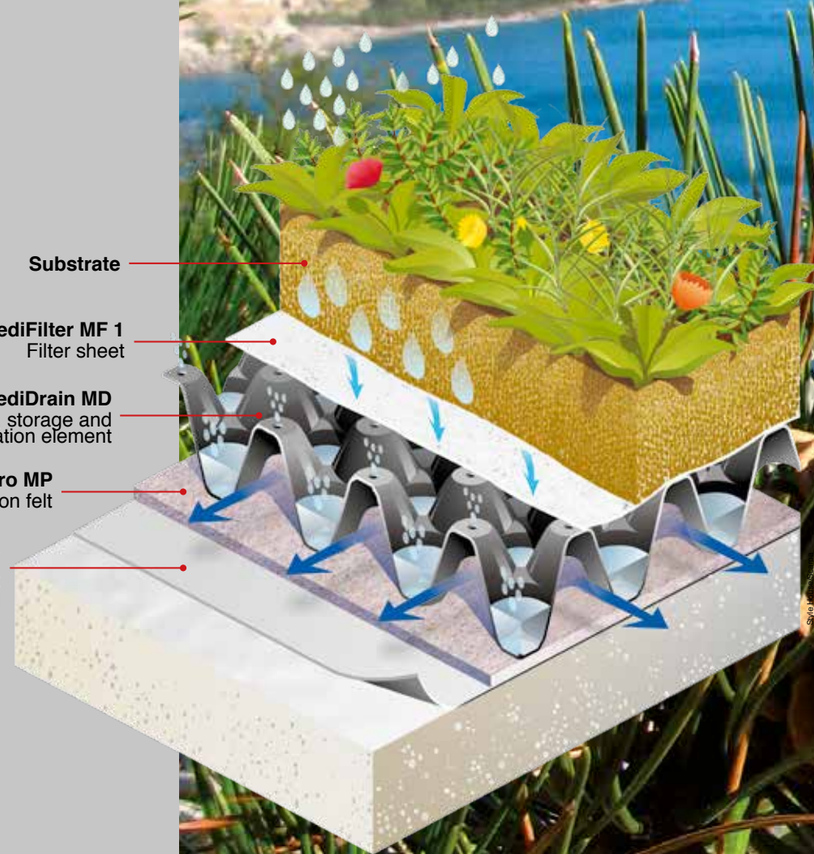
benefits and advantages

Within **Harpo**, the green roof division team has the objectives of spreading a culture of bringing city dwellers closer to nature, by raising awareness of issues such as the protection of biodiversity, lowering temperatures, reducing CO_2 and other pollutants, protecting the permeability of surfaces, reducing energy requirements and improving liveability of the urban environment for both the public as a whole and the individual, by promoting sustainable building techniques, such as green roofs.

A new mindset

Trieste: the city of the Mediterranean green roof

Geographically, Trieste is located in one of the meeting points for the most varied species in the world. No fewer than three contingents of species: Mediterranean, Illyrian and European overlap so much here that they make this area one of the richest in terms of biodiversity. In this context, Trieste has the potential to become the reference city of the Mediterranean green roof and constitute a “natural bridge” between the more mature continental experiences and the burgeoning Mediterranean ones.



The Mediterranean green roof: a new frontier

In light of current technological development, continental weather and climate conditions have encouraged the spread of green roofs in Central European countries, with systems which, in our climates, are often difficult to apply.

After several years of experience in Italy, we have become aware that, in the Mediterranean climate, the approach to green roofs can and must be different and unique, due to both the different weather conditions and the different benefits that can be obtained.

Here, in fact, green roofs can play an important role in thermal insulation in the summer, less relevant in the north. The more violent rains necessitate increased absorbency of the surfaces. In addition to this, the specific aesthetic culture of the Mediterranean must also be considered.

Through the experience gained so far and the results obtained through research carried out at Italian research institutes, **Harpo** is now able to offer technologies and systems designed to better reflect our climate, while continuing to invest in the development of new, increasingly advanced systems.

Systems for the Mediterranean climate have to offer high performance in terms of passive cooling in the summer and high water availability and at the same time reduce maintenance costs and water requirements in relation to typical Mediterranean plants.

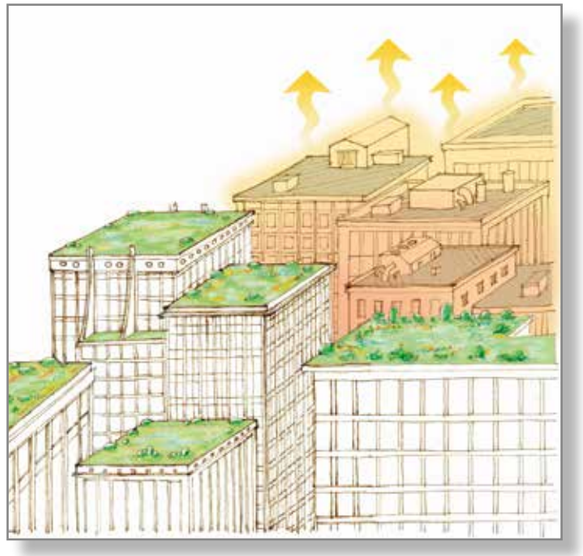
The great technical vocation of **Harpo** has enabled us to develop a wide range of accessories for even the most demanding technical specification details, with particular attention paid to safety devices for maintenance.

Harpo provides considerable training and information to specialised installers, in the belief that a good system can be enhanced only through proper use.

Environmental benefits

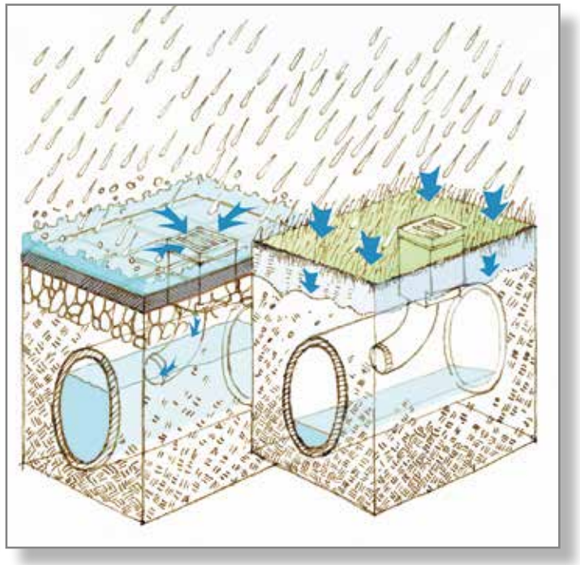
Improvement of urban temperature

The effects of the “heat island” phenomenon present in urban areas can be kept down through efficient distribution of green roofs.



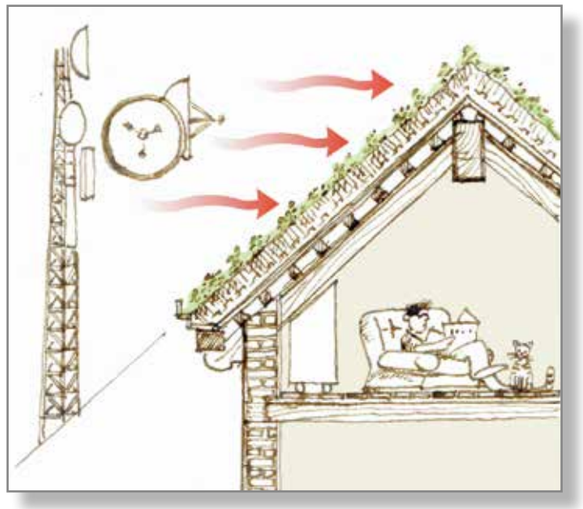
“De-sealing” soil

Green roofs can reduce the peaks of concentration due to water retention and runoff delays, relieving the load on rain water collection and channel networks.



Reduction of noise and electromagnetic pollution

A study by Professor Gernot Minke (University of Kassel in Germany) shows that a green roof with a substrate that is 15 cm thick reduces the electromagnetic waves emitted by common mobile phones (1.9 to 2.17 GHertz) by more than 99%.



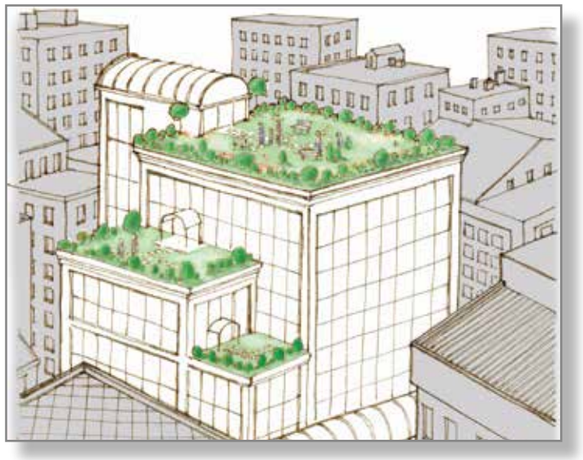
Protection of biodiversity

Roof gardens than can not be walked on can be used to recreate endangered habitats while protecting the fauna and flora. Widespread distribution of this type of roof can also create wildlife corridors through urban areas.

Economic benefits

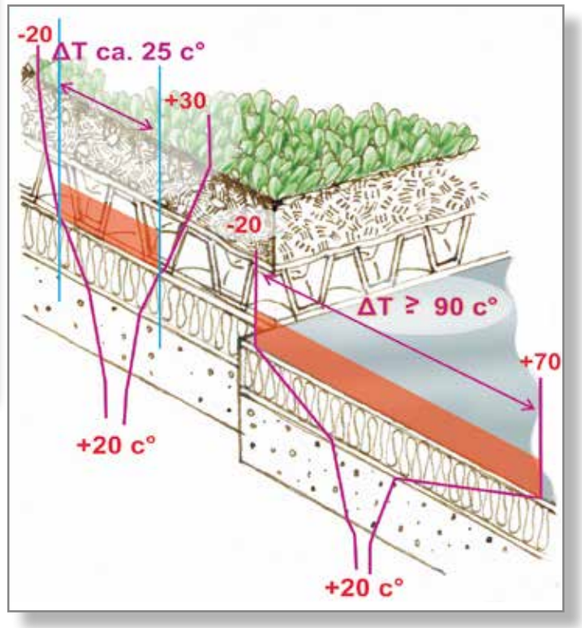
Increased property value

The creation of buildings that are more comfortable and more aesthetically pleasing and the possibility to increase usable surface area increase the value of the property. For hotels, shops and businesses, roof gardens create great opportunities to undertake projects which offer customers a better image and a higher level of comfort.



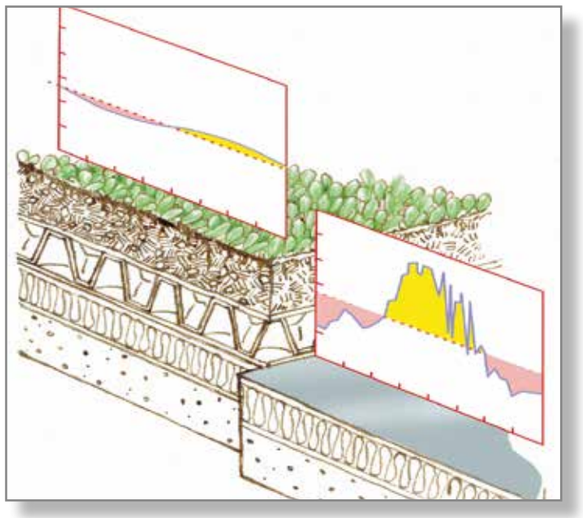
Duration of the waterproofing element

One of the critical factors affecting the useful life of the waterproofing systems is the stress caused by daily changes in temperature. On an exposed roof, the daily ΔT°C can easily reach values of 50-60 °C. In contrast, under a green roof, in equal conditions, the daily ΔT°C at the waterproofing level can be reduced to almost 0, increasing the duration of the membranes.



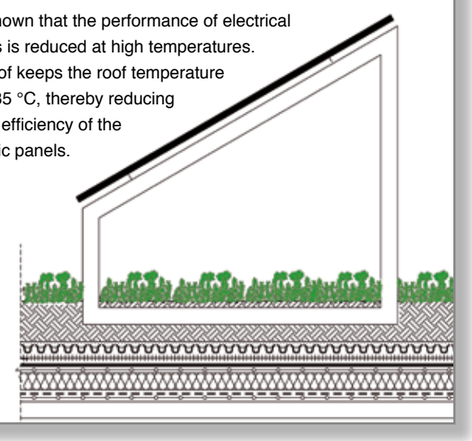
Energy saving

Several Italian and foreign universities are developing mathematical models to calculate the energy savings that can be obtained, especially in summer, in buildings with roof gardens. Concrete examples have shown that in summer, savings can reach 30%.



Better performance of photovoltaic panels

It is well known that the performance of electrical conductors is reduced at high temperatures. A green roof keeps the roof temperature below 30-35 °C, thereby reducing the loss of efficiency of the photovoltaic panels.



mediterranean green roofs

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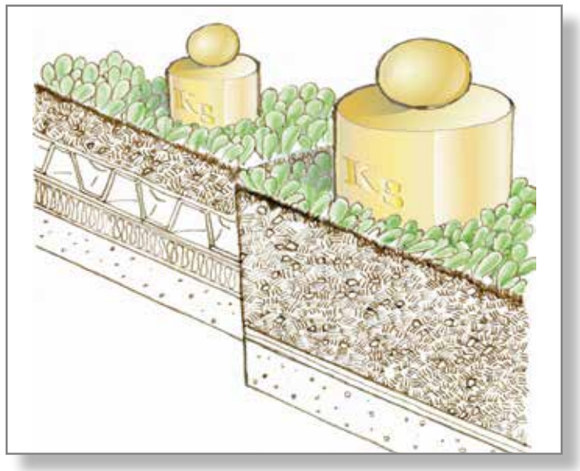
Building advantages

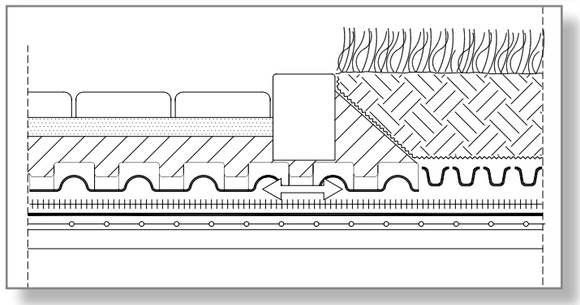
Lightweight

Our technological systems for roof gardens are designed to minimise the permanent loads on the floors. 15-20 cm of substrate are usually sufficient to create a lawn on a roof.



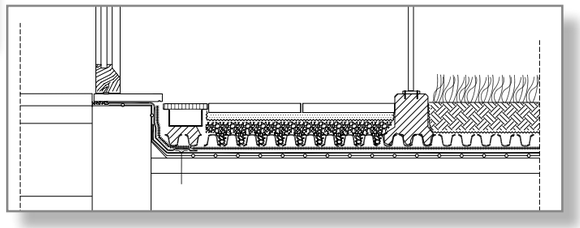
Continuous drainage

A wide range of technological solutions make it possible to create continuous drainage above the waterproofing, reducing the number of construction details, optimising the layout of the downspouts and maintaining the ability to create mixed-use surfaces, from pedestrian routes from the heavy vehicular paving.



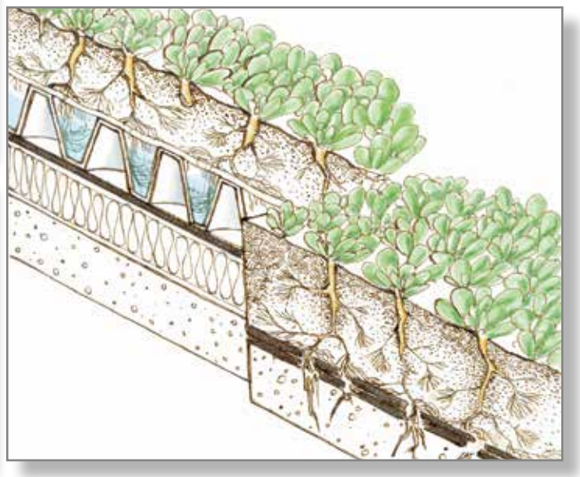
Accessories and technical details

The quality and duration of a green roof depend heavily on the care with which construction details such as wells, draining ducts, fittings with the roof's technical bodies, safety devices etc. are built.



Root care

If the waterproofing layer is not anti-root tested according to UNI EN ISO standards, our systems are integrated with special membranes that perform this specific function.



mediterranean green roofs

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Reliability and safety

Specialised gardeners

Creating a roof garden is the exclusive responsibility of specialists who devote themselves with passion to this particular gardening application. One of our most stringent guidelines is represented by the careful selection and training of highly reliable partners. Our trusted installers are equipped with our stamp of approval that is only issued after a period of training and after some works have been carried out perfectly.

Technical support

Our Technical Department offers designers and installers prompt, detailed solutions through technical reports, specifications, cost analyses, studies of construction details and assistance with installation.

Warranties

On request, Harpo systems are guaranteed with regular warranty certificates.

Use of recycled raw materials

Most Harpo technological system components are produced from recycled raw materials.

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