

# Green roofs

## What is a green roof?

A green roof is basically a garden that sits on top of a roof. It comprises of a waterproofing layer, a drainage system and growing media planted with a variety of drought tolerant species. A green roof not only reduces energy consumption by providing an extra layer of insulation, but also helps the health of our rivers and creeks by reducing the volume of stormwater run-off.

Typically a shallow planted system with a soil depth of less than 300mm, a green roof needs enough growing media to provide the plants with sufficient water to survive without being too heavy to cause issues with the roof structure.

For this reason the growing media used for a green roof is not the same as the ground soil used in a garden. Instead, the growing media is generally made up of a mix of mineral or rock-based materials that together are light-weight, provide good drainage, hold nutrients and water, and do not break down or degrade easily.

*Note: It is important that a qualified professional assists with the planning, design and implementation of your green roof. A certified plumber must be used for stormwater connections and modifications.*

## The benefits of a green roof

The installation of a green roof delivers a range of social, economic and environmental benefits. For example, a green roof provides environmental benefits in relation to stormwater management and increased biodiversity, while also offering economic benefits in terms of reduced energy costs and extended roof life. A green roof is also a great way to increase the amount of "green" in and around the home and adds value to your property.



## Planning a green roof

The successful installation of a green roof requires careful planning with professionals who can provide advice in relation to design, implementation and maintenance including a structural assessment of the roof area as one of the key design considerations.

## Building a green roof on an existing structure

While the benefits of a green roof are many and varied, the amount of weight that it adds to a roof needs to be considered. Therefore, if you are planning to install a green roof on an existing building, the design will largely be determined by the roof structure including its slope and weight holding capacity.

The first step when planning a green roof is to engage a structural engineer to assess whether your house or garage can sustain the added weight – which can be more than 100kg/m<sup>2</sup>.

## Integrating a green roof into a new building/home

The best time to consider a green roof is as part of the design of a new building or home. Determining the size and location of the green roof early in the design process is the best way to minimise the cost of installation and ensure that the roof is structurally strong enough to support it.

## Designing and building a green roof

A green roof should only be installed in conjunction with a skilled professional. Products for building a green roof are generally supplied by companies that offer a "full range" service – from site assessment and design to installation and maintenance.

The cost of installing a green roof can vary greatly. While a standard green roof will generally cost between \$200-\$400/m<sup>2</sup> for the components that sit above the roof structure, if structural or roof modifications are required the cost of installation can increase.

## Planting a green roof

While it is possible to grow a wide variety of plants on a green roof, the most successful plants are those that naturally adapt to "roof" conditions. Green roof plants are exposed to drought conditions due to the drainage properties of the growing media, possible high winds and temperatures, and a restricted depth for root growth. A green roof supplier will be able to provide advice in relation to the most suitable plants for your location, roof aspect and soil profile.

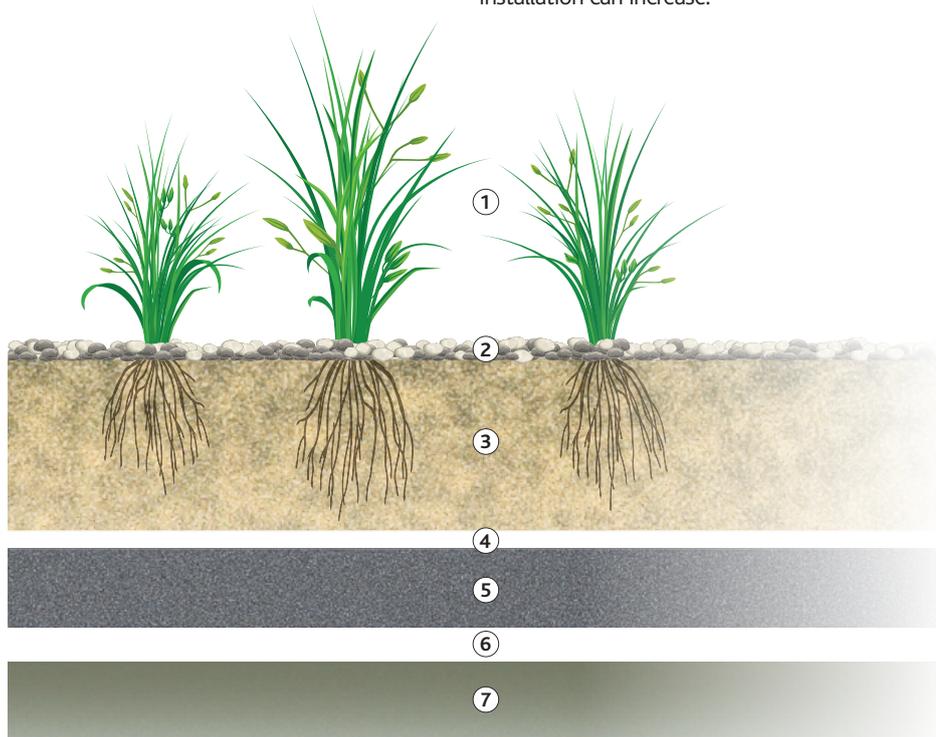
## Maintaining a green roof

A green roof like any garden will need maintenance from time to time. If a low maintenance garden is what you want, then the design of the green roof and plant selection should reflect this. The control of weed growth will ensure that the plants on your rooftop garden flourish.

## More information

Find more about green roofs in the following books:

- › *Small Green Roofs – Low-tech Options for Greener Living* (N. Dunnet et. al.)
- › *The Green Roof Manual – A Professional Guide to Design, Installation, and Maintenance* (E. Snodgrass et. al.)
- › *Planting Green Roofs and Living Walls* (N. Kingsbury et. al.)



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CROSS SECTION OF A GREEN ROOF

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