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# Straight up

If you have a small outdoor space, a green wall or vertical garden is a great idea

Words: Sidonie Carpenter



*This vertical garden was designed by Phillip Johnson Sustainable Landscape Systems.*

**UP TO 90 PER CENT OF AUSTRALIANS LIVE IN** urban areas so it comes as no surprise we are facing major environmental and health issues in our cities. These concerns include the urban heat island effect, the intensity of storms, changing microclimates, impervious sites, poor air quality and increases in air pollution both in and around buildings, not to mention the production of greenhouse gases. Green walls, also often referred to as vertical gardens, have a significant role to play in combating many of these problems.

## What is a green wall?

What are we really talking about when we refer to vertical gardens? Well, there are various types of vegetated wall surfaces which are broadly referred to as green walls but are more accurately broken up into two specific categories:

- **Green façades:** These feature a training structure upon which vines or climbing plants grow. The support is usually provided by stainless-steel cables, webbing or metal grids. The plants in a green façade grow upward from the ground and away from the building.
- **Green walls:** These are part of a building envelope system, comprising pre-vegetated or planted on-site panels containing plants, growing medium or liquid nutrient. These systems are installed in or on a frame and can be secured to a structural wall or freestanding.

There are pros and cons to each and different logistical issues to deal with. Among other things, you need to consider cost, maintenance, structural loading, nutrient supply, water distribution and how is it going to look. These are all important

considerations that will affect the final design of your vertical garden.

## The environmental benefits

Time spent researching and planning a green wall will be well worth it. Green walls actively contribute to the ecological value of our urban environment and perform a range of climatic and ecosystem functions, including:

- **Thermal benefits:** The shading properties of a green wall help decrease a building's surface temperature, thereby lowering the internal temperature. This in turn reduces your heating and cooling requirements — and your energy costs. If enough buildings had green walls, it would lead to a reduction in urban heat island temperatures in our cities, ultimately lowering our greenhouse gas levels.
- **Water management:** Similar to green roofs, green walls can help a city's stormwater management through the use of recycled water or the absorption of rainfall through the green wall. Some green walls use collected rainwater or recycled greywater.
- **Air quality:** The issue of poor indoor air quality (IAQ), also known as "Sick Building Syndrome", is supporting the interest in green-wall technology. Pollutants can cause or contribute to short- and long-term health problems.

## Indoor and outdoor use

This, of course, leads us to an important point — that vertical gardens can be employed both inside and outside of a building. Many commercial properties are beginning to incorporate internal

green walls into their premises, for reasons of aesthetics and air quality. You can also find them in a steadily growing number of private homes.

Whether growing ornamentals, veggies or herbs, if done well a green wall can be a thing of beauty — a work of living art or a form of self-expression — as well as something functional. The hope is that in time to come, we will transform our urban environments with green walls, making our cities cooler, quieter and much more liveable.

*Sidonie Carpenter is president of Green Roofs Australia Inc and principal designer of Green Canopy Pty Ltd.*



*The Verti Scape System, available from Living Holmes Design, is a breeze to install.*