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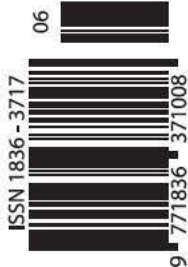
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VERTICAL GARDENS



Design by James Dawson Landscape Design: www.jdlldesign.com.au

Up the wall

Indoors or out, a vertical garden turns a bare wall into a living work of horticultural art

Words: Catherine Stewart

CLOTHING WALLS WITH PLANTS CAN SEEM LIKE you're trying to force them to grow in ways nature didn't intend, but if you look around you'll find lots of places where plants are growing in all sorts of ways — even upside down. Trees wrap their roots around cliff-side boulders, ferns cascade from tiny crevices behind rock waterfalls, and bromeliads, orchids and staghorns cling onto rocks and tree branches. Most plants just need to present an adequate leaf area to the sun for photosynthesis and have a stable medium in which to spread their roots and find water and nutrients.

Vertical gardens, or green walls, aren't just beautiful. They can have an amazing deadening effect on sound transmission through walls, as well as insulating walls from heat transfer and preventing the re-radiated heat that causes a heat island effect in built-up urban areas. All that moist

surface area intercepts and catches airborne dust and pollutants while increasing relative humidity and oxygenation. Instead of a bare wall devoid of life, you've got a tiny wildlife habitat that can also help attract pollinators, which is essential if you're also trying to grow fruit or vegetables nearby.

Apart from their utility, vertical gardens are a really useful design tool. Use them to make privacy screens or dividing walls between apartments and townhouses, or within your own home. The best designers can create beautiful plant pictures, where swathes and swirls of colours and textures become nature's wall art.

If you want to start small and see how your vertical garden works before you commit to something expensive, there's a natty little system available called the Vertiscape Mini from Living Holmes Design. Designed and made in Australia

from recycled plastics, it's only 495mm high, 350mm wide and 130mm deep, making it a practical way to begin your vertical greenery.

As Travis Holmes says, "Put it in your kitchen, on your office desk, your wall — it's very practical. Anyone can try and successfully achieve a vertical garden of salad leaves ready for picking, pretty flowers, bold succulents or soft ferns." Water is added to the top and then collects in a built-in reservoir at the bottom so there's no mess and you can recycle it through again. Available either online or through Plants Plus, Home Hardware and good nurseries, the Vertiscape Mini sells for only \$59.95.

Full-wall vertical gardens need substantial support as some of the larger systems weigh up to 88kg per square metre when the growing medium is saturated. You also need to make sure that the wall is properly waterproofed. Walls can be clad with a waterproof ply or blueboard, although some smaller kit systems come with a waterproof backing plate of plastic or powder-coated steel. Vertical garden companies will include waterproofing in their installation costs. You also need to make sure that the edges of the system are protected with a waterproof frame, as that's where plants can easily dry out.



Even more than in ordinary potted plants, water management is critical to vertical garden success, both in irrigation input and the output of water that drips from the bottom of the wall. While vertical gardens suit very water-wise plants, plants will fail if the wall dries out for too long. Fytowall estimates that each square metre of wall garden needs about one litre every day in winter but five litres per day through summer. Installed wall gardens usually have an automated, battery-operated system that may also add fertilisers into hydroponic systems. Water is drawn from either the mains or rainwater tanks, or can be recycled. Drip trays at the bottom of the wall catch excess water and either recirculate it or send it to the stormwater.

Vertical garden companies have experts to advise you on plant choices. The main groups from which suitable plants are chosen are bromeliads, succulents, orchids, trailing plants (especially from subtropical environments), small strap-leaf plants, sedges and ferns. Edible plants include salad leaves, strawberries, cherry tomatoes and eggplant, as well as a variety of herbs such as oregano, thyme and parsley. Remember that many edible plants are annuals, which require regular replacement.

Modular systems are made up of individual small

mesh crates that are hung from battens on the wall. Into each crate is inserted a pack of growing media, often held inside a geotextile fabric lining. Some companies use a good quality potting mix, while others use an inorganic non-soil medium. Plants are inserted through openings in the fabric.

The Fytowall system uses a steel mesh cage holding a polymer resin panel as the growing medium. This is wrapped in shade cloth to give a choice of background colours. The resin holds water well and doesn't slump or break down over time. Individual panels are 500mm high with a hydroponic irrigation line across the top, ensuring water is distributed evenly through the resin mix, avoiding dry areas at the top and saturation at the bottom. Panels can be combined to make any size green wall.

Another option is Gro-Wall from Atlantis. These are plastic units three bays wide and two bays high where each bay holds a separate grow bag with a plant, making it easy to replace individual plants. They can either be fixed to a wall or fastened back-to-back to make a freestanding green wall.

Felt walls are an alternative to plastic modules and are used by the famous Patrick Blanc, a world leader in green wall design. You can build a felt or rockwool wall yourself or Lushe can install one for you. Unlike the modules, felt walls are only a few centimetres deep and rely on a constant hydroponic drip system. Plants need to have very shallow root systems, growing naturally as epiphytes on trees or lithophytes (on rocks).

Several layers of felt are attached to a waterproof backing and plants are pushed through slits in the upper felt before being tacked on to a lower felt surface. You can even try germinating the seed of shallow-rooted annuals like sweet alicia in pockets in the felt wall. A drip pipe at the bottom of the wall collects excess water.

You might want to look to Up She Grows, which has click-together recycled polypropylene modules with a geotextile lining. These hold 16 plants and sell for \$65. They are from the Woolly Pocket range



Design by Paal Grant Designs in Landscaping: www.paalgrant.com.

and can be used outside in the garden or inside the home.

You could also look to Junglify, which installs green walls made from ecoVert Pro modules, which are 547mm high × 336mm wide × 130mm deep. Made from recycled lightweight plastic, the modules hold a geotextile bag filled with a specially developed planting medium containing perlite, organic matter and slow-release fertiliser. Plants are inserted into each of the 15 pockets. Once the included nutrients are depleted, the plants are fed hydroponically and all excess water is recycled back through the system.

