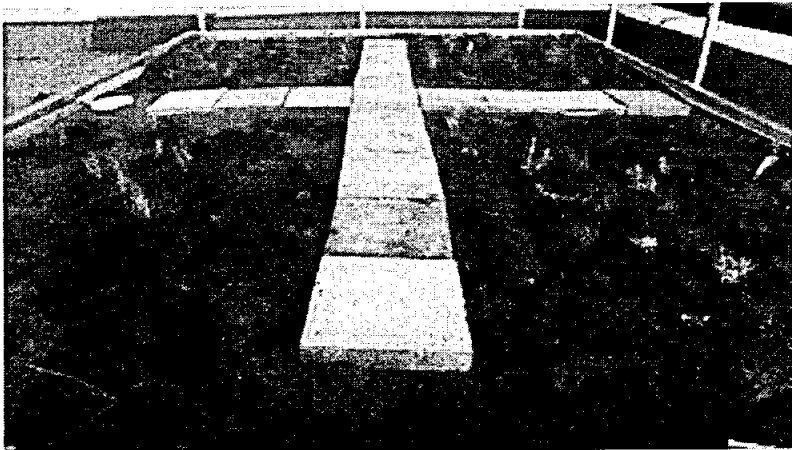


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Fact Sheet: A Roof Garden Experiment



John Patrick looks at an experimental roof garden in Melbourne

Presenter: John Patrick, 25/10/2008

As our population increases and the buildings in our cities become denser, it's a real quandary wondering where we're going to put wonderful gardens and landscapes that are so important to us. One potential answer is on the roof.

More and more rooftop gardens are being created on apartment and office blocks all over the world. They improve building aesthetics, give gardens to people who would not otherwise have them, and also save on heating and cooling costs.

At Melbourne University's Burnley Campus, plant ecologist, Dr Nick Williams and his colleagues are setting up an experimental roof garden to find out how they will actually work in controlled conditions.

Nick explains it to John, "We've got a frame to keep everything in place. Then we've got a protection layer, which is a heavy duty plastic that protects the roof. Next is a drainage layer that is made of recycled plastic and looks like eggcups. The depressions of the eggcups hold water but

there are drainage holes in the top of them. Over the top of that we have a geo-textile, which the soil sits on. This stops the soil clogging the drainage layer underneath. Slots in the side of the frame allow water to drain and pebbles around the sides prevent media from clogging the slots."

The medium in which the plants will grow contains two grades of scoria, sand and composted cocoa-peat. It needs to be light so it does not damage roofs, it needs to drain well but still hold nutrients for plant growth, and it needs to maintain its structure so it's long lasting. A temperature sensor under the soil continually measures temperatures and helps determine savings made to heating and cooling costs. The depth of the soil medium is only 12cm and John wonders if it's deep enough to sustain plant growth. Nick isn't sure but it's all part of the experiment.

Only tough plants were chosen for the experiment, which is good because they're only fertilised once a year and watered for four months until they're established.

The planting area is divided into four sections to allow for cultivation of four plant categories: Grassland forbs (small herbaceous plants), grasses and lomandras, spreading succulents and plants that have evolved to tolerate arid zones.

Nick says, "We've chosen plants with a high tolerance to sunlight that don't mind drought conditions. They're fairly robust and don't need much maintenance."

Varieties planted include:

- Alpine Tussock Grass (*Poa heimata*)
- Spear Grass (*Austrostipa* sp.)
- Wallaby Grass (*Austrodanthonia* spp.)
- Kangaroo Grass (*Themeda triandra*)
- Magenta Storksbill (*Pelargonium rodneyanum*) A beautiful clumping plant, great for rockeries.
- Pigface (*Carpobrotus modestus*)
- Rounded Moon-flower (*Disphyma crassifolium*)
- Coastal Twin-leaf (*Zygophyllum billardierei*)
- Common Everlasting (*Chrysocephalum apiculatum*), which has lovely grey foliage that reflects the heat.
- *Dampiera* sp. A lovely trailing plant with gorgeous blue fan-like flowers and a tuberous root system. Nick says, "If it gets really dry they'll just go dormant for a little while and then regrow from that tuber."
- *Lomandra* sp.

Nick says our native flora is "particularly well-adapted to use on roof gardens," and that "there's a lot of interest in Australian plants for roof gardens in Europe and North America."

A good roof garden has many advantages:

- They act as a water sensitive urban design feature.
- They help prevent stormwater flowing into our streams.
- If you plant large enough roof gardens, they can cool the surrounding landscape, which is good in high density urban areas and can reduce air-conditioning costs for everybody. They help workplace productivity because people like looking out over green roofs.

John loves the Melbourne University experiment and says, "I reckon it's a certainty we're going to see more roof gardens in the future, and scientific experiments like this are important because they're going to tell us how we can create sustainable roof gardens."

Information contained in this fact sheet is a summary of material included in the program. If further information is required, please contact your local nursery or garden centre.

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