



CRC for  
Water Sensitive Cities

# Green walls, roofs and facades in the City of Melbourne

Location:  
Melbourne,  
VIC



Case Study — Prepared by Cooperative Research Centre for Water Sensitive Cities, September 2020



**Business**  
Cooperative Research  
Centres Program

## Insight

*Local council leadership, and support for green infrastructure on private land, can help to achieve greening targets. Collaborating and advocating can promote use of green infrastructure in high density urban areas. It's particularly important to get buy in from developers and building owners in high density urban infill developments*

## Project description

Since 2005, the City of Melbourne has initiated activities to encourage green infrastructure—such as green walls, roofs and facades—throughout the municipality. The project aims to create 10 hectares of green infrastructure by 2021, to support a prosperous, healthy, cool and liveable city.

Examples include constructing an extensive green roof on Council House 2, and implementing demonstration projects such as Green Our Rooftop and Green Your Laneway. Currently, the majority of these systems are located in the central city and Docklands.

## The drivers

Substantially boost the quality and quantity of green infrastructure in the City of Melbourne by showcasing green walls and roofs on council buildings and working with the industry and developers to encourage private green infrastructure

- Council is using green infrastructure to help manage the impacts of climate change, rapid population growth and urban development on Melbourne's liveability and resilience.
- The Green Our City Strategic Action Plan sets a clear direction for council, the private sector and the community to substantially increase the quantity and quality of green infrastructure in the municipality.



Melbourne Quarter Sky Park, Docklands

### What does this case study demonstrate?

Each case study has been selected to demonstrate specific solutions, benefits or enabling structures that support the creation of water sensitive cities. This case study focuses on:

Green roofs and green walls

Amenity and urban greening

Water sensitive homes and buildings

Ecosystem health

Urban heat island mitigation

Leadership and influence

## The innovations

### Working together to share knowledge through practical resources




- **Increase industry knowledge** – The majority of the municipality is in private ownership so the private sector must be an active participant in achieving the target of 10 hectares of green walls, roofs and facades across the municipality by 2021. Robust discussions via workshops, forums and advisory groups reiterated the importance of private realm greening.

- **Green Factor tool** – The council developed an online tool designed for built environment professionals to assess and measure their project’s green credentials. The tool provides scores of the relative volume and efficacy of suggested green elements compared with the overall site.
- **Growing Green Guide** – The council developed this guide, based on advice from industry experts and academic researchers. It targets built environment professionals involved in designing, constructing and maintaining high-quality green walls and roofs.



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The Triptych Green Wall, Southbank. Image courtesy of the City of Melbourne

## The outcomes

 <b>Cities providing ecosystem services</b>	 <b>Cities as water supply catchments</b>	 <b>Cities comprising water sensitive communities</b>
<ul style="list-style-type: none"> <li>• <b>Urban heat island mitigation:</b> Green walls and roofs help to cool hot cities and insulate buildings throughout the year.</li> <li>• <b>Increase biodiversity:</b> Green roofs can provide new urban habitats for rare or important species of plants or animals.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Stormwater management:</b> Green roofs absorb and retain rainwater and can be used to manage the peak amount of stormwater run-off in urban environments.</li> <li>• <b>Improve water quality:</b> Green roofs can filter particulates and pollutants.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Boost liveability:</b> Green walls and roofs enhance a city, creating sustainable and lush social and leisure environments.</li> <li>• <b>Increase knowledge:</b> Practical resources educate developers and the wider community to increase the uptake and maintenance of green walls and roofs.</li> <li>• <b>Improve health:</b> More green spaces improve health and wellbeing outcomes for the surrounding community.</li> </ul>

## The lessons

- **Use a champion to promote the work** – A dedicated advocate or ‘champion’ who is passionate about green walls and roofs is essential. They are instrumental in progressing the work and securing support through adequate resourcing and budget.
- **Adopt a multidisciplinary approach** – Developing green walls and roofs requires involvement and advice from a range of disciplines, including architects, landscape architects, engineers, strategic planners, project managers and landscape gardeners.
- **Allow for ongoing maintenance** – It is essential for building owners to maintain their green walls and roofs and budget for this maintenance.
- **Consider policy options** – While some developers voluntarily include greening in their building projects, councils could consider a planning provision to encourage use of green infrastructure in development projects.

## Business case

Costs	Benefits
<ul style="list-style-type: none"> <li>• \$4 million to construct a green roof demonstration site and four green laneways</li> <li>• \$400,000 to develop the Growing Green Guide and website, policy options paper and four feasibility studies to retrofit green roofs</li> <li>• \$150,000 to develop the Green Factor tool</li> <li>• \$300,000 to develop an evidence base to amend the planning scheme to include environmentally sustainable design and green infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Improved thermal performance of buildings, reducing energy consumption for cooling living and working spaces</li> <li>• Cooler city climate, better managed stormwater and the creation of habitat and ecological biodiversity</li> <li>• Increased aesthetics and open spaces, as well as cleaner air</li> <li>• Increased property value for building owners</li> </ul>



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Melbourne Quarter Sky Park, Docklands

## Transferability

This project demonstrates that green walls and roofs are relevant and transferable to dense, urban areas. The City of Melbourne is proactively working with the development community, state government agencies and other inner Melbourne councils to improve collaboration and share knowledge in this space.

Given its online platform, the Green Factor tool could be modified for use in local, state, national and international areas to help the development community when assessing and measuring the credentials of a project's green infrastructure.

## Project collaborators

- City of Melbourne
- University of Melbourne
- Victoria University
- RMIT University
- Monash University
- Department of Environment, Land, Water and Planning (DELWP)
- Council Alliance for a Sustainable Built Environment (CASBE)
- Inner Melbourne local governments (the Cities of Melbourne, Port Phillip, Yarra and Stonnington)
- External Advisory Group including industry, developers and other peak body representatives from landscaping, planning and environmental sectors

## Awards

- Premier's Sustainability Awards 2015 – Education (Growing Green Guide)

## Project collaborators

[Green Factor tool](#)

[Growing Green Guide: A guide to green roofs, walls and facades in Melbourne and Victoria, Australia](#)

[Green Our City Strategic Action Plan](#)

[City of Melbourne website](#)

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