



Photography: John Gallings

Design:

Whilst the individual sustainability initiatives employed in the building may not be considered radical or innovative in themselves, it is the considered combination of all initiatives that is unique. We worked collaboratively to review and assess a variety of sustainability initiatives for the project whilst looking for synergies in those considered viable by the team.

This building is unique in that it combines beauty and functionality and hasn't needed to "highlight" the environmental initiatives because they are intrinsic and multifunctional within the envelope. Therefore being a reflection of the next level of maturity in environmentally responsible design it demonstrates that a building can be flexible, functional and great public architecture without having to specially "showcase" how environmental issues are addressed.

Integrated into the design is approximately 1,100 square metres of photovoltaic cells which have been placed on the roof for research and development work and to contribute to the energy input requirements for the facility.

Other unique features include a gas-fired tri-generation plant, low energy displacement cooling systems, heat recovery systems and two thermal labyrinths.

What we also view as innovative, or perhaps unique at this time, is that despite being a research laboratory building with typically energy intensive processes, the sustainability measures delivered result in a significant peak energy demand reduction.

Significantly, the Tyree Building is the first 6 Green Star certified laboratory building in Australia.

Sustainable Materials:

- Post-tensioned structural system reduces concrete framing.
- Recycled content of concrete used in structural frame reduced the absolute quantity of Portland cement by substitution: 60% for in situ concrete, 20% for precast concrete, and 30% for stressed concrete.
- Low VOC (Volatile Organic Compounds) and formaldehyde finishes.
- Steel has an average post-consumer recycled content greater than 50% by mass.
- 60% of total cost of PVC was reduced through the use of more sustainable materials.
- 95% of timber in the project was reused, recycled or Forest Stewardship Council (FSC) certified.
- No ozone depleting substances in thermal insulation used for the floor, walls, roof and pipework.
- A project-specific Environmental Management Plan (EMP) exceeded the 80% reuse/recycling benchmark for this project.