

Case Study: 40 Albert Road

Address: 40 Albert Road, South Melbourne

Owner: 40 Albert Road Commercial Pty Ltd, part of the Szencorp group of companies

Design: SJB Architects and Interiors, Energy Conservation Systems Pty Ltd, Connell Mott Macdonald

Construction: Construction Engineering

40 Albert Road, South Melbourne combines cutting edge sustainable design with a sophisticated, contemporary appearance. This 1,200m² office building, built in 1987 and regenerated during 2004-05, is the new headquarters of the Szencorp group of companies. 40 Albert Road is a showcase of sustainable building performance and innovative technology, with a number of “firsts” incorporated into the refurbishment. It has been awarded a 6 Star Green Star – Office Design V1 rating which gives the project “world leadership” status, and is the first office refurbishment in Australia to be awarded this rating. It is the first cooperation between an applicant and State Government with agreement to target and achieve a 6-Star rating

40 Albert Road’s design aim is to be Australia’s first zero emissions building. It is demonstrating that an innovative, holistic and long-term approach to the building design will reap business and environmental benefits whilst maintaining commercial viability. It has committed to building public access to share the projects’ learning.

Management

- Independent building commissioning and tuning.
- Building Users’ guide to be developed for future building occupants.
- Innovative governance arrangements including Energy Performance Contract and greenhouse management plans.
- Comprehensive environmental management plan (EMP) based on section 4 of the NSW Environmental Management Systems Guidelines (1998).
- Comprehensive waste management plan (WMP) recycled and/or reused 80 per cent of waste by weight during construction.

Indoor Environment Quality

- Automated ventilation system using outside air, linked to a weather station.
- Building Management System controls internal temperatures and ventilation based on occupancy.
- Increase in indoor ventilation rates to 2.6 times the Australian Standard.
- High performance glazing, operator controlled blinds and shading screens.
- High frequency dimmable ballasts and smart lighting systems.
- High thermal comfort performance.
- Decrease in internal noise levels.
- Low-VOC (volatile organic compound) content used throughout for insulation, carpets, adhesives, sealants, composite wood products and paints.



Energy

- 5 Star ABGR + 20% reduction in carbon dioxide
- Integrated sensor and management system for occupancy lighting, HVAC and security control.
- Ceramic fuel cell to generate low-emission, off-grid energy with potential of providing for >30% of building’s energy requirements onsite. This is the first time this technology has been used in an Australian commercial office building.
- Two solar PV grids (one amorphous) generating 5.5kW, which (with the ceramic fuel cell) will potentially provide zero grid energy consumption in future.
- Australian first permanent commercial office installation of natural gas VRV engine air conditioning units.
- Increased ceiling height (reclaimed from the old building plenum) allowing use of thermal mass for improved energy efficiency.

6 star rating



This rating represents World Leadership

Contact Us

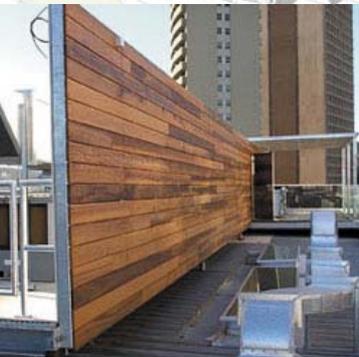
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Energy (continued)

- 70% reduction in energy use compared to conventional offices.
- Reduction in office lighting power density

Transport

- Provision of new bicycle, shower and locker facilities.
- Size and total number of car spaces reduced and 28% of car parking spaces for small cars.
- Climate offsetting of air and car travel requirements for occupants.
- Central location next to a tram terminus with good links to train and bus networks.

Water

- Low flush toilets, waterless urinals, electronic on-demand taps and showers.
- Solar hot water.
- Grey water recycling and rainwater collection.
- Potable water reductions of 82% compared to similar offices.
- Cooling tower water consumption eliminated.

Materials

- Recycling facilities for office waste.
- Forest Stewardship Council (Greenheart) certified timber.
- Reuse of existing roof, facades and building structure.
- Provision of flexible shell and core with fully integrated fit-out.
- High recycled content of structural concrete.

Land Use and Ecology

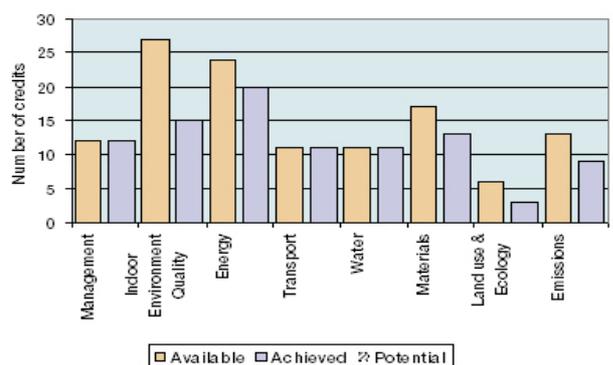
- Refurbishment – no major impact on site ecology.

Emissions

- Near-zero indoor air pollutants from Australian first use of Drykor dehumidification unit, which removes 94% of all micro-organisms and 77% of particles larger than 5 microns from airspace, helping to overcome “sick building syndrome”.
- Zero Ozone Depletion Potential (ODP) of all refrigerants and thermal insulants.
- Refrigerant leak detection and monitoring system.
- Management of all stormwater on-site up to a 1-in-20 year rain event.
- Sewer discharge reductions of 72%.
- Aiming to become a greenhouse sink/net energy exporter within two years.

Innovation

- Sensor-controlled air and fan coil movements, including CO sensors located in the car park.
- Two solar PV grids (one amorphous) generating 5.5kW, which (with the ceramic fuel cell) will potentially provide zero grid energy consumption in future.
- Australian first permanent commercial office installation of natural gas VRV engine air conditioning units.



Overall Green Star Building Performance

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Green Building Council of Australia

The Green Building Council of Australia is a national, not-for-profit organisation that is supported by both industry and governments across the country.

Launched in 2002, the Green Building Council's mission is to develop a sustainable property industry for Australia and to drive the adoption of green building practices through market-based solutions.



green building council australia

Key Objectives

- Drive the transition of the Australian property industry towards sustainability by promoting green building programs, technologies, design practices and operations; and
- Encourage the integration of green building initiatives into mainstream design, construction and operation of buildings.