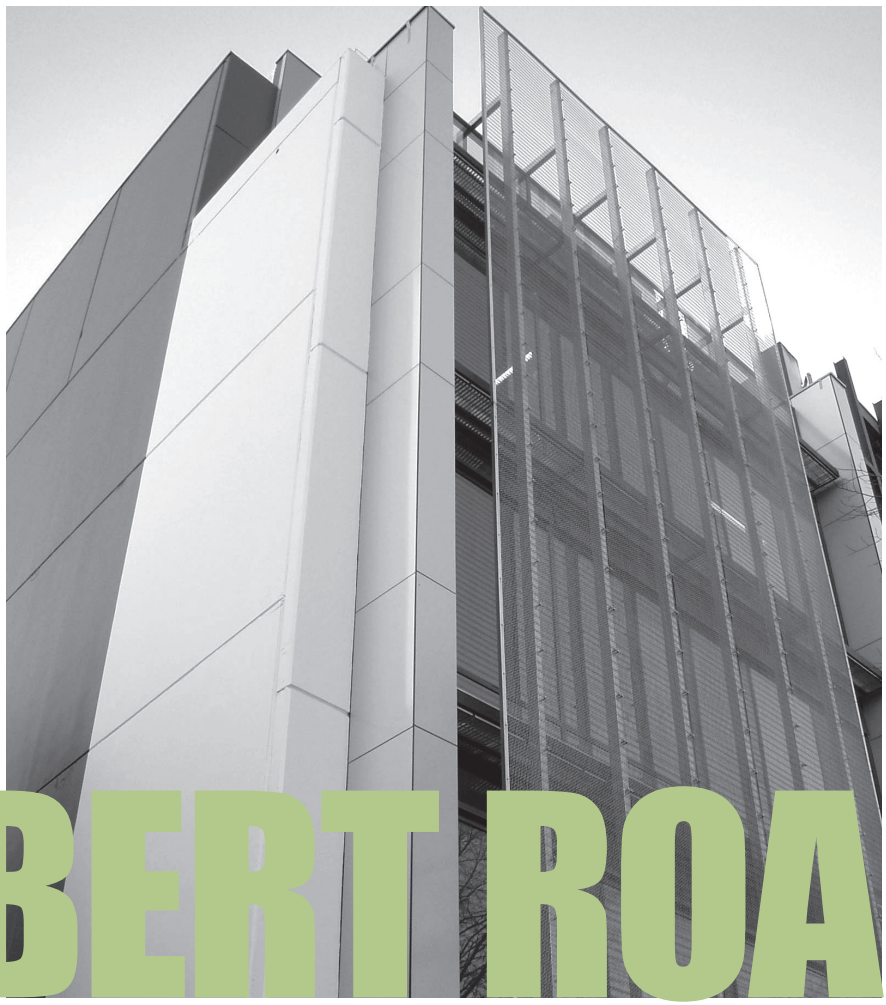
6 star rating

green star
environmental rating system for buildings
Office Design v1

green building council australia



40 ALBERT ROAD

GREEN BUILDING COUNCIL AUSTRALIA OVERVIEW

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

The Council's objective is to promote sustainable development and the transition of the property industry to implementing green building programs, technologies, design practice and operations. To do this, it advances and promotes the creation of a green building rating tool, economic incentives, government initiatives and programs, new technologies and industry knowledge.

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GENERAL PROJECT DESCRIPTION

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. 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 and has committed to building public access to share the project's learning.

40 ALBERT ROAD SOUTH MELBOURNE

Address:
40 Albert Road, South Melbourne

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

Designer:
SJB Architects and Interiors, Energy Conservation Systems Pty Ltd

Construction:
Construction Engineering

40 ALBERT ROAD

MANAGEMENT
- Independent building commissioning and tuning
- First building refurbishment to sign a Commitment Agreement to 5-Star ABGR rating
- 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
- 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 are 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 including buses, trains and ferries.

WATER
- Water fixtures are selected for efficiency of water usage;
- Water consumption is managed and monitored through use of water meters and sub-meters, which are linked to the Building Management System;
- Cooling Tower system is designed to use water efficiently; and
- Water used in Fire System testing and maintenance is retained for landscaping.

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 PERFORMACE