



SZENCORP BUILDING

Address: 40 Albert Road, South Melbourne
Owner: 40 Albert Road Commercial Pty Ltd,
 Part of the Szencorp group of companies
Design: Energy Conservation Systems Pty Ltd,
 SJB Architects and Interiors, Connell Mott MacDonald
Construction: Construction Engineering

CASE STUDY

SZENCORP BUILDING

40 ALBERT ROAD
SOUTH MELBOURNE

VICTORIA

The Szencorp Building sets a new benchmark in office refurbishment, combining cutting-edge sustainable design with a high-end look and feel.

This 1,200m² office building in South Melbourne is the new headquarters of the Szencorp Group of companies, who provide expertise in sustainable business.

It is Australia's highest rated building, having achieved a 6 Star Green Star rating from the Green Building Council of Australia, and 5 Star ratings for energy and water from National Australian Built Environment Rating System (NABERS).

WATER

The building features a comprehensive water management system designed and built by Energy Conservation Systems. Water consumption is minimised using the latest in controlled flow shower heads and taps throughout, some of them sensor activated only. Toilets are an award winning dual flush design using only 4.5/3 litres per flush. Urinals are waterless.

Lightly polluted water gathered from hand basins and showers (greywater) is collected, treated and reused for toilet flushing. This is complemented with a rainwater harvesting system providing 4,400 litres of rainwater storage, estimated to be enough for three weeks of normal flushing.

KEY AREAS OF ACHIEVEMENT

- First Australian building retrofit to have 5 Star NABERS ratings for energy and water, and a 6 Star Green Star - Office Design (v1) rating.
- Thought to have a world first integrated sensor and management system for occupancy lighting, HVAC and security control.
- First building in Australia, if not the world, to produce zero net emissions.
- Australian first use of ceramic fuel cells to reduce electricity used from the grid.
- Australian first use of the DryKor dry conditioning unit, which dries and cools the office space simultaneously, using a desiccant to absorb the water vapour from the air.
- Australian first use of natural gas engine AC units.



The Szencorp Building demonstrates innovative strategies and outcomes for the built environment that are anticipated to become standard practice over the next decade. It has been designed as a live case study with real-time monitoring and verification, and is an ongoing testbed for new products and services.

The project has achieved leading sustainable performance without compromising any conventional features - from the users' perspective it provides high-end office accommodation.



Energy Conservation Systems
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Management

- Independent building commissioning and tuning.
- Building Users' guide 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 NABERS + 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 on-site. This is the first time this technology has been used in an Australian commercial office building.
- Three solar PV grids (one amorphous) with capacity of approximately 8kW.
- 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 patterns have all contributed to the success of the Szencorp Building.

The aim of the Szencorp Building is to demonstrate how to recycle a typical existing suburban office into a leading edge building offering best practice performance in energy, greenhouse and sustainability.