

case study

Westfield Sydney

Sydney



Client

Westfield

ESD Consultancy

Cundall

Architect

Retail: Westfield Design

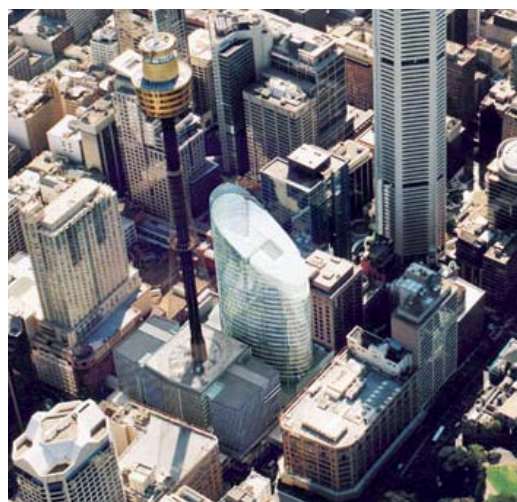
Commercial: Westfield Design

in association with JWA

External Building Envelope: Westfield (Design) & JWA (Concept)

Completion scheduled

2012 with staged openings from 2010



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Set to become one of Australia's largest sustainable mixed-use developments, the construction of Westfield Sydney aims to establish new benchmark targets in sustainable design for urban retail centres. The project incorporates a 33,000m² new office tower, the refurbishment of the 30,000m² office space below Sydney Tower, and the amalgamation of three existing shopping centres into a 40,000m² retail centre.

The design seeks to deliver premium indoor environmental quality, with both commercial towers and the Westfield Sydney shopping centre registered for Green Star ratings.

Cundall has realised the "green" ambitions pursued by Westfield with an innovative, integrative approach to push the boundaries of Australian Best Practice in retail centre environmental strategies.

Key building initiatives include -

Water - one of Australia's largest urban blackwater recycling systems will retain and treat all waste water on the site for non-potable uses, such as sanitary flushing and cooling tower water. In combination with high efficiency tapware, the site-wide water strategy aims to reduce commercial water use by 80% and retail water use by up to 50%.

Energy Use & Demand - a highly efficient cogeneration system provides approximately 25% of the base load for all three buildings, utilising the waste heat from on-site gas-fired electricity generation to supply "free" hot water, as well as "free" cooling energy converted by absorption chillers. On-site generation will substantially reduce peak energy demand, future-proofing the development against both peak and base electricity costs. The retail centre aims to use 25% less energy than typical shopping centres, and both commercial buildings have targeted 5 Star NABERS Energy ratings.

Indoor Environment Quality - High levels of thermal comfort, fresh air and daylight will be delivered through efficient facade design and air-conditioning systems. The new commercial tower features an internally ventilated, double skin facade - one of the first of its kind in Australia. Smart solar control is provided in all buildings by daylight sensor-controlled internal blinds and fritted glass. A displacement ventilation system in the retail centre, and a hybrid perimeter chilled beam system in one of the commercial buildings, have been designed to optimise thermal comfort with minimal energy demand.

Embodied Energy - embodied energy for the development will be reduced through the use of recycled construction materials, recycling of waste produced by construction and the reuse of all structures on site, including the former ATO building at 100 Market Street and three existing shopping centres, to be merged into a single world class retail space. The development will be an exemplar of green refurbishment, and aims to set a precedent for urban renewal projects in the Sydney CBD.