

CONSERVATION HOUSE

Entrusted with the task of conserving New Zealand's natural and historical heritage, it is appropriate that the Department of Conservation's (DOC) new head office is a demonstration of its commitment to conservation. *Conservation House - Whare Kaupapa Atawhai* is an iconic, environmentally sustainable building with an exciting yet efficient open-plan layout that is strongly connected to the external environment and nature. The building sets a new benchmark for environmentally sustainable design in New Zealand and takes DOC to the next step towards achieving carbon-neutrality.

Key achievements include:

- recycling of an existing structure to regenerate a prominent city site
- naturally ventilating open-plan offices mid season
- first use of chilled beams in an office building in New Zealand
- maximisation of natural light through glass facades and internal atria
- energy efficient lighting with automatic daylight dimming and presence detection
- harvesting and recycling of rainwater
- interior environment low in volatile organic compounds, formaldehyde and allergens
- building materials from sustainable sources that minimise embodied energy, greenhouse gases and PVC
- construction and demolition waste minimisation through reduction and recycling
- advanced building management system to ensure ongoing energy efficient operation



view of stairs with glazed atrium roof above

view down into atrium from 4th floor

Conservation House breaks new ground in sustainable office design in New Zealand, achieving a standard of national excellence exceeding that of just good practice. The project offers valuable insight into the strategies and resources required to successfully integrate sustainable design into architecture, and serves as a role model for others to follow.

A key learning was the importance of integrating sustainability goals into the client's brief at project conception. DOC included a very detailed *Building Performance Specification* within their brief that set specific sustainability targets under the following six objectives: optimise site potential; minimise energy consumption; protect and conserve water; use environmentally friendly materials; enhance the quality of the indoor environment; and optimise operational and maintenance practices. Submissions were required to demonstrate compliance with these objectives, and upon award of the design contract formed the basis of the contract specification between DOC and developer. This provided clear targets for the developer, avoiding the temptation to take short cuts or under-specify, and ensured that the project was budgeted for appropriately.

As sustainability is a relatively new development for commercial building in New Zealand, we were required to develop a new set of resources for design and specification. This involved establishing a strong consultant team, including a sustainability consultant, to share expertise, resources and ideas. Common reference was made to a variety of sustainability guides, such as the Ministry for the Environment and local Council guides. Products and materials were researched to establish their environmental impact, most of which did not have environmental information available as they do now. In the absence of a New Zealand sustainable building rating tool we referred to the Australian Green Building Council's *Green Star* for interim tests of achievement.

We learnt that sustainable building does not require a greatly different approach to design – rather, sustainable design reinforces good architectural design. For example, the interior aesthetic included not lining the columns or beams to expose the original structure of the building and explain the complex form of the interior glazed atrium. This also contributes to sustainability through the reduced consumption of finishing materials. Another example is the building façade, where the adoption of natural ventilation required a double-skin façade with operable openings to vent stale air out through the top of the façade. The double layering of glass and articulation of mullions and openings creates an architecturally appealing façade, providing a backdrop for the application of glazing film to personalise identity of the building.

We would be excited to present Conservation House as a case study at the Sustainable Building 07 conference. With the recent launch of the New Zealand Green Building Council's *Green Star* building rating tool we believe the building is a well-timed demonstration on how such a tool can be both a motivator and guide for sustainable design. We expect such a presentation would be of interest to a general audience, and would be particularly relevant to architects, designers and building developers.