



Manaaki Whenua  
Landcare Research

Landcare Research's new facilities at the University of Auckland's Tamaki Campus.

## Designed for sustainability

Our new purpose-built facility at the University of Auckland's Tamaki Campus reflects our commitment to the principles of sustainable development. The design has sought synergies (rather than trade-offs) between economics, the natural environment, and people's needs. It has a very low level of energy and water use compared to other buildings with similar functions and it delivers those cost saving features for the same capital cost of an equivalent conventional building. We hope it will encourage other organisations to follow and share in caring for the environment.

### Our goal

The key goal was to provide for all the functions we needed in a building where staff would enjoy working, and which encompassed state-of-the-art environmentally friendly features that cost about the same as a conventional building of the same nature, and with far less in operating costs.

Early in the design process, a workshop that included staff, council employees, EECA and other parties interested in sustainability, helped us identify, define and explore the design parameters for this building. The design responds to the requests of our staff, collaborators, shareholders, and other stakeholders.

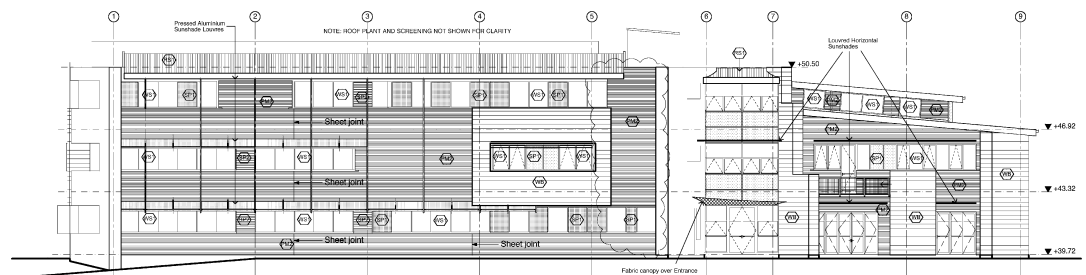
Chow:Hill (architects) and Connell Mott MacDonald (mechanical services design) worked with us to develop integrated systems that mimic natural ecosystem processes. Many mechanical and energy services are inter-related with waste from one system usefully feeding another service.

### Achievements

Construction costs were kept to the same as a conventional building of the same nature. The power savings, through using energy efficient design and sensible operating of the building, are projected to be a 60–70% reduction equating to approximately \$70K a year.

Water use is projected to be about half normal consumption through good water management and appropriate re-use.

*'Making a difference for a truly clean green New Zealand.'*



## Design objectives for the building

### *Environmental*

Engineering and technology used should ...

- demonstrate that leading-edge technology is practicable and cost-effective
- be durable giving the building a life span of 100 years or more
- have a minimum construction footprint
- use renewable, recyclable and recycled materials
- feature passive environmental systems wherever practical
- minimise waste solid waste, wastewater and stormwater going off site.

### *Social*

The design features should ...

- provide a healthy interior environment incorporating natural light and ventilation
- be a safe place with secure facilities and user-friendly operational control systems
- include shared and private spaces that encourage staff interactions
- improve links with MAF and university colleagues
- ensure a stimulating environment with improved, purpose-built facilities
- stimulate community interest in low impact urban design and development.

### *Economic*

The building should ...

- be cost-effective over the life of the building
- require low operational and maintenance expenditure
- be energy efficient all year
- have flexible, adaptable, multi-purpose workspaces.

## Low-impact urban design

The building exemplifies low-impact urban design and development. We believe low-impact development is an urgent alternative to conventional residential and commercial development. In collaboration with our University of Auckland partners, we are identifying cost-effective low-impact technologies that utilise natural systems and enhance sustainable design.

A core aspect of our research programmes is to establishing 'proof of performance' at the individual building, neighbourhood and urban catchment scales. The rapidly developing East Tamaki region in Auckland is one of several case studies around the country that will enable us to discriminate between effective and ineffective low-impact development approaches at all three spatial scales. We will be using the performance of this building in our research—measuring the actual energy savings, effectiveness of ventilation systems, reduction in waste water and sewage, and the success of our stormwater management system. We will also be assessing the impact of the building's design on the health and well-being of staff working in the building.

By evaluating the performance of low-impact design and development features in this building, we will be able to extrapolate and demonstrate the benefits to the neighbourhood and the catchment scales. We aspire to seeing 30 % of all major new development in Auckland and other urban centres embracing low-impact development by 2008.

### ***For more information, contact:***

Dr Maggie Lawton  
Operations Manager  
Landcare Research, 261 Morrin Road  
University of Auckland's Tamaki Campus  
Ph (09) 574 4100  
lawtonm@landcareresearch.co.nz

Dr Charles Eason  
Science Manager, Urban Environmental Research  
Landcare Research, Private Bag 92170  
Auckland  
easonc@landcareresearch.co.nz

***Or visit our web site:*** [www.landcareresearch.co.nz](http://www.landcareresearch.co.nz)