

# DRIVERS FOR RESOURCE EFFICIENCY

**Although there is no silver bullet for improving resource efficiency in commercial buildings, BEES is contributing to a greater understanding of the triggers that might drive resource optimisation.**

By **Kay Saville-Smith**, Research Director, Centre for Research Evaluation and Social Assessment

Improving the energy efficiency and thermal performance of New Zealand homes has been on the agenda for many years, and rightly so. BRANZ's Household End-use Energy Project (HEEP) demonstrated the national burden of energy consumption from our dwellings, the poor amenity value gained from energy consumption and trends in appliance use likely to drive its increase in the future.

However, this focus on the residential sector has meant energy consumption in commercial, office and retail buildings has been neglected. BRANZ's Building End-use Energy Study (BEES) provides a research-based response to energy consumption in that sector. And there is a need for it – overseas data shows that commercial buildings are significant, and generally inefficient, users of energy. For instance, researchers from the MIT Center for Real Estate in the United States have found that, on the basis of floor area, energy consumption

in residential buildings is less than half that of commercial office buildings.

## Challenges of energy efficiency

Designing and building energy-efficient buildings is a profound challenge. Pett and Ramsay suggest that the commercial building sector supply chain is characterised by inertia. Occupiers' and tenants' needs have little impact, and stakeholders persistently rationalise the failure to deliver technically achievable energy efficiency outcomes by alleging barriers presented by other stakeholders. This vicious circle of blame (see Figure 1) is compounded by the problem of split incentives and associated moral hazards.

Where tenants pay directly for energy, the building owner has no direct incentive to improve building or plant. Where tenants' access to energy is by way of their rental agreement, there may be no incentive to install plant or behave in ways that maximise energy use.

## Addressing split incentives

Mechanisms have been developed to incentivise the commercial sector to design, build and manage buildings for energy efficiency. There have been attempts to address split incentives through green leases, building accreditation schemes and sophisticated building monitoring and technical management. The efficacy of those mechanisms is being debated overseas, and their applicability to New Zealand must also be questioned.

BEES found that 14.5% of non-residential buildings are fully or partly owner-occupied and are not subject to the same split incentives as landlord-tenant arrangements. On the other hand, 72.1% of the premises in BEES pay directly for their electricity. This gives landlords limited incentive to deliver energy-efficient buildings. Split incentives may not be the main reason for low levels of energy efficiency, as landlords and property managers bring differing imperatives to building ownership and management.



Figure 1: The commercial building 'vicious circle of blame'. (Source: Pett and Ramsay, 2003, *Energy efficiency in commercial offices: Who can transform the market?*)

## DIY landlords or investors

Preliminary in-depth BEES interviews indicate a stark contrast between those who supply and manage non-residential buildings as a form of self-employment and those who see their main goal as generating value for investors.

The former take a do-it-yourself approach to building management. This is directed at:

- reducing direct and indirect costs through labour substitution
- ensuring tenants are non-complaining rather than mirroring building performance
- securing a steady, not necessarily maximised, income stream
- being accountable to no one but themselves.

Among these DIY landlords, there tends to be low-level tenant monitoring, refurbishment and outfitting and a variety of lease mechanisms. Where extensive refurbishment and outfitting are undertaken, it is often cosmetic in nature and directed to reconsolidating or splitting up space. There is no recognition of, nor interest in, energy efficiency.

For those whose buildings are primarily an investment, maximising returns and acquiring

buildings with strong income potential is important. Management focuses on reducing the operation costs of a building and attracting and maintaining tenants willing to pay premium prices.

These landlords and property managers are concerned with:

- building performance, including energy and water consumption performance
- building systems such as air-conditioning and other operating systems that drive costs
- maintenance and replacement costs.

## Similar goals, different approaches

The goal of cost reduction is not significantly different from that of the self-employed landlords – investor landlords just go about it differently. Significant effort is put into benchmarking building performance and identifying what can be improved. Improving building performance, especially through close building management, is seen as offering real returns in new and existing older buildings.

Achieving good energy and water consumption performance are important aspects of a building for attracting tenants. However, there are limits

to the return on resource efficiency, particularly with the new policy settings around tax and the international recession.

## BEES contributes through research

The diversity of residential buildings and these profound differences in approach to building management reinforce the view that there is no silver bullet for improving resource efficiency in commercial buildings.

BEES contributes by:

- identifying and classifying the different types of landlords and building managers in New Zealand
- establishing the quantum of non-residential stock associated with each type
- establishing the relative resource consumption in buildings operated by those landlord segments
- exploring the range of specific triggers in each segment that might drive the optimisation of resources. 📌

# Design with Cedar in Mind

## Design with Cedar in Mind

### Keep the cost of cladding down using BRANZ Appraised claddings

Cedar Products began importing Cedar Ply sheets, with the intention of reducing the cost of cladding in a natural and visually appealing product. These products have been used in the tough North American climate for 50 years and in New Zealand since 1987. The intervening years have seen improvements in both the strength and finish of the product, which is now 9 mm, 12 mm and 15 mm thick with a light band sawn face veneer which is almost defect free. These products are manufactured in the USA and marketed in New Zealand as Roseburg Cedar Super Ply.

Super Ply sheets can be supplied in lengths of 2.44, 2.74 and 3.05 metres. The covered width on grooved sheets is 1.2 metres. Ungrooved sheets are square edged and available in three thicknesses, 9 mm for soffits liners and garage doors, 12 and 15 mm for Board and Batten cladding. The 15 mm Super Ply sheets also come with a square groove pattern at

either 100 mm centres or 200 mm centres. These sheets come with a shiplap edge which forms a groove giving a continuous pattern along the wall.

These products are much stronger and less prone to cupping, warping or splitting than other timber claddings.

The exterior ply cladding products have a Cedar-tone prestain applied at the factory to help protect the product during transport, storage and application, after which you can apply most semitransparent oil-based stains available in NZ (Cabots, Wattyl, Resene). Cedar Products recommends their range of stainless steel nails (which are painted a cedar colour) for the fastening of all cedar and other timber claddings.

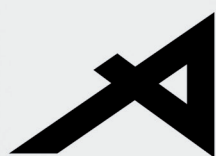
Cedar Products can also supply all other forms of cedar cladding, mouldings, beams and shingles, at competitive rates.

For details on fixing please refer to BRANZ Appraisal No.495 (2006).

**Cedar**  
**PRODUCTS (NZ) LTD**

IMPORTING DIRECT FROM THE SOURCE

High Quality Bandsawn Plywood for Board and Batten Cladding



**BRANZ Appraised**  
Appraisal No.495 [2006]

## Cedar Products (NZ) Ltd

PO Box 20-047, Glen Eden, Auckland, New Zealand

Ph: (09) 818-4279, Fax: (09) 818-5936

Toll Free: 0508 233 274

Email: cedar@cedarproducts.co.nz

Web: www.cedarproducts.co.nz

