

Lighting design in the Waitakere and Rotorua NOW Homes

Both the Waitakere and Rotorua NOW Homes were designed to maximise natural light and use efficient lighting. Monitoring of these live research homes confirmed what was – and wasn't – successful.

Waitakere NOW Home

Natural light was optimised with large windows in all rooms to reduce the need for artificial light between 9am-4pm all year round. With all the natural light flooding in through the windows, the family noticed they didn't need to switch lights on as often.

A Solatube skylight was installed in the kitchen to improve natural light – this was so bright that visitors to the house often thought a light was on.

Rather than recessed downlights, pendant lights were used in the main living area with its cathedral ceiling. Compact fluorescent light bulbs were used where possible.

Spotlights were used for task lighting in the kitchen.

This lighting design proved very successful, using only 6% of the home's energy use. This compares well with average lighting energy use of 8%.



Rotorua NOW Home

With extensive windows and sliding doors to trap sun, the Rotorua house has plenty of natural light, especially on its north face.

Halogen lights have been used for task lighting in the kitchen and bathrooms of the Rotorua NOW Home. Although not energy efficient, they are not likely to be on as long as general room lighting.

Instead of recessed downlights which create gaps in the ceiling insulation in a home, batten light fittings compatible with energy efficient bulbs were used.

However, the tenants found the house to be over-lit and difficult to control with a large number of lights on one switch. This resulted in lighting using 12% of energy use in the Rotorua NOW Home, considerably more than the 6% used in the Waitakere NOW Home. This is thought to be due:

- the much larger number of light fittings
- an insufficient number of switching circuits – meaning that one switch turned on lights in several locations, leading to over-lighting of the home.

For more information:

- Beacon website www.beaconpathway.co.nz/new-homes/article/what_is_the_waitakere_now_home_project and www.beaconpathway.co.nz/new-homes/article/what_is_the_rotorua_now_home_project

