

Thermal mass in the Waitakere NOW Home

A polished concrete floor, well insulated, helped keep the Waitakere NOW Home warm and comfortable over winter.

The Waitakere NOW Home was designed to make the most of passive solar principles. Facing north with living spaces and extensive windows and doors on the northern face, it maximises solar gain during the winter. Most importantly it also includes the use of thermal mass.

A 100mm thick concrete slab and footing acts as a heat sink to store the sun's warmth and release it later in the day when the temperature drops. To prevent heat loss into the colder surrounding ground and air, the slab is insulated with polystyrene insulation underneath and around its edges.

The concrete floor is coloured and polished and has been left exposed in all the north-facing living areas to collect and store heat more effectively. Sun pours into the house during the day, and at night, the family living in the house reports that warmth radiates back off the polished concrete floor. The family loved the floor, rating it ten out of ten. It kept the indoor temperature very even and even in winter did not feel cold. They reported it was easy to keep clean with only the occasional scratching.

Designed to only need space heating on 10 days per year, the Waitakere NOW Home® only needed additional heating only required on two days per year. There is no inbuilt heating – the family used a small fan heater when necessary.

The living room had an average winter temperature of 21.6°C and the bedrooms had an average night-time winter temperatures of 17.4°C -17.7°C. The winter mean temperatures all exceeded World Health Organisation minimum of 18°C for living areas and 16°C for bedrooms (compared to 30% of New Zealand homes which regularly don't meet these standards).

Overall the family enjoyed a much warmer home than their previous house. Although arriving at the tail end of winter, they did not use their space heater, drier or dehumidifier, all of which were used continuously at their last house.



For more information:

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