

# **IMPROVING THE PERFORMANCE OF STEEL FRAMED NEW HOMES THROUGH PREFABRICATION – CASE STUDY THE HIVE HIGH PERFORMANCE HOUSE WITH WARMFRAME**

Lois EASTON 1

Nick Collins 1

## 1. Beacon Pathway Limited

The HIVE High Performance House was developed in 2012 to trial a new method of improved steel framing (Warmframe™) alongside off-construction while achieving a high performance outcome. Traditional steel framing methods rely on the insertion of thermal breaks throughout the framing to achieve NZ Building Code compliance for thermal performance and it is rare for a steel framed dwelling to exceed the thermal performance requirements of the Building Code. The Warmframe™ composite system was developed to overcome these issues and enable high thermal performance outcomes combined with the efficiency of prefabrication to achieve a more sustainable outcome.

The house was located in PrefabNZ's Home Innovation Park in Christchurch where a range of other prefabricated houses were being showcased in order to promote the role of prefabricated houses in the Christchurch rebuild.

The house featured a number of more traditional sustainable building/high performance aspects such as photovoltaic energy generation, solar water heating, pellet burner, energy efficient lighting and appliances, rainwater tank and water efficient tapware and appliances and achieved a relatively high Homestar Design Rating.

This Case Study looks at the practical issues of off-site prefabrication of higher performing houses, the practicality of improving the thermal performance of steel framing and the wider issues of uptake of prefabricated housing in the post Canterbury earthquakes environment.

Presenting author: Lois Easton – [Loise@beaconpathway.co.nz](mailto:Loise@beaconpathway.co.nz)

Word Count: 250