CASE STUDY

Marriot House

PRODUCTS USED

Earthwool® glasswool: Ceiling, R5.2
Earthwool glasswool: Ceiling, R4.1
Earthwool glasswool: Wall, R2.6
Earthwool glasswool: Acoustic, R1.4
Jet Stream MAX

PROJECT

Marriot House

MAIN CONTRACTOR

Glen Harley (Harley Builders)

CONTRACTOR

Eco Insulation Canterbury

"Jet Stream® MAX exceeded my expectations in its ability to fill areas in the framing that can be missed in traditional insulation systems."

"It was very easy to work with and I was impressed with the ease and speed at which we were able to insulate the wall cavities," said Glenn Harley, Director of Harley Builders.

CHALLENGE

The Marriot House is the first home to be certified under the Passive House standard in Christchurch. Comfort, energy efficiency and quality are the principles of a Passive House and therefore the building materials and in-situ performance were crucial to ensure the house satisfied the Passive House Standard.

The structure incorporated ibeams in the external walls, which had no noggs, so it was important that the insulation used would fill hard to reach areas to prevent thermal bridging. It was also essential that the insulation had high thermal performance in order to achieve an R-Value target of R7.0.

SOLUTION

In order to achieve an R7.0 thermal rating in the 200mm thick external walls, Jet Stream® MAX and Earthwool® glasswool: Wall batts, were used.

Jet Stream MAX is a high performing blow-in glasswool insulation designed with optimal thermal properties and excellent coverage and blowing characteristics, making it the ideal product for filling the hard to reach areas around the ibeams.

In addition, an air-check membrane was placed around Jet Stream MAX and an additional layer of Earthwool glasswool: Acoustic wall batts, R1.4 was added.

Earthwool glasswool: Wall batts, R2.6 were installed in the internal walls. Earthwool glasswool: Wall batts, R2.6 are a high density glasswool insulation providing high thermal and acoustic performance. While helping to improve the energy efficiency of the home, the insulation will help to regulate the internal temperature to create a comfortable living environment.

Earthwool glasswool: Ceiling batts, R4.1 and R5.2 were used in the sub-floor and ceiling. The high R-Values exceed minimum standards for insulation in New Zealand but are an essential component of the building fabric to help reduce energy use. The insulation will also contribute to the sustainable credentials of the home, helping to reduce carbon emissions.

RESULT

The insulation materials used in a Passive House can contribute to lowering energy use. Therefore, insulation has an important role to play as it can considerably improve the energy efficiency of the building. The high thermal performance requirements combined with the ibeam structure meant that Knauf Insulation were able to provide a superior, alternative solution to traditional glasswool batts. Jet Stream MAX blow-in insulation can be installed at high densities to help achieve high thermal performance and the lack of noggs wasn't an issue as the insulation fully filled the cavity and once installed it will perform for the life of the building.

Commenting on why Jet Stream MAX was the best solution for the external walls, Glenn Harley, Director of Harley Builders said: "Jet Stream MAX exceeded my expectations in its ability to fill areas in the framing that can be missed in traditional insulation systems."

"It was very easy to work with and I was impressed with the ease and speed at which we were able to insulate the wall cavities.

There was no mess on site and because the insulation is compression packed we were able to get a lot of coverage out of just one bag. It's a fantastic product for providing high thermal performance in houses such as the Passive House design which demand superior performance."

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