

Why you should consider using the

## QBT 450™ roof system



### **Shelter**

Having a “roof over your head” is a basic need.

The roof, together with the foundation, is the most important part of any building. It protects the structure and the content.

Having the right roof, or for that matter, the right building envelope, is a very important and not necessarily expensive decision.

This results in buildings that truly shelter occupants, providing them with a healthy, comfortable indoor environment and protects their investment for years to come.

### **Status of housing in New Zealand**

The unhealthy and inefficient standard of the existing building stock in New Zealand is well documented. Recent BRANZ research found visible mould in nearly half of all houses surveyed. The quality of housing is one of a number of unequally distributed social determinants (wealth and education for example are others) that are known to drive health outcomes. Cold and damp indoor environments are widespread in New Zealand homes, and large proportions of the population do not have the ability to change these. There are some indications that houses built

to more recent iterations of the Building Code are still not as healthy or energy-efficient as they should be.

A core purpose of the Building Act 2004 (and in this matter the Building Code, especially under E2 and B2) is to ensure that “buildings have attributes that contribute appropriately to the health, physical independence, and wellbeing of the people who use them”. Our older houses often do not pass muster in this regard, but surprisingly very few new houses are up to the task as well. Too many houses have questionable indoor environmental quality, and require large amounts of precious energy to maintain even a substandard level of comfort, which pollutes the environment in the process.

From the outset, it has to be stressed that housing affordability is overwhelmingly determined by land prices, followed by the characteristics of building element surfaces. Yet, designing and building a better performing house will cost slightly more than a house of the same geometry at the same location with identical surfaces. It is however doubtful if the latter will meet the purpose of the Building Act 2004.

As most buildings are already built, requirements for new homes will not have an immediate impact on the overall performance of houses in New Zealand. Yet, new houses lock-in the performance for the next century, and better performing new houses will eventually lift the expectations for all housing, and enable by then tried and tested techniques to be transferred to existing buildings.

Scientific research and studies show that instant asthma is connected to moisture.

In New Zealand 1 in 6 Kiwis are affected by respiratory disease.

As a country, we use about 2% more energy every year. We could save about 20% of that demand (or \$2.4 billion a year) by using energy more efficiently and relying more on renewable resources.

Up to 10 per cent of New Zealand houses are not fit for habitation, and most that are, are not warm enough, says Dr Nevil Pierse a health researcher from Otago University. He has also stated that the huge health cost of poor housing is now more relevant than ever.

Every single human being on the planet should have safe and healthy places to live, work, learn and play. Leading long and healthy lives is not a privilege—it’s a right for everyone. Shouldn’t the places where we spend 90% of our time actively support our health and wellbeing? Improved health and productivity benefits are playing a larger role than ever before in driving companies to invest in green building.

### **How does QBT 450 contribute to healthier, dryer and warmer housing while also having a positive environmental impact with a responsible use of resources?**

The QBT 450 is installed over a ventilated cavity. This allows for moisture to drain freely out and also to dry out. This results in significantly less moisture being able to sit underneath the roof or entering the building or/ and structure.

The indirect fixings allow for free movement in thermal and seismic situations.

No holes are drilled through the intact surface, meaning no potential leak. This is opposed to how most profiled metal claddings are directly fixed with hundreds of holes being drilled to fix the sheet to the sub-structure, which allows moisture in.

On-site roll forming of aluminium reduces transport cost, does not require packaging and as a result has a significant positive impact on resources and energy consumption in comparison to other materials, hence contributing to reduction in CO2 emission.

A life cycle analysis of aluminium shows distinct advantages to recycling the material. The primary benefit of recycling aluminum is reduced energy consumption. Aluminium recovery from scrap needs only 5 percent of the energy required to extract it. Therefore, secondary aluminium production from recycling scrap has the potential to significantly reduce greenhouse gas emissions. Repeated recycling of aluminum also does not affect its quality.

Here are some further advantages of using aluminum rather than steel as a material choice:

- It is weather-proof and corrosive resistant
- Weighing up to 65% less than steel
- Coated aluminium roofs can reflect up to 95% of sunlight, dramatically lowering energy consumption for temperature moderation
- Can be recycled over and over again (in fact nearly 75% of all produced aluminium is still in use) recycled aluminium uses only 5% of energy in comparison to new source production
- Extended life cycle
- Little or no maintenance required

### **Summary:**

Based on above stated facts, the QBT 450 system provides a more sustainable, environmentally friendly and long-lasting solution than most other systems available on the market.

Especially schools, government buildings, public buildings like libraries, indoor swimming pools and commercial buildings would benefit due to the long-life circle, with little maintenance.

In this circumstance the question shouldn't be "can I afford it?", but rather, "can I afford not to have it?".