Industry perspectives on exceeding minimum Code requirements in new-build homes

BRANZ investigated the attitudes of construction industry professionals towards exceeding the minimum requirements of the New Zealand Building Code in new-build homes. Many of those surveyed were already exceeding the minimum, mainly in insulation, energy efficiency and material durability. Architects and designers were the main influencers in this area. At the time of the survey, a mismatch between real and perceived costs and benefits could be one of the major barriers for exceeding the minimum in the housing market. Targeted initiatives could further encourage high-performance residential building.

Buildings that exceed minimum building standards have many benefits for their occupants, such as better insulation and energy efficiency. Some investments in higher specifications have tangible benefits, such as indoor comfort and lower energy bills. Other longer-term benefits may be less obvious, such as improved health and reduced hospital visits.

BRANZ research investigated the perceptions and experiences of professionals in the construction industry about incorporating features that exceed Building Code requirements in new builds. The research also identified the real or perceived barriers to exceeding the minimum.

An online survey of 22 questions was sent to a random sample of architects, builders, building officials, building consultants and designers in Auckland, Waikato, Bay of Plenty, Greater Wellington, Nelson, Canterbury and Otago. 496 valid survey responses were received.

Most responses came from builders/installers (33%), designers (30%) and architects (20%). Responses also came from other professions, including project managers, building consent and compliance officers, surveyors and developers. Most responding had more than 20 years' experience in the construction industry.

Findings

Perceptions of quality and performance

The survey started by asking people to rank the quality of existing houses in New Zealand (Figure 1). Architects had the lowest perception of housing quality, with 46% considering it very poor or poor, while builders were more likely to rate the quality of existing housing as good (40%) or excellent (4%).

People responding to the survey were also asked about the performance of the last new-build house they worked on (Figure 2). Over half (53%) rated this as exceeding current minimum standards. Very few (6% overall) chose the best-practice

category. Architects had a more positive perception of performance than other professions. 78% of architects rated the last house they worked on as exceeding the current minimum standards. Conversely, only 16% of building consent officials selected this option, and most (84%) described the house as meeting the minimum standard only.

How the Building Code was exceeded

The survey also investigated how the Building Code was exceeded. This was most commonly by installation of insulation (underfloor, wall and ceiling), products supporting energy efficiency (heat recovery, LED lights) and material durability (cladding and wear surfaces for low maintenance) (Figure 3). The features used less often included renewable power generation, water efficiency (rainwater collection, greywater recycling) and external solar shading. Planned practices were similar (Figure 4).

The survey respondents were consistent in considering that the architect (67%) or designer (56%) is responsible for initiating discussion about exceeding the minimum and the house owner/client is who makes the final decision to build beyond Code (73%).

Attitudes towards benefits and barriers

The survey also investigated how the benefits for and barriers to exceeding the Building Code were perceived by industry professionals. Survey participants were asked to rank the benefits by environmental, economic, social and health benefits. 61% ranked health as the most important benefit, and there was a relatively even spread of the rank of the other three categories.

43% perceived built cost as the most significant barrier, but this was more commonly flagged by architects and designers than builders. The willingness of the house owner and developer were identified as the next most significant barrier, followed by lack of owner knowledge and life cycle costs and payback. Other barriers identified included the building consent/compliance process, which may be longer, more complex and/or more expensive for non-standard construction, and the availability of products, materials and documentation.

Sourcing information

Most survey participants sourced their information about building beyond Code minimums from BRANZ or the BRANZ Level website (Figure 5). Over half also sought information from colleagues. The New Zealand Green Building Council, Homestar and EECA were more commonly used by designers and architects than builders.

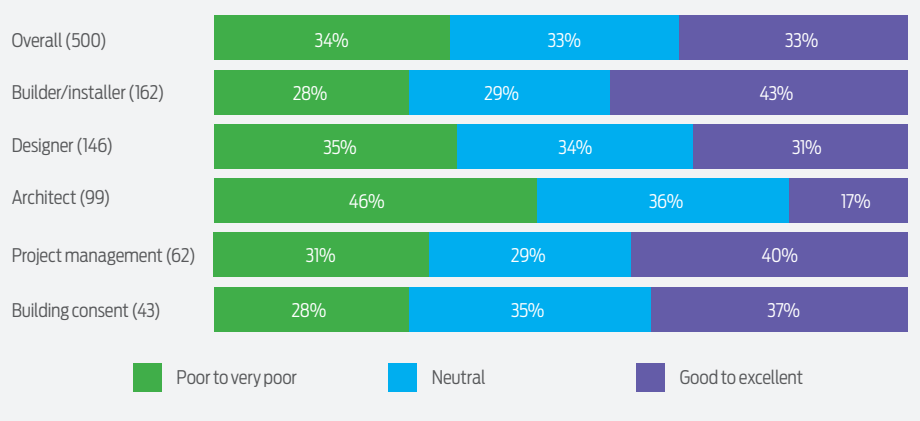

Figure 1. Perception of various construction industry professionals of existing housing quality in New Zealand.

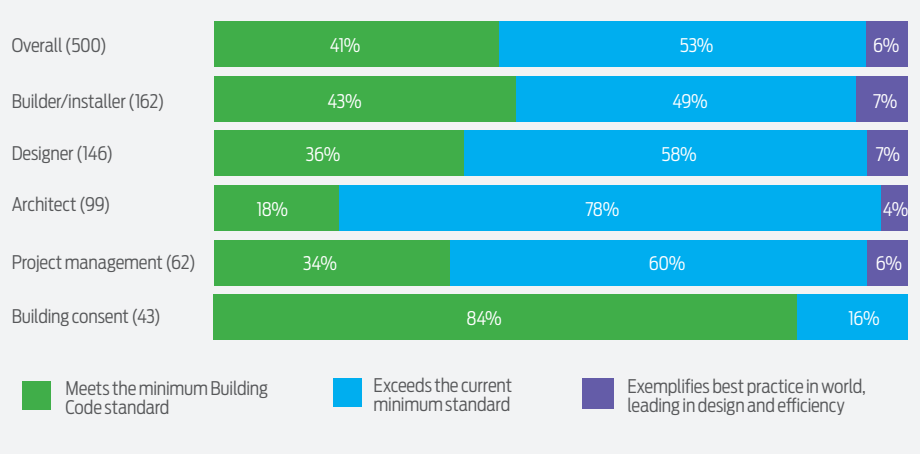

Figure 2. Perception of the performance of the last house they worked on.

Promoting high performance to consumers

The survey also asked what messages should be given to consumers to promote high-performance homes. 353 comments were given that had clear and recurring themes including:

- long-term cost benefit (life cycle costs) - the most common theme
- the Building Code is a minimum, not a target - frequently raised
- lower running costs
- enhanced resale value
- health benefits
- indoor comfort
- benefits for the environment/sustainability
- durability and lower maintenance.

People responding to the survey were also asked what else could be done to help them deliver high-performance homes. 359 responses were received along with some detailed feedback. Suggested themes included:

- education and awareness raising for consumers
- train and educate industry professionals to promote high-performance options
- make information on building life cycle costs more readily available
- provide a cost-benefit analysis tool to help calculate and communicate life cycle costs
- provide information to allow easier and more transparent product comparisons
- a central repository of information and clear guidance
- create a standardised home performance rating system
- work towards making land and materials in New Zealand more affordable
- create incentives, subsidies and rebates
- streamline the consent/compliance process and reduce costs
- change the existing Building Code and minimum standards.

Recommendations

Industry professionals are a part of the solution to exceeding Building Code minimums, and health

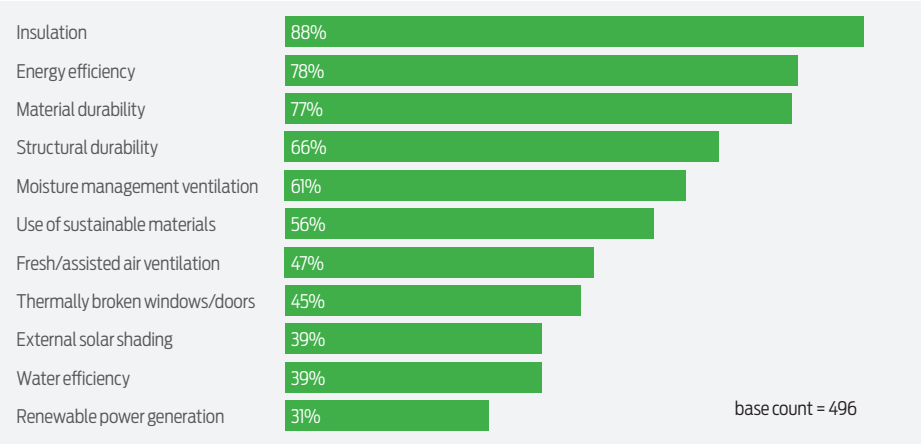

Figure 3. Features exceeding Code minimums currently used by those surveyed.

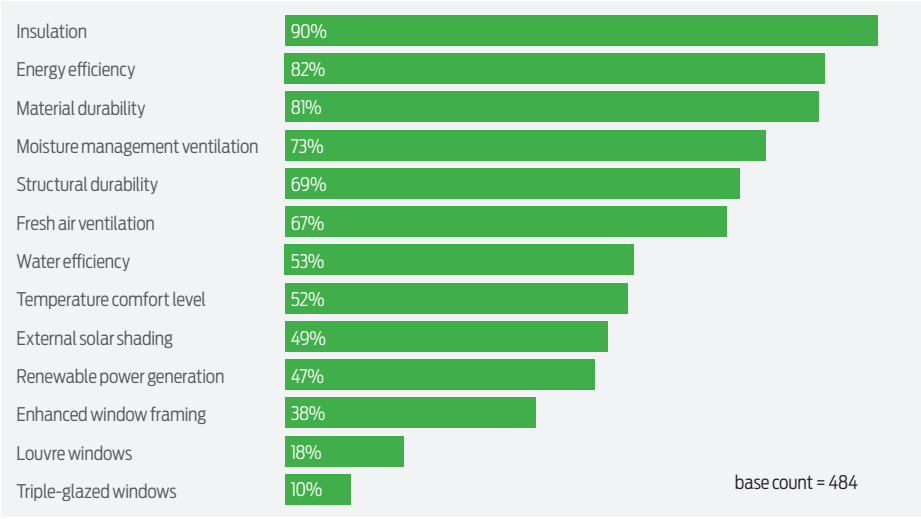

Figure 4. Features exceeding Code minimums that those surveyed planned to use in the next 12 months.

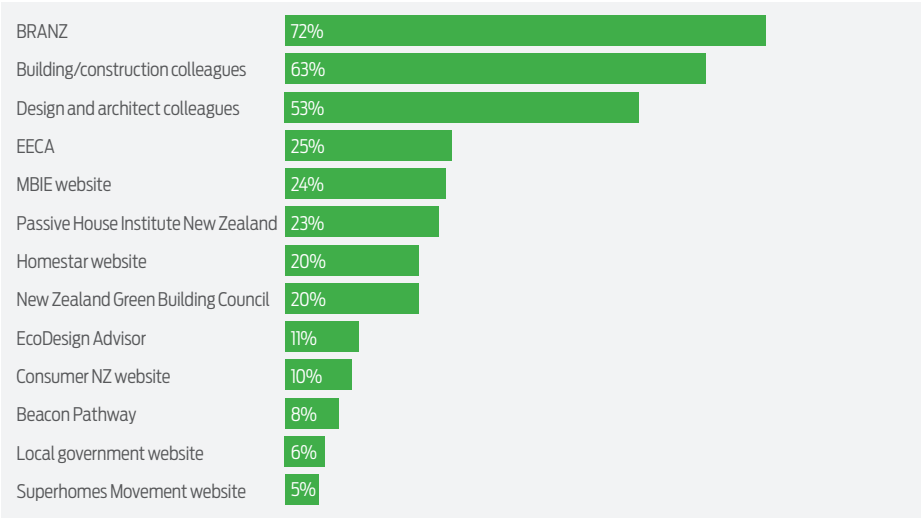

Figure 5. Where the industry professionals surveyed find their information about high-performance building.

and wellbeing is a common interest. However, there remains a mismatch between the real and perceived costs and benefits across the housing market in general. The following recommendations could address this:

- Ongoing training and support for building professionals to encourage the promotion and uptake of exceeding the minimum. This should involve greater grass-roots dialogue between designers, architects and builders as key influencers in getting the industry to exceed the minimum.
- Raise awareness among real estate agents, mortgage lenders, valuers and related professionals about the benefits of buildings that exceed the minimum, such as building quality, building performance and health benefits. A greater awareness of this and the costs is likely to have a flow-on effect for resale, as real estate agents could use the building's thermal performance as a selling point.

Further research proposed:

- Identify how exceeding the minimum could be incorporated or incentivised in financial systems, such as buildings that perform better having a mortgage discount. This could redistribute the risk of constructing buildings that exceed the minimum until the practice becomes more commonplace.
- Examine how the Building Code could be brought into line with international building codes and regulations in countries with similar climates to New Zealand.

More information

BRANZ Study Report SR385 *Industry perspectives on exceeding the minimum*

BRANZ Study Report SR402 *The choice to exceed: Consumer perspectives on building beyond Code in New Zealand*

BRANZ Study Report SR419 *A consumer survey of attitudes to exceeding minimum standards for refurbishments and retrofits*