Ministry for Primary Industries
Manatū Ahu Matua

A summary of the MPI-commissioned survey on engineered timber use

Prepared for the Ministry for Primary Industries

MPI Information paper 2014/12

ISBN: 978-0-478-43268-8 (online)
ISSN: 2253-394X (online)

June 2014

New Zealand Government

Growing and Protecting New Zealand

Disclaimer

The Ministry for Primary Industries (MPI) does not warrant, undertake or guarantee that the information contained in this summary report reflects any particular view of MPI or that the information in the report will lead to any particular outcome or result. This report is merely a summary and is not intended for any other purpose.

Requests for further copies should be directed to:

Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
WELLINGTON 6140

Email: brand@mpi.govt.nz
Telephone: 0800 00 83 33
Facsimile: 04-894 0300

This publication is also available on the Ministry for Primary Industries website at http://www.mpi.govt.nz/news-resources/publications.aspx

Introduction

This paper summarises findings from a December 2013, MPI-commissioned survey of those involved in the building of engineered timber multi-storey commercial and residential buildings in New Zealand. Specifically, the survey sought to:

- Verify the challenges to the uptake of this technology.
- Identify the knowledge gaps on engineered timber products.
- Determine how technical information on engineered timber products can be successfully communicated to specifiers.
- Identify what changes may be needed to current standards and codes to facilitate the uptake of this construction technology.

Dr David Evison of the University of Canterbury surveyed the developers and specifiers involved in the construction of four commercial buildings that incorporated engineered timber components.

Background

Engineered timber products are gaining market share internationally as a construction material for multi-storey commercial and residential buildings. New technology for timber construction has recently been developed in New Zealand. There is limited awareness, however, of the potential for engineered timber products for structural use in New Zealand. A lack of information, and few examples, has led to reluctance amongst specifiers (i.e. architects, engineers and builders) to specify products such as Laminated Veneer Lumber (LVL) and Cross Laminated Timber (CLT).

Engineered timber products have the potential to play a major role in the rebuild of Christchurch and to provide a competitive alternative to concrete and steel design options. Realising this potential would also require an enhanced prefabrication capability using engineered timber and steel components. To date, this technology has been applied to a limited number of buildings in New Zealand.

Survey Description and Findings

The survey was based on qualitative interviews of key decision makers involved in multi-story engineered timber building developments in New Zealand. The interviews found a number of common themes, and Dr Evison made the following points in his report:

- The motivating factors to design the four buildings in engineered timber included the innovative nature of the product, the seismic properties of engineered timber, the environmental benefits, and ability to combine engineered timber with concrete and steel. In all cases the buildings were built because the owners wanted a timber building;
- Most of the interviewees were positive about engineered timber products for multi-storey construction but thought there were a number of areas that, if addressed, could improve the uptake: Design assistance, (specifically the updating the the New Zealand Timber Standard 3603 and supporting technical information), further development of fabrication capability, and education and promotion of the benefits of timber were all mentioned;

- The benefits of building with engineered timber were: ease and speed of construction, ability to do more offsite, easy for follow-on trades, aesthetics, sustainability story, cost effective and resilient if fabricated properly;
- Barriers were essentially perceptions of higher cost and poor fire performance, lack of knowledge, lack of history/track record;
- A major factor that would influence other developers/specifiers to use engineered timber was seen as the development and provision of more information on the technology and benefits.

Survey Recommendations

The survey produced a number of recommendations that fall into these categories: design, manufacture, fabrication, construction, promotion, and research.

a. Design (engineer and architect)
    - Update the relevant construction standards to incorporate engineered timber products, so that architects and engineers can specify these products with confidence;
    - Provide engineers with access to specification guides that are in a 'job ready' condition; and
    - Provide information and education support to improve the understanding of engineered timber products, and the benefits of building with timber.

b. Prefabrication
    - Facilitate the development of the manufacturing and fabrication sectors by addressing technology and expertise gaps and thereby creating more interest in producing engineered timber products; and
    - Upgrade capability to meet the needs and expectations of the construction sector.

c. Construction
    - Provide information and education to increase the level of understanding between fabricators and builders, to improve both the availability of engineered timber products and scheduling arrangements between manufacture and construction.

d. Promotion
    - Promote engineered timber products for multi-storey construction

e. Research
    - Support continued research into specific areas that are current barriers to uptake of this technology

These recommendations are summarised in Figure One.

Next Steps

MPI will use the recommendations to:

- support the development of an upgraded New Zealand timber construction standard;
- promote discussion within the industry on the use of engineered timber products; and
- identify opportunities for technology transfer to raise awareness, use and market development of engineered timber products.

Acknowledgements

Dr David Evison, School of Forestry, College of Engineering, University of Canterbury.

Figure One
Summary of recommendations