

Putting knowledge into action

While it's agreed the construction industry needs root and branch transformation, for this to happen, government will need to take the lead and companies will need to be incentivised to do things differently.

BY JOHN TOOKEY, HEAD OF DEPARTMENT OF THE BUILT ENVIRONMENT, AUCKLAND UNIVERSITY OF TECHNOLOGY

WITH NATIONAL SCIENCE Challenge 11 (NSC11) Building Better Homes, Towns and Cities (BBHTC) well underway, initial work on the *Transforming the building industry* strategic research area (SRA) has focused on establishing the current state of industry

knowledge. From this, we can plan ways to effect change in the industry.

The research themes of the SRA are around innovation, people (training, education and capacity), technologies and processes to deliver societal needs for now and the future.

Committed professionals

After engaging with many industry stakeholders around the country, the news is both good and bad. On the positive side, as a nation, we have a tremendously knowledgeable and dedicated group of



industry professionals and participants in the construction community.

They are smart, outward looking and have a passionate commitment to the future of construction. They care about building communities to the best of their ability. Indeed, it has been a pleasure to engage with them and their views during research workshops.

It is very clear that many construction professionals know what is needed to build better homes, towns and cities. They read and travel widely as professionals and understand what best practice and high performance look like both at home and abroad.

Need to change widely recognised

Every participant in the workshops we ran knew the solution to our housing and construction problems. They all had a story of, 'Why can't we use/adopt/apply...?' They all recognised that we need to invest in capacity building in the building industry, to invest in innovation, technology, streamlining processes and developing human capital.

This research showed that, increasingly, industry representatives and professionals are thinking the keys to success are in 3D printing, prefabrication and BIM-enabled design to manufacture components.

To incorporate these technologies, we need changes in education and skills training. We need more and better skills during planning, architectural design/detailing, engineering and construction phases of development.

Professionals we met recognised the simple truism - if we always do what we

have always done, we will always get what we have always got.

We have a core of capable and committed professionals to transform the industry for the better. However, there is most certainly an increasingly apparent downside.

Downturn worries a barrier

The largest single impediment to transformation remains the issue of revenue lag between initial investment and return. All those we engaged with could see the benefit of investment in innovation, training and change - no problem.

However, the simple refrain was one of, 'Fine - I spend this money now, but what happens when the market turns?' It is apparent that the industry as a whole is much more comfortable anticipating a downturn and sailing the corporate ship no closer than it needs to the wind.

From a process perspective, there is limited upside to investment in innovation if the returns cannot be immediately realised through bottom line returns. When questioning one workshop participant on being reluctant about prefabrication, for example, the response was telling.

'So, I spend \$20 million on a plant to substantially increase my production. If, and when, the market turns, I now have that overhead to address without the demand volumes to support the investment.

'Worse yet, I am accelerating the likely market turn by expanding supply. Alternatively, I can carry on doing what I do with a known

return. Exciting and transformational? No. Safe? Absolutely.' There is the rub.

Looking back to move forward

Conceptually, it is apparent we know how to fix this problem, either directly or potentially.

In the past, housing shortfalls have been addressed through various measures including prefabrication. After the Second World War, for example, returning troops had to be housed, and the country rose to the challenge. Most of this additional housing stock is still in use.

Looking forward, this sense of purpose and resolution needs to resurface if we are to address the challenge of housing affordability and quality.

Holistic approach necessary

The problem needs to be looked at holistically. Picking at the edges will not resolve the wider complex and systemic issues defining the BBHTC National Science Challenge. The problem scope transcends strategic, operational and tactical solutions.

At an operational and tactical level of thinking, the *Transforming the building industry* SRA will help develop the new thinking and tools that we need to stimulate thinking, investment and transformation. This SRA will pilot new concepts for construction visualisation that takes designers and users through buildings before a consent is lodged or a brick is laid.

We will look to create the conditions for success through research leading to process, training and technological solutions. ➤

It is apparent that strong strategic leadership and policy directions need to be taken in order to move forward with industry transformation. Strategic leadership needs to originate from government and to an extent from BRANZ.

However, policy needs in turn to be informed by robust scientific research and policy advice coming from the work of the *Transforming the building industry* SRA among others.

Incentivise for change

The market will not automatically change. Good practice needs to be incentivised to overcome inertia and the status quo disincentivised.

For example, why not provide fast-track consents for prefabricated housing built to

specific size or cost criteria? Why not reduce consent costs for prefab and factory-built homes?

We could go on and on with improvements in process to leverage outcomes. Instead, we have no direct incentives for faster construction methods and many indirect disincentives to change anything.

NSC11 developing tools and policy advice

As a society, we need to understand that inertia is strong in construction - indeed, it is the natural condition for many builders. We should not be surprised that nothing will change without incentive (supernormal profit) or compulsion (legislation).

Looking forward, the bottom line is this - we have the expertise and the commitment

to transform this great industry of ours. We know where we need to get to and a lot of how to get there. We are rapidly developing the tools and policy advice to facilitate the change through NSC11.

The ultimate challenge is to convert all that energy and knowledge into action through strategic policy and incentivisation for change. ◀

For more ▶ The following article, *Preparing for the future*, has further coverage of aspects of the workshops.

