

Market study into residential building supplies

Submission

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Thank you for the opportunity to submit my perceptions and experience in regards to the construction industry in New Zealand. This is my personal history and New Zealand construction experiences.

My history in construction

I grew up in a construction family. My mother was one of the first female architect/developers in a male dominated industry. I watch my mother fight for her identity and role in the sector since I was 3 years old. After school and summer breaks I worked for my mother. I didn't always like it but I gained a lot of insight of how the industry worked and how homes were built. Obviously I moved a lot of trash, spent materials, and often wondered why there was so much waste. I've worked in construction as a labour/framer for many years in the USA and some in Australia. I've built 2 of my own homes as well as working on many other clients' homes.

My career path wasn't in construction. It was in the environmental sector, environmental engineering and science specializing in government auditing and permits condition monitoring.

I've never had an issue of getting a home off the ground until I tried to build a home that used materials specific to its surrounds in New Zealand.

Personal experiences in New Zealand consenting processes

I managed to buy what was the cheapest rural section in Auckland. I had my piece of dirt and assumed a future. Few years later I bought the neighbouring section which allowed me to build a decent 3br home for a family based on 15% legal coverage. I got plans drawn up from a local architect who had worked with quite a few projects around the site and in 2014/15 I applied for resource consent. This application was met with a flurry of issues; watercourse, trees, height, and local board objections. The one thing that never seemed to get through was the intent and logic of what I was doing. What I was doing was completely legal. I had read the district plan and what local board notes were available for consenting/construction. I knew the rules and legislation. I had a background in it. I hired experienced professional(s) interacting with local govt and filing completely legal things. Let's just say this ended up in a hearing, hired a lawyer and luckily enough I prevailed. Well it was legal to start. I couldn't understand why the opposition to building on a section zoned traditional residential in a rural area. That cost me between \$40,000 and 90,000. I hate to really look at the numbers. Tree reports/consents, wastewater reports/consents, geotechnical reports, and many other consultants. I was pleased I

had a positive outcome but no sense in value for money, yet.

Obviously this hearing loss had rubbed them the wrong way. In 2015 I applied for building consent. Before you assume, no I don't have consent yet.

Due to the moisture of a watercourse and trees (+8m) my intent was to use materials that wouldn't rot, sustain moisture damage, or support mold. I opted for steel concrete and polycarbonate. All legal, BRANZ appraised materials and the same materials are used on council owned buildings. I had everything thrown at me. Peer reviews, every question hinged on 20 days response times, it dragged out forever. I've spent over \$200,000 and haven't even dug a hole. Again everything above board; mostly environmental friendly low maintenance materials, and it would be a speedy build. My council bill is over \$24,000 to be absolutely obliterated of my dreams. They've reduced it but still play games with communications and refuse to email me documentation of discussions. I filed a complaint over a year ago and they still haven't responded. We really need to talk about this peer review and professionally licenced individual/entity and how a non-licenced person questions the report results.

That build in 2016-2019 would have cost between \$500,000-\$700,000 and taken about 3-5 months to complete. Today this same structure would cost me between \$1.2-1.7m to build, if it could be built in this current market. For instance steel is up 219%, materials are short supply, and shipping is a nightmare.

The last message (deal) to the council BCA took 9 months to answer and my response costs another \$2,500 in professional fees. Clearly they wanted to end the project. Today, my architect won't return my calls for fear of council reprisal. He said he'd never dealt with anything like this in his whole career. Let's just say I absolutely love what you've done with this system. It's far from legal and there is no accountability.

Development of a NEW construction system where I have been the lead stakeholder/developer

Based on my historical experience in construction/engineering, the environmental sector, and a desire to live in remote locations, I thought to myself there had to be another way. In 2006-2008 I started working on a system to build homes with minimal environmental impact and maximum diversity. Something anyone could build. Along that line we challenged ourselves to find ways to make this waste free, locally manufactured out of New Zealand materials and using New Zealand companies. We used people from Invercargill, Dunedin, New Plymouth, Auckland, and skills from aerospace engineers through to manufacturing/production engineers. The majority of people are migrants in design, kiwis in development. Ultimately it's a zero waste design that is super low liability and can be reconfigured so suit almost

any application. Assembled in hours, with minimal tools it is sort of a cross between Lego, Meccano, Ikea, but full scale. 15 sqm assembles in hours with 2 people and 6 tools. It made with 60-80% recycled materials and its 98% recyclable at end of life which exceeds that of timber. It even works in hybrid with timber, think rooms that bolt to traditional homes in less than 2 days with only a rubbish bin of wastes. Wooden trusses to match roofing materials and lines. It fits in because it is considerate of what is now. Also with current advancements in materials manufacturing it is set to become carbon neutral.

Through 2010-2016 I've tried to get R&D support through Callaghan Innovation. I've been refused or sent down dead ends the entire time. I gave up contact with Callaghan Innovation in 2021 after a meeting left me completely perplexed. Being told that after 8 years design/development (at this point never built) of something nobody offers on the market, nobody in the world has; he said in his words "there is nothing new, novel, or technically challenging about this project", I was befuddled. How did I get patents if that was the case? Who has zero waste construction? On the walk out of the Callaghan offices in Mechanics Bay he drove the nail in the coffin. He said, "You know I've been asked by Fletchers to keep them advised of projects like this one the go". My response, hell no, how is that not a conflict of interest. I spent \$33,000 in die charges to change from Nalco who was purchased by Fletchers to prevent this. Sure he'll deny it but it's the truth. It was probably the right decision to never seek their support again.

So that whole Callaghan process wasted about 6 months of time over 4-5 years and probably \$1000-2000 in expense. Via their suggestions I've met 2 universities, also contacted endless lists of government agencies, and all I've done is waste my time.

NZ new/novel building system - Invitations to view proof of concept, designs etc..

Universities in NZ; One offered to sell my idea/invention, one offered to study it for \$20,000. That changed to \$60,000 and there was no guarantee the student would finish it, but I still had to pay. Students might leave the country, lose their visas, or change majors etc. BRANZ said it was too different and they could be of no assistance. MBIE multiple points of contact and zero assistance. I have had many discussions of building codes with MBIE. Political; exhausted the avenues of housing, homelessness, and waste minimization. 3-4 times with Callaghan via Ateed/Auckland Unlimited. Auckland Council waste minimization fund. Ministry of The Environment waste minimization fund. NZ structural engineering review of designs, I was laughed at when I said I had budgeted \$26,000 to review the designs.

These hardships have forced me to find other ways. Unfortunately NOTHING in NZ seems even focused on changing the industry i.e. its waste, its environmental impact, its current deficits like materials, and susceptibility to water damage.

To the contrary I got my structural review by one of the top 3 structural engineers in the world for \$5000 USD. I have 2 universities in the United States who have made senior structural engineering projects of my designs at no costs.

This study asks about new technologies.

What you say you want but in reality of what you're really doing as an industry is completely backwards. Policy wise you are NOT as forward thinking as you want to believe and threatened by things that are different unless it's driven from the top down, not the bottom up. This is proven by the Tiny Homes failure to be recognised.

You'll write policy about it, but if your BCAs are judging reports from licenced professional are they reporting to the licensing board(s) of deficiencies? Surely it's better to improve engineering when failures are discovered.

1. Why are there council approved "stamps" on consulting groups and what is the process?
2. So what is the role of a BCA when it comes to construction advancements?
3. What mechanisms are available to advance the industry outside of research funding if you're handicapping the appraisals and approvals groups via BCAs.

Based on my experiences New Zealand has the access and ability to develop and be world leading construction technologist but little regulatory and government support mechanisms to deal with change or different. Most importantly in regards to adaptability for sustainability and climate change. They are good at writing political speeches about it.

People are fully aware that we're no longer flying in wooden airplanes and sailing in wooden ships. Industry and technology advances move around this industry. Why is this industry being suppressed to a deficit? The simplest solution is a registered exemption. How is the automotive certification process less complicated?

I am more than happy to pull up every person/entity/agency over the last 6-8years I've attempted to interact with.