



Victoria Tinney

The building control regime in Scotland provides a level of rigour that Victoria Tinney finds reassuring; two years since establishing her own practice in Glasgow, she talks to **Helena Russell** about the Scottish building warrant system and the power of sketching.

CAREER MILESTONES

2014	Graduated from Dundee University with degree in Civil Engineering Design & Management Joined Kirksaunders Associates as graduate structural engineer
2016	Joined Price & Myers as structural engineer
2018	Was accepted on to CROSS Young Members' Programme
2019	Joined SD Structures as senior structural engineer Became chartered structural engineer
2020	Received commendation in Young Structural Engineering Professional Award
2021	Joined CROSS-UK Structural Expert Panel Moved to Glasgow, Scotland, and joined Will Rudd as senior engineer
2022	Became Approved Certifier of Design (Building Structures) under Structural Engineers Registration Ltd (Scotland)
2024	Joined Harley Haddow as principal structural engineer Set up VT Structures

Although she was originally inspired to become an engineer by the Connel Bridge near her hometown of Oban in Scotland, Victoria Tinney eventually segued into buildings. It was the opportunity to focus on the detail of design and the freedom to offer a range of different options that appealed.

Tinney never planned to become an engineer – in fact she didn't really know what it involved – despite mathematics being one of her favourite subjects at school. Graphic communication was another favourite, and she was leaning towards architecture until a careers adviser suggested engineering. 'He used the nearby Connel Bridge as an example of what civil engineers do; I went to some open days, checked out engineering schools and thought it seemed like it could be a lot of fun!'

Choosing the building sector

She studied Civil Engineering Design & Management at Dundee University, but says it still didn't really click for her until the fifth year of study. 'At the time, the V&A Museum in Dundee was being built, and our Master's project was to do our own design for the site. We worked in groups of six, all having different tasks, and I was responsible for the architectural side of it, the layout, massing and so on. While we were doing that, I realised designing buildings was something I actually wanted to do; it became a 'real' job for me.'

Her circumstances made it challenging to gain any work experience during the holidays; there were no structural engineering firms in her hometown, and to take up a role in Dundee or Glasgow she would have had to pay rent over the summer.

But she did take up other opportunities that were offered during the academic break, including an exchange with a Chinese university that resulted in a month-long visit to Wuhan. Although it was more of a cultural exchange than an academic one, Tinney paired up with two engineering students from Amsterdam to organise their own visit to the Three Gorges Dam. They hired a taxi driver who enthusiastically gave them a full

sightseeing tour along the way. 'By the time we got to the dam it was absolutely pouring with rain and we could barely see it!' she laughs.

As graduation approached, Tinney decided that she wanted to work in the building sector, despite her enthusiasm for bridges. 'I remember there was an issue of *The Structural Engineer* that featured all the stadia that were built for the London 2012 Olympics. I looked at the websites of the companies featured in it, to see what kind of work they did, and applied for all the graduate programmes of those I was interested in.'

Into the deep end

'I chose Kirksaunders Associates in Kent as everyone I met there was super friendly and enthusiastic. I learned a lot working with senior engineer Ian Hawes, who took me under his wing. The main project I worked on was a huge housing scheme on the side of a hill – we were designing the houses and all the foundations and what turned out to be more than 5km of retaining walls.

'At the same time, Hawes was trying to push for the office to transition from British Standards to Eurocodes, and I was tasked with writing spreadsheets comparing the impact of the two sets of codes. Getting to know the codes in this way was invaluable,' Tinney recalls.

After 18 months, with work on the housing scheme winding down, Tinney felt it was the right time to move on. She got a job at Price & Myers and was thrown in at the deep end once more. 'On my second day, I went into the office and was taken to a kick-off meeting for the refurbishment of Dorset County Museum. I went straight into designing a large, Grade II-listed refurbishment project; quite different to what I had been doing. It was a step up from design engineer to being a project engineer – attending client meetings and seeing how the wider process worked.'

Tinney's main project during her time there was as part of the team designing the Hill House Box (**Figure 1**) for Charles Rennie Mackintosh's domestic masterpiece. The National Trust for Scotland had identified that the render needed to be removed from the building



FIGURE 1: Tinney's main project at Price & Myers was as part of the team designing the Hill House Box in Helensburgh

to prevent it deteriorating any further: 'The plan was to shelter the house so that they could take the render off and let the building dry out for five or 10 years. They also wanted to provide access so that people could get in and see the work being carried out. We designed this box to go over the house, put walkways round the outside and a bridge over the top. From the walkways you can look over the top of the house and see Mackintosh's details from new angles, which are absolutely fascinating,' she explains.

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'There were several big constraints, and one was that the 'box' had to cost less than it would to have scaffolding on the building for the same period of time,' Tinney explains. 'It involved lots of spreadsheets looking at different truss types and arrangements, trying to figure out the most efficient use of steelwork and how much repetition we could use.' The frame is covered in stainless steel 'chainmail' cladding that allows air to get through and for the building to dry naturally, and within the box a glulam visitor centre was also constructed.

Sketching the details

Tinney began sketching during her time at Price & Myers, where staff were encouraged to develop the skill through in-house courses led by The Drawing Gym. She remains a strong advocate for it as a means of communication, having directly witnessed its benefits (Figure 2).

'I remember seeing the sketch my boss had done for the Hill House Box competition and having been impressed by how he had managed to convey so much on one piece of paper with a simple sketch. Engineering is a process of piecing together – when you are going through that process, being able to summarise it in such a neat way really works.'

Her subsequent move to SD Structures – a small company where she became only the 10th employee – was where her interest in domestic projects was first piqued. 'My eyes were opened to a whole new world; domestic projects are smaller and usually trickier, you have different types of clients, and it's a

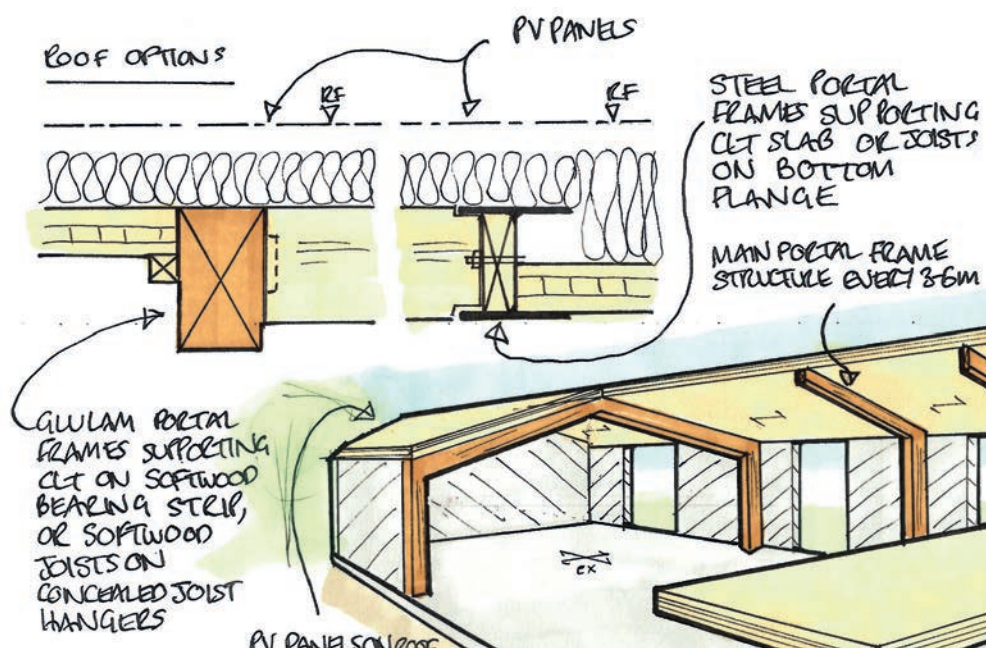


FIGURE 2: Tinney won The Structural Engineer's Drawing Board competition in January 2020

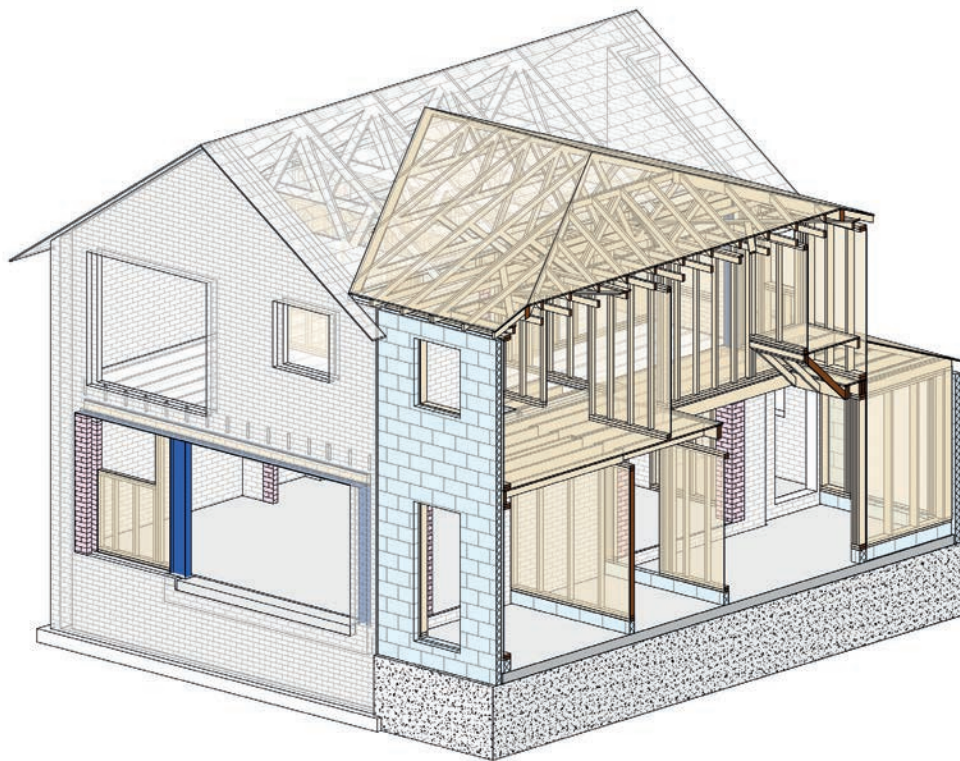


FIGURE 3: After setting up VT Structures, Tinney has worked on a range of projects, with domestic work featuring heavily

very different way of working. I found it interesting because I started to get to know the building types in different parts of London, and what I could expect to find. These smaller projects required attention to detail, and I really enjoy diving into details.'

But her start coincided with the arrival of Covid, and the change to working conditions proved tough; she did not enjoy working from home. When restrictions were lifted, she started thinking about moving back to Scotland. 'I'd always said I would 'go down' for five years and ended up staying for seven. Covid meant I had missed out on a lot of family time, and one of my sisters had already moved to Glasgow, so it made sense.'

Back to Scotland

Relocating to Scotland brought its own challenges, particularly in adapting to a different building control regime, explains Tinney. 'In England, you design a project and send your drawings and calculations to building control; often you are working on a project when it's already on site. But under the Scottish building regulations you have to have a building warrant in place before you can start on site, and to apply for one you have to submit a fully designed and detailed building.'

'I found it changed the dynamic of the work – it feels more procedural. There is a plan to follow which is similar across most small projects, and



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there are really good guidelines in place.'

Since 2004, Scottish regulations require Part 1 designs to be signed off by a structural engineer who is qualified under the Structural Engineers Registration (SER) scheme. This individual certifies that the structural design meets the building regulations; in most engineering practices they are employed in house.

This level of rigour appealed as it addressed some of the issues she had come across through her involvement with CROSS-UK. Tinney was recruited onto the young members' programme while she was in London. When the organisation's role expanded after the Grenfell Tower fire, she was invited to join the Structural Safety Expert Panel. 'I'd read about domestic projects where, for example, walls had been removed without overall stability being considered, or additions to buildings such as balconies which hadn't been

designed to be supported on the actual wall construction.'

'The SER certification process is specifically designed to catch the primary structure and all those things that might fall between different specialities, such as balustrade designs and cladding fixings. It's hugely beneficial for structural safety in terms of things not getting missed, and the client can be sure that things have been looked at in a timely fashion, rather than being rushed when on site.'

Going solo

After gaining a couple of years' experience as an SER certifier, Tinney took the plunge and decided to set up her own business, quickly snapping up a desk for rent in an office share where she knew one of the architects and where she is still based in central Glasgow.

Expecting her work to be mostly domestic, she has been surprised by the mixture of jobs (**Figure 3**). 'On my second day in the office, a client called and told me she'd just bought a building on the same street, and asked if I could help her convert it into luxury apartments; that was my third project. Early on I also found work on new-build retail units – again the client wanted to try a new structural engineer and gave me a chance.'

At her base in the Collective Architecture studio, Tinney finds close alignment with the organisation's principles of delivering socially responsible projects. Having access to other professionals is helpful too; neighbouring desks are occupied by a conservation-accredited architect and a senior architectural technologist.

'I'm mostly working on domestic projects at the moment,' she says, 'and I'm meeting a lot of like-minded architects who are interested in reusing buildings as far as possible, and promoting sustainable building materials.'

She is keen to introduce carbon counting on all her projects, but admits she hasn't yet found the time to do it. 'I always give clients a range of options, and it's easy to put them in order of levels of embodied carbon, she adds. 'The most carbon-efficient design is usually the simplest – if you list the options from easiest to hardest, they usually correspond with least carbon to most carbon.'

'My biggest worry when I made the decision to go self-employed was that I would feel isolated, but being with Collective in its co-working space means that there is a hive of activity and I can always find someone to bounce ideas off or discuss problems with,' Tinney says.