

# Profile



**Young structural engineers want variety, flexibility, recognition and challenge in their early careers. But above all they are eager to become chartered, as Jackie Whitelaw found out when she spoke to three members of the Institution's Young Members' Panel.**



## Tasha Chandler

Tasha Chandler is the obvious first port of call if you want to find out about career priorities for young members of the Institution. She is the energetic chair of its national Young Members' Panel and has been an active member of the Institution since she first started work in 2011.

She became chartered in 2015 and her early working life has all been about her drive to get professional recognition by passing the Chartered Membership Examination and through the type of work she is given by her employers. She has moved job twice in this quest and is evidence that, within her cohort of structural engineers, there are many who are not prepared to sit quietly and wait for their employers to give them what they want; they will move on and find it for themselves.

Now 28, she is working for her third company and seems to have found her niche for the moment at AKS Ward in Birmingham; one that suits her ambitions and her style of working.

'I was introduced to AKS Ward by a former colleague,' she says. 'I had been looking for new opportunities and AKS Ward, being new to the Midlands, stood out as something different. Through a joint venture known as Corde I share an office with architects and M&E engineers in Birmingham's Jewellery Quarter. It's the perfect environment for cross-discipline working, and an example

of where the industry is heading as roles become less defined, with the development of BIM and the use of federated models. That was a big attraction for me. You learn so much by osmosis, by simply being around other professionals, and we help each other out even on non-Corde projects.'

Chandler studied engineering at Cambridge and joined WSP in Birmingham after graduation in 2011. 'I liked the idea of a big company because I thought there would be opportunities to move around within it, but that turned out not to be the norm. I was there for a great two-and-a-half years, including eight months with Laing O'Rourke at its Design for Manufacture and Assembly [DfMA] plant, which was fascinating. As well as continuing work on Liverpool's Alder Hey Children's Hospital from a contractor's

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perspective, I was converting consultants' *in situ* designs into DfMA schemes. From this I learned to understand a contractor's constraints, such as pallet sizes and demoulding, but I still didn't feel I was getting the holistic project experience I needed to become chartered.'

She then moved to BWB, which had a growing office in Birmingham. 'When I joined, the other structural engineers in the office left!' Tasha says. 'It was either sink or swim and I had a stimulating eight months when I had more responsibility than I was sure I wanted.'

Vikki Klette, an engineer with over 10 years' experience, then joined the business and Chandler found she was working with someone who could validate her engineering decisions – especially as the projects got bigger. 'That was a game changer for me,' she says.

The decision to go for her chartership at a relatively young age was prompted by some encouragement during some time off work. 'I'd embarked on the ICE [Institution of Civil Engineers] route as it was encouraged at WSP, and seemed a quicker route to chartership, but I struggled to fit myself into the commercial boxes that it demands.



**Figure 1**  
Kents Hill School,  
Milton Keynes, under  
construction

However, the IStructE's objectives and exam fitted with everything I'd experienced to date. I'd enjoyed engaging with the Midland Counties Regional Group; and this led to being co-opted onto the Young Members' Panel and then Council – everything just felt so friendly and inclusive.'

When Chandler passed her CM Exam, she was after a new challenge. 'So I looked around – I had time after all that studying was over. AKS Ward offered me more responsibility to fulfil, a unique opportunity, and I have been there 18 months. Working as Corde with new colleagues to deliver the Kents Hill School in Milton Keynes (Figure 1) through construction to handover was certainly a rewarding start.'

Chandler competes in iron-distance triathlons – swimming 3.8km, cycling over 180km and then running a marathon. All that energy has also been brought to bear on the Young Members' Panel. 'My region nominated me and I started as a corresponding member. Now I am Chair. We aim to represent the views of young members to the Institution's Board and Council and we are taken very seriously. When I report our key issues to Council, I get bombarded with questions and interest – momentum is really gathering.'

A particular success on her watch has been the launch and continuation of the successful Young Engineers' Conference, which just held its second event.

Institution support for her career has been good, she says, but could be better. 'I think the student-to-graduate transition could be better supported,' she says. 'My region has been very active in its support, but others are not so lucky.'

Next on the list for the Young Members' Panel to assist with is ethics, particularly the tricky issue of how a young engineer can highlight something in design they think is wrong. 'We are finding young engineers won't go to their boss and point out potential errors. But they need to be given confidence in their own competence and not be afraid to point issues out.'

And the CM Exam needs to move on and be future proofed, she says. 'It's designed for the way people used to work, with design calculations and full technical drawings by hand. I understand they are skills we need, but, in reality, in the workplace most people form concept designs and sketches, then go to computer software for the detail. That disconnect makes the exam a larger undertaking than it perhaps used to be, which may be off-putting for future generations, who should be encouraged.'



**Phil Snowden**

Phil Snowden, 25, is another young engineer eager to become chartered. He is working in London with structural consultancy Heyne Tillett Steel (HTS), which he joined after completing a five-year Master's degree at Loughborough University, including a year in industry.

He is working towards charterhip with a lot of support from his company, including his director, Andy Heyne, and his line manager, Najib Sheeka. 'They are brilliant,' Snowden says. 'They are very supportive, always trying to find me jobs to work on that fill in the gaps in my training.'

It was a year in industry during his studies that opened Snowden's eyes to the importance of becoming qualified and also to the value of being able to say he is a member not only of the IStructE, but also the ICE. And although his company is not insisting he obtains both qualifications, Snowden is pursuing that nevertheless.

'I spent 12 months with Abacus Design Associates in the East Midlands in my industry year. My directors there were chartered members of both institutions and I could see that doing the same would give me options in the future,' he says.



Figure 2 Architect's initial impression of internal view of proposed six-storey engineered timber structure in Shoreditch

'I still haven't definitively chosen to pursue ICE or IStructE first, I am just concentrating on getting good practical experience and tracking my training at the moment. It does seem that the membership process for the IStructE is quite long at present, which can be intimidating and potentially off-putting.'

There is no question about his commitment to a career as a structural engineer, despite having both a grandfather and a brother with civil engineering contracting experience. 'I love being on site,' he says, 'but even better is the opportunity that structural engineering gives to solve design challenges on multiple projects simultaneously.'

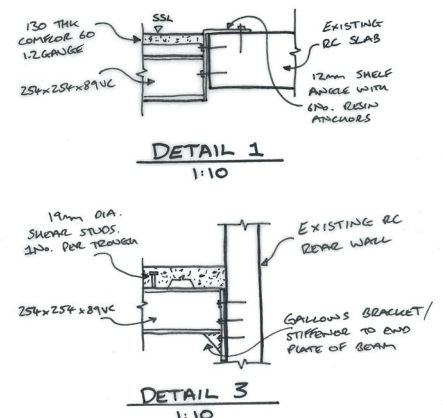
He is currently fascinated by engineered timber and working on a six-storey office building in Shoreditch, London that will have a completely timber superstructure (Figure 2). He is also involved with research at City University into timber connections and fixings.

'People know how steel and concrete work,' he says. 'Timber has more unknowns and so much potential. Now is the time to learn and become an expert, because timber is becoming a more commonly used structural material every year and this is only going to continue.'

Snowden joined the Young Members' Panel when he arrived in London after university because he wanted to get involved with the Institution and keep track of his training in a city where it is easy 'to get swamped with life', as he says. 'I emailed the Institution to see if there was a group in London and was invited onto the national panel; I'm now co-opted onto the Institution's Council too and appreciate the invaluable experience and networking this provides, as well as the opportunity to effect real change.'

'I'd been a student member during my placement year and went to a few talks which made the job more real. The events discussed real problems and projects and helped me realise that this was what I wanted to do.'

Figure 3 Sketch by Phil to show structural details for £22m refurbishment in City of London



BUCKLEY GRAY YEOMAN ARCHITECTS

The talk that stands out in my memory was by Mark Whitby. It was supposed to be about bridges, but the overarching theme was the importance of creativity and sketching. That had never been a focus of mine, but the talk opened my eyes. I had previously thought the job was all numbers and rigid processes with computer-generated drawings, often completed by technicians. How wrong I was.

'That said, I didn't start sketching until I left Loughborough. HTS is very keen on it. I completed a sketching course with Trevor Flynn, who showed me how to use drawing as a means of communicating ideas (Figure 3). Now when I'm on site or in a meeting, if people don't understand the solution, I quickly sketch it; it doesn't have to be perfect but just helps to explain'.

Snowden corralled Flynn into doing a session at this year's Young Engineers' Conference. The Panel was acting in response to feedback from Chris Wise the previous year who, like Whitby, had extolled the necessities of sketching.

Snowden is thoroughly enjoying his current job at the 80-strong HTS. 'I'm only two years out from graduation, but because of that year in industry and summer placement experience I'm given a certain degree of autonomy and responsibility. I like the smaller company environment where you can know everyone. As a company, HTS is very employee focused, with technical talks every Wednesday and a company-wide lunch on Fridays where engineers share technical problems and successes. It's very interactive and good for knowledge sharing. Although work keeps me busy, HTS is keen that you have a life outside, so I can still find the time to complete training to be a dance examiner and continue my passion for the subject.

Another great perk is the company trip that takes place each year. Last September it was New York, this year it's Edinburgh!



### Louisa Brown

Louisa Brown has found the Institution a useful support as she has developed her career in Sheffield. Now 30, she became chartered two years ago and works for Arup.

'I joined the Yorkshire Regional Group when I first arrived in Sheffield,' she remembers. 'I'm from Kent originally and was looking for work at the start of my last year at Imperial College London in 2009. I'd applied to Arup, but it was the start of the crash and they had only two vacancies in London, which is close to home; they asked if I would consider one of the regional offices. I said yes and moved to Sheffield seven years ago knowing no one.

'When I came here I decided to throw myself into everything personally and professionally and the Institution was an obvious place to start.'

Her focus was very much on wanting to qualify as a chartered structural engineer, so even though the ICE gave her a nice graduate and student welcome to the region, Brown wanted to see what the IStructE had to offer. The Yorkshire Young Members' Group was a little quiet, but she joined anyway, took it over and revitalised the organisation, which is now still going strong even though she stepped down as its head in 2014 to work for a year

with Arup in Amsterdam.

When she returned from The Netherlands, Brown became part of the national Young Members' Panel and has also been elected to Council from 2018.

'One of the things we are trying to do is build an online repository of resources for all the regional Young Members' Groups – anything from pub quiz questions to a bank of speakers, all to make them easier to run.

'The perennial challenge is turnout, which can be anything from 10 to 40 people or more. We organised one lecture on BIM and it was packed, so much so that we re-ran the talk in Leeds. The difficulty in the regions, particularly one as big as Yorkshire, is choosing where to hold events; everyone has to travel and if they start at 5.30pm it's a challenge.

'But the regional groups are really valued by their members. I'm lucky; I work in a large firm and for my chartership I had a lot of support and training from my company, but if you are in a small firm that might not even have any Institution members, then the support on offer from the Institution is invaluable.

'There are often some fantastic speakers at the evening lectures at HQ in London, but it's just too far to go. Perhaps there is currently less focus on organising events in other cities as HQ knows there are many active regional groups delivering a full calendar of events. However, in my experience, these tend to have a local flavour to pique interest, celebrate projects close to home and ensure availability of speakers. It would be lovely to see a greater number of high-profile events organised by HQ but located out of the capital.'

Brown's career at Arup is progressing very successfully. 'I like working in a regional office – you get local work but can also work on international projects. It's a nice blend and I like the variety. I get to know the clients, go to the meetings and understand more and more about what clients want.

'We are helping with the re-planning and regeneration of lots of 1960s Sheffield, including a new residential scheme by the Porter Brook river which is being daylighted. And a real favourite for me was the Cornerstone project for Square Chapel Arts Centre in Halifax (Figure 4), where we used lots of exposed concrete structure and created a really interesting space. It's been lovely to see it full of people.'

Sheffield, Brown says, is a fun place to be based and has turned out to be a very good move.

### HAVE YOUR SAY

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Figure 4  
Soft opening of  
Cornerstone project,  
Square Chapel Arts  
Centre, Halifax