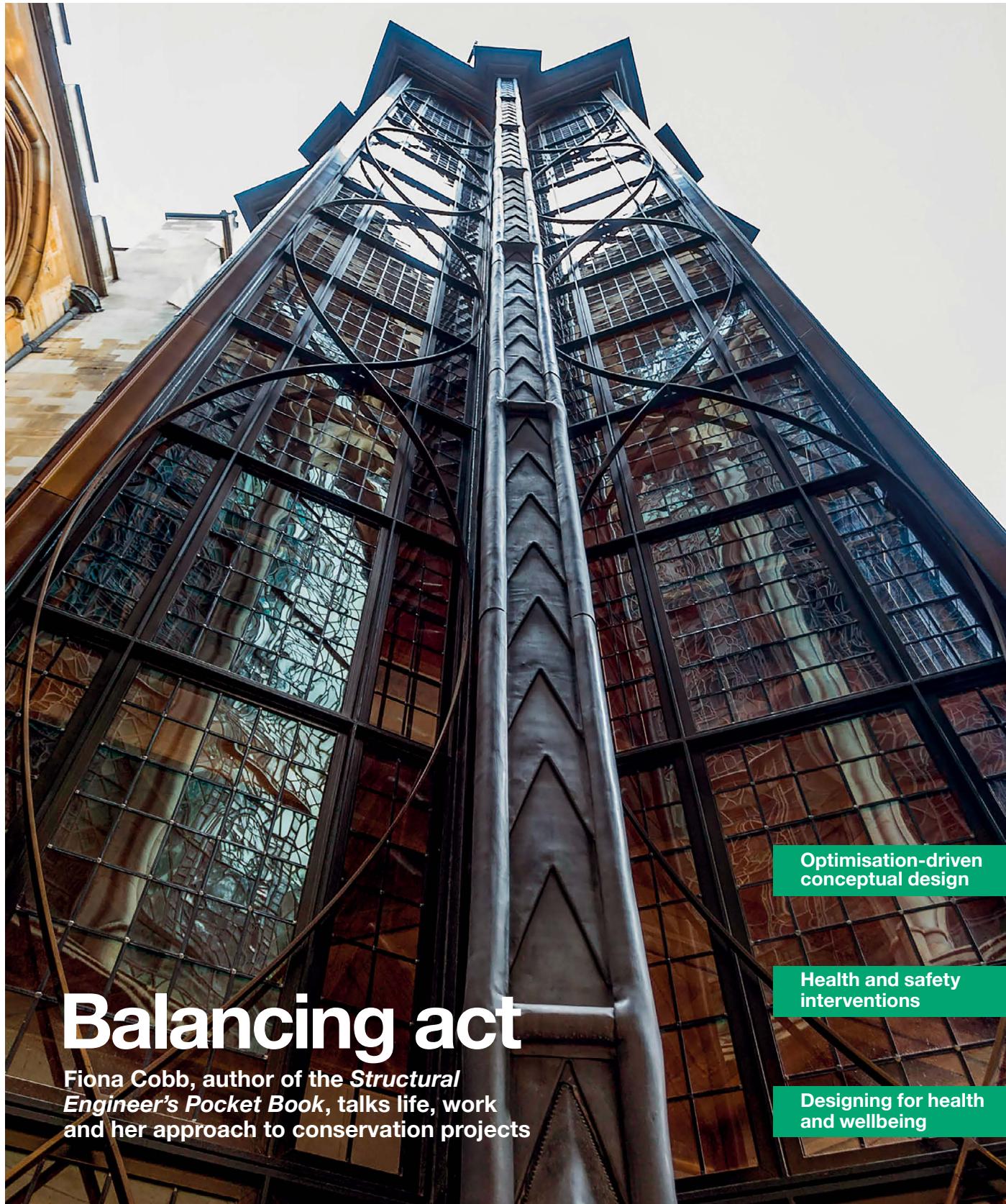


The Structural Engineer



Contents

Upfront

- 5 Editorial
- 6 News

Features

- 8 Next-generation buildings: wired for health and wellbeing

Professional guidance

- 16 Business Practice Note No. 28: Making a health and safety intervention
- 18 Why it pays to be able to demonstrate your understanding of structural behaviour

Technical

- 20 Optimisation-driven conceptual design: case study of a large transfer truss

Project focus

- 28 Design of the world's first sprayed-net, hyperboloid, lattice ice structure

Opinion

- 32 Profile: Fiona Cobb
- 34 Viewpoint: Computational design: embedding sustainability
- 38 Verulam

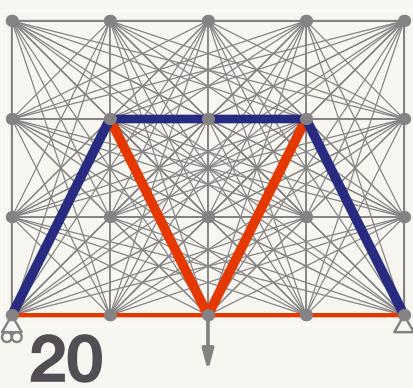
At the back

- 42 Diary dates
- 44 Spotlight on Structures
- 46 Products & Services
- 47 Services Directory
- 48 TheStructuralEngineer Jobs
- 50 And finally...

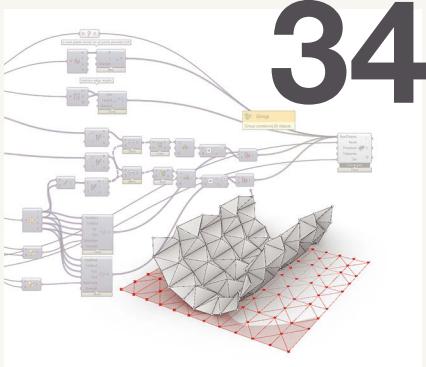
32



28



20



34





Fiona Cobb

Fiona Cobb has surprised herself throughout her career, from going to university to be an engineer, to working for a top London consultant, to writing a book that's in the Science Museum. Her latest adventure is to start her own practice, she tells Jackie Whitelaw.

IF YOU HAVE EVER owned or borrowed a copy of the Structural Engineer's Pocket Book, you will know the name of its author, Fiona Cobb. That's at least 40 000 of you according to the print run, but it's likely to be a lot, lot more.

Cobb drafted out the potential headings for the publication in a vaporetto water taxi while working briefly in Venice, approached a publisher directly and was commissioned to put the handbook together.

It's now in its third edition, is an approved text for 66 university courses in 16 countries and is included in the structural engineering exhibit in London's Science Museum.

So, for everyone who has ever used the tables, data, facts, formulae and rules of thumb to source job-simplifying and time-saving information, or who has worked with Cobb during her two-decade career at Price & Myers, here's what she is up to next.

Going it alone

At 46, Cobb has just left the security of employment at one of the UK's leading practices, where she became an expert in conservation and heritage work, to start her own business of Cobb & Company. The firm opened its doors in early October and the signs are that it will be just as successful as her other ventures, including the pocket book.

'From the moment I left Price & Myers, I've been approached about a job every day,' she says. 'That better work-life balance I had planned may have to wait, but it's very gratifying to be in demand.'

'I've worked with a lot of people for a long time, I suppose – grown up with them, effectively,' she says. 'We've gone through the various life stages at the same time, so there's a bond. And I've helped out others who started their own business ahead of me. Now they are returning the favour – they understand how difficult it is to take that first step and they appreciate the entrepreneurial nature of what I'm doing.'

Heritage values

Cobb can divide her 22-year career at Price & Myers into two halves, different experiences that led subliminally to the conclusion that her own business was the right next step.

'My first 10 or 11 years from 1997 were fantastic. I was under founding partner Sam Price's wing, became chartered in four years, was made an associate, did a master's, wrote the book and worked on some great projects, including the one in Venice with Sam to convert a brewery into flats. This had some gorgeous sculptural touches such as doubly curved, stressed-skin,

ply panels made by a gondola maker. That started a real interest in how trades make their mark and became very relevant to the conservation work I do, where we are very reliant on the skills of the craftspeople.'

'I also started working at the Grade I and II listed Westminster School with Ptolemy Dean Architects. Ptolemy won a competition for a new building on one of the school yards; his solution was to reverse the 20th century additions and restore the historic pattern of the buildings. That led to five projects to reorder the accommodation in Busby's Yard, which unlocked the heritage aspects and the internal circulation routes, but we were allowed to provide new accommodation by adding storeys in a sensitive setting in the middle of a UNESCO World Heritage Site.'

'That's where I saw that if you understand the context of a historic structure and do something subtle, sensible and use good materials, you will get the permissions you need. I'm also always aware of people 300 years in the future looking at what I've done and judging me.'

Changing priorities

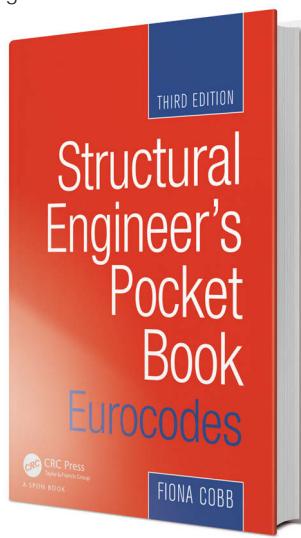
During this time, Cobb had settled with her partner and had children. That has defined the last 10 or 11 years of her working, as well as personal, life. 'I was working part time, juggling life and there were many days when I felt I was failing. There were moments when I lost confidence – when I felt I wasn't doing as good a job as before because I had to get up and leave the office at 5pm and nor was I doing as good a job as thought I ought at home. Six hours at work, six more at home, it was exhausting. I could see why women dropped out or their careers stalled. And there were no women role models ahead of me to guide me.'

'Someone described those years as the survival years for a working mother, and I was lucky because my husband is a freelance osteopath and adjusted his hours to make mine work. We've been properly 50:50.'

Cobb could have given up, but now, with the children eight and ten and more self-sufficient, she is glad that she didn't. What did happen though was that latterly she had more time to think, and particularly to think about what she really wanted to do with the next 20 years of her working life.

'I asked myself what I really enjoyed, and the answer was projects. I like making beautiful buildings and the world a nicer place. As Price & Myers got bigger, I found I was more involved in management or administration. It was time to make the leap.'

'Sam Price and Robert Myers had established the company in their mid-40s, and there are a lot of people I know who began their own businesses

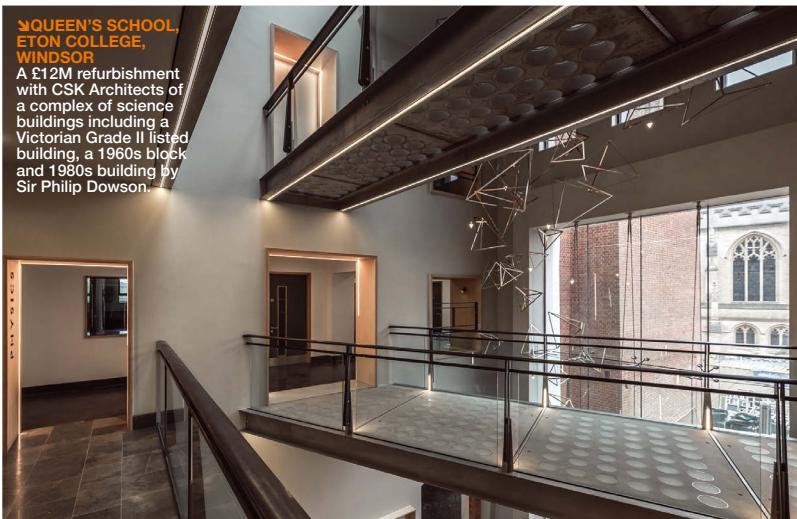


A CAREER IN FIVE PROJECTS

►QUEEN'S SCHOOL,
ETON COLLEGE,
WINDSOR

A £12M refurbishment with CSK Architects of a complex of science buildings including a Victorian Grade II listed building, a 1960s block and 1980s building by Sir Philip Dowson.

DIDO MILNE



▼WESTON TOWER, WESTMINSTER ABBEY,
LONDON

Project for the Dean and Chapter of Westminster Abbey with Ptolemy Dean Architects: a new stair and lift tower tucked into the narrow Poets' Yard between the Grade I listed abbey and scheduled monument of the Chapter House and next to the site of Caxton's printing press. The core of the tower is reinforced concrete with a steel exoskeleton which is stabilised by the oak stair and landings.

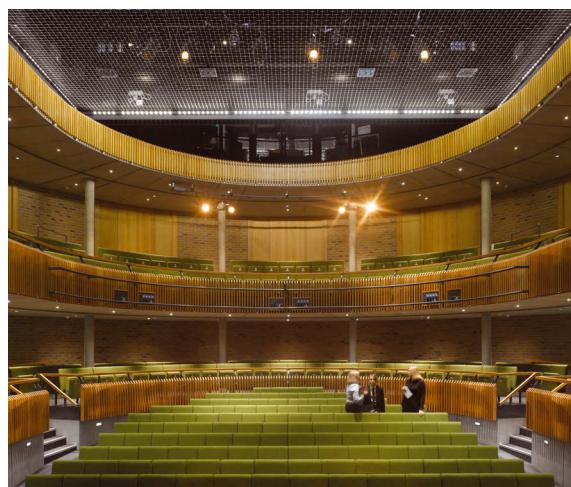
ALAN WILLIAMS



→PARABOLA ARTS
CENTRE, CHELTENHAM
LADIES' COLLEGE

Conversion and extension with Foster Wilson Architects of a Grade II* listed Victorian villa to create a performing arts theatre.

JAMES BRITAIN



↑MAGGIE'S CENTRE, CHELTENHAM

A new-build 'home from home' for cancer patients with MJP Architects: timber, steel frame and a sedum roof.

SIMON KENNEDY



↑BUSBY'S YARD, WESTMINSTER SCHOOL, LONDON

Five phases of reordering of accommodation with Ptolemy Dean Architects.



THAT STARTED A REAL INTEREST IN HOW TRADES MAKE THEIR MARK

at a similar age. A spate of my projects was coming to completion and there was a company reorganisation under way. It was the right time for me.'

Accidental engineer

If there seems inevitability about the move, Cobb was as surprised as anyone when the time came.

'I like to think I have a plan, but in my career, all the good stuff has been luckily accidental,' she says. 'I wasn't supposed to go to university, I wasn't supposed to be an engineer, I wasn't expecting to write a book and I arrived at a top practice like Price & Myers by chance. It certainly never occurred to me that I'd set up my own business, but here I am.'

At school, although no one in her family had ever been to university, when her physics teacher asked her why she wasn't considering it, Cobb thought why not, and went for it. 'I was at an enormous comprehensive in Dundee and I'd just assumed I'd leave and get a job. But, instead, I studied Civil Engineering with European Studies at Heriot Watt University in Edinburgh.

'The final year in France was daunting but great fun – it definitely made me braver and I learned that a few words and a smile can get you a long way as long as you have a go at the language, rather than try to form the perfect phrase. I think it gave me confidence to put myself forward for things even though I don't know everything there is to know.'

But being abroad meant she missed the 'milk round' (or graduate recruitment process) and had to find a job for herself, which she did at a small practice in Edinburgh. 'They were great, but everyone I knew had left the city so there was nothing to hold me there. I went through the job adverts in a professional magazine and applied to three not knowing too much about the companies.'

'Price & Myers were the only one that replied. I went down to London for the interview and it was clearly a brilliant place to work. I was desperate for an offer.'

'I thought I'd work down in London for five years and go home, but instead I found a lot of nice people and lovely projects and I've stayed.'

Now it's time for Fiona Cobb and Cobb & Company to make their own mark.

HAVE
YOUR
SAY



tse@istructe.org



@IstructE #TheStructuralEngineer