



Tina Vejrum

The award of this year's IStructE Gold Medal to Tina Vejrum not only boosts the representation of women on the prestigious roll call, it also signals a nod to the specialist long-span bridges sector. **Helena Russell** finds out about her career so far.

With characteristic modesty, Tina Vejrum declares herself hugely honoured to have been awarded the 2026 Gold Medal by the Institution of Structural Engineers. 'When I look at the list of previous winners, I feel humbled,' she says quietly.

Vejrum is one of only a handful of winners since the award was launched in 1922 to be cited for their contribution to the field of bridge engineering; as such, this recognition is particularly welcome. 'We need to see more women and also more bridge engineers on this list!' she states firmly.

As part of her Gold Medal Address, Danish-born Vejrum plans to explore why there are still so few women in the sector and discuss what can be done to change this.

Ironically, she doesn't believe this gender imbalance impacted on her own progress, but agrees that if it is to improve, women bridge engineers need to be more visible. 'I can't recall having any female role models, and I never really thought about it because that was just the name of the game,' she says. 'Hopefully, I can compensate for this in some way.'

Aesthetic appeal

Vejrum describes her route into bridge engineering as 'something of a coincidence'. Her family owned a

glove factory in Denmark and, although her father's profession as a tanner had its roots in chemical engineering, there was no link to structural engineering or architecture in the family.

'In school I loved maths and physics and natural science, everything about the living world really. Then, in the early 1970s, my family went to another part of Denmark and we crossed the New Lillebælt Bridge – the country's first suspension bridge that was very much inspired by the Severn Bridge. I was so impressed by the beautiful design, the elegance, the slenderness – it kind of got me interested in architecture and engineering,' she says.

Vejrum began to explore careers in applied science, where she could use her maths and physics skills to make a difference. But before committing fully to engineering, she took a gap year after college, just to be sure that she was happy to continue studying, rather than going into the family business.

'I actually worked for a year in Millau in France, long before the Millau Viaduct was even thought of!' she reveals. Staying with family friends, Vejrum worked in the local tourist bureau, largely as a way of learning French. 'I was slowly realising that maths and physics might be the tools of engineering, but if you can't communicate, if you don't know the language and culture, it's difficult to be effective as an engineer.'

She was accepted at the Technical University of Denmark (DTU) to study on the five-year civil engineering Master's course. She was hugely inspired by her tutor, the late Professor Niels Jørgen Gimsing, who shared experience and knowledge from his own practice – including the Storebælt Bridge and the Øresund Bridge.

Once she graduated, Gimsing invited her to do a PhD. 'I wasn't really sure whether to pursue an academic career or go into practice,' Vejrum recalls. 'Doing the PhD kept both doors open and allowed me to intensively study bridges, which had become my passion.'

Her research examined the concept of cable-supported bridges with 3D

CAREER MILESTONES

1993	Graduated from Danish Technical University (DTU) with MSc Civil Engineering
1997	PhD in cable-supported bridges at DTU
1996	Joined COWI as bridge engineer
2000	Project engineer and deputy project manager, COWI
2005	Senior resident engineer with Arup Hong Kong
2008	Promoted to senior project manager and head of section, Bridges International at COWI
2015	Promoted to vice president, Bridges International at COWI
2016–22	Chair of the Danish Group of IABSE
2019	Joined the board of directors of COWI Foundation
2022	Promoted to senior technical director, Transportation International at COWI
2022–25	President of IABSE
2026	Honorary Member and Fellow of IABSE



COWI

FIGURE 1: Vejrum began her career with COWI working on the East Bridge of Denmark's Storebælt Link

inclined cable systems that absorb wind loads. These can be helpful on long spans where only slender decks are necessary due to the low traffic volumes, e.g. in Norway.

Building bridges

In time, Vejrum realised that she wanted to work on the construction of bridges and joined COWI. 'They were working in a joint venture with Rambøll on the Storebælt Link, and with the contractor on construction of the Øresund Bridge,' she recalls. Her first task was to assist with finishing works on the East Bridge of Storebælt (**Figure 1**), including guide vanes to suppress vortex-induced vibrations.

COWI was expanding internationally at the time; in 1988 it had made its first links with American engineering firm Ben C. Gerwick, and 10 years later with Canadian specialists Buckland & Taylor.

'I was one of the first people to be seconded to Buckland & Taylor,' she says. 'I was very fortunate to be sent over there, and to work on Lions Gate Bridge rehabilitation in Vancouver.' This was a technically challenging job in which the truss deck of the suspension bridge was cut out, removed and replaced section by section during

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overnight closures – the first time such an operation had ever been attempted.

'The exchange was a very clever move because it created links and good friendships at all levels from junior upwards and those friendships still exist,' she says. After three months in Vancouver, she moved to Ben C. Gerwick in San Francisco for six months.

Vejrum's Master's had focused on fatigue of steel structures and she had the opportunity to apply this knowledge when she worked on design of a railway bridge in Sweden. The Råån Creek railway bridge, which COWI designed with architect Dissing & Weitling, is just south of Helsingborg.

The fact that it was close enough to

visit made a big impact, she says. 'Every young engineer should get the chance to go and visit their project and see it in real life and understand just how big these structures are. You can look at the details, and get feedback on your design, on your choices; you get it directly from those who are building it, those who are doing the bar bending, and the welding. It's the best feedback you can get and you will also gain respect for the work that is done on site.'

She is concerned that site visits are less frequent these days. 'It's difficult for young engineers to get that kind of experience because so much is done remotely. As an industry, we need to make a dedicated effort to provide these opportunities, otherwise there's a risk that what we are doing becomes very theoretical, and not very practical.'

'Also, we need to focus more on maintaining the structures we have already built, and not so much on building new. So, we need to maintain, upgrade, and if we can't do that then reuse as much as possible. In order to do that, we need to have a fundamental understanding of the structure, deterioration mechanisms and so on. Fortunately, this is the kind of thing that I believe humans are better at than AI.'



FIGURE 2: The teamwork and collaboration experienced over a decade on Hong Kong's Stonecutters Bridge were a career highlight for Vejrum

Milestone project

The opportunity to become fully immersed in a major project came along with Stonecutters Bridge in Hong Kong (Figure 2). COWI was involved from the very start of the scheme, working with Arup to assist the client, Hong Kong Highways Department, to organise the design competition and working with the technical and aesthetic committees to assess the entries.

As one of the first major bridge projects delivered in this way, the process was not without debate; the international competition attracted a huge number of entries and the detailed design of the winning concept by Dissing & Weitling, Flint & Neill, Halcrow and SMEDI was subsequently awarded to Arup and COWI through a standard tendering process.

'I felt sorry for the team that was responsible for the original design, that they were not able to carry on and deliver it, and that led to a number of recommendations for procurement through design competitions,' says Vejrum. 'Publication by IABSE [International Association for Bridge and Structural Engineering] of new guidelines for bridge design competitions (www.iabse.org/Guidelines), compiled by Naeem Hussain, was a very fair way of drawing on that experience,' she adds.



Vejrum initially worked on design of the steel deck and cables. 'At the time, it was a record-breaking cable-stayed bridge, with a steel deck, in a region where there are typhoons. It was the project I had been dreaming about,' she says. With project manager Lars Hauge spending a lot of time in Hong Kong, Vejrum took on more responsibility for the team based in Denmark. 'We were working globally – Arup in Hong Kong and London, us in Copenhagen and a big team in Vancouver doing the towers, so we were really working around the clock.'

'When SARS hit, the staff who couldn't travel back to Hong Kong came to us in Denmark and we did a lot of teambuilding with Arup.' In 2005, she relocated to Hong Kong for three years, with her partner, bridge engineer Michael Birk Jensen, while the bridge was under construction.

'Stonecutters was a highlight as I was able to follow it over a period of 10 years – to see it from the first idea on a piece of paper, detailing it, bidding it and seeing it constructed in front of your eyes. The towers were a hole in the ground when we came to Hong Kong. Seeing them rise nearly 300m was really something.'

Another highlight that sticks with Vejrum from that project was the

teamwork and collaboration she experienced – building relationships that endure even now. 'When IStructE announced my Gold Medal award, I got comments from people I haven't seen for more than 15 years.'

Vejrum names Naeem Hussain – whom she met while working on Stonecutters – as one of her main role models, alongside COWI colleagues Klaus Ostfeld and Ian Firth (formerly at Flint & Neill).

'Naeem's intelligence and understanding of all cultures is immense. Although softly spoken, he is very good at explaining things in simple terms and getting the best outcome in the interests of the project.'

Transition to management

After returning to Denmark in 2008, Vejrum became head of section and moved into project management. 'Rather than doing the analysis and reviewing method statements, I was managing a team. I saw that as a natural transition rather than an abrupt change,' she says.

It was another mentor, COWI colleague and former CEO Klaus Ostfeld, who helped her to come to this realisation.

'What Klaus taught me was that you can't do everything yourself. If you want to grow and achieve better



COWI

FIGURE 3: Fully adopting BIM for the 1915 Çanakkale Bridge project in Türkiye was a steep learning curve; nonetheless, the bridge opened to traffic a year ahead of schedule

results, you need to help others learn so that the total sum becomes bigger than its components.

‘It’s easy to lose when we step out of the technical role – especially today with BIM and AI. So, it’s even more important than before to maintain that interest – you can’t just expect to step into management for 10 years then seamlessly step back into the technical detail,’ she says.

When Ostenfeld retired from his post as COWI CEO, and redirected his efforts to try and revitalise IABSE, he encouraged Vejrum to get involved with the organisation; in 2022 she became IABSE’s first female president.

Vejrum met another important mentor, Ian Firth, at a conference about Stonecutters Bridge in Hong Kong. ‘Ian is very creative, he is a very good teacher in conceptual design and understanding of structural behaviour, and he is passionate about developing the profession,’ she says.

Her most challenging recent project was construction of the world’s longest suspension bridge, the 1915 Çanakkale Bridge in Türkiye (**Figure 3**). COWI was employed by the Korean/Turkish contracting consortium DLSY and Vejrum was very much supporting the team, as vice president of bridges rather than doing any technical work. But there

were unique challenges – not just in its scale, but the fact that the design was tailored to rapid construction and delivery took place largely during the global Covid pandemic. Despite this, the bridge was completed and opened to traffic a year ahead of the original schedule.

At the same time, COWI took the strategic decision to move fully over to BIM for this scheme. ‘It was a steep learning curve – I had to push the team quite hard and get additional resources to support,’ Vejrum recalls.

‘Everything is different in BIM, especially the timing! There are some critical choices that you have to make early, and if for some reason you need to change these further down the road, it has a big impact on what you are doing and on your progress.’

As senior technical director, Vejrum now carries out peer reviews, assists projects in the tendering phase, and

makes sure that lessons learned from previous projects are transferred into proposals and new projects.

‘I spend half my time on technical development in the company, and the rest on being a board member of the COWI Foundation and involved with various professional institutions such as IABSE.’

Embracing opportunity

Despite a career encompassing some of the world’s most high-profile bridges, she is keen to emphasise the smaller wins that engineers can make.

‘We have an opportunity to have a big influence on society, and to contribute to the fight against climate change by making the most of structures that are already built,’ she says.

‘None of us delivers a project on our own – we deliver as teams. It might feel like a lot of responsibility, but we support each other and it’s a profession where you are constantly learning new things. But, also, it’s about being willing to experiment and sometimes fail because we learn from these failures.’

‘If I was to give one piece of advice to young engineers, it would be to grab every opportunity that you can. Whatever choice you make, you will miss out on something else, but consider carefully before saying no.’

Don’t miss the Gold Medal address

Tina Vejrum’s Gold Medal address, ‘Learnings from record bridges’, will be delivered at IStructE HQ on 12 November 2026, with a livestream online.

Register for the event at

www.istructe.org/events/hq/2026/gold-medal-address/.