

Profile

Hanif Kara is a world-class structural engineer who is more appreciated by those outside his profession than those within it; or that, at least, is how he feels. Jackie Whitelaw talks to a man who wonders if he is too different to be embraced by the establishment.



Founding director of AKT II, Hanif Kara – a man recognised for raising the debate on engineering of the world rather than the world of engineering – has a phrase to describe how many of his peers perceive him. ‘It is often said that I am weird and different,’ he reports.

On one hand, he’s happy with that – clients, universities and non-engineering organisations notice and see these as positive attributes; on the other, there’s an element of disappointment as he feels his success is generally less understood by the engineering establishment.

‘I don’t fit the mould that many people are comfortable with. But then, one of my

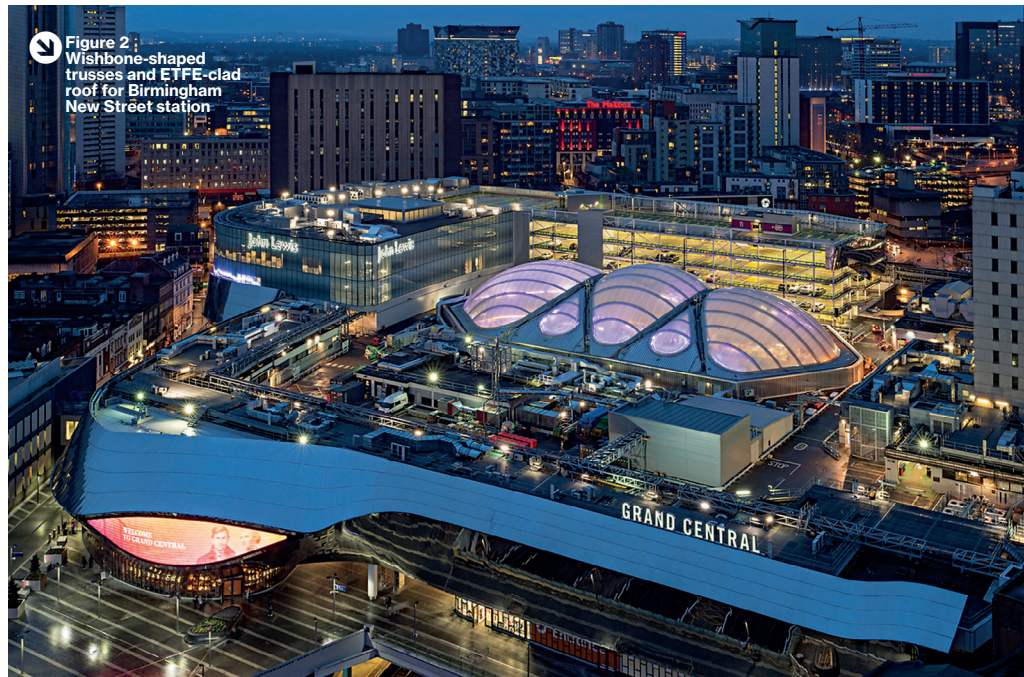


Figure 2: Wishbone-shaped trusses and ETFE-clad roof for Birmingham New Street station

"IT IS GOOD TO COMBINE WEIRDNESS WITH TECHNICAL INGENUITY IF YOU WANT TO BE SUCCESSFUL AND MAKE BUILDINGS STAND UP THAT OTHERS CAN'T"



Figure 1: London's Bloomberg HQ required intricate design of transfer beams and triangular column grids

mentors and clients, Peter Rogers, reassured me early on that it is good “to combine weirdness with technical ingenuity if you want to be successful and make buildings stand up that others can’t”, Kara says, smiling.

A record to be proud of

If Kara feels held at arm's length by his own profession it is a shame, because his record is astonishing. Over the last 20 years, he has collaborated with the world's leading architects, including Norman Foster, Will Alsop, Zaha Hadid, Herzog & de Meuron, David Chipperfield and AHMM. His projects include the freeform curves of the Heydar Aliyev Centre in Baku, the eccentric Stirling

Prize-winning Peckham Library in London, as well as the capital's building of the moment – the Bloomberg European Headquarters (Figure 1).

Kara, and the practice he set up in 1996 with Robin Adams and Albert Williamson-Taylor (the A and T in AKT), has also designed the folded, three-dimensional marvel that is the Henderson Waves footbridge in Singapore (IJP Architects), the ground-breaking single-surface geometries of the Phæno Science Centre in Germany (Zaha Hadid Architects), the topside structure for the striking overhaul of Birmingham New Street station (Figure 2) and the impressively slender Highpoint tower in Elephant and Castle, London (Figure 3).



Figure 3
Structural innovations for Highpoint tower included suspended balconies and eight-storey CLT podium block

His current workload includes Google's London headquarters building (Europe's longest building, with Bjarke Ingels Group and Heatherwick Studio), re-engineering the classic Eero Saarinen-designed 30 Grosvenor Square in London (with Chipperfield) and, on site, the Sberbank Technopark in Moscow.

It is also worth noting that Kara was the first structural engineer to be appointed to the Commission for Architecture and the Built Environment, and in 2011 the Association for Consultancy and Engineering cited him as an Engineering Ambassador for his advocacy of the engineer's role globally. He has been Professor in Practice of Architectural Technology at Harvard University for 10 years – the first ever structural engineer to achieve that position – and is an honorary fellow of RIBA. He was also the first engineer to be invited onto the Steering Committee for the Aga Khan Award for Architecture in 2012.

So far, however, the engineering world has not known how to capture or use his energy and intellect. 'Bizarrely, a past Institution leader once offered me an opportunity to start a minorities group,' he recalls.

Kara didn't take that as racism – and if he has encountered it, it is something that has never to his knowledge held him back, he says, unlike the institutional discomfort with outspoken people. 'I suspect people are uncomfortable because my education didn't follow the accepted route, or I didn't go to the "right" university, or maybe I am too "weirdly" disruptive to be part of any establishment,' he muses.

Radical thinking

He is very proud of being a structural engineer, but concerned that the profession is in danger of disappearing down the rabbit hole of routine practice, reliance on finite technologies that give binary solutions and which will very likely be replaced by artificial intelligence. Instead, he believes it is important to recast engineers as those who, in addition to finding solutions to questions posed by others, can contribute creativity, rigour, passion, curiosity, innovation and aesthetic appreciation of their own.

'What I sense is that 30–40% of the undergraduate engineering curriculum should be replaced with more useful "design thinking" skills such as communication or even colour, for example – when do we ever talk about colour and the impact it has? We are taught in an old-fashioned, binary, linear way and then characterised as an overly decisive discipline, unwilling to discuss



MIKE ODWYER

"WE MUST PLAY A PART IN SETTING THE VISION FOR A PROJECT OR PLACE"

options; of course, we have to design safe structures, but armed with new powers of observation we must play a part in setting the vision for a project or place, be more than "just" the structural engineer.

'I define myself as a design engineer, someone who understands construction and the value of design. I have empathy with the other disciplines and see the projects from their eyes to offer solutions that will make things possible to build, easier to build, that will deliver the creative vision which I have helped develop. Architects, developers and constructors recognise that this fosters behaviour that is more than solely manipulating building materials, to achieve a collective good.'

It bothers him that the Institution doesn't seem to embrace that way of thinking. 'It appears self-protecting, there's a patina of deference that acts against unusual thinking.' There is a sense of him feeling like he is on the other side of the glass from many of his engineering peers, which could in part come from upheaval when he was young. Kara, who is now 59, came to the UK in 1973 as part of the forced exodus of British Ugandan Asians under Idi Amin.

Building a reputation

Uprooted suddenly from all he knew when he was 13, Kara found himself in Cheshire. 'We were welcomed, but I didn't do very well at school given that I didn't speak English when we landed. I got three O-levels. But I found an apprenticeship as a structural steel draughtsman where I did the equivalent of A-levels via day release and night ONCs [Ordinary National Certificates]. The company then sponsored me to study civil engineering at Salford University – at the

time a recruitment ground for contractors rather than designers. When I left, after my year back at the fabricator, I joined Allott & Lomax working with former Institution President John Roberts, who is still one of my mentors.'

There followed a spell on nuclear power stations, three years on site with Taylor Woodrow, and then oil rigs followed by some time on the original Battersea Power Station project. Kara found he loved London and, wanting to stay, joined YRM, which became YRM Anthony Hunt. 'But I'd come from working on substantial structures, it wasn't my kind of engineering. However, it was where I met Robin and Albert.'

When the 1996 recession hit, Kara thought about giving up engineering all together and had already started two dry-cleaning shops. 'But my wife knew my passion was design and encouraged me to start my own practice. Robin and Albert were also keen and, with capital in part from the sale of the dry-cleaning business, off we went,' he says.

'It was the time that computing was coming into its own. I was part of the first generation that exploited the brute force of computation not only to design but also communicate what had previously been impossible.' Projects such as the UK Pavilion for Shanghai Expo 2010, which Kara worked on with Thomas Heatherwick, or the Heydar Aliyev Centre in Baku (Figure 4) with Zaha Hadid would not have been possible without the revolutionary geometries or finite-element analysis they allowed, he explains.

'As the AKT company developed, we realised we could use the digital revolution to design a different type of practice, one of design engineers where rather than just doing the structural engineering, we could combine that with our understanding of construction and architecture. That allowed us to innovate and come up not with one

answer to a conundrum, but different answers at different stages of a job that would all contribute to the whole.'

Clients liked the proposition and AKT became renowned as designers that pushed the boundaries of what was possible, but understood how to combine architectural vision with budget and buildability. The business blossomed, but after 10 years it was sold to WYG at the height of the boom. 'They offered us autonomy, a good price, resources and access to a global market. Unfortunately, after 18 months the recession hit. I could have walked away, gone to Barbados and played golf, except I hate golf. Instead, with the help of new partners Gerry O'Brien and Paul Scott plus the support of "angel" investor Tyréns, we bought the business back and renamed it AKT II. It was a good deal.'

Second time around

AKT II today employs over 260 people, about 195 of whom are structural engineers. 'We are big in terms of structural engineers,' Kara points out. 'I don't think people realise.' The firm has held fast to its origins, but is now using digital power and its diversely skilled engineers (36 different nationalities) to push harder at making the impossible possible and also to ask more questions of projects – why they are wanted or needed – and to generate solutions that may not have been obvious at the beginning.

'We want solutions that deliver benefits, it's a value-oriented approach that is embedded in our designs from the start; how do we use structural engineering to design a better world rather than get stuck in a world that only talks about the engineering?'

This approach is helped by the fact that from the beginning AKT has engaged with research and development at many levels. It's current home at the White Collar Factory in

Shoreditch, London was born out of design research for Derwent to make creative spaces using high ceilings and natural light. 'And it is yielding results,' Kara says. 'Our design engineering culture is definitely going up a notch.'

AKT II staff teach at many leading institutions and the company pursues projects that it knows will be built. 'That's how we keep up with change, by staying ahead of the curve and being judged by what we have built,' Kara says 'If we see a project that is unlikely to be built, we steer clear. We are not interested in investing time in it, even if the fees might be big.'

AKT had lost money on ground-breaking jobs – the Phæno Science Centre in 2005, for instance, but it was worth the loss, Kara says. 'It was the first single-surface structure, demonstrating to us that with computers we could move from standard geometry to almost anything. It changed us as a practice and the investment in developing tools to design it helped us on several projects subsequently.'

Judged on one's merits

For the future, Kara wants to push his profession to be more meritocratic rather than what he sees currently as a cosy club. 'The position of the engineer is undervalued in the UK. It is not helpful that in our own "village" the institutions are in denial about this at times and are particularly ill qualified – perhaps through opacity or lack of resource – to make the distinction between those in the club who gain through good public relations or virtue signalling and who are often the first to be recognised and rewarded, and those who can prove their ability by merit and evidence.'

'The obsession with certain practices and universities tells me something else may be at play and it is a vivid experience when you are on the receiving end of it.'

'Fortunately, we have managed to stay away from the pool of homogenisation of the discipline and turned adversity to advantage. 'The challenge for me now is to ensure the next generation of directors here embrace and retain the authenticity of the position we have carved out in the last 20 years. I am absolutely confident that will happen and the next leaders at AKT II will continue to be world class.'

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Figure 4
Zaha Hadid-designed Heydar
Aliyev Centre, Azerbaijan