Review

Nick von Behr enjoys this well-illustrated new history of Tower Bridge, covering its construction and life in operation, which will appeal to a broad general audience.

Tower Bridge: History, Engineering, Design

Author: Ken Powell
Publisher: Thames and Hudson
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KEN POWELL HAS WRITTEN A FASCINATING book about the story of London's Tower Bridge in the 125th year since it was completed in 1894.

The book goes back in time to provide context for the building of the iconic bascule bridge, covers the construction process in detail, and then moves forward to look at key stories over the last century-and-a-quarter of operations.

Many visitors are unaware, until they step inside them, that the famous stone towers actually protect a vast framework of internal steel columns and beams. Critics wanted this functional aspect to be more overt in the final bridge, but it is likely Queen Victoria would not have been amused!

What was, and still is, unique about Tower Bridge is the fact that it is a huge bascule bridge. Sadly, it no longer holds the record for the world's longest bascule span, as this was surpassed less than 20 years after it was built by the Broadway Bridge in Portland, Oregon, which also still operates today.

Powell goes into detail about the construction of the huge foundations for the main towers, sitting as they do on soft London clay. This was an epic piece of engineering which learned from the recently completed Brooklyn and Forth railway bridges, both iconic Victorian structures in their own right *and* still functioning.

The author tells us more about the engineers and architects for the project, an area well known by this particular reviewer. The original designer was Sir Horace Jones, the City of London Architect, but his plan was adapted for the construction and he died early on in the project. His successor designed the Gothic exterior features, criticised by some, but required to blend with the neighbouring Tower of London. John Wolfe Barry and Henry Brunel were partner consulting civil engineers, with an excellent pedigree, who were closely involved from the very start in all aspects of the build.

Powell gives due tribute to Sir William Arrol, Scots steelmaster extraordinaire, who supplied the key building material for the bridge and ensured it was properly installed on site by the contractors. Credit also goes to Sir William Armstrong for the hydraulic operating system which raised and lowered the bascules rapidly, with no hold-ups, to accommodate the busy alternating road and river traffic of 19th century London.

The book will appeal to those general readers who are interested in the basic story of Tower Bridge, so in this sense it is an architectural update and expansion on the excellent, shorter book by Honor Godfrey written more than 30 years ago.

The book is aimed at a very broad global audience and has plenty of images within it, perhaps too many, so may not suit all of the readership of *The Structural Engineer*. It also doesn't cover any particularly new ground from a structural engineering point of view, unsurprisingly given that the author is a successful architectural historian by trade.

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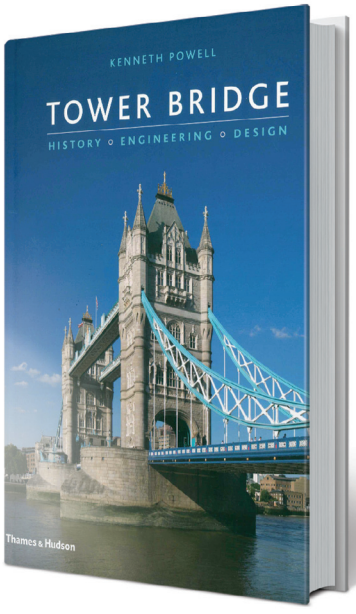

This reviewer has had exchanges with structural engineers about the role of the enormous, hinged side-chains supporting the outside decks of the bridge: Wolfe Barry said that these were to stiffen the suspended decks to carry the load of heavy road traffic waiting for the bascules to close – while a textbook on structural theory even likens them dynamically to an upside-down Salginatobel Bridge, completed by the Swiss engineer Robert Maillart in 1930!

In summary, *Tower Bridge* is well written and produced, and would add to an existing library collection of hardbacks on relevant aspects of architectural history.

Nick von Behr
Nick von Behr was formerly Education Manager at the Institution of Structural Engineers. He is writing a book about John Wolfe Barry, Henry Brunel and their famous fathers, Isambard Kingdom Brunel and Sir Charles Barry (www.buildingpassions.co.uk).