Cite this article
Fisher J and Boothman D (2018)
Editorial
Proceedings of the Institution of Civil Engineers – Bridge Engineering **171(2)**: 79,
https://doi.org/10.1680/jbren.2018.171.2.79

Bridge Engineering

ice publishing

Editorial

1 **Jeffrey Fisher** BSc, PhD, CEng, FICE, FIStructE
Technical Director – Bridges, Mott MacDonald, Croydon, UK

2 **Danny Boothman** BEng, PhD, CEng, MICE
Associate, Transportation, AECOM, Glasgow, UK

In our call for papers for this themed issue on innovation in bridge construction, we stated that 'the construction of bridges often challenge contractors and designers to develop and implement innovative construction methods'. The papers in this edition have demonstrated how innovation continues to drive our industry, both in the design and construction of bridges. Looking back over the last 40 years, there have been many examples of innovation; the list is too long, but there is continuous impetus to making this list longer by the day. This issue gives us examples of present day solutions to problems through innovation.

The paper by Barnes and Gill (2018) on the Pont Briwet Viaduct, UK, explains the design approach adopted to minimise maintenance costs using a fully integral structure between the superstructure and substructure. This resulted in the elimination of road movement joints and rail adjustment switches over a length of 133 m; i.e., the length of the bridge. The paper describes the design approach that justifies an integral bridge over this length.

The paper by Duguid *et al.* (2018) relating to the Ordsall Chord in Manchester, UK, discusses the approach to the application of digital design delivery on a major rail infrastructure project in Manchester. Early involvement of both the main contractor and its steel fabrication subcontractor has allowed conventional roles and processes to be challenged. In some cases, drawings were dispensed with entirely and key structures were built directly from the digital model prepared in collaboration between the fabricator and designer.

It's good to see a paper from our friends in Japan (Takeichi *et al.*, 2018), in which the authors explain the design of a 260 m long main span cable truss bridge with a reduced height of the pylons and a minimal number of cables, which minimised adverse effects on the environment. The approach was achieved by placing horizontal cables under the main span deck.

The technology developments of jacked structures continue apace and the paper by Thomson *et al.* (2018) conveniently summarises the key developments by reference to completed projects.

Finally, we would like to highlight the very interesting paper that describes the design and construction of the A82 road widening following the shoreline of Loch Lomond, UK (Stroscio *et al.*, 2018). The use of the deck to carry the road traffic in a temporary position is a very good example of innovative thinking.

In our challenging industry, often constraints on budget and programme discourage engineers from innovating without genuine benefit or necessity. Innovation is often driven by necessity or economics rather than pure desire for innovation, academic interest or research and development. Thankfully, the nature of our industry is such that unusual, sometimes unique, challenges are relatively frequent and as the papers presented herein demonstrate, innovation in bridge construction and is alive and well.

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