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Editorial

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It is with pleasure that I again welcome you to this regular issue of *Bridge Engineering*.

What is so pleasing about this task of introducing you to each of these issues is to see the wide range of innovative ideas and techniques that are being employed every day by bridge engineers throughout the world. In this issue we have examples of design, construction and repair, not necessarily of the big, headline projects, but nevertheless full of clever ideas, novel techniques and reliable, well engineered solutions. As a consequence, there is much to be learnt from these examples, both in terms of what can be achieved technically and the benefits of encouraging and supporting the dissemination of such case studies.

Bridge Engineering has an important role to perform in this context and, while it might not achieve the citations deemed necessary to qualify it for an impact factor, the editorial panel is of the opinion that these project-focused, practice-based papers are the lifeblood of our journal. We hope you agree and if you do, please prove this to us by engaging with us, either by writing and submitting a paper or by engaging in discussion of the papers that are published, as we see in this issue. The latter provides a very valuable forum for debate and the exchange of opinions that are fundamental to the development of our profession. In particular, we would welcome review papers to establish the 'state of the art' in specific aspects of our discipline, to help those that are new to it and to refresh those whose knowledge is more established, and which can build on the many case studies that already exist in our back catalogue.

Many thanks are due to the authors whose work is published in this issue.

In the first of these (Biana, 2010) the design, innovative detailing and construction of the Todwick Road bridge, Rotherham, a semi-integral bridge of high skew, is described. The new bridge, which forms a strategic link between the ongoing development of the former Dinington Colliery site and the motorway network, has an effective span of 21.2 m, a skew of 36° and semi-integral bankseats on reinforced earth abutments. The paper describes how this solution was achieved despite these criteria being outside standard Highways Agency guidelines.

The second paper describes the many challenges faced during the design and construction of the low-level approach viaducts of the Penang Bridge between Penang Island and mainland

Malaysia (Corbett *et al.*, 2010). The project, which required the construction of new piles adjacent to the existing structure, involved vibration monitoring and careful measurement of pier settlements, and this identified the need for remedial works at a small number of piers, achieved either by carbon fibre wrapping, the addition of reinforced concrete collars or epoxy resin injection grouting of any cracks.

The third paper discusses the design, analysis, detailing and construction of a 180 m long, four-span steel composite viaduct where, due to site constraints, the most economical and practical method of erection was to launch the steelwork into position rather than lifting it in by crane (Liddle, 2010). The author focuses specifically on the key issues relating to the launching of the steelwork and highlights that the design and construction of such a structure can be significantly more involved than that of a more conventionally erected composite viaduct.

The final paper in this issue describes the fatigue strengthening of welded connections on London's Docklands Light Railway (Tilly *et al.*, 2010). It includes details of the use of an ultrasonic impact treatment (UIT) and a programme of fatigue tests that were carried out to evaluate the extent of the improvement that could be achieved. Experiences gained from the experimental programme enabled an improved specification for UIT quality control to be developed and were used in support of the design work to upgrade structures by reinforcing under-strength welds as necessary.

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