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## Editorial

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It is with considerable pleasure that I am writing this (introduction) to the first issue of the second volume of *Engineering History and Heritage*. I have believed for some time that there is sufficient high quality research taking place around the world into engineering history to justify establishing a specialist journal on this theme within the ICE Proceedings suite. It is perhaps even more obvious that within mature economies the volume and value of work in maintenance and conservation equals or exceeds new build, and that the work involved is often more challenging to the practitioner than projects on green field sites. The challenge for any journal is to make papers containing case studies attractive to practitioners, once the word 'history' is mentioned. History is, in fact, immensely practical. Without an understanding of 'history' any person is liable to committing faux pas, treading on sensibilities, causing affront, and that is before one even gets on site.

It is therefore with great delight that I have read through these papers and seen a judicious blend of history and practice. Santiago Huerta is well known in construction history circles, both as an expert in masonry construction (Huerta, 2004) and the organiser of the first International Conference on Construction History (Huerta, 2003). His paper (Huerta, 2010) in many ways represents a synthesis of all that EHH's editorial advisory panel have been working for – a thorough history of the topic of buttress design, drawing on a range of primary and secondary sources, from mediaeval to modern times, and finishing with a review of modern approaches to masonry buttress analysis and methods of estimating safety. The ICE library had been asked about the subject the week before I read this and struggled to find an authoritative review of the subject. It clearly now exists.

Foti, Mongelli and Paparella's paper (Foti *et al.*, 2010), on shear assessment of the Della Vittoria stadium, Bari, Italy, appears a more specialist treatment than that of Huerta, but it also includes a more general introduction to the development of reinforced concrete design and its codification in Italy. In considering how buildings were designed in the early twentieth century, and would be designed today, the authors are highlighting how our understanding of shear behaviour has improved and how it needs to be considered in assessing buildings of that vintage, particularly for seismic loads. The Della Vittoria stadium is looked at in the context of modern Italian and ACI codes, and results compared to the surviving

original calculations for the stadium. Possible weaknesses in the original design procedure are highlighted.

In contrast, William Bradford's review of James Mansergh's water demand forecast for Birmingham of 1892 vindicates Mansergh's work (Bradford *et al.*, 2010). The forecasts were the basis for the well known Elan Valley water supply scheme and persuaded the Parliament of that time to provide the necessary powers. Mansergh's horizon was 60 to 70 years and Bradford is able to demonstrate how well Mansergh did. Mansergh, although a president of the ICE, is probably the least well known of the leading water engineers of his generation as, unlike the Binnies, Taylors and Hawksleys, his firm did not flourish into the late twentieth century. His career, however, was firmly based in the best practice of the time, with Robert Rawlinson, among others, as his mentor. Like the Binnies, he would have learned at the start of his career of the need for reliable hydrological data.

Ben Barr's story (Barr, 2010) – that of the design and construction of the Conway and Britannia tubular bridges – is much better known. However, despite the abundant contemporary publications on these bridges, both in the UK and elsewhere, the large-scale experimental testing of tubular iron beams and their results seem to have been forgotten by the designers of steel box-girder bridges in the late 1960s and early 1970s (ICE, 1973). This was despite engineers like Timoshenko referring to the work on buckling behaviour in their textbooks (Timoshenko, 1936; 1959). Ben Barr describes how the Stephenson team, using existing analytical methods and test results, developed the design and a safe construction method. He forcibly argues that the use of a case study like this, rather than relying on discussions of stability theory, would be more successful in teaching students about more abstractability of thin-walled structures.

This is exactly the point that some members of the editorial panel see as the most enduring legacy of this journal, to inform the next generation of engineers about how the lessons of the past can help avoid the mistakes of the future.

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