

Editorial

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It has been my great privilege to chair the Editorial Advisory Panel (EAP) for this journal for the past 3-year period and it is now time to pass the baton to my successor, Professor Pete Walker. I welcome this opportunity formally to thank all my colleagues on the Panel for their support and friendship during my term in the chair, not forgetting the excellent work done by various officials from the Institution. I also wish Professor Walker and his team every success during the 3 years starting on 1 November 2012.

As we all know, the last 3 years have been a tough time in the construction industry and we are not yet sailing in open water, though there are many encouraging signs. Despite the challenging economic climate in Europe and in many other parts of the world, construction has been moving forward. Even on our doorstep in the UK there have been some large and impressive projects, with others planned and with UK companies and engineers involved in many exciting developments overseas, all as regularly documented in the various ICE weekly and monthly publications.

This on-going construction endeavour, together with a growing international awareness of the need for sustainable and environmentally friendly development, has maintained the academic and practical searches for new and better construction materials, and/or for new and improved ways of using more familiar materials. Alongside these fresh approaches, there has been a determined push to make better and more widespread use of recycled materials in construction; plus encouraging examples of composite products, achieving better performance from traditional materials whilst also consuming otherwise waste by-products.

I am delighted to know that *Construction Materials* has published many papers and briefing notes on these exciting developments over the few years since its inception. Many of these examples have involved the number one structural material, concrete, and its constituents. However, the EAP is always keenly aware that its brief is to present state-of-the-art information on a full range of construction materials. These include the highly traditional, such as natural stone, earth and timber, through to the astonishing array of modern options, such as the latest polymer and ceramic products, engineered cementitious options and various ingenious composite developments. Thus, we continue to call for high quality papers that cover all of these varied construction materials.

This current issue of *Construction Materials* is a splendid example of the diverse range and degree of expertise and innovation that we seek to provide. It includes two papers on rammed earth; a fascinating paper on using soil as an alternative to reinforced concrete for retaining walls; a similarly innovative paper that applies an established asphalt test to the unbound materials beneath; a paper on the performance of self-compacting concrete; and last, but by no means least, a paper that describes a prototype low-carbon house built from prefabricated straw bale panels.

Chear *et al.* (2012) have investigated the shear strength of rammed earth, one of the very earliest construction materials, but which is addressed rather conservatively in current design standards. Their research, using different test methods for establishing shear strength of rammed earth reinforced with sisal and flax fibres, has led the authors to recommend use of the triaxial (geotechnical) test for assessing rammed earth. On a completely separate aspect of rammed earth, moisture or humidity buffering, Allinson and Hall (2012) explain that rammed earth can be a 'good' buffering material and have identified means of optimising its potential for such passive air-conditioning, including a modelling tool appropriately called 'CHAMP'.

Jayasree and Ansar (2012) address an actual situation in India, in which poor ground conditions were challenging for the construction of embankments required in connection with new bridge structures, making the traditional reinforced concrete retaining walls prohibitively expensive. The authors report on a feasibility study for using a more flexible solution based on soil walls reinforced with geotextiles and faced with gabions.

Kim *et al.* (2012), working in Iowa, USA, explain that the resilient modulus (M_R) of unbound materials is a required property in the pavement design process. They have evaluated the validity of employing a 'hybrid' Nottingham Asphalt Tester (NAT) system to determine the M_R of unbound materials, using Iowa materials of established performance, concluding that the system is effective; guidance criteria are suggested.

Adequacy and consistency of compaction are key parameters for any concrete and Goel *et al.* (2012) explain that self-compacting

concrete (SCC) is a valuable recent development that might eventually replace most normally vibrated concrete (NVC). They have researched the flexural fatigue of SCC beams, finding both that variability in determined fatigue life is reduced and that two-million-cycles fatigue strength is slightly increased for SCC by comparison with NVC.

Finally, Wall *et al.* (2012), inspired by historic applications in Nebraska, USA, describe an interesting 'value-added use of a widely available low-carbon co-product of farming' (straw bales), which have been employed by the authors to prefabricate panels that are then used in the construction of a prototype house. This paper presents some of the preliminary research findings and aspects in need of further development, also whetting the appetite with promises of further reports in the near future.

I hope and trust you will enjoy reading these papers as much I have been rewarded by their review, leading to some excessive abbreviation in the preceding paragraphs. It is also and finally my pleasure to convey seasonal greetings to all our readers and contributors.

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