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Editorial

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Welcome to the August 2013 issue of Engineering Sustainability. There are four papers included in this issue covering topics ranging from carbon emissions assessment, through risk-based approaches to sustainability, to a life-cycle approach for integrating sustainability into design.

The first paper, by Itoya et al (2013), is concerned with evaluating the CO_2e emissions associated with highway maintenance. With the aim of supporting decision making about maintenance, the authors consider data from core highway maintenance processes being conducted at twelve locations (four urban, four semi-urban, and four rural). Their results, which are presented in detailed tables, will be a valuable resource to readers concerned with reducing CO_2e emissions from highway maintenance. Evaluating and reducing the CO_2 emissions by the construction industry has recently become recurring theme in Engineering Sustainability (see, for example, Byrns et al. 2013, Ng et al 2013, Sampson et al 2013). This suggests that it is occupying the thoughts of many professionals in the construction industry, and I would therefore like to take this opportunity to invite readers to submit discussion contributions on any of these papers (see below).

The second paper, by MacAskill and Guthrie (2013), focuses on fully integrating sustainability into management of major infrastructure projects. The authors advocate taking a risk based approach to sustainability issues, and that sustainability should be routinely reviewed as part of project risk management throughout the lifetime of projects. The advantage of this approach is that it has the potential to make sustainability an integral part of the project decision-making process. Current sustainability tools, such as multicriteria analysis and rating schemes, would then be used to review the risk register.

The final papers in this issue report a two-part study of sustainability in bridge design. The first paper (Gervasio and Simoes da Silva, 2013a) proposes a new approach that integrates environmental, economic and social criteria into a single life-cycle analysis. It involves pairwise subjective comparison between proposed design options for each criteria, comparative scoring of the design options within the three main criteria categories, and a final step where the user explicitly weights the relative importance of environment, economy and society criteria within the context of the specific project. The second paper (Gervasio and Simoes da Silva, 2013b) presents the application of their new methodology to two case studies concerning over-bridges across major highways. The first case study demonstrates how the methodology can be used to conduct a life-cycle analysis, and the second shows how it can be used to compare alternative designs from a decision-making perspective. Usefully the Authors report two general outcomes from their analyses: materials production and traffic congestion are of paramount importance in the life cycle of bridges, and minimising traffic congestion during both construction and maintenance are critical to achieving sustainable performance.

The issue closes with reviews of two books of direct relevance to sustainable construction community. The first is Haggard, Bainbridge and Aljilani's book "Passive solar architecture pocket

reference" and the second is Manzi, Lucas, Jones and Allen's book "Social sustainability in urban areas: Communities, connectivity and the urban fabric".

The papers in this issue highlight the many challenges that remain to achieving consensus about the best way to deliver sustainable construction. They show that the science and regulatory instruments needed to ensure engineering sustainability are still being developed. It is important that all stakeholders in construction feel able to contribute to the sustainability debate, and this journal sees supporting and shaping this debate as one on its primary functions. Engineering Sustainability actively encourages debate on topics within this domain and one of the quickest and most effective ways to make your input is via a discussion contribution. These are short commentaries (less than 500 words) that respond to recently published material in Engineering Sustainability and are reviewed by the Editorial Advisory Panel for rapid publication in the journal. With a view to further reducing the turnaround time for publishing discussion contributions, I would like to finish by reminding readers that Engineering Sustainability has recently started publishing its most recent articles "Ahead of Print" on its Virtual Library homepage (http://www.icevirtuallibrary.com/content/serial/ensu). This allows the community fast access to new journal content, which should hopefully facilitate topical discussion.

G. Byrns, A. Wheatley, V. Smedley (2013). Carbon dioxide releases from wastewater treatment: potential use in the UK. Engineering Sustainability, 166(ES3), 111-121.

Gervasio and Simoes da Silva (2013a). A design approach for sustainable bridges – Part 1: Methodology. *Current issue.*

Gervasio and Simoes da Silva (2013b). A design approach for sustainable bridges – Part 2: Case studies. *Current issue.*

Itoya et al (2013). Highway Routine Maintenance Carbon Emissions Assessment. *Current issue.*

MacAskill and Guthrie (2013). Risk-based approaches to sustainability in civil engineering. *Current issue.*

S.T. Ng, J.M.W. Wong and M. Skitmore (2013). Challenges facing carbon dioxide labelling of construction materials. Engineering Sustainability, 166(ES1), 20-31.

J. Sampson, M. Biesta, M. Crapper, I. Hall, A. Shepherd (2013. Carbon dioxide accounting:2014 Commonwealth Games Athletes'' Village. Engineering Sustainability, 166(ES3), 150-160.