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Editorial

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Following two very exciting issues in which a number of the interim outputs from the Engineering and Physical Sciences Research Council Sustainable Urban Environments (SUE) programme were presented, this issue returns to individually submitted papers, although there are still a few SUE papers to be published in the next few months.

The Editorial Panel of the journal has been reviewing the name of the journal and whether or not it should be changed. This is in the light of the launch by the ICE of two new parts of the *Proceedings*: *Construction Materials* and *Waste and Resource Management*. I was not in at the start when the name *Engineering Sustainability* was chosen. During the debate about the possible name change there was some support to include the word 'environment' somewhere in the title, a bit like the American Society of Civil Engineers' journal *Environmental Engineering*. However, as many of the original members who decided on the original name were still part of the panel, there was fierce opposition. They were emphatic in stressing that sustainability is not especially about environment, but equally about society and economics. Hence the name *Engineering Sustainability* is fitting for the ICE as it is really what we are all about; delivering through engineering 'sustainability' in all its meanings. As stated before, it is our ambition that engineering sustainability becomes such a mainstream part of our activities, that any papers in ICE *Proceedings* will be sure to include it. But as yet this still seems a long way off. Many of the papers we receive talk effusively about sustainability, but lack key components in at least one of the three main areas, or lack appreciation of what these actually mean, with vague comments about 'good for the community' or claiming that construction using a particular widget makes a solution adopted sustainable. You will therefore be glad to know that we have decided to keep the original title and redouble our efforts to attract papers that really do span the pillars of sustainability. (Any views readers have on the journal's title will be received with interest. Please forward any comments to Ben.Ramster@ice.org.uk.)

This is being written in the aftermath of the launch in October of the ICE's annual State of the Nation report. As in the previous two years, this has been greeted with much interest from the Government and the media. I was involved in the meeting at which the sustainability ratings were given in the various infrastructure sectors. Particularly depressing was the energy sector, where there has been no progress and the grade awarded was 'poor' and sustainability 'below average'. In the environment and sustainability area, the overall conclusions were of missed opportunities, despite certain initiatives from Government, and there seem to be no real attempts to manage demand and unsustainable behaviour across the board, in transport, waste generation, water and the building of communities in places where making them sustainable is impossible. For readers who do not know about these annual reports I would point you to the ICE website, where they may be accessed. This year's is at http://www.ice.org.uk/downloads//state_of_the_nation_2005.pdf.

In this issue there are four papers. Helen Bartlett and Peter Guthrie from the University of Cambridge are concerned with the way sustainability is defined and interpreted in relation to the built environment. They have carried out a landmark comparative analysis of documents in this area, identifying commonality in interpretations of sustainability for the built environment, from this being able to collate a commonly agreed set of principles or guidelines that represent current thinking on how the objectives of sustainable development could be interpreted for the built environment. This paper could become an oft-cited and key source for future work in this area.

Peter Guthrie figures once again as second author in a paper led by Jay Golden at the International Institute for Sustainability at Arizona State University, in which the heat island during summertime in urban areas is considered. The paper focuses on the implications of rapid urbanisation and consequent summertime local climate change, as a result of the differential heating of hard urban surfaces. The changes in volumetric and physical characteristics that comprise the urban fabric of a region are reviewed, then research efforts are considered that have set out to quantify how surface material applications and microclimate, being subject to the laws of thermodynamics, can be altered in terms of engineered alternatives. The paper includes a review of surface mitigation research as presented in the context of sustainability.

Colin Serridge, from Pennine Vibropiling, is concerned with sustainability in vibro stone column techniques. Colin indicates that vibro stone columns have been used as a ground treatment technique in the UK since the 1960s and claims they are currently the most common form of ground treatment. As there is an increasing desire to use recycled materials for vibro stone column techniques, the relative sustainability has to be considered as does the 'fitness-for-purpose'. Materials used in stone column construction are required to be free draining, hard, inert and

comply with acceptable criteria in terms of material type, grading, hardness and chemical stability. New European standards for aggregates now allow the use of environmentally sustainable materials in a wider range of applications. Colin discusses the importance of the fines content of the aggregate, as this influences both the carrying capacity of the stone column and the settlement characteristics. Applications of recycled aggregate in the context of vibro stone columns are presented, as is an innovative technique for avoiding pollutant linkages via stone columns using 'vibro concrete plug' technology.

Waste in terms of sustainability is something of an oxymoron. However, Benjamin Bolaane, University of Botswana and Mansoor Ali of the Water Engineering Development Centre, Loughborough University, consider the constraints and opportunities to organised recycling in Gaborone, Botswana. In developing countries, the promotion of recycling of waste is often not preceded by an objective assessment of practical conditions on the ground in terms of potential constraints and opportunities. Results from a field investigation to examine possible constraints and opportunities to recycling are used to characterise household and commercial waste and secondary materials markets. A number of constraints to organised recycling were identified, such as the lack of specific incentives to promote recycling, limited municipal implementation capacity and lack of reform of the municipal waste management departments; fragmentation of the recycling industry, sourcing materials free of charge and municipal officials' attitudes that favour the status quo were also found to be possible constraints. Opportunities were found for the enhancement of recycling, such as policy and legislative support and high recovery for selected materials by the private sector. From the identified constraints and opportunities, it is concluded that adopting organised recycling may not be a viable option and the emphasis of a recycling strategy for Gaborone and other cities with similar characteristics should be on supporting private sector initiatives through appropriate incentives.