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Editorial

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Welcome to the fourth issue of *Engineering Sustainability*.

This issue sees the completion of the first year of the journal. I would like to take this opportunity to thank the authors, panel members and reviewers whose contribution to the 'sustainability knowledge bank' (and, importantly, its dissemination) has demonstrated how engineers and ICE members continue to provide leadership and share knowledge to the benefit of all.

1. BRIEFINGS

In the first briefing note Reid describes a protocol that provides guidance on the use of recycled and secondary aggregates. The protocol is based on the requirements of existing specifications and legislation and will help engineers respond to increasing demands by clients to increase the proportion of recycled materials and products. It would be helpful if readers who have used the protocol could make comments on its efficacy, which could be reported in this journal. The briefing note provides me with an opportunity to remind readers that a special edition of *Engineering Sustainability* is being planned for September 2004 entitled '*The Reuse of Materials*'. The initial call for papers has resulted in an encouraging response. Please note that final papers will be required by 1 March 2004, should be 2000–5000 words in length and, where appropriate, illustrated with around six to ten photographs and/or simple line drawings.

The second briefing note is the write-up of a keynote speech by Head at the Better Building Summit[1] hosted by the DTI on 21 October 2003. The theme of the summit was to identify ways of delivering better, greener buildings faster. There was a particular focus on energy efficiency and the future potential of renewable energy. The importance of the role the construction industry can play in helping to reduce CO_2 emissions by 60% by the year 2050 is illustrated in Fig. 1. Peter Head's keynote speech at the summit outlined the work being carried out by the London Sustainable Commission to develop a practical approach to improving performance particularly in waste, emissions reduction, take-up of renewables and water efficiency. A summary of the issues covered by the summit is available on the DTI website.[2]

The summary identifies some key statistics and impacts of the construction industry:

- The industry employs 1·5 million people.
- It accounts for 8% of UK Gross Domestic Products (GDP).
- The use of materials for construction is around 6 tonnes each year for every man, woman and child in the UK.
- Construction and demolition produce 70 million tonnes of waste each year—three times the amount of household waste.
- Thirteen million tonnes of UK waste is unused material each year.
- Over 44 000 megalitres of water is abstracted every day with demand close to exceeding effective rainfall in some areas.
- Some experts estimate that in the UK we are using over three times our global share of resources.

The challenge at the summit was to ask 'what kind of 2030 do you look forward to?' (see Table 1)

2. PAPERS

Adetunji reports on an EPSRC-funded study to establish the baseline review of UK construction contractors' engagement with the concept of sustainability and gauge their response to the questions being raised. It is encouraging to note that most of the respondents have the view that a proactive sustainability strategy supported by effective reporting to stakeholders can have a major positive impact on organisational competitiveness. I assume that the proactive strategy also helps to improve our environmental and social performance! Disappointingly the survey also identifies that 'substantial progress has only been made regarding the environmental aspect of sustainability'.

In the second paper Shaw reviews the environmental implications of the hydroelectric industry as it relates to upland run-of-river projects. This paper reviews the issues relating to run-of-river schemes and water abstraction. It then goes on to describe the impacts of fish stocks, plants and animals. He also covers amenity and landscaping and other factors such as sociological and archaeological impacts. Shaw identifies that the environmental and other impacts are well understood and concludes that 'this industry and those to whom it supplies energy will be better served if its implications for the environment are methodically assessed and the results widely publicised'—a call for stakeholder dialogue and demonstrable competency in environmental assessment!

Amblin, in his paper, describes the construction of a wastewater treatment plant that will serve nearly a third of Mauritius' 1·1 million population. It is evident that the plant will provide

Is this the worst case?	Is this the best case?
UK dependent on fossil fuel from unstable sources. Unreliable supply means electricity rationing has reduced productivity by a third.	Renewable energies provide 40% of UK heat and power. Many domestic customers are now net suppliers to the grid through wind and solar schemes.
National average SAP remains below 60. Tenant and owner relationships break down due to energy costs.	Fuel poverty eliminated in 2013. Homes refurbished to meet national average SAP of 100 by 2015
Water rationing throughout the UK and water piped from north to south.	Reduction in water use. Increase in recycling and biological sewage treatment helps maintain supplies and keep costs low.
Road and runway building still underway as gridlock increases. Air pollution contributing to one million premature deaths per year.	Walking, cycling and public transport now the most popular choice for journeys under 10 km. Air traffic taxed in line with other modes of transport.
Record numbers of directors in prison for corporate manslaughter. UK construction industry shrunk to half of 1990 levels due to overseas competition offering more predictable services.	Modern methods of construction have eradicated accidents and maximised UK construction productivity, predictability, profitability and energy efficiency.
Adversarial contracts lead to sub-optimal design to the detriment of clients, users, and communities.	Integrated teams on non-value-linked fees work with clients, users and communities to create best value products and services.
Landfill capacity reached in 2017. Waste disposal is single biggest construction cost.	Construction became a zero waste industry in 2023

Table 1. Best and worse case scenarios for 2030

environmental and social benefits through supplying improved potable water supplies in addition to providing water for irrigation which will also deliver significant economic benefits to the community.

REFERENCES

1. See http://www.dti.gov.uk/construction/betterbuildings.htm for more details.
2. See http://www.dti.gov.uk/construction/issues.pdf for more details.