Editorial

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'Sustainability' has taken on the Brundtland definition paraphrased as 'maintaining quality of life now while not affecting the ability of future generations to maintain their quality of life'. For engineers, particularly in rural areas, this requires a broader view of their activities than may have been the case in the past. Sustainability can permeate every aspect of the job—from safety to durability to affordability. As a result, long suffering engineers may feel they are the whipping boys for every interested party—some of whom take the view that engineering and sustainability are mutually exclusive, while others will say the engineer working on a tightly specified road in Sussex should consider the impact on the rainforest in Guatemala.

Rural areas and communities can be seen as laboratories, demonstrating the results of unsustainable practices, currently and in the past. The growth of cities, and the resulting dependence of rural communities on them, reflects the interdependence of long established parasitical relationships, which have become symbiotical—the ant species feeding on a flower, fending off other species and becoming unable to breed outside that particular plant. Both decline and fail without the other. Sustainable engineering in a rural context needs to reflect the interdependence of the rural and urban. It also needs to adapt to the growing impacts of the unsustainable aspects of our society, such as climate change. These are the themes of this issue.

The edition starts with a review of the rural community in England by Colin Williams and Richard White and raises the question as to whether rural communities are the idyll of popular imagination and independently sustainable, or are they now as dependant on urban parasites as urban areas are on them? The underclass of jobless and low-income families are excluded from the mobile and relatively wealthy urban workers who use the rural community simply for leisure. To continue this requires the re-integration of the minority with innovative and sustainable policies.

We are where we are—too radical changes in society could have the opposite effect to sustainability—a pragmatic approach to reducing impacts and re-examining activities may yet avoid or mitigate looming sustainability problems. Reducing waste, managing waste and reusing or recycling waste should be an obvious and early first step. Rural areas were frequently sources of aggregates and minerals used to support

ungrateful urban growth. A direct consequence of their extraction was the creation of convenient, out of the way holes in which to bury waste. This relationship and interdependence is examined by Peter Jones, who points out the gross inefficiency of using 10 tonnes of raw materials for a net increase in material wealth of 50 kg, and takes the microcosm of the Isle of Wight to develop an engineering led approach to integrating waste management with resource management.

This theme is then taken further by Mike Winter, who argues the case for a framework within which recycling of aggregates and other wastes may function to promote sustainability. The current flurry of recycling initiatives, many with limited success and worse impacts than before, strongly supports this thoughtful approach.

Damage already done to the climate is visiting almost biblical floods on areas used to such events once a century or less. For communities to survive in these areas requires a new approach to flood management, and the issues around building design are examined by Pam Bowker, who suggests it is possible to cope and adapt to flooding. A related theme of using building design to conserve water is taken up by Daniel Leggett and Paul Shaffer. Drought and flood—a consequence of climate change requiring innovative and integrated thinking by engineers used to more equitable climates.

The protection of coastlines against more frequent storm damage using sustainable materials is discussed by Matthew Crossman and Jonathan Simms, and maintains the theme of integrated thinking in addressing the problems created by human activities, and the key role for engineers in these solutions.

Parks and greenspaces are rural environments in an urban setting. Their importance and survival are increasingly recognised as quality of life issues for the urban dweller. How to maintain and improve them are the themes of the paper by the late Ken Fieldhouse and that by Ian Richardson.

The common theme of this issue is the innovative thinking by municipal engineers in managing the problems of rural sustainability. The solutions developed in the relatively benign environment of Western Europe may provide a degree of smugness that we can overcome anything and maintain our resource intensive way of life. The real need for sustainable

infrastructure to provide a basic quality of life is starkly identified by Richard Brown's paper on the post-war devastation present in so many developing countries. Starting from scratch, yet avoiding quick fix, unsustainable development is a real challenge for municipal engineers, and one we all should

consider when creating the model to which the developing countries may aspire.

These issues will form the theme of the next Municipal Engineer seminar, to be held in November.