Editorial

Ana Paula Bortoleto CEng, MEng, PhD

Assistant Professor of the Department of Sanitation and Environment,
School of Civil Engineering, Architecture and Urban Planning, University of
Campinas, Brazil

This issue of *Waste and Resource Management* reinforces the importance of human factors and not only technological innovation on delivering cost-effective policies on the waste management sector. Following the recent events in the UK, Messent and Ross (2016) begin the issue with their briefing on the implications of Brexit – the withdrawal of the UK from the European Union (EU) – for the waste sector. It differs from the focus of the other papers in this issue in that it considers the new political and economic framework with no precedent in history. The authors discuss the regulatory uncertainty raised by this situation, particularly on circular economy, waste imports and exports. There has never been a more important time for all those researching on waste to work together and to use our body of knowledge and expertise to help influence and deliver a new environmental vision, not only for the negotiations involving the UK leaving the EU, but also for other countries facing the challenge of developing new strategies to decrease waste generation.

The mission of sustainable development has exerted the pressure demanding for the adoption of proper methods to protect the environment across all industries including civil construction, which is by essence a non-environmentally friendly activity. The world's construction industry is expected to continue its considerable growth for the foreseeable future. In recent years, large-scale urban construction programmes, particularly the extensive urban renewal activities in developing countries, have produced billions of tonnes of construction waste and caused significant environmental impacts.

The paper by Wang and Tam (2016) presents an approach to evaluate carbon dioxide emissions from construction activities through an empirical study in Shenzhen, China. According to the IPCC (2007), the building sector contributes up to 30% to total greenhouse gas (GHG) emissions annually. The United Nations Environment Programme (UNEP) declared that GHG emissions will more than double in the next 20 years unless actions mitigating the emissions are undertaken (UNEP, 2009). Interest in these emissions should extend to other cities on both developed and developing countries, and readers should bear in this in mind when examining these specific results.

According to Yang *et al.* (2016), more than 3400 people were killed and over 2 million were otherwise affected by landslides

in China between 2000 and 2015. These disasters were usually caused by the collapse of large piles of construction and demolition waste. The obvious response to avoid them is to reduce the amount of waste generated. Waste minimisation or the so-called '3Rs' (Reduction, Reuse and Recycling) is commonly recognised as the best option for reducing construction waste generated on site. However, coordination among all those involved in the design and construction process is essential – this is the topic of discussion in the papers by Moreton *et al.* (2016) and Tam and Hao (2016), both published in this issue.

Moreton *et al.* (2016) refer to the project's design stage as an opportunity to effectively reduce the waste. The conducted survey shows that knowledge may affect architects' perceptions towards the link between waste generation and design decisions. Their results produced an interesting background on architects' perceptions on responsibilities and knowledge, barriers of design waste reduction and ways of delivering training to draw additional insights by readers on their local situations. Tam and Hao (2016) examined the attitude towards recycling on construction projects in the city of Toronto (ON, Canada), showing us why workers in civil construction have a positive perception and judgement of recycling activities on construction sites. Clearly, contextual factors are to be considered by public officials to enable a recycling friendly construction industry as well as recycling on site.

The recycling of waste implies a significant reduction in amounts destined for disposal by landfilling, enhances the achievement of recycling rates established by law, leads to a reduction in the use of non-renewable resources, promotes closure of the material cycle with immobilisation of elements that would otherwise have been available to the environment and produces a positive outcome on climate change, both by acting as a carbon sink and through a lower consumption of fossil fuels. The paper by a group of researchers from the UK presents a novel process to produce high-value carbon nanotubes and hydrogen-rich syngas through pyrolysis-catalysis of waste tyres (Zhang *et al.*, 2016). This well-designed experiment draws out some interesting details about the composition of the resulted syngas and presents images of the carbon deposited on the catalyst from the pyrolysis-catalysis of different types of tyres and rubber samples. The method also generates carbon deposits on the catalyst that have, according to the

authors, the potential to be further processed to produce a high-value product to support the advanced materials industry.

I hope that you find these articles interesting and insightful and the journal invites readers to contribute to the discussion by sending your comments to the journal.

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