Editorial

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Happy the man who has been able to learn the causes of things
Virgil (70 BC to 19 BC)

A question arose recently regarding the options for controlling the number of pigeons in the town of Ramsey on the Isle of Man in the British Isles. The nuisance caused was primarily that of their droppings which were polluting the human realm in a way that was thought unacceptable to the majority. Consulting the experts, it was wisely, if obviously explained that the population of the birds was directly related to the amount of food resource available to them.

It is not a massive leap to adduce that as the pigeons are to the town of Ramsey, so are us humans to planet earth. The continuing steep increase in population is not ultimately sustainable although who is insightful enough to say whether a population of 500 million, 5 billion, 20 billion or 100 billion is the sustainable number of humans for our planet? I can say with authority that there is a sustainable number. I can also deduce that for a given planet earth the sustainable number would be higher on a well managed earth than on a badly managed one. Also, I would reflect that the optimum sustainable number is lower than the maximum sustainable number.

Perhaps this strand of thinking only emphasises that mankind's primary objective might be to find another planet to populate – unless there is some greater meaning that should furrow the brows of man. This issue of *Municipal Engineer* examines some of the issues that population increase brings and considers what is perhaps, pending discovery of another habitable planet and the means to get there, mankind's secondary objective, how to sustain ourselves by making the most efficient use of our current planet's precious resources.

Municipalities across the world are taking steps to recycle waste (Ongondo and Williams, 2012). Leading waste authorities in the UK are achieving over 60%. Many different techniques have been deployed ranging from sorting to incineration. Initiatives often achieve a degree of success but then recycling levels plateau as the various methods realise their optimum performance. One limiting factor with user-sorting and/or post-sorting methods is domestic food waste which typically makes up around 20% of all domestic waste.

This is difficult to process in its own right but when mixed with other waste also reduces the percentage of that waste which can be recycled. In-sink waste disposal units are relatively prevalent in the USA and in certain parts of the world but less so in Europe and elsewhere. In his detailed and thorough paper, Evans (2012) takes an objective look at their pros and cons, including the associated carbon dioxide emissions. The author dispels some of the myths around their use – for example, he concludes there is no evidence that they lead to a greater incidence of blocked sewers. This paper provides an option for waste authorities to improve on their existing performance both in relation to overall recycling percentages as well as the resultant carbon dioxide emissions.

Across the globe it is estimated that some 10–20% of drylands are undergoing further dehydration and are moving towards desertification because of changes in global weather patterns. Many developed countries face a degree of challenge as both population growth and modernisation increase demand against a backdrop of reduced rainfall. Not untypical, urban conurbations in Western Australia currently seek to maintain their parks and recreational areas for the benefit of the population. Given the local climate, their current strategy relies heavily on groundwater extraction from an aquifer and as elsewhere is under stress due to a combination of increased demand and lower rainfall replenishment. There is also a governance issue as licence quotas for extraction are being stretched. Forward climate scenarios vary in severity, albeit with a common theme of hotter, drier conditions that will inevitably exacerbate the current problems. Eves' paper explores the issues from the perspective of the city of Stirling and as part of a wider strategy examines the benefits of rolling out three possible levels of intervention using the concept of 'water smart parks' (Eves, 2012). These bring direct benefits in lowering water demand and have related benefits to wildlife, energy use, fiscal and governance and appear to provide a more sustainable prospect for the area.

Emergency fire services are regarded as a vital component of any sophisticated modern economy despite being seen as a cost overhead. The paper by Chang *et al.* (2012) focuses on the optimum geo-spatial arrangement of fire stations. Recognising that disasters are complex and not fully predictable, the paper establishes a clear correlation between size of population and,

in particular, commercial development, where the higher the population the higher the number of incidents. As the world population increases, there is perhaps more pressure to create higher density development and thereby inadvertently increase incident rates. Whilst manmade disasters are common, nature often plays a role and potentially more so as global weather patterns appear to be changing. Arguably, the best modern societies place the highest value on human life and in combination, all these factors conspire to create a backdrop where optimised emergency service provision has never been more important. This paper will remind emergency service providers of the need to continually review and seek to optimise their service provision whilst also providing a method of doing so.

The paper by Omoregie (2012) essentially explores the age-old human conundrum of how one individual effectively engages another to carry out a job of work. Expanding this to delivery of national and international infrastructure projects the author ponders the questions of socialism versus capitalism and community versus individual. Bearing in mind that civilisations of all types and persuasion have ultimately failed for their own reasons, the paper perhaps touches on the bigger question of ‘what is mankind about?’ as it grapples to answer the illusive question of which procurement model will produce the most sustainable project outcomes in the context of the prevailing culture.

Finally, the paper by Younger *et al.* (2012) examines key factors in success and failure of specific projects in terms of their true sustainability for the communities involved, effectively arguing that success ultimately depends on a balanced approach that must include environmental, economic and social factors. It complements the previous paper.

Through understanding and insight into ‘the causes of things’ this issue helps explore a number of specific and also general issues of sustainability and the human state and thereby has the potential to release a small amount of the human emotion Virgil spoke of.

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