Editorial

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This issue of *Municipal Engineer* includes one book review and five papers. There is a general issue; the book review and first two papers are concerned with sustainable transport and trips, the third paper discusses the uses of location specific data in urban management, the last two papers relate to works programming and worker safety during construction. All five papers use examples from across the globe to demonstrate their findings.

The first paper (Chen *et al.*, 2020) is on the theme of encouraging cycling as a sustainable means of travel and describes the development of a mathematical model and solution algorithm for the planning and design of improvements to the existing bikeway network in Taipei city, Taiwan. The model uses a network flow technique to take into account cyclists' demand, travel time and safety, bikeway continuity and connectivity. The overall objective of the analysis is to develop a bikeway improvement plan that minimises overall costs to cyclists within the confines of government budgets.

The second paper (Grieco *et al.*, 2020) describes the development of a Built Environment Index that seeks to predict the potential for sustainable trips in urban areas, with application of the index tested in several communities in Niteroi, Brazil. Sustainable trips are defined as those that are non-motorised or that use public transport. The paper suggests that the nature of the built environment has a stronger influence on sustainable trip generation than income and socio-economic characteristics. Such an index is important in that it can allow planners to improve sustainable development by ensuring the built environment optimises the potential for sustainable trips and improves the quality of life for urban communities through improved sustainable access to activities, facilities and services.

The third paper (Yildirim and Ural, 2020) discusses the importance of systematic, accurate and up-to-date address data for effective urban management, and the challenges of establishing a numerical address system in urban areas and associated geographic information system (GIS) to manage location specific data. Whilst their paper focuses on the application of such a GIS to improve real estate tax collection by local governments in Turkey, it could also be used to improve emergency service response and of the built environment to promote sustainable development.

The next paper (Lin *et al.*, 2020) presents a worked example of building factories across international borders (in this case Taiwan and China) taking into account the additional challenges and uncertainties involved including mobilising personnel, transporting equipment and managing a range of stakeholders from the home and target countries. It describes how linear programming models and critical path analysis can be combined with decision trees to analyse and select options for accelerating project completion. Effective project management and transparent decision making are important aspects of any development project.

The last paper in this issue (Umar and Egbu, 2020) investigates the relationship between working in hot and humid environments, and workplace accidents in the construction industry in Oman. Interestingly, the authors further discuss related issues such as time based accident data and linkages with daily temperature and human alertness cycles, reliance on imported labour and the need for acclimatisation, worker fatigue due to long working hours, worker age and risk aversion, health indicators such as Body Mass Index and blood pressure, and enforcement of occupational health and safety regulations that include specific measures to protect workers against heat exposure and fatigue. Again, the effective management of workplace safety is an essential aspect of any development project.

From Brazil to Taiwan, from planning through design and construction, the papers in this issue all contribute to the effective management and sustainability of municipal infrastructure and society. Articles are published Ahead of Print on the ICE Virtual Library homepage. The Ahead of Print options allows the community faster access to new content. The knowledge and information shared in these articles are relevant to the civil engineering and related community of practice. Papers for a thematic edition of the *Municipal Engineer* on Workplace Wellbeing, Health and Safety are currently being prepared and compiled for a future edition. Please contact the journals editor, Rebecca Rivers, for further information.

REFERENCES

- Chen CY, Yan S and Tseng HT (2020) A model with a solution algorithm for the improvement of an existing bikeway network. *Proceedings of the Institution of Civil Engineers – Municipal Engineer* **173(1)**: 3–13, <https://doi.org/10.1680/jmuen.17.00015>.

Grieco EP, da Silva Portugal L and Alves RM (2020) Influence of the built environment on sustainable trips: the case of Niterói, Brazil. *Proceedings of the Institution of Civil Engineers – Municipal Engineer* **173(1)**: 14–24, <https://doi.org/10.1680/jmuen.17.00010>.

Lin JW, Shen PF and Huang CW (2020) Project management of constructive acceleration in building multinational factories. *Proceedings of the Institution of Civil Engineers – Municipal Engineer* **173(1)**: 36–48, <https://doi.org/10.1680/jmuen.18.00010>.

Umar T and Egbu C (2020) Heat stress, a hidden cause of accidents in construction. *Proceedings of the Institution of Civil Engineers – Municipal Engineer* **173(1)**: 49–60, <https://doi.org/10.1680/jmuen.18.00004>.

Yildirim V and Ural H (2020) A geographic information system for prevention of property tax evasion. *Proceedings of the Institution of Civil Engineers – Municipal Engineer* **173(1)**: 25–35, <https://doi.org/10.1680/jmuen.17.00008>.