urban morphology', *Urban Morphology* 17, 48-50.
Ratti, C., Raydan, D. and Steemers, K. (2003) 'Building form and environmental performance: archetypes, analysis and an arid climate', *Energy and Buildings* 35, 49-59.
Whitehand, J. W. R. (2001) 'British urban morphology: the Conzenian tradition', *Urban Morphology* 5, 103-9.
Whitehand, J. W. R. (2007) 'Urban morphology and policy: bridging the gap', *Urban Morphology* 11, 79-80.
Zhang, L. and Ding, W. (2012) 'Density, height limitation, and plot pattern: quantitative description of the residential plots in Nanjing China', unpublished paper presented to the Nineteenth International Seminar on Urban Form, Delft, October.

Sustainability and the study of urban form

Teresa Marat-Mendes, Instituto Universitário de Lisboa (ISCTE-IUL), DINÂMIA'CET-IUL, Departamento de Arquitetura e Urbanismo, Av. das Forças Armadas, 1649-026 Lisboa, Portugal. E-mail: teresa.marat-mendes@iscte.pt

Echenique *et al*. (2012) have concluded that there is not a clearly superior spatial urban form in terms of sustainability. They argue that changes in 'white collar' lifestyles and associated population growth have a far greater impact on the natural environment and resources than is attributable to spatial urban form. This prompts me to raise again the subject of sustainability and urban form within urban morphology.

The relationship between urban form and lifestyles is central to both the field of knowledge of urban morphology and the topic of sustainability. If one accepts that changes of lifestyles are crucial to the achievement of sustainability, and that sustainability is as germane to the control of environmental disorders as is suggested in various European and other international directives (UN-HABITAT, 2012; WCED, 1987), it is important that urban morphologists reflect on and pursue their role in the search for sustainability.

Stanilov (2003) and Kärrholm (2011) point out how little attention urban morphologists have given to sustainability. Examination of contributions to *Urban Morphology* reveals that the word 'sustainability' occurs in the title of only two Viewpoints (out of a total of 113 Viewpoints and 102 full-length papers) that appeared in this journal up to the end of 2012 – those by Stanilov (2003) and Marat-Mendes and Scoffham (2005). It also appears in just a few references listed by Stanilov (2003), Marat-Mendes and Scoffham (2005), Satoh (2008), Hall (2008) and Gil *et al*. (2012).

In contrast, a large number of publications address the issue of the sustainable city more generally (see, for example, Frey 1999; Jenks, Burton and Williams, 1996; Urban Task Force, 1999; Williams, Burton and Jenks, 2000). However, the compact city model (Urban Task Force, 1999) seems to prevail, finding strong support, for example, within the European Union (Marat-Mendes and Scoffham, 2000).

Kärrholm (2011) has recognized urban form as an essential tool to bring together issues and problems that have hitherto largely been treated in a specialized manner. He, Marat-Mendes (2002) and Jabareen (2006), though differing in their approaches, have confirmed that certain urban forms do contribute more than others to sustainability. Sustainability is related in important part to the processes of change to which urban forms are susceptible (Marat-Mendes and Scoffham, 2000). The focus needs to be on assessment of urban form in relation to different environmental and social constraints, including changes of use and lifestyles (Scoffham and Marat-Mendes, 2000). As suggested by Frey (2000), the question of how to undertake such assessment is central.

If one revisits the studies that contributed to the foundations of the field of study of urban morphology, as acknowledged by Whitehand (2012), one can identify perspectives similar to those advocated by the United Nations report (UN-HABITAT, 2012). As emphasized by Stone (1965) and Heineberg (2007), such studies were grounded on a substantial international and multidisciplinary approach. Research conducted by early urban morphologists was characterized by its holistic approach. Indeed it had a good deal in common with the approach needed today towards sustainability. An example is the work by the French geographer Albert Demangeon (1872-1940), who played an important role in the

formation of the First International Geographical Commission on 'L'Habitat Rural', at the International Geographical Congress in Cairo in 1925. Demangeon (1920, 1927a, 1927b, 1932, 1936, 1938) encouraged the study of settlements from a morphological perspective. He reported on processes of change occurring within urban, rural and natural environments, including the relationships between lifestyles and settlement forms. It is apparent from such studies that urban morphologists have long ago recognized and articulated the relationships between lifestyles, population growth and urban form and explored the impact of these factors on the natural environment, albeit not necessarily employing the term 'sustainability' in quite the ways in which it has been utilized since the Brudtland Report (WCDE, 1987).

If one accepts that changes of lifestyles are crucial to the achievement of sustainability, and that sustainability is the important social goal suggested in various European and other international directives on the control of environmental disorders (UN-HABITAT, 2012; WCED, 1987), the case for urban morphologists to build on the foundations they laid long ago is a strong one. We need to build a platform of common interest to promote synergies between the study of urban form and research on sustainability.

References

Demangeon, A. (1920) 'L'habitation rurale en France', *Annales de Géographie* 29, 352-75.

Demangeon, A. (1927a) 'La géographie de l'habitat rural', *Annales de Géographie* 36, 1-23.

Demangeon, A. (1927b) 'L'étude de l'habitation urbaine', *Annales de Géographie* 36, 265-9.

Demangeon, A. (1932) 'La population de la terre', *Annales de Géographie* 41, 291-4.

Demangeon, A. (1936) 'Trois questionnaires et trois enquêtes de gégraphie humaine', *Annales de Géographie* 45, 512-8.

Demangeon, A. (1938) 'La question du surpeuplement', *Annales de Géographie* 47, 113-27.

Echenique, M. H., Hargreaves, A. J., Mitchell, G. and Namdeo, A. (2012) 'Growing cities sustainably. Does urban form really matter?', *Journal of the American Planning Association* 78, 121-37.

Frey, H. (1999) *Designing the city: towards a more sustainable urban form* (Spon, London).

Frey, H. (2000) 'Not green belts but green wedges: the precarious relationship between city and country', *Urban Design International* 5, 13-25.

Gil, J., Beirão, J. N., Montenegro, N. and Duarte, J. P. (2012) 'On the discovery of urban typologies: data mining the many dimensions of urban form', *Urban Morphology* 16, 27-40.

Hall, T. (2008) 'The form-based development plan: bridging the gap between theory and practice in urban morphology', *Urban Morphology* 12, 77-95.

Heineberg, H. (2007) 'German geographical urban morphology in an international and interdisciplinary framework', *Urban Morphology* 11, 5-24.

Jabareen, Y. R. (2006) 'Sustainable urban forms: their typologies, models and concepts', *Journal of Planning Education and Research* 26, 38-52.

Jenks, M., Burton, E. and Williams, K. (1996) *The compact city: a sustainable urban form?* (Spon, London).

Kärrholm, M. (2011) 'The scaling of sustainable urban form: a case of scale-related issues and sustainable planning in Malmö, Sweden', *European Planning Studies* 19, 97-112.

Marat-Mendes T. (2002) 'The sustainable urban form: a comparative study in Lisbon, Edinburgh and Barcelona', unpublished PhD thesis, University of Nottingham, UK.

Marat-Mendes, T. and Scoffham, E. (2000) 'Planning for a sustainable housing future. What can we learn from the past?', *International Journal for Housing Science and its Applications* 24, 275-81.

Marat-Mendes T. and Scoffham, E. (2005) 'Urban sustainability and the ground rules that govern urban space', *Urban Morphology* 9, 45-6.

Satoh, S. (2008) 'Urban morphology in Japan: researching castle towns', *Urban Morphology* 12, 5-10.

Scoffham, E. and Marat-Mendes, T. (2000) 'The 'ground rules' of sustainable urban form', in Williams, K., Burton, E. and Jenks, M. (eds) *Achieving sustainable urban form* (Spon, London) 97-106.

Stanilov, K. (2003) 'Sustainability and urban morphology', *Urban Morphology* 7, 43-5.

Stone, K. H. (1965) 'The development of a focus for the geography of settlement', *Economic Geography* 41, 346-55.

Urban Task Force (1999) *Towards an urban renaissance. Final report of the Urban Task Force chaired by Lord Rogers of Riverside* (Spon, London).

United Nations Human Settlements Programme (UN-HABITAT) (2012) *Sustainable housing for sustainable cities* (United Nations Human Settlements Programme, Nairobi).

Whitehand, J. W. R. (2012) 'Issues in urban morphology', *Urban Morphology* 16, 55-65.

Williams, K., Burton, E. and Jenks, M. (2000) *Achieving sustainable urban form* (Spon, London).

World Commission on Environment and Development (WCED) (1987) *Our common future* (Oxford University Press, Oxford).