

trodden paths towards higher fidelity representation of the built environment, providing theoretical and empirical justification for the need to move away from the abstract representations of urban form dominating urban modelling systems today. Improving the level of realism in representing urban environments derived from the integration of urban morphological concepts in urban microsimulation can lead not only to an enhanced theoretical and empirical grounding of the models, but to a better comprehension of the model design and outcomes as well.

Conversely, urban modelling can aid urban morphological research in two ways quite significant for the development of the field. First, the knowledge derived from urban simulation can offer critical insights into understanding the dynamics of urban growth patterns, particularly in the area of land-use analysis. The study of land-use patterns, identified by M. R. G. Conzen (1960, pp. 3-10) as one of the three main components of the built environment along with the properties of the town plan and building typology, has become the neglected child of urban morphology, to a great extent due to the strong emphasis of the British and Italian schools on the analysis of the latter two urban form elements. The integration of knowledge on land-use dynamics derived from urban modelling with the understanding of the evolution of town plan and building typology gained from morphological analysis can be the critical step needed for a qualitative leap forward in our understanding of how cities grow and change. Secondly, linking urban modelling more tightly with urban morphology can highlight the importance of applying morphological concepts and knowledge in the area of urban planning and management. So far efforts to make morphological research relevant to the practice of urban planning have particularly focused on the use of

morphological analysis as an inspiration for the conservation of the built environment. Urban modelling, however, can become a more powerful medium for the integration of urban morphology in the practice of managing the built environment more widely, but remaining in tune with the inspirations of Conzen and Caniggia (1963).

This is a strong case for closer collaboration between the fields of urban modelling and urban morphology. Such a way forward could be beneficial for both fields of urban research and it could improve their effectiveness as tools for understanding and managing the urban environment. This argument needs to be tested by theoretical and applied research embracing such a methodological challenge. A recent study of the growth of West London carried out by K. Stanilov and M. Batty at the Centre for Advanced Spatial Analysis at University College London appears to be a very promising start along this way. We hope that we can publish the results of this project in forthcoming issues of *Urban Morphology*.

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Typomorphology and public participation in China

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The potential of typomorphology in planning practice has attracted attention in recent years. It has been suggested that typomorphological analysis of the historical development of urban form can

benefit urban landscape management (Whitehand and Gu, 2007), urban design (Chen, 2008; Chen and Romice, 2009; Samuels, 1999), urban conservation and regeneration (Bienstman, 2009;

Larkham, 1990; Whitehand, 2009). It is not a new idea that architectural and urban types can act as a design language and facilitate communications between designers and laymen (see, for example, Bandini, 1984). But this idea needs taking forward, and I suggest that typomorphology has great potential in promoting public participation in the design process. Typomorphological analysis is able to provide common ground for designers and the public, in particular stakeholders and local residents.

While participatory design has been widely practised in the West since the 1960s, it is particularly necessary in China, where top-down planning and designing is imposed in most design projects all over the country. The lack of democracy in the design process has been widely criticized by scholars, although there have been gradual improvements in this respect in the last 2 decades (Chen *et al.*, 2007; Huang and Long, 2003; Liu, 2004). The publication of urban planning and design proposals on the Internet, as well as open exhibitions of planning outcomes, have been adopted in many Chinese big cities, allowing the public to be aware of proposed changes around them. However, this one-way delivery of information is by no means ensuring that the voice of the public is being heard by local authorities and design bodies. Organizations representing various interest groups are largely absent in China. The new urban and rural planning law published by the Chinese central government in 2007 states that planning schemes should be made known to the general public at both the proposal and the implementation stages; public meetings should be held; and public opinion taken into account in the planning process (Central Government of the People's Republic of China, 2007). This is the first legal document providing the public with rights in the decision-making process. However, no detailed regulations have yet been provided.

It is widely acknowledged that public participation in the design process aids fairness, reduces conflict, raises the quality of decisions (since more information is added and alternative solutions are assessed by the public during the process), and helps build support in the implementation stage of planning and design (Coenen, 2009). Arnstein (1969) describes methods of public participation from the very low level of providing information to the highest level of making decisions. Although she gives preference to higher levels of participation, all levels and methods of public

participation need to contribute to the decision-making process. The fastest growing participatory medium is the Internet (del Rio and Levi, 2009; Dodd, 2008; Hanzl, 2007), which is used to conduct questionnaires of the public, publish design proposals, hold online forums and collect feedback. H. Sanoff (2000) argues that digital interactive games are powerful tools to stimulate design alternatives and facilitate participation. He also demonstrates other commonly used participation techniques, providing a number of examples ranging from housing projects to public building design. The methods include visioning (with both traditional and digital aids), design workshops, post-occupancy evaluation, visual preference and appraisal. Typomorphological mapping and the establishment of morphological databases can be incorporated in these methods. However, their practical application in China awaits confirmation.

An important outcome of public participation in the West is that participators need to be equipped with adequate knowledge of environmental and community-building procedures. In China, the lack of such knowledge is one of the reasons why the level of public participation is low in this field. This is a particular respect in which typomorphology can contribute. It can act as a medium for linking designers and the public by explicating site histories, the identification of types, and the transformation processes of urban form.

From the beginning of the design process, project sponsors and designers need to be aware of stakeholders' and local residents' expectations of the project. To establish an appropriate development brief, designers may provide a morphological analysis, while the relevant laymen provide information on site history and social changes. Linkages between designers and the public during the design process are suggested in Figure 1. With appropriately selected participation techniques, the interactive process between designers and non-professionals helps designers to make acceptable design decisions, and educates the public about the site history and aesthetic quality. Once the communication process has been established, negotiations on design issues other than urban form can be promoted. Samuels's (1999) paper on the design of the small French town of St Gervais implied such a participatory process. The type of interaction between participants posited in Figure 1 is particularly needed in China, with special attention paid to complications that arise from variations in the participatory process.

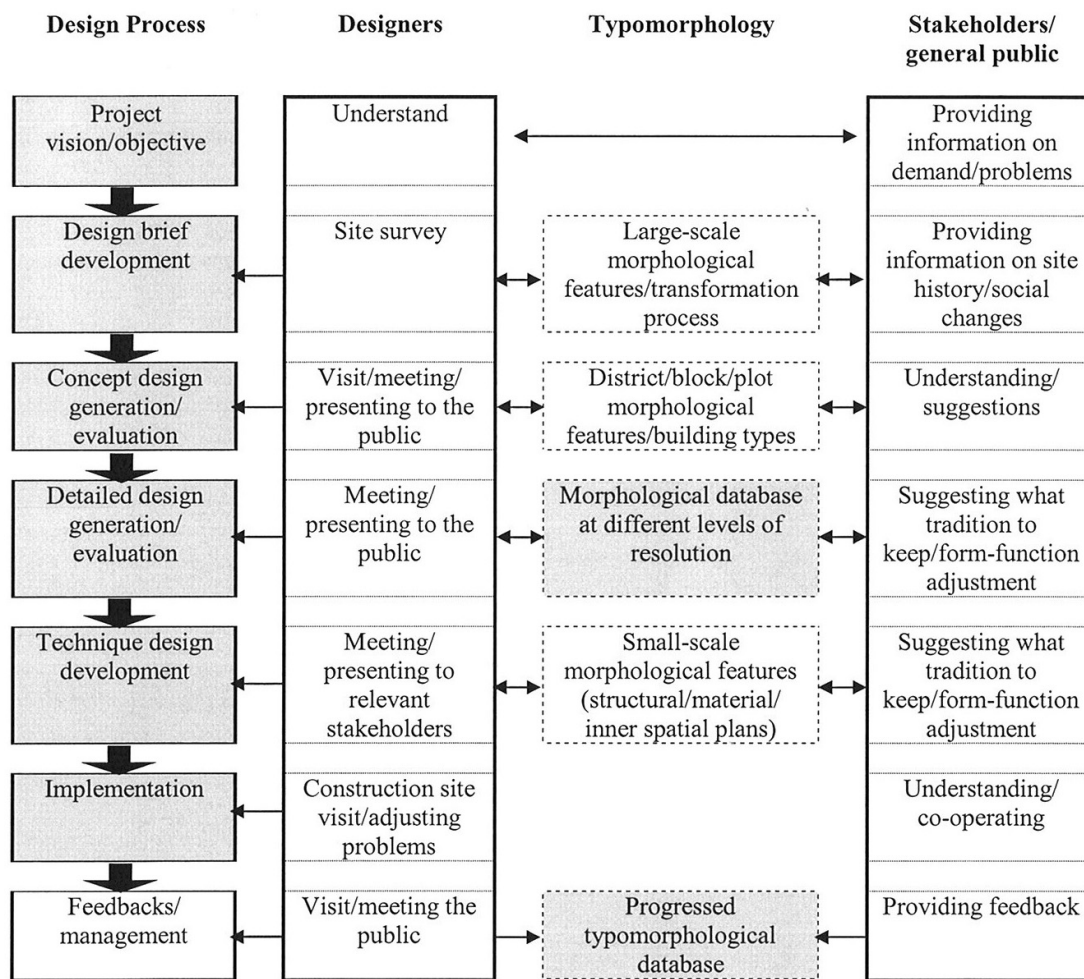


Figure 1. Typomorphological links between designers and the public during the design process

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The development of an urban atlas of Portland

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A web-based project, based at the Portland Urban Architecture Research Laboratory (PUARL) of the University of Oregon, is being developed to organize geographically-based information about urban history, current urban planning, architecture, buildings, open space and urban sustainability. It is intended to be a resource for architects, planners and urban designers in the city as well as students and researchers in the academy, and citizens of Portland. The resulting atlas will be freely available to everyone.

The City of Portland and its Metropolitan Area are well known for their planning achievements, including the urban growth boundary and progressive transportation and land-use policies. Portland is also the only major Metropolitan Region in the United States with an elected government with decision-making powers. But Portland lacks an overview of the city and metropolitan area with respect to issues of urban morphology, building typology and open space character, including ecological and sustainable features. The ongoing work on a new Portland Urban Plan by the City of Portland and the complementary work by the University of Oregon Portland makes this work more pertinent and relevant.

The atlas is one of the first projects that is being handled by the new Portland Urban Architecture Research Laboratory (PUARL). The intention is that the city as a whole, as well as areas

immediately outside the city that are part of the Portland Metropolitan Area, be represented through typical building configurations located at various places throughout the city. The representation will be through maps, drawings and historical and contemporary photographs.

The atlas deals with a range of scales, from the entire city, to individual neighbourhoods, street blocks and buildings. It will be possible, for example, to see distributions of particular building types over the entire city, relationships between street patterns and housing density, relationships between building permit applications and property values, and relationships between commercial activity and housing density. These sorts of correlations are normally not readily available, as information is contained in different kinds of sources. The atlas will bring different sources together within a common cartographic framework, allowing the user to readily visualize new relationships.

The data come from a range of sources, including historical and contemporary zoning, tax lot maps, insurance maps, contemporary planning and infrastructure maps and documents, historical photographs, oral histories, building permit applications and visual architectural documentation such as building plans and elevations. Having this variety of information in one place, and linked to particular geographical areas, will allow the user of the atlas to see and understand a particular place