paradoxically, in a stronger position to use typomorphology to support design proposals if it is independent of a specific design approach and, so to speak, brought to bear from outside the rhetoric of design prescription.

Towards a general nomenclature of urban form

The typological process itself suggests that if typomorphology is not to be discarded as an accessory of a passing fashion it has to establish a language that is not tied to a particular crisis and does not privilege any particular habit of design. It must be agnostic about history and should not in itself attribute value to any particular period in history. It must use the same terms to describe new and old, tradition and innovation.

Certainly we need the languages of prescription and inspiration – the language of persuasion. But we also need a nomenclature that can cut through the self-justifying 'evolve-or-die' rhetoric of pseudo-evolutionary necessity dished out by snake-oil salesmen passing off old forms for totally new. We need terms that can expose those who pander to a false consciousness of history by camouflaging the globalized machinery of modern life with a dusting of tradition.

Then typomorphology can become a tool that cuts two ways. In one direction it can identify with great precision both basic relationships and viable design solutions embodied in the built environment to make much more effective use of that legacy. In the other direction it can inform innovations with a clear idea of the structure of what is introduced and how it fits into wider structures and processes. More importantly, it can provide the means to understand and potentially channel the habits and dynamics of the formation and transformation of the built environment not just for the limited purposes of townscape management or conservation but as a basic background and framework for urbanism.

Urban morphology needs to pull itself out of its niche and demonstrate its wider relevance. To do that, the language of urban morphology and process typology cannot be the language of tradition or innovation; it must be a language common to both. We must show the strength of our common conceptual foundations and build a general nomenclature of urban form.

Notes

1. A version of this viewpoint was delivered as the keynote address at the joint ISUF/INTBAU Symposium, 27 August 2005, in London.
2. Caniggia, G. and Maffei, G.L. (2001) *Architectural composition and building typology: interpreting basic building* (Alinea, Firenze).
3. As set out in the tables in Muratori, S. (1967) *Civilita e territorio* (Centro Studi di Storia Urbanistica, Roma).
4. Peirce, C.S. (1958) 'The architecture of theories', in Wiener, P. (ed.) *Charles S. Peirce: selected writings* (Dover, New York) 142-59.
5. Matt Ridley as quoted by Dawkins, R. (2005) 'Creationism: God's gift to the ignorant', *The Times*, Weekend Review, 21 May, 6.
6. Hume, D. (2003) *Treatise of human nature* (Dover, New York) Book III, 284-92; Moore, G.E. (1988) *Principia ethica* (Prometheus Books, New York) Ch. 1.

The morpholograph and the spirit of place

Ben Guy, Urban Circus, PO Box 202, Stratford, Queensland, Australia 4870. E-mail: benguy@urbancircus.com.au

Town planning is about the control of use and form to create 'sustainable' places. One interprets sustainable places as being functional, viable, useful, ideally non-consumptive, and, often overlooked, pleasant to be in. Making great places is why many of us are involved in the built environment field.

Unfortunately, town planning and the processes of modern city building have not been creating memorable, celebrated places for living and work. Modern places may be safe and clean, they may be functional, especially if you have a car, but they lack spirit of place. Indeed, modern planning has been a place-spirit destroyer of monumental proportions. Discordant insertions in the urban fabric of spirited places, mundane or monumental,

have been all too common. 'Regeneration' projects and major 're-designs', for example associated with the Olympic Games, openly ignore the principles made so famous by Lynch (1960) or Jacobs (1961).

Town planning's failure has led to the invention of urban design, the modern champion of place production, focused on the physical outcome – not unlike town planning at its birth, in the era of Ebenezer Howard and Raymond Unwin (1909). In the quest to divine a credible place-based planning method focusing on 'place spirit' generation, eyes are cast on urban morphology: the repository of form-based urban knowledge.

For whom we plan

To get to the roots of place-making, one must understand the place-seekers: those for whom towns are planned. People prefer certain environmental shapes and conditions, and dislike certain others, for rational reasons. These are based on our psycho-physiological adaptations to evolving in a complex and dangerous world. Essentially, we like places that are good for us. Places that shelter, nourish, and protect create ease with our primitive limbic urges. Detecting dangerous environments is intuitive and we avoid them where we can. The more evolved parts of the brain entice us toward environmental opportunity and learning – suitable for a nomadic, feeble biped. That a balance of spatial legibility, for navigation, and mystery or 'spatial opportunity' is preferred in many cultures has been demonstrated experimentally (Nasar 1988a, b). Our evolved desire for new information drives us forward. The subtlety of anticipation – the mystery of what lies around the corner, the bend in the road, or behind the promising door – is totally overlooked in modern spatial construction. The duality of three-dimensional mystery and legibility may be too subtle for many, but it is integral to spirited place. Fortunately, urban morphology has assisted the conversion of the esoteric to the metric.

Spatial morphology

Kropf's (1996) hierarchy of morphological elements inspired closer inspection of a structured method of urban analysis. However, an element was missing: the spirit of place lies not in form – but in space. It emerges in the gap between forms, inside and outside buildings. The spirit of place infuses the street or square – it is an outdoor, shared, subtle phenomenon that can disappear with a footstep in the wrong direction. This spatial structure needs to be a point of focus for urban morphology to contribute to modern planning method. Similarly, the central focus of urban design is the quality of public life and the public realm.

Urban design has ample to say on the spatial structure of the street, with recommended ratios for sections to elevations, to provide a sensation of enclosure and definition. This has been derived largely through observation of 'what works'. Environmental psychology, too, is missing the opportunity to contribute to city-building. Not least there is the significance of rhythm: the punctuation along the spatial wall of accents, for example through edges, doors, ridgelines and trees, to add variety, pattern and complexity to the vertical plane.

For town planning to utilize a place-based planning method, a scientific and rational method had to be invented to 'measure' the attributes that encourage a 'place spirit'. The morpholograph (Guy, 2001, 2005) was created for this purpose. Using the notion of 'levels of resolution' and applying them to 'public space', a rapid method of measuring spatial characteristics emerged.

The study site chosen to test the morpholograph, was a complex, diverse and multifunctional space, with an evident but eroded place spirit. Magdalen Street in Norwich, with a 2000-year history, was a century ago a hub of elegance – it was a place to be seen. Now, thanks to unenlightened modernist planning, it suffers from vacancy and dereliction – it is a place to avoid. Despite retaining some handsome features, the spirit of place has gone. After countless footsteps measuring forms and façades, the solution was identified in the spatial shape: the focus changed from form to space.

The shape of space emerges between enclosing forms – simply height by width. This was measured in plan and elevation for every plot. Added to this was rhythm, the vertical accents along the spatial edge. Each dimension was given a Cartesian plan and a matrix was created of the spatial variability along the street. Streetscape width is constant along streets and spaces, typically changing by under 10 per cent. Indeed, where width changes significantly, and consistently, a new spatial response is required to generate a sense of place. Spatial width is the foundation of spatial logic because it is the least malleable element. It is hard to change across a shared space. Width informs the required height and rhythm.

Spatial height is more malleable and typically

enjoys greater variety, often linked to the rhythm of the street-wall response. In more pedestrian spaces, a 'faster' rhythm becomes appropriate than that of spaces designed for vehicle speeds. But always 'edges' are required for a space to come into existence: without this we have objects on a plane, not space created by form.

The testing

This hypothesis was tested in detail for the 'skeletal' level of spatial resolution along the several hundred metres, and the hundreds of buildings, of Magdalen Street. What was measured? The rows of the matrix related to plots, with one matrix for each side of the street. Streetscape widths were extracted, between each frontage unit, from a GIS program. Plot widths were likewise measured and tended to form the primary horizontal measure along the direction of the street (or around a square). However, this element of rhythm requires verification on the ground – some plots are clearly subdivided vertically through changing eaves or building height, changing building lines etc., while several plots can appear as one long unit – typical of shopping centre design, of which Magdalan Street has several examples. Thus it is the physical expression of the form that is of prime importance. Height is always the most time-consuming element to measure, and all measures are to the nearest 0.5m. Brick counting and measuring by various trigonometric methods are used to measure the enclosing height of the built mass. Height is usually measured to the eaves, but sometimes to the ridge line where imposing roof structures are used. This simple process, when repeated, provides a matrix, and then a graph, of the spatial pattern of each element. This is the 'morpholograph'. The graph reveals spatial harmony and aberration. Where the characteristic measure of a spatial element is out of the normal 'range' or pattern, the response is graphically obvious.

From this matrix, a succinct one-line spatial approximation is used to describe, or prescribe, the streetscape spatial skeleton. If a physical insertion in the street complies with this simple spatial algebra it will, at the least, not undermine the inherent place character. For Magdalen Street, the spatial formula proposed (where *X* is street width, *Y* is physical frontage length and *Z* is building height) (which can be referred to as Magdalen Street$_{xyz}$) is:

10m ± 1m (X) : 8m ± 3m (Y) : 8m ± 1m (Z)

The idea was extended more widely within Norwich, to ensure it did not apply just to a particular street type. Each space of inner Norwich was prescribed a morphological equation from its fundamental spatial characteristics. Then each equation was translated to a planning zone, with the space at its centre and the defining buildings as its perimeter. About eight primary zones emerged, each having sub-types for more detailed levels of prescription. Examples are a river zone, high street, residential street, boulevard and ring-road zone. There is also a series of unique 'squares', from a large market square to minor non-linear spaces, which could also be described by changing the 'width' dimension to either two 'widths' or a 'surface area' measure.

In sum, a rational planning method for managing the structure of urban form, and space at the level of human perception of the street and square has been derived using the methods of urban morphology. The understanding of discrete urban elements, the concept of resolution levels, and the rational and quantifiable approach have been invaluable. Gaps have been bridged between the ambiguity of constructs from environmental and evolutionist psycho-physiology, the aspirations of urban design, and the day-to-day practicalities of town planning to provide a basis for discussions on how to build in a particular location in support of the local *genius loci*. By staying within the spatial character range of a particular space, one can be confident at the least of not undermining the local spirit of place. The land use is almost inconsequential other than in relation to nuisance and conflict. Indeed, the greater the diversity and the finer-grained the uses, the better at the human, especially pedestrian, scale.

By the same token, the architecture is also of limited interest. The spatial framework can be satisfied by any style or materials. This is why places with an array of architectural styles and building periods, for example a glass and steel insertion in a classical streetscape, can 'fit', provided they respect the greater spatial framework.

An offspring of this work is the creation of a research and development company, Urban Circus (www.urbancircus.com.au) to experiment further at the interfaces of urban morphology, design and planning.

References

Guy, B. (2001) 'Streetscape morphology', paper presented at the Planning Research Conference 2001,

University of Liverpool and John Moore's University, 9-11 April.
Guy, B. (2005) Spatial urbanism: public space typology as urban planning zones, unpublished PhD thesis, Anglia Polytechnic University.
Jacobs, J. (1961) *The death and life of great American cities* (Random House, New York).
Kropf, K. (1996) 'Urban tissue and the character of towns', *Urban Design International* 1, 247-63.
Lynch, K. (1960) *The image of the city* (MIT Press, Cambridge, MA).
Nasar, J.L. (1988a) 'Visual preferences in urban street scenes: a cross-cultural comparison between Japan and the United States', in Nasar, J.L. (ed.) *Environmental aesthetics: theory, research and applications* (Cambridge University Press, Cambridge) 260-74.
Nasar, J.L. (1988b) 'Perception and evaluation of residential street scenes', in Nasar, J.L. (ed.) *Environmental aesthetics: theory, research and applications* (Cambridge University Press, Cambridge) 274-89.
Unwin, R. (1909) *Town planning in practice: an introduction to the art of designing cities and suburbs* (Fisher Unwin, London).

Linking urban landscape characterization and urban morphology

Alex J. Birkhamshaw, Urban Morphology Research Group, School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, B15 2TT, UK. E-mail: ajb093@bham.ac.uk

Two previous contributions to *Urban Morphology* have drawn links between the programme of urban landscape characterization being undertaken by English Heritage and the discipline of urban morphology.[1] Nick Morton drew attention to the lack of acknowledgement of established morphological concepts and methods in the English Heritage characterization programme as it existed in 2001, pointing out, however, the obvious parallels between the mapping of character areas and the mapping of morphological regions.[2] Recently Roger Thomas, the head of urban archaeology at English Heritage, noted, with regard to the methodology used in English Heritage Extensive Urban Surveys (EUS), the debt to M.R.G. Conzen.[3]

A still more recent indication of the growing dialogue between those involved in the English Heritage characterization programme and those engaged in the discipline of urban morphology was the featuring of a paper, given by Jeremy Whitehand, on urban morphology at the latest English Heritage conference on urban landscape characterization.[4] For me, an urban morphologist, the presentations and discussions at this conference raised a number of points concerning the relationship between the English Heritage characterization programme and the discipline of urban morphology: where they come together, where they pull apart and the possible grounds for a constructive exchange of knowledge between the two.

The principle of urban landscape characterization is very similar to that of morphological regionalization. Both aim to describe objectively and map the character of a particular place; both see the character of the contemporary urban landscape as the product of, and therefore intelligible through, its historical development; and the envisaged application of both is to provide a guide to the long-term management of the urban landscape, especially with regard to its conservation.

In practice, however, urban landscape characterization and morphological regionalization tend to be realized in quite different ways. Thomas's comment that 'the debt to M.R.G. Conzen is clear, although EUS is necessarily very rapid and broad-brush' hints at a significant difference between the work of M.R.G. Conzen and the work on characterization currently being undertaken by English Heritage.[5] In fact, the indeterminacy of character descriptions and imprecision of boundary definitions evident in some of the broad-brush approaches to characterization demonstrated at the English Heritage Urban Characterization Seminar stand in marked contrast to the meticulously detailed morphological regionalization of Ludlow produced by M.R.G. Conzen.[6] Conzenian urban morphologists, such as myself, are more accustomed to promoting the value of the slow and rigorous survey than that of the fast and broad-brush survey.

Whilst to date no direct comparison has been