CONZENIAN URBAN MORPHOLOGY AND URBAN LANDSCAPES

Jeremy W. R. Whitehand
University of Birmingham, UK

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Jeremy W. R. Whitehand
Urban Morphology Research Group, School of Geography, Earth and Environmental Sciences,
University of Birmingham, Birmingham, B15 2TT, UK.
J.W.R.Whitehand@bham.ac.uk

Abstract

Urban morphology began to take shape at the end of the nineteenth century as a field of study concerned with the urban landscape. Its origins were largely within central European geography. M.R.G. Conzen was much influenced by pioneers in the field, such as Otto Schlüter, and in the post-war period he authored publications that gave rise to a Conzenian school, first within anglophone geography and eventually more widely. Morphogenetic method, conceptualization of historical development, terminological precision and cartographic representation were characteristic of his work. During the last quarter of the twentieth century this was increasingly recognized as important for an appreciation of the development and significance of the historical grain of urban landscapes. Conzenian thinking has in recent years begun to influence urban landscape management and has been one of the principal stimuli in the origin and growth of an international, inter-disciplinary group of urban morphologists, the International Seminar on Urban Form (ISUF).

Introduction

The study of urban form, frequently referred to as urban morphology, is characterized by a number of different perspectives. One that has attracted increased interest since the early 1980s is also arguably the oldest. It has become known in recent times as 'Conzenian'; a description that reflects the major formative role played by M.R.G. Conzen. This presentation is concerned very largely with this perspective. It begins by describing the integral role of urban landscapes in the early development of urban morphology within the discipline of geography. The main body of the presentation is then concerned with exemplifying the contribution that Conzenian urban morphology can make to understanding urban landscapes in the current era of concern for urban conservation and landscape management.

German origins

Urban morphology started to take shape as an organized field of knowledge at the end of the nineteenth century. Some of its most important roots were in the work of German-speaking geographers. Arguably the father of urban morphology was the geographer Otto Schlüter. He envisaged the city as part of the wider landscape (*Landschaft*) (Schlüter, 1899a). Particularly under his influence, the urban landscape (*Stadtlandschaft*) came to occupy a central place within human geography in the first 3 decades of the twentieth century.

This early period of urban morphology within geography had a marked influence on how the field developed in the course of the twentieth century. Urban morphology was from the beginning, in keeping with its origins in geography, inherently about distinguishing, characterizing and explaining urban landscapes. Schlüter had published two papers in 1899. One was a programmatic statement about settlement geography in general and urban landscapes in particular (Schlüter, 1899a). The other was about the ground plan of towns (Schlüter, 1899b).

In his work on urban ground plans Schlüter drew heavily on an earlier paper by the historian John Fritz (1894). He reproduced from that paper and other sources a number of simple maps of the layout of European, mostly German, towns. Though they were crude – essentially diagrams of street patterns– several had delimited on them the distinct physical parts into which the historical cores of the towns could be divided. They were early examples of the tracing of the historical development of urban form that was in the next century to become a core feature of urban morphology. Enriched by the contributions of architects (for example Siedler, 1914) and historians (for example Hamm, 1932), this approach was later often referred to as morphogenetic.

A key feature of the morphogenetic approach from its early days was the mapping of the various physical forms within urban areas. An early example, and one of the first to use colour, was that by the geographer Hugo Hassinger (1916). He mapped the historical architectural styles in the city of Vienna. Another example was the mapping of land and building utilization and the number of storeys in residential buildings in inner Danzig (Gdansk) by Walter Geisler (1918), one of Schlüter's students. This was followed by Geisler's major work, culminating in comprehensive classifications of the sites, ground plans and building types of German towns (Geisler, 1924).

Geisler's map of inner Danzig influenced the work of Conzen, who was also a German geographer. In a University of Berlin dissertation, Conzen (1932) mapped the building types in twelve towns in an area to the west and north of Berlin. Different types were shown by different colours. The number of storeys was shown by the depth of colour. A quarter of a century later these maps of towns near Berlin influenced the much better-known maps Conzen produced of the English port town of Whitby (Conzen, 1958). In his map of the building types of this town, priority is given to historical periods, and these are *morphological* periods – periods having unity in terms of the physical forms that were created.

The Role of M. R. G. Conzen

Conzen was to become at least as important for urban morphology in the mid- and later-twentieth century as Schlüter had been for its beginnings 50 years earlier. For understanding and managing urban landscapes his work is critical. Characteristics of it are morphogenetic method, cartographic representation and terminological precision. Arguably most important are the concepts he developed. It was

Conzen who put forward a tripartite division of urban form into first, the town plan, or ground plan (comprising the site, streets, plots and block plans of the buildings); secondly, building fabric (the 3-dimensional form); and thirdly, land and building utilization (Conzen, 1960, p.4). More important than this division of urban form are the concepts he developed about the *process* of urban development.

One of these concepts was the burgage cycle, a burgage being the landholding of an enfranchised member of a medieval borough. The cycle, consisting of the progressive filling-in with buildings of the backland of burgages and terminating in the clearing of buildings and a period of 'urban fallow' prior to the initiation of a redevelopment cycle, is a particular variant of a more general phenomenon of building repletion where plots are subject to increasing pressure, often associated with changed functional requirements, in a growing urban area.

An aspect of burgages, and of plots more generally, that particularly attracted Conzen's attention, and subsequently the attention of others, was their dimensions. These can be subjected to metrological analysis, which affords an important means of reconstructing the histories of plot boundaries (Lafrenz, 1988). For example, by analysing measurements of plot widths in the English town of Ludlow, Slater (1990) was able to detect regularities, speculate about the intentions of the medieval surveyor when the town was laid out, and infer the original plot widths and how they were subsequently subdivided.

The Fringe-Belt Concept and the Historical Grain of Cities

Many parts of towns and cities lack the regularity of plot dimensions that series of residential plots tend to have. This is particularly true of fringe belts.

Over 70 years ago the German geographer, Herbert Louis, one of Conzen's mentors, recognized that the outward growth of an urban area was very uneven in its progress: the growth of a city was made up of a series of outward expansions of the residential area separated by marked pauses. A fringe belt tended to form at the urban fringe during a period when the built-up area was either not growing or growing only very slowly. It included within it many relatively open areas, often vegetated, such as parks, sports grounds, public utilities and land attached to various institutions. A key factor in the case of each of the two oldest of Berlin's fringe belts was the restriction on the growth of the city by a city wall (Louis, 1936), which acted as what Conzen subsequently called a 'fixation line' (Conzen, 1960, p. 58).

Fringe belts are of a great variety of shapes and sizes. Their boundaries often follow a field boundary, perhaps a rural property boundary. Fringe-belt plots are unlikely to have been created as a series of rectangular shapes, which is the norm for plots in a housing area. Compared with residential areas, fringe belts have considerably larger average plot sizes, less hard surface and fewer road crossings: they are less permeable to traffic (Whitehand and Morton, 2003, pp. 828-31).

Changes over time in the amount of housebuilding and associated fluctuations in land values are major influences on the formation of fringe belts. Whereas high-density housing is characteristic of housebuilding booms, when land values are high, fringe belts tend to form during housebuilding slumps, when land values are low. Whitehand (1994, p.12) depicts a simple model of one quadrant of a British city showing the alternate zones of housing and fringe belts that result from these relationships. A more complex model needs to

take into account the timing of the adoption of innovations (Whitehand, 1977).

When fluctuations in housebuilding are being considered there is a tendency to think of the great urban growth periods. But periods of little or no growth also left indelible marks in the landscape. The fringe-belt model emphasizes the historical grain of the city, especially the very different zones that tend to be created during periods when the outward growth of the residential area has been arrested owing to a slump in housebuilding or some other obstacle to residential development such as a physical barrier.

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Fringe belts are not only relevant to understanding the morphological structure of towns and cities but they are also pertinent to urban planning. To appreciate their full significance they need to be seen in relation to a wider framework of relationships, including building cycles, land values and the adoption of innovations. Once the structure of the city is understood in these historico-geographical terms it becomes apparent how relevant it is to the appreciation of variations in some basic characteristics of our environment, such as the density and pattern of roads, the amount of vegetated land, building coverage and the sizes and shapes of plots.

Historical Grain and the Problem of Planning

Facts such as these should have implications for the way we think about cities, but frequently planners, including those with responsibility for conservation, show little appreciation of how the form taken by the urban landscape is connected to the historical grain of the city. The administrative boundaries to which planning decisions tend to relate often cut across the units in the urban landscape that are products of the city's historical development.

A problem almost everywhere is poorly-developed awareness of cities as mosaics of interrelated forms. Awareness of the existence of historic features is not enough. How they fit together is critical. Historical awareness in planning all too often remains at the level of dating and describing individual features. Historic features tend to be treated as disconnected patches. In most countries management of historical urban landscapes goes no further than conservation of individual buildings, monuments and special areas that are architecturally or historically significant or both. There is little sense of how these relate to one another and are part of a process of change: awareness of historico-geographical processes is poorly developed.

There is then a mismatch between the inherently historico-geographical character of urban landscapes and the poorly integrated and often ahistorical approach to the way decisions about those landscapes are taken. How is this problem to be resolved?

Urban Morphology and the Problem of Sectional Thinking

There are a number of ways in which urban morphology can help answer that question. And they follow from the approaches that have already been outlined. They involve articulating, in various ways, how urban landscapes have developed historically, and doing this in a manner that can be incorporated into the various processes of decision-making about conservation and development. Two of these ways are first, by sharper analysis, and secondly, by greater integration. Both can be illustrated by enlarging upon the work of Conzen.

In the case of analysis, we can with advantage refer to the remarkable town-plan analysis of the English town of Alnwick that Conzen undertook half a century ago (Conzen, 1960). The analysis was at

various resolutions down to the level of individual plots and buildings. Unlike in the majority of conservation documents, the maps he produced were not concerned with showing the location of historically and architecturally notable buildings or special areas for conservation. Instead they showed how the layout of the town had come into existence and changed over time, and how the various components of that layout fitted together.

Conzen was interested not just in the layout of towns and cities but also in their other 'form complexes', as he called them. He disaggregated the urban landscape into its component parts. One of the places in which he did this was the English market town of Ludlow. Like Alnwick, Ludlow retains many medieval features, including a historic castle. Based on field surveys and archival research, Conzen mapped three form complexes (Conzen, 1975). The maps were of first, plan type areas (that is areas delimited according to their ground plan); secondly, building type areas (focusing on the 3-dimensional physical form of the buildings); and thirdly, land and building utilization areas. In each map a hierarchy of areas, or units, was recognized that articulated the development of that particular form complex, in the first two cases *historical* development being integral to the patterns delineated. Not surprisingly, the patterns were by no means the same for the different form complexes.

However, Conzen was interested in much more than sharply-focused analysis, and he wanted to do more than establish unitary areas of each form complex. He was well aware that this alone was not enough. But he was working at a time when progress in many fields was being achieved by increasing specialization. Academic disciplines had become strikingly discrete. Sharply-focused, penetrating views were the basis of great scientific progress but at a cost.

The Swedish geographer Torsten Hägerstrand (1991) reminded us of this most effectively in his view of landscape, recollecting how the problems inherent in the narrow, sharply-focused view were depicted in the portrayal of 'the scientific points of view' by the Swiss philosopher and geologist C. E. Wegmann. Like Conzen, Hägerstrand was acutely aware of the need to *integrate* the various components that for analytical purposes are distinguished in the landscape. He identified a major problem facing societies worldwide that relates to the fact that science and technology are not concerned with how the various phenomena on the Earth's surface connect with one another to create the environments in which people live: the emphasis is on specialization rather than integration. But *both* specialization *and* integration are needed, particularly in seeking to understand and manage historical landscapes.

Historicity and Urban Landscape Units

Continuing this line of thought, Conzen needed a method to integrate the results of his analyses of the individual urban form complexes. The argument by which he underpinned this and thence advocated its prescriptive use contains a number of elements of which two are especially important.

The first relates to the particular significance he attached to the historicity of the urban landscape: its historical expressiveness. The city is viewed as a long-term asset whose importance extends far beyond its contemporary functional value. The urban landscape is seen as an invaluable source of experience, the more so because it constitutes the predominant environment of such a large proportion of the world's population. The fact that the urban landscape is a visual and, for many people, practically omnipresent experience gives it an advantage over many other sources of knowledge. However, realizing

its potential requires appreciating societal activities and processes in what can be observed on the ground, and an important part of this appreciation is the uncovering of historical and geographical order. Fundamental to this is the intellectual activity of regionalization.

Conzen was deeply imbued with a sense of the intrinsic importance of regionalization within geography and, being essentially a historical geographer and historical urban morphologist, the second element in his argument relates to what he referred to as the 'morphogenetic priority' of the different form complexes as contributors to the landscape. This priority reflects the persistence or lifespan of the elements that comprise each form complex. In the case of the ground plan these elements tend to have high resistance to change. Many very old street systems, for example, are still recognizable in the landscape today. They constitute a framework that powerfully influences the long-term historical development of the city's conformation. Land and building utilization, in contrast, tends to be much more ephemeral. Buildings are, on average, intermediate in their resistance to change.

These relative resistances to change are important in the way in which Conzen integrated the form complexes to delineate morphological regions or landscape units. As with individual form complexes, he recognized and mapped a hierarchy of these units. He summarized the thinking that underlay the way he did this in the form of a table (Conzen, 1988, p. 261), in which he specified, in relation to each morphological period, a number of attributes of each form complex. Essentially these were first, resistance to change; secondly, historico-morphological characteristics; and thirdly, contribution to the hierarchy of units. The table does not, however, amount to a check list that can be applied by rote: it assumes familiarity with historico-morphological processes. In the case of Ludlow a five-tier hierarchy of units is identified, ranging from the entire 'Old Town' (essentially the medieval town) at the top of the hierarchy to the 'smallest coherent form associations' at the bottom of the hierarchy (Conzen, 1975, pp. 98-9).

Practical Applications

The uncovering of the process of urban landscape formation and change in this way was seen by Conzen, and those who have followed in his footsteps, as an important part of the activity of discovering possibilities for the future. The majority of this activity hitherto has related to the contribution that urban morphology can make to conservation and the incorporation of new forms in old landscapes (see, for example, Larkham, 2005; Whitehand, 2005), but there is also the contribution to the creation of totally new landscapes (see, for example, Gallarati, 2004).

Since Conzen published his ideas on morphological regions, they have been explored by a number of other researchers (see, for example, Barrett, 1996; Kropf, 1993; Whitehand, 1981, 1989, pp. 12-13; Whitehand and Gu, 2003). One of the issues that has been addressed is the practical application of this type of thinking, for example in conservation. The method that Conzen expounded in Ludlow is not straightforward to apply: it requires historical urban morphological research that is time-consuming by the standards of planning authorities, and the necessary procedures are not readily reduced to rules of thumb. However, two applications serve to illustrate the practicability and potential of the approach in markedly different areas.

One of these applications was undertaken close to Beijing's Forbidden City as part of an investigation into urban conservation in China (Whitehand and Gu, 2007). The procedure was similar to that

demonstrated by Conzen in Ludlow. Integration of the maps of the different form complexes yields a two-tier hierarchy of landscape units. The map of these units emphasizes the historico-geographical environments in which historical sites, structures and spaces exist. It allows the character of the different parts of the area, and proposals for conservation, to be articulated. Emphasis is placed on the identities of the physical forms whose conservation is being considered and how these identities are products not only of history but also of how individual forms relate to their surroundings. The boundaries of the units differ considerably from those in the City's conservation and redevelopment plan, which is not based on systematic analysis of the physiognomy of the area and treats individual sites largely in isolation, divorced from the historical processes of which they are a product.

The other application formed part of the plan for one of the bottom tier of administrative units in the UK, the parish. The procedure was again similar to that employed in Ludlow but, since the settlement surveyed, Barnt Green, in the English Midlands, was essentially suburban, vegetation was added to the attributes (form complexes) taken into consideration. Since the procedure for approval of the plan included public consultation, the use of technical terms was reduced to a minimum. This entailed the substitution of terms that in purely research publications would be unsatisfactory. For example, 'urban landscape unit' became 'character area'. 'Fringe belt' became 'community spaces and utilities' – a potentially misleading term in certain respects, but more likely to evoke roughly apposite images amongst the general public. Again a hierarchy of units (character areas) was recognized and mapped, with most of the main character areas containing subdivisions. In this case most of those subdivisions had further subdivisions within them.

These maps of very small areas in China and the UK capture stages in the unfolding of particular urban landscapes. But they are not simply static portrayals of landscapes at moments in time. The units of which they are made up embody processes of change and they reflect the kinds of decision-making that underlie those processes.

Conclusion

If one of the aims is to manage change or conserve, then being able to capture cartographically the historical geography of what it is that is being managed or conserved is fundamental. Maps of landscape units, or character areas, in conjunction with photographs, drawings and a written explanation for each unit or area, provide those wishing to conserve or make changes with an important part of the context for preparing management plans. Geographical boundaries are almost invariably given great emphasis by planning authorities. It is ironical that the *basis* of those boundaries has generally been inadequately researched. The method described here provides a more rigorous basis.

This is not to suggest that the problems of articulating historical grain and utilizing the results in planning practice have been resolved. On the contrary, this is a subject that is alive with challenges to both researchers and practitioners. Much needs to be done; for example on the concepts of unity and unit, as in 'urban landscape unit', and on from where in the landscape, and by whom, unity is perceived. Treating unity as if it were merely a function of homogeneity is far too simple. Some unified areas derive their unity from admixtures: unity in heterogeneity is not uncommon in very old landscapes, such as those in the core areas of traditional European cities. In some areas heterogeneity is contrived, as in some of the creations of

postmodernism. Fringe belts are unified by their role in the historico-geographical *grain* of the city and by certain aspects of their form referred to earlier, but in some respects they are highly heterogeneous.

Research in urban morphology generally, and on the aspects outlined in this presentation in particular, is benefiting from the coming together of Conzenian urban morphology and a school of thought within architectural urban morphology (Maffei and Whitehand, 2001; Marzot, 1998). For example, the idea of the morphological region is benefiting from research on the architectural concept of 'tissue' (see, for example, Caniggia and Maffei, 1979, 1984; Kropf, 1996). It has become evident, over the last 20 years or so, that the work that Conzen carried out during the middle decades of the twentieth century shares major common ground with work carried out by the Italian architects Saverio Muratori and Gianfranco Caniggia (Samuels, 1990). Recognition of this has been one of the stimuli for the formalization of an international movement in urban morphology (the International Seminar on Urban Form – ISUF). The contents of the burgeoning literature associated with the coming together of these two schools of thought, and others, have significant implications for the management of urban landscapes. The immediate prospect is that some of the strongest developments arising out of this comparatively recent integration will be based on the type of thinking of which a soupçon has been provided in this presentation.

References

Barrett, H.J., 1996, "Townscape Changes and Local Planning Management in City Conservation Areas", *unpublished PhD thesis*, University of Birmingham.

Caniggia, G., Maffei, G.L., 1979, *Composizione Architettonica e Tipologia Edilizia: 1. Lettura dell'Edilizia di Base,* Marsilio, Venezia.

Caniggia, G., Maffei, G.L., 1984, *Composizione Architettonica e Tipologia Edilizia: 2. Il Progetto nell'Edilizia di Base,* Marsilio, Venezia.

Conzen, M.R.G., 1932, "Die Havelstädte", *unpublished Staatsexamen dissertation*, University of Berlin.

Conzen, M.R.G., 1958, "The Growth and Character of Whitby", G.H.J., Daysh (Ed.), *A Survey of Whitby and the Surrounding Area*, Shakespeare Head Press, Eton, pp.49-89.

Conzen, M.R.G., 1960, "Alnwick, Northumberland: A Study in Town-plan Analysis", *Institute of British Geographers Publication 27*, George Philip, London.

Conzen, M.R.G., 1975, "Geography and Townscape Conservation", H. Uhlig, C. Lienau (Eds.), *Anglo-German Symposium in Applied Geography, Giessen-Würzburg-München*, Lenz, Giessen, pp.95-102.

Conzen, M.R.G., 1988, "Morphogenesis, Morphogological Regions and Secular Human Agency in the Historic Townscape as Exemplified by Ludlow", D. Denecke, G. Shaw (Eds.), *Urban Historical Geography: Recent Progress in Britain and Germany*, Cambridge University Press, Cambridge, pp.253-72.

Fritz, J., 1894, "Deutsche Stadtanlagen", *Beilage zum Programm 520 des Lyzeums Strassburg*, Heitz & Mündel, Strassburg.

Gallarati, M., 2004, "Urban-scale Architecture Today: A New Town Centre Near Genova", *Urban Morphology*, 8, 29-32.

Geisler, W., 1918, *Danzig: ein Siedlungsgeographischer Versuch*, Kafemann, Danzig.

Geisler, W., 1924, "Die Deutsche Stadt: ein Beitrage zur Morphologie der Kulturlandschaft", *Forschungen zur Deutschen Landes-und Volkskunde 22*, Engelhorn, Stuttgart.

Hägerstrand, T., 1991, "The landscape as Overlapping Neighbourhoods", G. Carlestam, B. Sollbe (Eds.), *Om Tidens Vidd och Tingens Ordning: Texter av Torsten Hägerstrand*, Byggforskningsrådet, Stockholm, pp.47-55.

Hamm, E., 1932, *Die Städtegründungen der Herzöge von Zähringen in Südwestdeutschland,* Freiburg, i.B..

Hassinger, H., 1916, *Kunsthistorischer Atlas von Wien* Österreichische Kunsttopographie 15 (Vienna).

Kropf, K., 1996, "Urban Tissue and the Character of Towns", *Urban Design International* 1, 247-63.

Kropf, K.S., 1993, "The Definition of Built Form in Urban Morphology", *unpublished PhD thesis*, University of Birmingham.

Lafrenz, J., 1988, "The Metrological Analysis of Early Modern Planned Towns", D. Denecke, G. Shaw (Eds.), *Urban Historical Geography: Recent Progress in Britain and Germany*, Cambridge University Press, Cambridge, pp.273-84.

Larkham, P., 2005, "Understanding Urban Form?", *Urban Design*, 93, 22-4.

Louis, H., 1936, "Die Geographische Gliederung von Gross-Berlin", H. Louis, W. Panzer (Eds), *Landerkundliche Forschung: Krebs-Festschrift*, Engelhorn, Stuttgart, pp.146-71.

Maffei, G.L., Whitehand, J.W.R., 2001, "Diffusing Caniggian Ideas", *Urban Morphology*, 5, 47-8.

Marzot, N., 1998, "The Role of History in Conzen's and Caniggia's Approaches to Urban Morphology", *Urban Morphology*, 2, 54-5.

Marzot, N., 2005, "Typological Analysis and Hermeneutics in the Conzenian and Caniggian Schools: Overlaps and Differences", *Urban Morphology*, 9, 48-50.

Samuels, I., 1990, "Architectural Practice and Urban Morphology", T.R. Slater (Ed.), *The Built Form of Western Cities: Essays for M.R.G. Conzen on the Occasion of his Eightieth Birthday*, Leicester University Press, Leicester, pp.415-35.

Schlüter, O., 1899a, "Bemerkungen zur Siedlungsgeographie", *Geographische Zeitschrift*, 5, 65-84.

Schlüter, O., 1899b, "Über den Grundriss der Städte", *Zeitschrift der Gesellschaft für Erdkunde*, 34, 446- 62.

Siedler, E.J., 1914, *Märkischer Städtebau im Mittelalter*, Julius Springer, Berlin.

Slater, T.R., 1990, "English Medieval New Towns with Composite Plans: Evidence from the Midlands", T.R. Slater (Ed.), *The built Form of Western Cities: Essays for M.R.G. Conzen on the Occasion of his Eightieth Birthday*, Leicester University Press, Leicester, pp.60-82.

Whitehand, J.W.R., 1977, "The Basis for an Historico-geographical Theory of Urban Form", *Transactions of the Institute of British Geographers*, New Series 2, 400-16.

Whitehand, J.W.R., 1981, "Background to the Urban Morphogenetic Tradition", J.W.R. Whitehand (Ed.), *The Urban Landscape: Historical Development and Management*, Institute of British Geographers Special Publication, 13 Academic Press, London, 1-24.

Whitehand, J.W.R., 1989, "Residential Development under Restraint: A Case Study in London's Rural-urban Fringe", *University of Birmingham School of Geography Occasional Publication*, 28, University of Birmingham School of Geography, Birmingham.

Whitehand, J.W.R., 1994, "Development Cycles and Urban Landscapes", *Geography*, 99, 3-17.

Whitehand, J.W.R., 2005, "Urban Morphology, Urban Landscape Management and Fringe Belts", *Urban Design*, 93, 19-21.

Whitehand, J.W.R., Gu, K., 2003, "Chinese Urban Form: A European Perspective", A. Petruccioli, M. Stella, G. Strappa (Eds.), *The Planned City?*, Uniongrafica Corcelli, Bari, pp.731-6.

Whitehand, J.W.R., Gu, K., 2007, "Urban Conservation in China: Historical Development, Current Practice and Conzenian Approach", *unpublished MS*.

Whitehand, J.W.R., Morton, N.J., 2003, "Fringe Belts and the Recycling of Urban Land: An Academic Concept and Planning Practice", *Environment and Planning B: Planning and Design*, 30, 819-39.