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Compact Cities and Sustainability: An Introduction

...the year [19]95 is a symbolic marker; after which the balance seems to tilt away from anxieties about death and decay to dreams of regeneration and rebirth (Showalter, 1995, p. 3)

It is less than a decade since the Brundtland report *Our Common Future* was published (World Commission on Environment and Development, WCED, 1987), and little more than three years since the Rio Declaration was signed by over 150 countries (United Nations, 1993). Within a very short time issues of sustainability and of sustainable development have become part of the mainstream. Concern about the future of the world's environment and its resources is now an established fact of life, and this has been accompanied by expressions of good intention by governments worldwide. There has been wide ranging discussion about the importance of achieving inter- and intra-generational sustainability. The debate has covered many issues related to population, agriculture and biodiversity, industry, energy consumption, global warming and pollution, equity in access to resources, and urbanism. The arguments have largely moved on from the rather doom laden scenarios of global catastrophe, towards a certain optimism that having understood the problems, solutions might be found. But it is an optimism tinged with doubt, as questions remain about how best to achieve effective solutions, and whether there is the will to implement them. While the whole range of environmental issues is important, and all are interrelated, it is the issue of urbanism that seems to provide the problems that are among the most intractable and difficult to solve. The significance of cities is not in doubt. As Elkin *et al.* (1991, p. 4) observe, 'Urban centres are crucial to the functioning of the world economic order'. But although the problems are generally known, the complexity of cities, and differences in the urban experience of their inhabitants, lead to a variety of issues that make the search for effective solutions a daunting task. Nevertheless, it is a task that needs to be undertaken; a large part of the response to unsustainable development 'should come from the cities because that is where the most intense environmental damage is taking place, and it is there that many improvements can effectively be made' (White, 1994, p. 109).

The sheer scale of action required to achieve sustainable cities is readily apparent. Brundtland predicted that by the year 2000 almost half of the world's population would live in urban areas (WCED, 1987, p. 235). This prediction was accurate as in 1995 just over 45% of the population lived in urban areas, representing some 2.6 billion people, of which more than one billion lived in large cities of three quarters of a million people or more (World Resources Institute, WRI, 1995). By the turn of the century it has been estimated that the 40 largest cities will have populations ranging from 4.5 million in Philadelphia to 25.6 million in Mexico City (Girardet, 1992). However, urban populations are not evenly distributed, nor are cities at the same stage of development (Auty, 1995). Over 70% of the populations of economically advanced nations in North America, Europe and Oceania live in cities, yet they only account for around 28% of urban dwellers worldwide. These tend to be mature cities where growth rates are generally slow, or in decline (van den Berg *et al.*, 1982). In

the developing countries just under 1.9 billion live in urban areas; furthermore, in these nations the growth rate within, and migration into, cities are high (WRI, 1995). Girardet (1992, p. 185) encapsulates the difference: 'Population censuses in cities such as Sao Paulo, Cairo, Lagos, Bombay or Bangkok are out of date as soon as they have been completed. This contrasts with 'mature' cities such as London whose population has been virtually static for decades.' While sustainability concerns in the emerging nations are associated with extremes of growth and size, in the developed countries they are more to do with the loss of population and the resulting decline and decay.

It is tempting to suggest that cities in the developing world, with high growth rates which place a heavy toll on the environment, have such overwhelming problems that all our efforts to find solutions should be concentrated there. However, the relative affluence of many cities in the developed world, far from providing solutions, contributes to the problems of unsustainability. It is in these cities that the disproportionate consumption of resources has a major global impact. On average, citizens of North America consume 16 times more energy than those in Africa, and over eight times more than citizens in Asia or South America. The same is true, to a slightly lesser extent, with the emission of greenhouse gases. Europe is also a relatively high consumer, but still only consumes about half of the energy per capita than in North America (United Nations Environment Programme, 1993; WRI, 1995). White (1994) argues that it is the richest cities that contribute to worldwide environmental degradation because of their dependency on 'an unsustainable level of resource use', which if followed by the developing nations would mean that 'we will soon experience large-scale ecosystem collapse...we must strive to develop alternative models...' (p. 113)

Getting the right policies, management and form for cities will be a key factor. With such a large proportion of the world population, the concentration of environmental problems, and consumption of resources, cities clearly appear to be the most important location for action to help the goals of sustainable development. If successful policies and practical solutions can be found, then the benefits will be great.

The compact city

The problems of, and search for solutions for, cities in the developed world are the focus of this book, in particular the concept of the compact city. There is a strong link between urban form and sustainable development, but it is not simple and straightforward. It has been suggested that a sustainable city 'must be of a form and scale appropriate to walking, cycling and efficient public transport, and with a compactness that encourages social interaction.' (Elkin *et al.*, 1991, p. 12). Other proponents have suggested forms that range from large concentrated centres, through ideas of decentralised but concentrated and compact settlements linked by public transport systems, to strategies for dispersal in self-sufficient communities (Haughton and Hunter, 1994). In existing cities, the concept of compaction arises through processes that intensify development and bring in more people to revitalise them. The ideas behind the compact city are an important strand in the attempt to find sustainable urban forms.

The vision of the compact city has been dominated by the model of the densely developed core of many historic European cities. These are a great attraction not just to architects, planners and urban designers, but to countless tourists who flock to see them. They are seen, often by those from outside, as ideal places to live and experience the vitality and variety of urban life. The danger is that it is a romantic vision, one which assumes a golden age that can be recaptured through urban form, leading to a sustainable and benign civility. Perhaps it is not surprising that the strongest advocate for the compact city has been the European Community (Commission of the European Communities, 1990). However, the policies proposed have been based more in theory than in practice, and the arguments are contentious. The theory is to an extent premised on urban containment, to provide a concentration of socially sustainable mixed uses, that will concentrate development

and reduce the need to travel, thus reducing vehicle emissions. The promotion of the use of public transport, traffic calming, walking and cycling are often cited as solutions (Elkin *et al.*, 1991; Newman, 1994). Further reductions from harmful emissions might also accrue from more energy efficient land use planning, combined power and heating schemes, and energy efficient buildings (Nijkamp and Perrels, 1994; Owens, 1986; Owens, 1992). Higher densities may help to make the provision of amenities and facilities economically viable, enhancing social sustainability (Haughton and Hunter, 1994). But on the down side, the compact city may become overcrowded and suffer a loss of urban quality, with less open space, more congestion and pollution (Breheny, 1992a, 1992b), and may simply not represent the sort of environment in which the majority of people would wish to live if they had the choice.

With concepts and theories that are sometimes conflicting, what is needed is knowledge drawn from research and practice to provide a clearer understanding of the more complex reality. Differences between cities should mean that the compact city is not just a simplistic concept, drawing on particular reified urban forms. As Haughton and Hunter (1994, p. 311) point out:

The sustainable city is not rooted in an idealised version of past settlements, nor is it one given to a radical casting-off from its own particular cultural, economic and physical identity in the name of the latest passing fad for urban change.

Is the compact city, then, a romantic ideal, or is it a genuine way forward? Answers are needed with some urgency. Policies for creating higher density development, environmentally friendly design, and reduced reliance on private transport are in place in Europe, the UK and Australia. There is the likelihood of action being taken and solutions implemented, without an accurate understanding of the impacts they may have, nor how sustainable they may turn out to be. The theory would suggest beneficial outcomes, yet despite the advocacy and debate, many questions remain.

A sustainable urban form?

It is the aim of this book to address some of the questions raised about the conceptions of the compact city. The chapters that follow present many sides of the debate, in order to put forward different points of view, and to draw together both diverse and common strands of the arguments. It is by no means clear that the compact city is the best or only way forward. In presenting new thinking and research, the intention is to advance the debate, and to provide a basis for a better understanding of the concept.

Theory is considered in the first part of the book. It is argued that sustainable development is an imperative if the dire consequences of global warming are to be ameliorated. A link is made between urban forms that are often associated with the compact city, and with lifestyle changes that would be necessary to reduce dependence on the car. However, questions are raised about the form and effectiveness of the compact city concept in achieving sustainability, and whether it means concentration and centralisation, or decentralisation with some degree of autonomy. Strong arguments are put for each position and a middle way, or compromise, of intensification in cities in parallel with some green field suburban development is suggested as a possible solution. Overall it is recognised that while there may be strategic benefits, the impacts of the compact city are likely to be felt locally. Arguments address the issue of acceptability, the desires of individuals, and the wider responsibilities of the citizen and the public interest.

The focus in [Part 2](#) turns to a more detailed consideration of social and economic issues. There are concerns about the dominance of environmental arguments for compaction, and the social and economic consequences that might arise unless they are given equal weight. The relationship between high density living and mixed

use environments, and a high quality of life is examined. While such an environment may be advantageous to some groups, it may not be an improvement for all. To achieve such compact development would require investment which is only likely to come from the private sector. The debate extends to take in the views of developers, their willingness to build, and the obstacles that appear to hinder more dense development. A clear message is the need to make the intensification of cities both appealing and economically viable, if people are to be attracted back into them.

Environmental issues are covered in [Part 3](#), particularly the connection between transport and urban form, and whether or not the claimed benefits would result from the compact city. The evidence discussed indicates, at best, only marginal gains, and counter-arguments are presented that sustainability might be better achieved with less dense, more self-sufficient settlements. It is argued that a greater impact might occur through changes in travel behaviour and more environmentally friendly technologies, than hoping for a modal change in the means of transport.

A degree of uncertainty in theory and in the particular issues surrounding the compact city debate exists, and [Part 4](#) addresses some methodological approaches that could contribute towards a more certain knowledge base. Here it is argued that complexity and uncertainty mean that a precautionary principle should be applied in relation to the development of more compact urban forms. Theories have generally not been validated by research, and what has been done is critically reviewed; it is argued that a better co-ordination and integration of research is needed. Research is presented that breaks new ground in defining environmental capacity and in the modelling of complex urban forms to enable predictions of pollution dispersal. The final part of the book addresses the implementation of compact city concepts, and gives examples and practical advice. The role of agencies, particularly local authorities and the planning system, is discussed. The chapters here debate some of the measures used to implement and manage compact city ideas, the scale and level of implementation, and issues of legitimacy.

The book presents common as well as conflicting themes, and draws some conclusions. It shows that the concept of the compact city is a complex one, and that the debate is by no means resolved. By finally pointing to some ways forward, the hope is that the book will contribute to the ‘tilt’ in balance towards a more achievable and sustainable urban future.

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