

Part I
Propositions, Theory and Practice

Propositions – Epistemology – Perspectives – Projects

I. People, Places and Philosophies

Increasingly across the globe people have come to live in big cities. And it is in those cities many live that mobile and spatially extensive way of life which is characteristic of modernity. Given this, it is research and action designed to make this modern and urban way of life more environmentally sustainable which will contribute most to the cause of sustainability. . . The real challenge facing us is not one of building eco-villages, but of making the modern city, and the way of life lived in it, environmentally sustainable

(Barton 2000 p.28)

Civilisation, with its two faces of urbanism and agriculture, has transformed the planet. Accelerated by fossil-fueled industrialism, human activities have dramatically affected the world's ecosystems. Changing weather patterns threaten the shape of our coastlines and the stability of our human institutions. We are being presented with the challenge of sustaining civilisation in the face of unprecedented rates and types of change. And therein lies the conundrum. The making of cities and all that it entails is damaging the world to the point of threatening our existence as a species, yet city-making lies at the heart of civilisation. We need cities to survive yet they are killing us.

The Pattern that Connects

In the past few years there has been a great increase in the number of books dealing with the topic of the sustainable, green, or ecological city. They all contain useful information and ideas and generally follow a similar thematic path that deals with the various aspects of urbanisation and environmental impact which are now familiar territory to all but the most casual reader in the field. What is missing, I believe, is any concerted attempt to identify the active linkages between all those aspects; such linkages are merely implied by the fact that the city contains them all. There is a lack of any overarching theoretical construct to help pull the pieces together and make, perhaps, more sense. Exceptions do exist, notably Paolo Soleri's inimitable and profoundly influential 'City in the Image of Man'. My book contains many ideas, but few of them are mine. The basis of this attempt to set out a theoretical framework is the simple observation that even if there is no city as yet worthy of the name, most, if not all, the essential ideas we need to create ecological cities

already exist. I have tried to find the essential points of connection between ideas that seem to carry particular value for the mission of making ecological cities in the terms defined by the Ecopolis Propositions. I have been looking for the points of connection in what Gregory Bateson might have called ‘the pattern that connects’. The propositions describe cities and their relationship to both the biosphere and human culture and lead to a concise definition of the *purpose* of cities – which is to create and manage complex living systems that are the primary habitats for human survival.

Some of the ideas are well represented here, some less so; I ask that you, the reader, forgive any perceived shortcomings in the representation of any particular theorist or set of ideas and use the reference here as their point of connection with the original, more complete expression of those ideas. Likewise, you may find that there are writers and ideas not represented here that you feel should be.

Part of the Ecopolis theory is that anything which fits the propositions can be incorporated in the theory; it is intended as the basis of an evolving body of knowledge that is purposefully directed towards the creation and management of complex living systems that are the primary habitats for human survival.

We have to find ways of making cities that sustain both our human culture and the planet. We need to construct new kinds of urban ecosystems and deal with substantial, systemic changes in the way we live. The solution to the problem of civilisation is civilisation, but our definition of what civilisation means has to be carefully and consciously expanded to encompass a new, more vital understanding of the purpose of building and our relationship to the biosphere. I think that this is an evolutionary imperative and have called the connected pattern of ideas ‘Ecopolis’. It is a word that appears to have been concocted in a number of places and times. In Europe, the concept of Ecopolis has appeared in urban ecology programs in Finland (Koskiaho 1994) and the name appears to have risen independently as the rubric of a landscape architects’ conference in New Zealand in 2004. It is the name of a Russian research program which builds on the work of one of the pioneers of ecology and in Chinese urban research “The term ‘Ecopolis’ is used to imply an ecologically sound city or large urban area and its immediate periphery in sectors of cities and towns.” (SCOPE 2005). This Australian ‘Ecopolis’ was first published in a paper I presented at the Ecopolitics IV Conference of 1989. The concept as I have presented it has always included the recognition that urbanisation and human activity is a major force in shaping the biosphere and that it needs to be *consciously* directed.

In the following pages I hope to demonstrate that the solution to our problem of city-making lies in the way we make cities, that we already have the necessary means and knowledge but we need a better sense of how the pieces all connect and must learn how to put it all together a little differently.

In the first part of this book I present the Ecopolis Propositions, discuss an epistemology for urban ecology and review some of the theories and practice in the field. I identify people, places and philosophies that have particular relevance to the Ecopolis thesis and include brief reviews of existing theories of architecture and the ecology of human settlement which either explicitly or implicitly possess an

ecocity agenda¹. I briefly describe projects that incorporate relevant principles and practices, including some in which I have had a leading role, testing the propositions and demonstrating practical outcomes.

Chapter 1 presents the ‘ground plan’ in which I introduce the idea of Ecopolis and set out a series of propositions that describe the purpose of cities and the essential determinants of ecological cities. These propositions emphasise the importance of culture as the means by which knowledge is stored and transmitted and the need to consciously construct a modern culture for the development of an ecological civilisation. I introduce the idea of cities as ‘engines of survival’ in an era of unprecedented ecological disruption. Popular culture is identified as an important means of distributing and embedding key ideas in society to facilitate change and the concept of urban/cultural fractals is proposed as a means to catalyse adaptive activity through the creation of demonstration projects which contain the essence of Ecopolis in microcosm.

I explore some epistemology for the evolving field of urban ecology in Chapter 2 – looking at the organisation of knowledge that is typical of architecture and planning and finding it wanting, failing to provide anything other than superficial analyses and syntheses when addressing the issue of sustainability. I propose that a cybernetic approach offers the basis of an epistemology that might make a coherent relationship between architecture, city-making, ecology and the life sciences. An outline for an epistemology for urban ecology is proposed that is built around the ideas of adaptive response and connectivity across and through traditional disciplines of knowledge and the fluid forms of popular culture.

Chapter 3 takes us in pursuit of the idea of an ecological design epistemology evolving from, or at least incorporating, powerful ideas about city-making, ecosystems, regionalism and architecture that have been extant for decades. Here, I review part of the history that has led to current ideas about the ecological design of buildings and cities. I briefly discuss how different points of view provide both a rich source of ideas but also some contradictory opinions about what sustainability is in urban architecture and design. I propose that architectural and planning ideas need to be embedded in an ecological framework to provide the basis for integrating the cumulative knowledge that is presently dispersed. A critical approach to regionalism is a way to consciously integrate the making of buildings with the ecology of their cultural and physical landscape.

In Chapter 4 an attempt is made to discern the type and extent of the influence of key theorists and practitioners. Its purpose is to show how and why particular people and ideas have influenced the development of the Ecopolis idea. I classify as ‘urban ecologists’ or ‘ecocity theorists’ those whose work contains sufficient concern with urban systems, community affairs, ecosystem function, design issues

¹ With its many diverse issues, including, for example: water management, energy systems, air quality, waste and resource management, construction materials selection and use, food security, biological systems design, habitats for non-human species, disease vectors and amelioration, aesthetics, urban design, place making, bioregionalism, geomancy, spirituality, the role of professionals, gender, education, civil liberties, civics, competition, cooperation, and the role of community.

and their inter-relationships, that they are clearly operating in the realm of ecocity theory. The categories I have employed are intended to identify some of the patterns of connectivity that inform ecocity ideas.

This review of theoretical frameworks is followed in Chapter 5 with some discussion about relationship of perception and aesthetics to ecology and the built environment. Despite the increasing number of texts worldwide dealing with sustainability and urbanism, there are very few published designs for ecological cities. There are a small number of examples of plans for parts of cities designed on ecological principles and there are several ecovillage plans. By accepting a broader definition of ecocity than the one proposed for Ecopolis, I have provided examples to illustrate the diversity of form and expression in the ecological design of cities. I consider the role of aesthetics in communicating information and draw attention to the culturally generated, socially dependent nature of aesthetics but also touch on the idea that we have certain aesthetic preferences ‘hard wired’ into our brains which are manifest in the phenomenon of biophilia.

Although Europeans are not strongly represented in the chapter on relevant theorists, many of the most ‘ecological’ places, in the terms favoured by this book, are in Europe. Chapter 6 provides a review of attempts at sustainable planning and development in New Urbanist, social activist and ecovillage environments in Europe and America. It then shifts focus to the developing world to discuss Curitiba and Calcutta as examples of urbanisation that display certain characteristics of ecocity function (although not necessarily as a result of ecocity precepts). Calcutta is compared with Curitiba in Brazil, a city that calls itself ‘ecological’ and brief mention is made, for comparative purposes, of Adelaide, South Australia.² Curitiba is receiving international acclaim as a prototypical ecocity although there are a number of aspects of ecocity design, development and maintenance that are not addressed in a manner likely to ultimately support its definition as a ‘true’ ecocity. This is discussed. These examples are selected on the basis of Calcutta being a quintessential third world city, Curitiba being the first city of any size to identify itself as an ‘ecocity’, and Adelaide because it represents an almost cartoon-like manifestation of a modern sprawl city – the antithesis of the compact city form favoured by ecocity advocates. In a section on England’s rural urbanism I trace part of the conceptualisation of Ecopolis back to some early formative work I undertook on ‘anti-Modernist’ urban design and theory; the chapter concludes with a brief overview of Masdar in the UAE and ecocity projects in China.

I describe the development processes and results of three Australian ecocity projects in Chapter 7. This includes a summary history of the non-profit group Ur-

² I know something of these cities as a participant in international conferences that dealt with the subject matter of this thesis; Adelaide was host to EcoCity 2, the Second International Ecological City Conference, Curitiba was host to EcoCity IV, and Calcutta hosted the International Conference on Architecture of Cities for which my ‘Charter of Calcutta’ was drafted and adopted in the formal closing session. This ‘charter’ has been informally adopted by various individuals and organisations since its dissemination in the early 1980s and has achieved a kind of manifesto status as a ‘pro-city’ environmental summary (see Section 10.2).

ban Ecology Australia which I co-founded in 1991 and which, with my practice of Ecopolis Architects, took responsibility for the three projects. Despite and because of being so personally close to these projects, I have attempted to draw lessons from the experiences with them and with UEA, concentrating on the processes involved in aspiring to do Ecopolis developments from a community base. In this chapter you will also find the introduction of ‘scenario planning’ and the need to plan over a range of timescales, something that is taken up and dealt with in more detail in the second part of the book.