strict temporal limits: sustainable urban form a mere chimera, a mirage that disappears over the horizon on approach. A degree of sustainability is all that can be achieved in any set of circumstances. It seems appropriate, therefore, to limit a study of sustainability to its dimensions: those factors that, from time to time, appear relevant. Some forms of development will probably be more sustainable and long-lasting than others. There is no authorative research on sustainable urban forms, only informed speculation about the path to be taken. This is a further reason for the tentative title of the book.

It would appear that the Post Modern agenda of the 'New Urbanists' is compatible with much of the theory of sustainable development, particularly those theories of sustainable development of the paler green hue. The current preoccupations of many urban designers are with the vitality and identity of urban areas, the quality of urbanity and the compact city, urban forms of human scale, which are less dependent upon the use of finite resources while respecting and conserving the natural environment. While there is a general consensus on the features of a sustainable development agenda amongst many working in the field of urban design, nevertheless there are differences in emphasis, (Carmona *et al.*, 2003). Over a decade ago, Calthorpe (1993) in the USA outlined his principles for the Transit-Oriented-Development: an agenda that many in this country could still accept as a general guide. In summary, the principles of Transit-Orientated Development are:

(1) Organize growth on a regional level so that it is compact and transit-supportive.
(2) Locate commercial, housing, jobs, parks, and civic uses within walking distance of transit stops.
(3) Design pedestrian-friendly street networks which directly connect local destinations.
(4) Housing should be a mix of densities, tenure and cost.
(5) Sensitive habitat, riparian zones, and high-quality open space should be preserved.
(6) Public spaces should be the focus of building orientation and neighbourhood activity.
(7) Encourage infill and redevelopment along transit corridors within existing neighbourhoods.

This then, is the basic urban design agenda, compatible with sustainable development ideas, but is it sufficient for achieving that aim?

THE ENVIRONMENTAL MOVEMENT

It has been suggested that the publication of *Silent Spring* by Rachel Carson in 1962 was the start of the modern environmental movement (Dobson, 1991). However, the roots of environmentalism may be much deeper. Farmer (1996) has traced the development of 'Green Sensibility' in architecture back to folk buildings and the cult of the cottage through the nineteenth century in the writings of Ruskin, the work of the Arts and Crafts movement to the twentieth century and the organic ideas in Modern Architecture. The planning profession could also cite its list of planners with green credentials. Amongst these father figures of the planning world would be Geddes (1949), Howard and the Garden City

Movement (1965), and Mumford (1938) with his analysis of the 'Rise and Fall of Megalopolis'. No doubt other disciplines could legitimately cite their own lists of people with deep concerns for the environment, many of them working long before the term 'sustainable development' was coined. While it is not the intention to downgrade these fine scholarly traditions, nevertheless, for the purpose of this study, and for convenience, the beginnings of the modern environmental movement will be placed in the 1960s. The mood of environmentalism quickened with Rachel Carson's analysis of the inevitable damage caused by large-scale and indiscriminate use of chemical pesticides, fungicides and herbicides. Carson's influence was widespread, affecting pressure groups such as Friends of the Earth, in addition to the stimulus she gave to the development of green politics and philosophy.

From the USA, Ian McHarg, the Scottish émigré, published his seminal work *Design with Nature* in 1969, seven years after Carson's warning cry. McHarg's ecological thesis spans the disciplines of landscape, architecture and planning: he is one of the founding fathers of sustainable development. McHarg argued that human development should be planned in a manner that took full account of nature and natural processes. *Design with Nature* in addition to articulating a philosophical position also provided a technique for landscape analysis and design using overlays, a technique which now forms the basis of GIS, Geographic Information Systems, an important tool for current planning and design. While McHarg was writing in the 1960s, the thrust of his argument still applies today in the twenty-first century. 'It is their (the merchant's) ethos, with our consent, that sustains the slumlord and the land rapist, the polluters of rivers and atmosphere. In the name of profit they pre-empt the seashore and sterilise the landscape, fell the great forests, fill protective marshes, build cynically in the flood plain. It is the claim of convenience – or – its illusion – that drives the expressway through neighbourhoods, homes and priceless parks, a taximeter of indifferent greed'.

Small is Beautiful by Schumacher (1974) is another milestone in the analysis of the causes of environmental problems and in the development of green principles. One cause of environmental problems according to Schumacher is the notion that we can continue to produce and consume at ever-increasing rates in a finite planet. Schumacher warned that the planet which is our stock of capital is being threatened by overproduction: in effect, the human race is consuming its capital at an alarming rate, endangering the tolerance margins of nature, and so threatening the life support systems that nurture humankind. A further landmark in green analysis was 'The Tragedy of the Commons' (Hardin, 1977). Hardin argued that if everyone maximized his or her own gain from commonly held property, whether land, sea or air (the commons), the result would be the destruction of those commons. Where populations are comparatively small the 'commons' are not under great threat. With rising world populations, the commons now under threat include the air we breathe, the ozone layer that protects us from the sun's rays, and the ecological systems that deal with the waste we cause. How far *The Limits to Growth* (Meadows *et al.*, 1972) for the Club of Rome's Project on 'The Predicament of Mankind' progressed the aims of the environmental movement is problematical. It attempted to plot the