ethical issue. It concerns the redistribution of resources both within and between nations. Sustainable development means a movement towards greater social equity both for moral and practical reasons. An environmental *cordon sanitaire* cannot be erected around the poor south, nor is there an effective defensive structure that will protect against the anger and frustrations of the militants who claim justification of violence in the hopeless poverty that pervades some parts of the developing world. It is one Earth that we inhabit, and its environmental, social, economic and political problems have no easily policed borders. The third idea of 'future generations' introduces the idea of intra-generational equity: 'We have a moral duty to look after our planet and to hand it on in good order to future generations' (Department of the Environment, 1990). It was the United Nations Conference on the Human Environment which fostered the idea of stewardship in 1972. Stewardship implies that mankind's role is one of caring for the Earth and steering a path that as far as possible benefits the human and natural systems of the planet. Mankind is viewed as the custodian of the Earth for future generations. This attitude is best summed up by a quotation attributed to the North American Indian: 'We have not inherited the Earth from our parents, but have borrowed it from our children'. Following this line of argument the aim is not simply to maintain the status quo but to hand on a better environment, particularly where it is degraded or socially deprived. It requires of any particular generation the wisdom: to avoid irreversible damage; to restrict the depletion of environmental assets; to protect unique habitats, high-quality landscapes, forests and other important

ecosystems; and to use frugally and wisely non-renewable resources. In summary, the definition of sustainable development derived from Brundtland implies both inter- and intra-generational equity within a framework of development which does not destroy the planet's environmental support system.

Elkin (1991b) identifies four principles of sustainable development: futurity, environment, equity, and participation. The principle of futurity is seen as maintaining a minimum of environmental capital including the planet's major environmental support systems, together with the conservation of more conventional renewable resources such as forests. This is to meet the Brundtland requirement that human activity should be limited by consideration of the effect that activity may have on the ability of future generations to meet their needs and aspirations. The second principle is concerned with costing the environment. The true cost of all activities, whether they take place in the market or not, should be paid for by the particular development through regulation, and/or market-based incentives. This idea naturally leads to the suggestion that 'The polluter should pay'. It is difficult to identify the minimum environmental stock which should be maintained for future use. Elkin in the early 1990s thought that it was clear that: '...current rates of environmental degradation and resource depletion are likely to carry us beyond this level'. A decade later, there seems little evidence to show that the environmental stock has made a sudden recovery. There has been an attempt to dilute the argument by suggesting that environmental stock if used judiciously could be converted into useful capital stock for future generations. Much of the environmental stock which supports life

on this planet is irreplaceable; for example, fine buildings, their furniture and fittings do not equate with the rain forest from which they may be made. Sustainability constraints are difficult to define with any precision. It is possible, however, to identify the direction of changes in consumption patterns that are necessary to avoid breaching environmental thresholds. Which brings the discussion back again to the 'Precautionary Principle'. By applying this principle, where doubt and uncertainty exist, it may be possible to outline the type of development that is more sustainable or, more accurately, development that is less unsustainable. Elkin's last two principles, he regards as secondary; they support the first two main principles of sustainable development: like many other authors he writes about inter- and intra-generational equity. Elkin includes a further principle, that of participation. He notes, that, '. . . the problems of economic development without democratic participation have been made manifest time after time. Unless individuals are able to share in both decision-making and in the actual process of development, it is bound to fail'. Participation has become a common feature of development procedures, with groups of 'stake-holders' involved in consultations. How many of these exercises in participation involve real power being devolved to the general voting public is debateable.

These ideas about the nature of sustainability have been absorbed in the general literature, and have informed literature in the city design professions of architecture, planning, landscape and urban design. In architecture for example, there is Hagen's (2001) fine book, *Taking Shape*, which builds on the earlier work *Green Architecture* by Vale and Vale (1991); in

planning, a good example is Riddel (2004) *Sustainable Urban Planning*; in landscape, one of the few recent contributions is *Landscape and Sustainability* by Benson and Roe (eds., 2000); in urban design, *Sustainable Urban Design* by Thomas (ed., 2003). Amongst the growing body of literature on this topic, a number of books attack the subject from the viewpoint of practice: one such authoritative book, *Shaping Neighbourhoods* (Barton *et al.*, 2003), illustrates how to achieve sustainable development at neighbourhood level.

Before we leave the topic of the definition of sustainability, reference to the dictionary may shed a little more light on its meaning. The Shorter Oxford English Dictionary (1933) defines 'to sustain' in a number of ways, such as, 'to support, to keep a community from failing, to keep in being, to cause to continue in a certain state'. 'Sustenance' is a word derived from 'to sustain', and its meaning is 'the means of living or subsistence', or 'the action to sustain life by food'. From these basic definitions it would seem that the goal of sustainable development is to sustain human communities by development that does not destroy the fundamental environmental life support systems. Applying this definition to the subject matter of this book would make the basic requirements of a sustainable city self sufficiency in food, water, energy and shelter: the city would have to be able to reproduce its population, be self-sufficient in terms of its own employment, service requirements, be able to deal with its own waste products, and to do all this while enhancing environmental quality without damaging its precious life support functions. Such an agenda is a very great challenge indeed.