may be the decision of a great leader, the result of corporate action by a group or simply accretive development, the outcome of many individual spontaneous actions. Cities first emerged independently in six or seven places, and all after a preceding agricultural revolution. Toffler (1973) in *Future Shock* said that the changes in the society of today are so great that the only comparison in history is the period of change associated with the agricultural revolution which predates civilization. To support his argument Toffler quotes Marek, author of *Gods, Graves and Scholars*, as saying: 'We, in the twentieth century, are concluding an era of mankind five thousand years in length . . . we are not as Spengler supposed, in the situation at the beginning of the Christian West, but in that of the year 3000 BC. We open our eyes like prehistoric man, we see a world totally new.' Today, amidst great societal change, and with a command of a powerful technology, man is being forced to reassess the effect of unlimited development upon the environment. In the process of coming to terms with the limits of the environment the city is being reinvented in sustainable forms. The creation of the sustainable city is an act of will, the creation of a work of art, a determination to come to terms with the limitations imposed upon human settlement by the environment.

It may be possible to gain some insight into the problems of city design by examining the origin or birthplace of early cities. The birth of cities saw the simple and, to a large extent, egalitarian life of the village community replaced by a more complex social grouping. The new social grouping in the city exhibited: unequal ownership, a clearly distinguished power structure, war-like tendencies for defence and colonization, a monumental architecture, and a city structure which clearly expressed the highly stratified society. The city was also a vehicle for learning – it is associated with specialists not involved in farming, with the birth of science and writing. The city is associated with naturalistic forms of art and with craft and distant trade. Wherever this complex heterogeneous society developed spontaneously, it followed a path which started with a settled society producing a surplus of food. Amongst the Hausa people of Nigeria there are folk tales about the coalescing of small villages to form larger towns (Moughtin, 1985). A reasonable explanation of city formation is based on the hypothesis that stateless societies, which define their solidarity by co-residence on a clearly delimited tract of land, contain in their cultural systems the germs from which state organization can develop. Stateless societies of this type still exist in West Africa, though they have been absorbed into the large modern nation state. The important principles of political organization are co-residence on common territory and submission to the laws sanctioned by the spirit of the land. These ideas are close to the concept of sovereignty and a body of laws to which all comers are automatically subject. The first occupants of the defined territory have a closer and more intimate relationship with the land than late comers, which provides a potential differentiation between royal and non-royal lineages (Horton, 1971). The reasons for the initial growth of particular cities are lost in antiquity: a particularly effective shrine and its wise man may have attracted gifts or followers from far afield or a chief may have been able to unite disparate groups in a formal coalition for mutual safety or economic benefit.

Early cities functioned as warehouses for the food surplus, break points on trade routes, fortified centres for war or administrative centres for managing great public works such as irrigation schemes or the building of pyramids. Finally, early cities were religious centres of importance. The early city is both a great centre of activity and a place of oppression and aggression. Its form and layout was carefully planned to express the power structure in society and to create a theatrical backdrop for religious ceremony. The form of the early city is, therefore, designed to reinforce and enhance the sense of awe and dependence of those subject to the state: at one level it is a device to assist the process of psychological control and domination. The city was, at the same time, a seat of learning and a place for the meeting of minds. As such it was a physical expression of pride in man's achievements, a shelter from both foe and the elements: it also promised hope for the future.

There are common structural and physical features in the layout of cities in most of the great early civilizations of Egypt, Mesopotamia, India, China and Mezoamerica. These common features included the use of the grid, the straight axial street, an orientation of the settlement or its main building to the path of the sun and, with the exception of the inaccessible reaches of the Nile, encircling fortifications (Figures 6.1–6.7). Teotihuacan in Mexico, at its most powerful in about AD 450, covered eight square miles and had a population of 200 000. It was laid out on either side of a great ceremonial way running along the valley floor for three miles. The processional route terminated in the north at the Pyramid of the Moon. The Citadel and the Great Compound, the administrative centre and commercial heart of the city, were located at

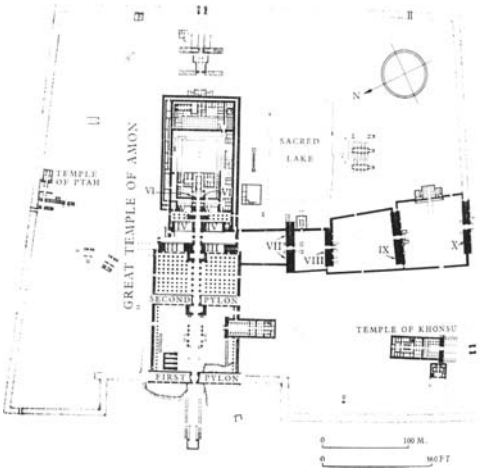

Figure 6.1 Plan of the Temple at Karnak in Egypt (Stevenson Smith, 1958)

the junction of the north–south processional route and the main east–west cross street. The houses of the nobility were on the main axial street together with the pyramid of the

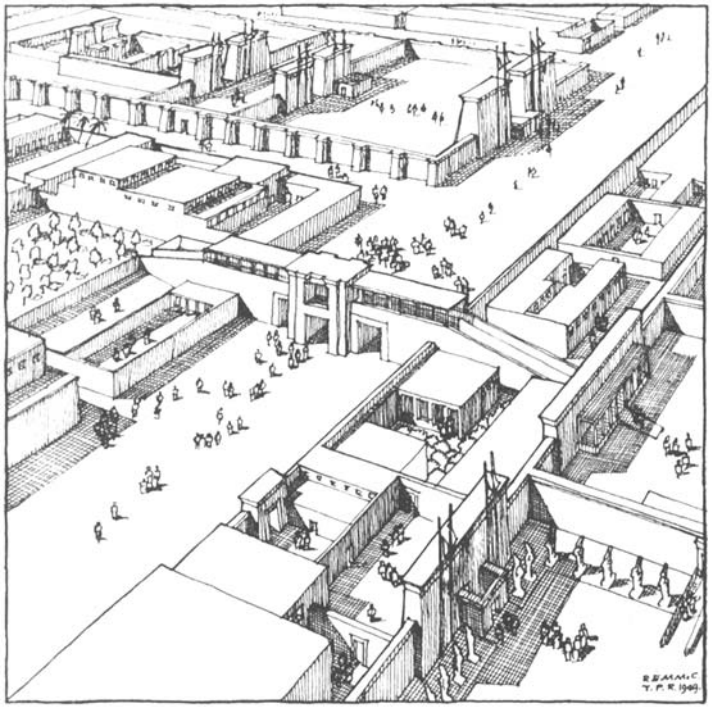

Figure 6.2 Central Area, Amarna in Egypt (18th Dynasty) (Fairman, 1949)