constraints may be difficult to define with any precision. It is possible, however, to identify the direction of change in consumption patterns which are necessary to avoid breaching environmental thresholds. By applying the precautionary principle, where doubt and uncertainty exist, it may be possible to indicate the types of urban development which are more sustainable, or more accurately, less unsustainable. Environmental impact studies based upon accurate environmental audits, discussed in Chapter 6, are basic tools for use by the urban designer in making proposals for any major sustainable development.

In summary, the definition of sustainable development by Grø Brundtland implies both inter- and intra-generational equity within a framework of development which does not destroy the planet's environmental support system.[18] As Brundtland points out, there are many problems in pursuing development without a high degree of democratic participation. Unless people as individuals and as members of groups can share in the decision making and in the actual process of development, that development is bound to be unsustainable. There must be the opportunity for individuals and communities to own any development; such ownership comes through action in the development process. The urban designer working in the field of sustainable development must be skilled in the process and techniques of public participation. Techniques of participation are used at many stages in the design process and consequently appear in a number of chapters of this book.

The pursuit of sustainable development gives to urban design its social purpose and acts as a goal which informs the design process. Subsumed within this goal of sustainable development is the aim to develop an environment of aesthetic quality. The concepts used to define quality in the urban environment have been discussed in detail elsewhere.[19] In this book they appear in the assumptions which determine the type of investigations carried out in assessing the form and character of the urban context for any development proposals. Chapter 3 deals with these techniques which are used to analyse townscape, the purpose of such contextual studies being to form the basis of sets of proposals which fit into and complement existing structures. The analyses are predicated upon such notions as compatible land uses, appropriate grain of development, buildings and spaces of human scale, together with ideas about the use of local materials, colour and decorative treatments of regional significance.

URBAN DESIGN METHOD AND PEOPLE

Public participation in the process of design and implementation is a key factor in the definition of sustainable development. Sustainable urban development is the result of a process. It is a little simplistic to discuss participation in urban design unless that discussion includes a specific description of the type of participation and the techniques used at each stage of the process. The techniques of participation outlined in this book are based on the detailed analysis which appears in chapter 1 of *Urban Design: Street and Square*.[20]

Urban design, or the art of building cities, is the method by which man creates a built environment that fulfils his aspirations and represents his values. One value which is becoming increasingly important is care for the natural and built environment for the benefit of future generations. Urban design, therefore, can be described as a people's use of an accumulated technological knowledge to control and adapt the environment in sustainable ways for social, economic, political and spiritual requirements. It is the method learned and used by people to solve the total programme of requirements for city building. The city, therefore, is an element of a people's spiritual and physical culture and, indeed, is one of the highest expressions of that culture.

Central to the study of urban design is man, his values, aspirations and power or ability to achieve them. The task of the city builder is to understand

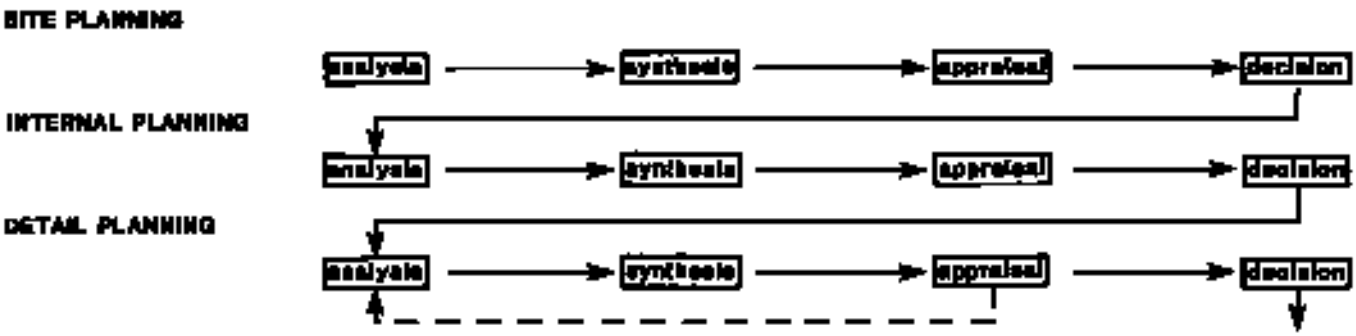

Figure 1.1 Architectural method.

and then express in built form, the needs and aspirations of the client group or citizens. How does the city builder design to best serve the community's needs? How can the designer ensure that the end product is both culturally acceptable and sustainable? What methods and techniques are best suited to this purpose? These are questions which are relevant considerations for those in the city-designing professions. An important aspect of a designer's skill is the development and use of a menu of techniques of public participation for incorporation into the design process. These techniques range from anthropological studies establishing essential cultural data, user studies and planning surveys, through informative techniques such as the exhibition, press notice and other media means of communication, to administrative procedures such as planning appeals and public inquiries. People's views can also be elicited at public meetings or sought through the electoral process by the inclusion of planning matters in political manifestos. Finally, there is a group of more active forms of participation, such as community design exercises, self-build operations and procedures for community administration and control.

THE URBAN DESIGN PROCESS

The RIBA practice and management handbook divides the design process into four phases:

- Phase 1 *Assimilation*: the accumulation of general information and information specially related to the problem.
- Phase 2 *General Study*: the investigation of the nature of the problem: the investigation of possible solutions.
- Phase 3 *Development*: the development of one or more solutions.
- Phase 4 *Communication*: the communication of the chosen solution/s to the client.[21]

The description of design method is taken a little further by Markus and Maver. They argue that the designer goes through a series of linked decisions which form a clearly defined sequence.[22] This sequence is described as *analysis, synthesis, appraisal* and *decision.* The decision sequence is repeated for increasingly more detailed levels in the design process (Figure 1.1). During the analytical stage, goals and objectives are classified and patterns of information are sought. Synthesis is the stage where ideas are generated. It is followed by a critical evaluation of the alternative solutions against objectives, costs and other constraints. Decisions are made depending upon the findings of the evaluation. The decision process, however, is not defined as a simple linear progression: return loops between stages in the process are important, the process being iterative.

This way of looking at the design process for an individual building can be extended to urban design,