CONSTRAINTS AND POSSIBILITIES

Two useful analytical tools are constraints and possibilities mapping. The constraints and possibilities maps focus mainly upon the physical factors which affect development. The constraints map contains information, for example, on the location and design of any approved projects such as road widening, sites with planning approvals, land use or building height restrictions, buildings designated as of historic interest, together with any important features of the land or its servicing. The constraints map can have a debilitating effect upon design if each constraint is not challenged in terms of its current importance and also examined in the light of any possible waivers or methods of circumventing the effects of the constraint. The possibilities map includes items such as areas ripe for development, possible linkages with adjacent areas in the city, features which are special to the area, groups of buildings of outstanding architectural significance which, with a change of use, would bring distinction to the quarter, positions where development would enhance the appearance of the built environment and areas where landscape intervention would be advantageous.

SIEVE MAPPING

Analysing constraints and possibilities can be expressed graphically as a series of sieve maps. Mapping a number of constraints as transparent overlays to an ordnance survey map of the project area eliminates those areas which, for one reason or another, present difficulties for development. The technique, when combined with the power of the computer using Geographic Information Systems (GIS) technology, can combine many layers of physical and socio-economic data, so affording complex analyses which relate population studies to the environment occupied by the community. The use of large-scale three-dimensional computer models is becoming more common in urban planning and design. In addition to the use of the computer model for design, it is being developed to act as the core of an urban information system. Systems are being developed for linking objects in a three-dimensional model with other kinds of information, including text and photographs, records of a building's history, social statistics, data about energy use and digital material for sound and video. Computer models are beginning to appear in which 'The visualisation capacities of the CAD model and the analytical power of the geographic information system can be brought together to provide new kinds of tools for urban design'.[3]

STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

SWOT (strengths, weaknesses, opportunities, threats) analysis is a useful technique for the collection and structuring of data. SWOT analysis has its origins in business management where strengths and weaknesses refer to the internal workings of the organization while opportunities and threats are external to it.[4] This clear distinction between internal and external conditions is more difficult to apply when assessing the potential of a part of the physical world such a city district. The analysis in strict management terms could be applied to an organization contemplating a particular intervention in the world of real estate but not necessarily in quite the same way for the potential of the real estate itself. Many of the threats facing an inner city area or the opportunities it presents could be considered to be internal to the physical structure being investigated. For example, a continued loss of population in the inner city could be seen as a threat to regeneration but in many ways it is inherent to the inner city. Clearly there is overlap between all four analytical categories. A weakness, for example, can be viewed in a more positive light as an opportunity, while in

	Strengths	Weaknesses	Opportunities	Threats
Built Environment physical and aesthetic properties				
Natural Environment fauna, flora, air and water				
Socio-economic Environment including political and administrative conditions				

Figure 4.1 SWOT analysis.

some instances a strength in one area when viewed from a different perspective can appear as the source of a weakness. Nevertheless, the structure imposed by the listing and categorizing of aspects and qualities of the project site under these four broad headings does assist in formulating possible strategies for intervention. The completion of the analysis can also form the basis for questioning the assumptions underlying project goals and objectives. The SWOT analysis can, therefore, assist in the clearer definition of the design brief and point the way to design solutions.

SWOT analysis, when used in matrix form, is a powerful tool for dissecting the properties and potential of an urban area. If the examination of the data is structured, as shown in Figure 4.1, then the strengths and weaknesses of a number of the main aspects of life in a study area can be addressed and analysed. The properties and potential of the study site or city district can be examined under a number of broad headings or factors. In Figure 4.1 the factors considered are the physical properties of the built environment of the area and its aesthetic quality, the natural environment which would include pollution, and finally the social and economic conditions in the area. Using this or a similar matrix, it is possible to examine, for example, the strength or weakness of the study area in terms of the factors listed in the matrix, which may be of more use to the designer than a simple aggregate statement about the area which may obscure more than it reveals. It is also possible, working horizontally along a line of the matrix, to examine any particular factor for its strength, its weakness, opportunities for its development and the potential threat it faces. The use of the matrix is simply an aid to analysis. The result of that analysis will be a statement which summarizes the potential of the site for achieving sustainable development, outlining the interventions or actions necessary to arrive at such an outcome.

CASE STUDY: THE LACE MARKET, NOTTINGHAM

A SWOT analysis is not possible without an understanding of the history of the study area and a knowledge of its present function within the city. Plans for the regeneration of The Lace Market in Nottingham, for example, expressly emphasize the quarter's history and the development of its special character: it occupies the site of the former English Borough (Figure 3.18). The Lace Market, as its name implies, was the centre of the large and flourishing nineteenth-century lace industry. Grand warehouses and factories were built in pleasantly scaled streets, which makes The Lace Market in Nottingham one