unstable, that the whole thing took many times longer to build than was envisaged, all contribute to the scene of continuous and substantial conflict. And yet the final outcome is one of the most recognisable and celebrated pieces of modern design anywhere in the world.

The legislator role introduces yet more potential conflict, which can take surprising forms. Conventionally we have the image of the designer and legislator locked in battle, with the designer often representing the unstoppable force and the legislator the immovable obstacle. Richard Rogers' description of his problems with the Parisian fire department, which we saw in Chapter 6, is a dramatic example. However, it is not always so. Sometimes, for example, planning authorities can provide a brake to restrict the client's commercial drive, and the architect, taking a wider urban view, may have considerable sympathy with such restrictions.

This then introduces us to a complication which any student of social relationships would already have recognised as inevitable. Where groups are involved in decision making, not only may tensions exist, but also coalitions and thus factions. Designers then, frequently need social skills to carry through their ideas. Users, clients, legislators and builders or manufacturers must all be persuaded and convinced if the design is really to come to fruition. On the whole the larger the scale of design the more central and vital these skills become. It is therefore not surprising that simulation and gaming techniques have been used in the education and development particularly of town planners, urban designers, and to a lesser extent architects. This is noted by Taylor and Walford (1972) in their study of the educational use of gaming and simulation techniques:

> Urban development gaming has also expanded at a remarkable rate as planning has become more of a total science and less exclusively concerned with the technological aspects of bricks and mortar. Hence planners have built upon the games developed by business analysts, economists, political scientists, organisational psychologists and sociologists to present a more balanced synoptic view of selected aspects of human settlement; they describe, simply, the milieu within which the planner works.

Interestingly, Taylor and Walford, who illustrate their thesis with a number of games, give the details of a game which they call the 'Conservation Game'. In fact this game simulates the final deliberations of the Roskill Commission Inquiry into the third London Airport which was discussed in Chapter 5 of this book. Here, however, the participants of the game are allocated roles in

order to bring out the conflicts between the potential gainers and losers at each site. In order to give the game a fresh impetus, sites may be selected for examination other than the four dealt with by the real inquiry. Such a game can simulate and bring to life the social elements of the design process, which this book can only describe. The relationships which exist between people, the ideas for which they stand, and their perception of each other, all contribute to decisions along with the logic and passion of the arguments.

So far we have been concerned with the effect on the design process of the various roles played by the participants in relation to the designer, and the designer has been implicitly seen in the singular. However, this is by no means the only way to design. Large projects such as buildings usually involve a whole design team, and those teams are normally comprised of smaller teams of specialists. A building of any size will need not only architects, but also quantity surveyors, structural and service engineers, and more complex buildings may involve many other even more specialised consultants. Both the individual specialist teams and the overall project team can be seen to exhibit group dynamics, and to behave not just as a collection of individuals. Whilst some architects prefer to be independent, others have deliberately chosen an integrated form of practice in which the various skills are combined into project teams. An examination of professional diaries is likely to show that most architects spend more time interacting with other specialist consultants and with fellow architects, than working in isolation, and yet this is hardly reflected in the curricula of most schools of architecture.

Cedric Green explored the problems of co-operation between architects with a clever adaptation of a children's competitive game called Connect created by the graphic designer Ken Garland for Galt Toys. Garland co-operated with psychologists in the design of symbols in the workplace and this clearly lead him to develop a minimalist approach to graphics which seems ideally suited to the naturally inventive and imaginative world in which children live. He has since used this expertise to develop many other much loved graphical games for children, but would probably have been both surprised and interested to see his game in a school of architecture! Connect consists of a series of tiles with coloured tracks running across them in either straight lines or curves, and sometimes these tracks split or simply stop. In the original game the tiles are dealt out to players who must lay them down in turn following the logic of the tracks, so as to be the first to use up their allocation.