



Figure 6.5

Each group can generate internal and external constraints

small part of the total problem, are often highly significant. Such factors as the site, location, or the specific context in which a design is to be used all create external constraints which emphasise the individual and particular nature of the design. It is worth noting that when it comes to architectural design, the town planners are responsible for constraints which are located at the bottom right-hand corner of our model. This is where problems tend to be at their most demanding and challenging, and where they most restrict the options of the designer. It is perhaps not surprising, then, that architects and town planners sometimes regard each other with a certain amount of suspicion over matters of development control!

One of the most fascinating features of the design process for its would-be students seems to be the nature of the role played by external and internal constraints in the designer's mind. Clearly the balance of importance is not always the same. Perhaps one of the reasons why students of architecture find housing design so difficult is because the balance of external and internal constraints is very even. Unlike many other buildings the architect may design, the house has an internal structure which is relatively simple and easily understood. What makes the internal planning of an individual house difficult, however, is the problem of relating it to adjacent houses and other features of the site. The indications are that the experienced housing architect will use a process quite unlike that employed by the novice student. Before tackling housing for the first time architectural students are quite likely to have

designed such buildings as schools or offices, where the internal planning was of paramount importance. So they have begun to develop a design process based on exploring internal constraints and thus may initially turn their attention to the house itself. By contrast the experienced housing architect already has a good grasp of the basic variations of house planning and is much more likely to concentrate on the site.

In her study of the design of six housing estates in London Jane Darke quotes several of the architects explaining their design process in just this way. Douglas Stephen was perhaps the most explicit:

I don't think of house plans at all at the beginning . . . I think entirely of the site and of the restrictions, and there are not only spatial restrictions but also social restrictions on the site.

(Darke 1978)

Other architects were less practical and more romantic about the influences of the site. Kate Macintosh thought that 'you should try to express the unique quality of the site' (ibid.) and Michael Neylan confirmed that 'we try to get the building to respond and breathe with its surroundings' (ibid.). All these architects are experienced and distinguished designers of housing and this response to a new problem is quite understandable when one remembers that the problems of a house remain fairly constant but each site is unique. As Neylan puts it: 'the whole point of good housing is the relationship between the unit (house) and what's around it' (ibid.). Perhaps it is this very close and critical interplay between internal and external constraints which makes housing such a fascinating but difficult design problem. It certainly seems likely that the balance of internal and external constraints in a design problem is of considerable significance in determining the nature of that problem and the designer's response to it. We shall return to this point again in Chapter 16.

The function of design constraints

We have seen how design problems are built up of constraints which may be either entirely internal to the system or object being designed, or may be linked with some external factor not under the designer's control. These constraints may be imposed most obviously by the client or users but also by legislators and, even, designers. The question which remains is, why are these constraints imposed? What do they achieve, what is their purpose and