Figure 6.6
The completed model of design problems

They support the interior functions while allowing for flexible planning. They provide coherence to a large scheme which is, nonetheless, broken down to the human scale. They give visual expression to the essentially public nature of the institution: for a theatre must be a place where human contact is enriched and a common experience is shared.
(Lasdun 1965)

Just as a design is a product of the designer's approach, so it is also a reflection of the particular pattern of constraints which make up
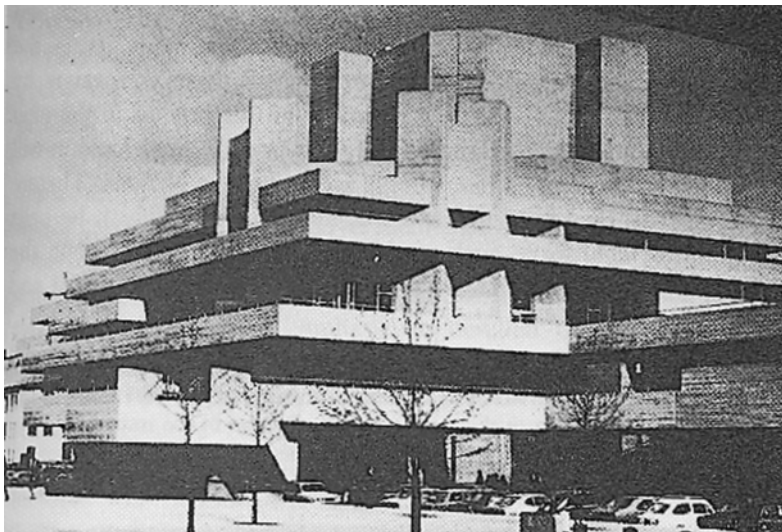

Figure 6.7
What the architect of the National Theatre, Denys Lasdun, called 'strata' solve radical, formal and symbolic problems

the problem. We have already seen how dramatic landscape features can be major generators of architectural form, and we must all recognise the enormous influence of climate on building construction and form across the world and throughout history. The need to absorb the special constraints peculiar to a particular problem into a continuing and developing design philosophy, therefore, becomes one of the chief challenges in the practice of design. This point is acknowledged by Richard Rogers in his fascinating account of the design of the Pompidou Centre:

> It is impossible to divorce the building from its legal, technical, political and economic context. At the same time, a major part of any design approach is the way constraints may be absorbed, and whenever possible inverted into positive elements. On the one hand, new technical needs and regulations, political dicta and changing user requirements make it difficult to control the building on the other hand the way that the building overcame these constraints is a measure of the success or failure of both the building and its philosophy.
>
> (Suckle 1980)

We can now also see the overlap between the functions of constraints. For example, let us imagine we were asked to design a new flag as was the case for the European Union. Clearly the purpose of a flag is to be a symbol, so how can we sensibly separate the radical from the symbolic constraints? Thus in extreme cases one set of functions may become so important that the distinctions are blurred, but in most cases the distinctions seem to remain useful. In the design of a school the radical constraints will certainly include the need to accommodate the activities and people involved in schooling. The school will need to be composed well not only for purely formal reasons but in order that pupils and visitors can build their own mental maps of the building and navigate around it. A school must also be to some extent a symbol of the way society cares for children and, of course, the practical constraints require the designer to make not only adults but small children comfortable. Thus there are not absolutely clear distinctions between all these functions, but a designer thinking about a school might find it useful to help identify all the important problems by using these four categories of function.

The use of the model

Unlike the maps of the design process reviewed earlier in this book, this chapter has developed a model of the structure of the design problem. However, in the next chapter we shall see something of