

seems, therefore, to be arguing that the purely utilitarian should not really be regarded as design in the sense we use the word in this book.

Human values can only be preserved and mediated by means of symbolic forms, and the basic factors of a civilisation required the most articulated symbols (ibid.).

This finds an echo in the opinions of Wittgenstein who produced a considerable body of thought and writings on architecture which have been well documented (Wilson 1986).

Where there is nothing to glorify there can be no architecture.

Heath, more recently used a similar classification of architecture into 'commodity buildings', 'systems buildings' and 'symbolic buildings' (Heath 1984). Actually none of these distinctions is realised in particular buildings, but we can still see remarkable differences in the design processes which lead to buildings towards the extremes. It is the utilitarian building types of hospitals and factories which have generally led to the main attempts at system building. No one has proposed a modularly co-ordinated standardised approach to designing churches! Of course the systematisation of the design process has crept some way across to the buildings in between such as houses and schools, and this is usually accompanied by more critical comment than when it is applied to hospitals and factories! We seem, therefore, more prepared to accept the notion of design being reduced to selecting from catalogues of components for work which is seen as heavily constrained by the practical or utilitarian or which is seen as essentially a commodity, but we recognise this to be an inappropriate methodology for more expressive value-laden and symbolic work.

There are many more models of the functions of design constraints in specific contexts which we could review and most of them have at least some useful features. However, for the purposes of this more general model we will adopt four functions, which in addition to formal and symbolic include radical and practical. While these four functions are fairly exhaustive some readers may like to add others or subdivide some to suit more specialised fields of design. Since the first edition of this book I have frequently agonised over whether to extend this range or subdivide it, but so many people have told me they find this model to be helpful in understanding design that I have left it in its original form.

Radical constraints

The radical constraints are those which deal with the primary purpose of the object or system being designed. 'Radical' is used here not in the sense of revolutionary or left-wing, but in its true meaning of 'at the root of' or fundamental. Thus, in the design of a school the radical constraints are those to do with the educational system the school is there to implement. Such constraints then can range over a tremendously wide set of issues and are generally thought to be very influential right from the very beginning of the design process.

Although these constraints are central and most critical, little need be said about them here. They are generally so important as to be obvious and reasonably well understood by the client. However, there may be conflicts between the radical constraints generated by the client and the users, or even between different groups of users. In a hospital, for example, often what is good for the patients may be inconvenient for the medical staff.

However, these radical constraints are the whole reason for having the design in the first place. In this sense they may overlap other constraints in some cases, but that will become clearer later.

Practical constraints

The practical constraints are those aspects of the total design problem which deal with the reality of producing, making or building the design; the technological problem. For the architect such problems include the external factors of the bearing capacity of the site and the internal factors of the materials used in construction. For the graphic designer there are the practical problems of printing and reprographic technology, and the media of transmission. For the product designer they most usually not only include the materials used but also the manufacturing processes.

The practical constraints are not exclusively concerned with the making of the object being designed. They also embrace the technical performance of the object during its working life. For the architect this means making a building which will continue to stand up and resist the weather and modify the internal climate as necessary. The product designer must worry about the durability of the product in use and its ability to withstand normal use, which may include such events as the object being dropped, left in direct sunlight or used under water.