

suggested strongly that the ideas it represented were discussed by the members of the practice. This phenomenon of using simple words or phrases to represent complex sets of ideas that the members of a design practice understand seems particularly significant for creative teams. As we have seen, the design process often involves very fast and intense periods of idea creation. The conversations that go on at these stages must therefore be very high level and rapid too. It simply would not work if every major concept raised in the conversation had to be explained.

The conversation with the drawing

We have already discussed the relative advantages of words and images in designing. However there can be no doubt that the drawing process is generally central to most design processes. In an earlier edition of *How Designers Think* I developed a model of the kinds of drawings that designers use which was based on an earlier taxonomy first suggested by Fraser and Henmi (1994). In fact that model has since been taken rather further and become more elaborate as research has suggested its initial inadequacies. It will not be presented here in its entirety since the reader can find it in *What Designers Know* (Lawson 2004). What is important for our consideration here however is not the whole model but those kinds of drawings with which, as Schön put it, designers have conversations. Technically this is possible with any kind of drawing. Indeed it is possible too with text. When I write this book I do not know in advance every detail of what I am going to say. I have a rough idea, some major themes and an overall structure. As the text begins to emerge on the word processor I may from time to time, and indeed I do, change my mind. In a sense then my own words speak back to me, as if I were talking to myself, and when I hear them I may feel the need to make adjustments. This is what Schön described as 'reflection in action'. I am sure a musical composer must go through a similar process of writing, listening and revising. Perhaps the process is more noticeable in a drawn medium which is not linear and sequential as the text and the score are. The order in which a viewer gets information from a drawing is not determined by the author. Even the order in which we draw is less predictable and structured. When designers are producing drawings entirely for their own benefit as opposed to presenting information to others, this reflective process is almost the whole point of the drawing.

It is these design drawings, sketches, scribbles, diagrams and the like that most offer this conversational potential. This was perhaps most eloquently described to me by the great architect/engineer Santiago Calatrava (Lawson 1994).

To start with you see the thing in your mind and it doesn't exist on paper and then you start making simple sketches and organising things and then you start doing layer after layer . . . it is very much a dialogue.

A particularly charming example of the designer having such a conversation with a drawing was first shown to me some years ago by Steven Groak who had heard the Italian architect Carlo Scarpa describing how he designed a handrail detail for his wonderful Castelvecchio Museum in Verona. Scarpa worked over several years in the building itself, designing and drawing as construction work proceeded. This process has been lovingly researched by Richard Murphy and is beautifully documented in his excellent book (Murphy 1990). Scarpa's work is notable for the way he has designed around the methods of construction employed by the craftsmen who built the work. So as Scarpa was drawing we may assume that he was also imagining the process of construction and Groak's account of his description of the process confirms this.

In the example shown here Scarpa is designing a balustrade for one of the galleries that leap across the spaces of the Castelvecchio (Fig. 15.3). He is drawing the junction between the handrail and the

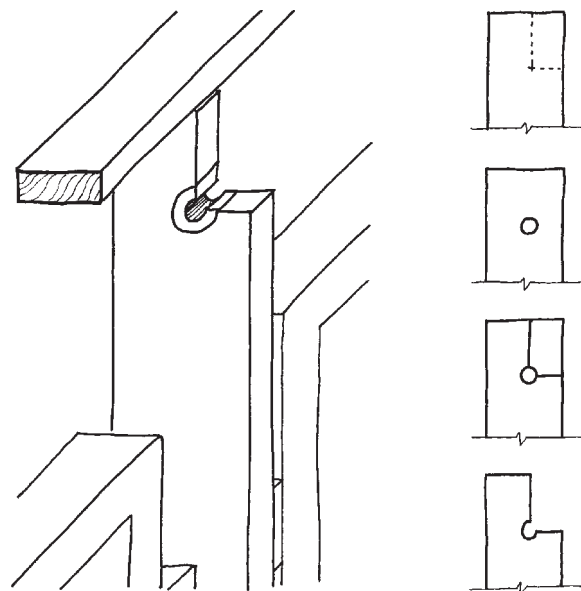


Figure 15.3

A reconstruction after that by Steven Groak of how Carlo Scarpa developed a detail through drawing the construction process