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## Types and styles of thinking

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The highest possible stage in moral culture is when we recognise that we ought to control our thoughts.

Charles Darwin, *The Descent of Man*

The art of reasoning consists in getting hold of the subject at the right end, of seizing on the few general ideas that illuminate the whole, and of persistently organising all subsidiary facts around them. Nobody can be a good reasoner unless by constant practice he has realised the importance of getting hold of the big ideas and hanging onto them like grim death.

A. N. Whitehead, 1914 *Presidential address to the London Branch of the Mathematical Association*

### Thinking about thinking

So far in this book we have concentrated on the nature of design as a process and on the characteristic qualities of design problems and good solutions. Now it is time in this third part of the book to turn our attention to the thought processes which are required to identify and understand those design problems and create design solutions. In subsequent chapters we will need to consider the principles, strategies and tactics which designers use in this mental process. We study the traps and pitfalls that frequently beset them and examine how designers use drawings, work in groups and with computers. After all designers are not philosophers for whom the thought process itself is centre of study, nor does the designer resemble Rodin's 'Thinker' who sits in solitary meditation. Essentially the designer's thinking is directed towards some physical end product the nature of which must be communicated to others who may help to design it and to construct it.