Preface

Early in my professional life as a student and architect I was not averse to design briefs. I actually appreciated the trouble someone had taken to tell me what I should design and why. The designs I was expected to make should have some purpose other than giving me an opportunity to shine as an architect. Later as a researcher and teacher I became aware that this was not the opinion of the majority but this did not diminish my interest in how a brief can contribute to synthesis and analysis. I realized that while there was considerable expertise in how the brief should be compiled, briefing was hampered by two unfortunate tendencies. The first was that briefs were often little more than vague wish lists that contributed more to abstract architectural debates than to designing. The second was that briefs often remained secondary sources of information in architectural design. Designs were primarily considered on their own terms (i.e., with respect to what the designers wanted to achieve) rather than in relation to specific uses and objective performance measures. In short, design briefs were seldom operational tools that could contribute to design guidance, analysis, and communication.

As a consultant I had the opportunity to work on many briefs, including several for major projects, in particular when it came to evaluating them or comparing them to designs. What struck me was that while designing was becoming increasingly dependent on digital methods and techniques, briefs were seldom included in architectural computerization, even though the task was significantly easier and could have a greater impact than some of the major preoccupations in design computing. In several projects I was able to develop, apply, and test various computer systems for working with briefs and designs. At the same time in my research I managed to work towards a coherent framework for computer-mediated briefing that stressed integration and continuity of design information.

On the basis of work done in the last twenty years I have written this book to address what I consider to be an emerging necessity and challenge in architectural design and information management. My intention is to link a clear approach to briefing to concrete actions in a transparent way that explains what we can do and why. There is little value in methods and theories that cannot be implemented and even less in actions that have no clear and constructive goals. My approach is founded on a view of architectural design as problem solving and information processing, which makes the use of computers relevant and meaningful, not mere replacements of analogue media. Developing briefs in detail and connecting them explicitly to designs presupposes an intelligent partnership between architects and computers that makes the whole enterprise efficient and reliable by building on the particular strengths of each partner.

The book starts with a general introduction to the subject and the approach in Chapter 1. It explains the connection between the computer and the brief and presents the concepts and terms used in here concerning the structure and content of briefs. It gives a short overview of the aspects and applications of computer-mediated briefing and introduces the software used in the following chapters.

Chapter 2 presents the fundamental transformation of a brief into an information system that can be processed with database management systems (DBMS). This transformation is presented in a gentle manner, starting with simple single-table databases and proceeding to multitable ones that can capture
the complexity and standardization we encounter in briefs. The chapter focuses on two main issues: how you should structure the brief database and how you can use DBMS to analyse and evaluate the structure and content of a brief.

Chapter 3 continues with databases but shifts from briefs to designs. It explains how you can make a design database by putting together various pieces of information and the documents that carry them. A primary reason for doing so is to have access to well-documented designs that can be used as precedents in a range of briefing activities.

Graphs, a rather poorly known representation with remarkable potential, are the subject of Chapter 4. This potential includes the ability to express a brief spatially in an abstract way that makes few assumptions about the form of a design but facilitates the connection between brief and design. As abstract spatial representations graphs also support several analyses of briefs on their own, without reference to designs, as well as analyses of aspects involving complex relationships between activities (e.g., circulation).

Chapter 5 is a brief account of relationship matrices, a technique that used to be quite popular in design methods and early architectural computerization. It positions relationship matrices in the framework of the approach underlying this book and demonstrates how they can be used to enhance the reliability and validity of briefs.

Chapter 6 is an overview of the connections between brief and design. It explains how design representations should be structured in order to make these connections possible and how this can be implemented in CAD and BIM software.

The first of these connections, feedforward, is the subject of Chapter 7. Feedforward is poorly understood and underused despite all that it has to offer: explicit, transparent links between entities or their properties in a design and activities or requirements in a brief. These links form an efficient and reliable basis for design decisions that take into account the specifications of the brief from the earliest to the latest design stages.

The subject of Chapter 8, feedback, is better understood but equally poorly implemented due to the frequent lack of means for comparing briefs to designs. The chapter explains how the links between brief and design presented in the previous chapter can also be used for such comparisons continually throughout the design process and how the results of comparisons can be used to modify either the brief or the design so as to improve the match and guide the development of a project.

Chapter 9 deals with parameterization, a subject currently very popular in architectural computerization but also directly relevant to one of the main but often neglected components of a brief: constraints. It shows how you can implement constraints in CAD and BIM programs in order to ensure that specific properties and relationships in a design remain within the values specified in the brief.

Chapter 10 presents the possibilities of computer-based analyses, arguably the biggest promise of computerization to architectural design. These analyses and in particular simulations allow us to project and evaluate the behaviour and performance of a design with unprecedented accuracy and reliability. Their results can then be directly compared to goals, usually the most abstract and hence toughest component of a brief.

Chapter 11 concludes the overview of what is available and possible today by casting a look at the future and identifying possible development directions. Computing technologies may be changing in different ways than we expected but their impact on our daily and professional life is already undeniable and profound. As a background to the design and use of the built environment, the brief may be subject to rather drastic changes if these technologies are fully implemented in the architecture.

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