Contents

Preface

About the Author

Chapter One : Why?

Why management?

Why design management?

The role of the design manager

Taking on the role

Scope of the book

Part One : Managing Creative Projects

Chapter Two : The Business of Projects

Understanding projects

Quality

Time control

Cost control

Design control

Assessing value and risk

Procurement and influence

Interaction within projects

Project frameworks

The project-to-office interface

Chapter Three : Establishing the System Architecture

Starting as you mean to go on

Team assembly
Selection criteria
Communicating to achieve objectives
Managing meetings effectively
The project-to-office interface
Chapter Four : Exploring Client Value
Understanding the briefing phase
Approaches to briefing
Understanding the client
Establishing value parameters
The written brief
Reviewing the brief
The project-to-office interface
Chapter Five : Creating Design Value
Collaborative design
Detailing the design
Design conversations
Design critiques, charettes and reviews
Programming and coordinating design work
Approvals and compliance
Coordination of production information
The project-to-office interface
Chapter Six : Realising Design Value
Getting involved
Working with the contractor’s design manager
Programming
Interaction during construction
Misunderstanding and conflict
Requests for information and design changes
Closing out projects
The project-to-office interface
Chapter Seven : Evaluation and Learning
Lifelong learning
Learning from projects
Learning from the product
Evidence-based learning
Reflection in action
Action research and learning
The project-to-office interface
Part Two : Managing Creative Organisations
Chapter Eight : The Business of Architecture
Architectural practice
The professional service firm
Clients and the market for services
Management of the business
Market analysis
The office-to-project interface
Chapter Nine : Managing Creative People
Getting the balance correct
Office culture
Psychological wellbeing
Recruitment and retention
Skills development
The office-to-project interface
Chapter Ten: Managing the Design Studio
A creative space
The project portfolio
The design manager’s role
Models of design management
The traditional model
The sequential model
Managing design effort
Identifying good habits and eliminating inefficiencies
The office-to-project interface
Chapter Eleven: Communication, Knowledge Sharing and Information Management
Communication within the office
Communication with other organisations
Effective communication strategies
Knowledge retention and sharing
Information management
Preparation of information
Implementing an IT strategy
The office-to-project interface
Chapter Twelve: Financial Management

Cash flow and profitability

Sources of income

Fee bidding and negotiation

Invoicing and cash flow

Controlling expenditure

Financial monitoring and evaluation

Crisis management

The office-to-project interface

Chapter Thirteen: Attracting and Retaining Clients

Promoting a brand image

The client’s perspective

The architect’s perspective

Communicating with clients

Promotional tools

Architects’ signboards

Managing marketing activities

The office-to-project interface

Further Reading

Architectural Management

Design Management

Practice Management

Project Management

Index
Design Management for Architects
Second Edition

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Preface

It was during the 1960s that the architectural profession in the UK started to take the issue of management seriously. The RIBA’s report *The Architect and His Office* (1962) highlighted the architect’s lack of managerial acumen, which resulted in the subsequent publication of many guides, such as the RIBA Plan of Work and *Architect’s Job Book*. This early work has been continually revised and updated over the years, providing architects, architectural technologists and technicians with essential guidance to the administration of individual projects. Interest in the management of design has also been growing, with the growth of the design management literature and the evolution of the design manager role within the fields of architecture and construction. Parallel to this has been the growth and evolution of construction management literature, which more recently has started to expand into the areas of design management and briefing. Since the 1960s there have been considerable changes in our approach to the management of construction projects and, despite many good examples of how to manage the processes effectively and professionally, we still see reports urging us to do it better. In addition to the reports and initiatives aimed at the construction sector, there have also been a small number of reports aimed specifically at architects. These have emphasised the need for better management of design activities and design offices, while also raising questions about how, and what, architects should be taught. Whatever our view, it is difficult to ignore the fact that our fellow professionals leave university with a thorough understanding of how to manage projects and commercial enterprises. The result is that architects often find it difficult to relate to their fellow project contributors and frequently find themselves excluded from important decision-making stages at pivotal stages in the life of a project. Architects have a significant part to play in the realisation of creative and exciting buildings, but this is difficult to achieve when positioned outside the management culture. It is imperative in a highly competitive business environment that architects are able to demonstrate professional management skills and leadership competences to their clients and hence retain (or regain) an important place in the planning and management of
our built environment. Similarly, it is fundamental that architects are able to communicate with fellow professionals in an environment of greater collaboration and integral working; this requires an understanding and appreciation of management.

As students we spend a great deal of time, effort and emotional energy on learning to design, only to find that on entering practice we are suddenly constrained by many different pressures and controls. Administration seems to be endless and managerial controls too restrictive. Frustration is immediate, not necessarily because there is less time to devote to design, but because we have inadequate grounding in the management of design. My own managerial skills were honed in architectural practice through experience (good and bad), combined with reading many books and articles on management, and, when time permitted, reflection on daily practice. At the time there were few publications that dealt with managing the complexities of design and/or creative architectural practices. Books aimed at architects were primarily concerned with the administration of individual projects, not with the management of creative staff, nor for that matter with the interrelationship between the project portfolio and the office – a situation that has changed little over the years. My aim was to write a book that would be pertinent, stimulating and above all useful for architects entering architectural practices, essentially the type of book that I would have welcomed when starting out. The approach taken is to address the synergy between the management of projects (Part One) and the management of design offices (Part Two). It is the interdependency of architects’ and clients’ businesses, represented in projects, that colours, shapes and determines the quality of our built environment. The premise is that to be successful we need to ensure that projects are managed professionally and are conceived and delivered within a professionally managed office. It is through effective management of the design office and the project portfolio that client values may be translated into a physical artefact with minimal loss of creativity.

This book has been a complex and lengthy undertaking, bringing together many, often disparate, areas under one set of covers. The ideas and concepts presented were first developed when I was working as a design manager in an architect’s office and were subsequently refined through interaction with a wide variety of construction professionals in practice and academia. The academic environment has allowed time and space for the ideas to be researched, tested and developed further.
Since the first edition of this book was published there has been a significant change in the way the construction industry is using information communication technologies (ICTs) and building information modelling (BIM). In particular, BIM changes the way in which project contributors interact, requiring a more collaborative, open and, one might argue, trusting relationship. Combined with the move towards integrated project delivery, leaner processes and the rapid uptake of the (construction) design manager role by contracting organisations, the environment in which architects operate has been evolving. No longer is design, or for that matter the management of design, the exclusive domain of architects in a collaborative, digital, marketplace. In this edition I have tried to show how such changes are an opportunity for architects (and the architectural profession as a whole) to take a fresh look at their roles and the services they offer their clients. Working on the Second Edition has also given me the chance to respond to readers’ feedback, clarify the content and better emphasise the role of the design manager from an architect’s perspective.

I am very conscious that the way in which architectural practices and projects are managed is heavily influenced by context, prevailing socioeconomic conditions, technologies and people. There is no one best approach; no easy answer, no quick fix. Instead a lot of time and effort is required to build effective ways of working and demonstrate leadership. As professionals we can never be content, nor complacent; there is always room for improvement in process and application, no matter how major or minor, as we strive for perfection in everything we do. I encourage readers to take the issues presented here, think critically and apply and/or adapt them to suit their own, very special, context.

Stephen Emmitt
About the Author

Stephen Emmitt, BA(Hons), Dip. Arch, MA(Prof. Ed.), PhD, is Professor of Architectural Technology at Loughborough University. He is a registered architect with industrial experience gained in a wide range of architectural practices. He formerly held the Hoffmann Chair of Innovation and Management in Building at the Technical University of Denmark and is currently Visiting Professor in Innovation Sciences at Halmstad University, Sweden. Teaching and research interests cover architectural practice, design management, architectural technology, architectural detailing and innovation in construction. Stephen has taught and facilitated design management workshops in the UK, Europe and Asia.

As an architect Stephen worked as a design manager, responsible for the effective and efficient delivery of projects and the strategic management of the architectural office. Responsibilities centred on two areas: the effective interface between design and production, and the efficient management of the project portfolio. Application of process and product innovations was central in the drive for consistent management of the architectural office and consistent service delivery to clients. It was this experience that led to his first book in 1999, Architectural Management: A Competitive Approach, since which time he has authored and edited many books on architectural management and architectural technology, in addition to over 120 peer reviewed articles. Recent books on design management include Architectural Management: International Practice and Research and Collaborative Design Management.

Stephen has been an advocate for better management for architectural practice since the 1980s. He served on the Manchester Society of Architects’ Professional Practice Group and then joined the CIBW096 Architectural Management Group in 1994, since which time he has been an active member, first as Press Officer and more recently as Joint-coordinator of the Group. He is currently a member of the Chartered Institute of Builders’ (CIOB) Design Management Working Group. It was the experience of teaching management to architectural students that
identified the need for a simple and straightforward guide to design management – the primer for the first edition of *Design Management for Architects* – which was translated into Chinese in 2011. This Second Edition has been extensively rewritten in response to further student feedback and rapid evolution of design management in architecture.

Current Wiley Blackwell titles by Stephen Emmitt:

*Architectural Management: International Research and Practice*
*Architectural Technology, Second Edition*
*Architectural Technology: Research and Practice*
*Barry’s Introduction to Construction of Buildings, Third Edition*
*Barry’s Advanced Construction of Buildings, Third Edition*
*Construction Communication*
*Principles of Architectural Detailing*
Chapter One

Why?

Architects play a pivotal role in the delivery of value to their clients, building users and community alike. The unique value architects add to their clients’ lives and businesses is grounded in an ability to deliver something that their competitors cannot: design vision. Design ability is, however, not enough in a highly competitive market as clients seek suppliers who can provide a professionally managed service, effectively and quickly. This means that architectural practices need to constantly monitor the business environment in which they operate and continually improve the way in which they approach the business of design. Design management plays a crucial role in this regard, helping professional design offices to deliver a consistent level of service, which in turn helps the business to secure a continual flow of finance, return a profit on its projects and provide a platform for creating great architecture. However, there may be some doubts in the minds of architects as to the true value of management to their profession. Therefore, this introductory chapter seeks to explain why management and design management is so important to the modern architectural business. This helps to provide some context to the chapters that follow.

Why management?

Architectural practice is a ‘conversation’ with projects and society – a process of testing, developing, applying and reflecting on design knowledge. Architects learn from projects and from the work of others by developing ideas, propositions and ways of working to suit the culture of their office and the needs of their clients. We develop a way of working, a
type of (architectural) language, which becomes ever richer over time. This informs the practice of architecture, which flexes and adapts to each new project. The way of working also informs the business of architecture, a parallel (commercial) language that underpins and nourishes the language of architecture.

Good design management should be one of the core values of a successful architectural practice, the controlling mechanisms that allow the chaotic creative process to be transformed into fee generating activities. Management is, however, often seen as a way of coping with the chaos of design rather than something that adds value to the business. Indeed, it is not uncommon for the business aspects to be viewed as a ‘necessary evil’, with the vast majority of professional designers preferring to concentrate on design rather than business. This could be interpreted as architects’ reluctance to embrace management, although it is rarely so clear-cut given that elements of management are inherent to all projects. It is not easy to divorce the act of designing from the business of design, although this is rarely acknowledged in architectural education (which tends to ignore management issues); nor is it particularly well demonstrated in the architectural literature.

The stereotypical view, which architects’ competitors like to promulgate, is that creative designers lie outside the bounds of managerial control. This is a convenient image for some designers to hide behind when it suits. It is true that creative people do not respond particularly well to tight control and the tick-box mentality of many management approaches. The challenge appears to be less with the concept of management per se and more with applying sensitive and appropriate managerial frameworks. Managerial principles and methods should place minimal demands on the designer and provide adequate space to accommodate the inherent uncertainties that come with design projects. At the same time the managerial frame should provide guidance to the individuals who work within the office and hence reassurance to the clients who commission the work. Good managerial frameworks tend to be relatively simple and largely invisible. Poor managerial frameworks tend to be unnecessarily complicated and highly visible because they disrupt the way in which designers like to work.

According to many research reports and anecdotal feedback from clients, it is the managerial skills that architects need to improve. One indicator of
the architect’s lack of managerial acumen can be found in the reports issued by the Architects Registration Board (ARB). Their annual report of 2004/5 presented a list of the ten most common complaints it receives from clients. The ARB advises architects to adhere to the Architects Code as one way of avoiding the pitfalls that can result in an appearance before the Professional Conduct Committee. Following good management practices and procedures also helps, since all of the complaints listed by the ARB are concerned with management (and the failure to communicate). These complaints are listed below with a brief comment on how to avoid them.

1. **Excessive delay in the project being completed.**
   The problem here is primarily related to poor predictions of project duration and the failure to discuss with clients the potential reasons for delay. Architects must make it clear to clients how the project duration has been calculated and by whom. They must also explain the measures put in place to try and ensure projects will be complete to the planned timeframe. If progress starts to suffer then the architect must be proactive and advise the client, and if appropriate take measures to get the project back on programme.

2. **Client expectations were raised too high.**
   Raising client expectations too high can occur as the architects discuss design possibilities that are beyond the scope of the budget (and the brief). Having a good knowledge of realisation costs can help to mitigate unrealistic expectations. Similarly, bringing specialists early into the design phase can help with the realistic estimation of construction costs as the design matures.

3. **The client was expected to pay for mistakes/errors made by the architect.**
   Architects must be open with clients and acknowledge when they have made a mistake. Using quality management systems and good design management practices will help to mitigate the number and extent of errors, although it is impossible to eliminate all problems. Tracking the cause of design changes and variations will help to identify those that were a result of an error and those requested for other reasons. Adopting a collaborative approach may go some way to sharing responsibility for errors and the cost of rectifying them.

4. **Contract papers were not clear.**
   There should be no excuse for failing to set out fees, roles and
responsibilities clearly and concisely before work commences. This is required by the client and also for the smooth running of the office. A short meeting with the client to discuss contract papers before the project starts can help to avoid uncertainty and problems at a later date.

5. Attempted work outside area of competence.
Architects must clearly state the extent of services that they are experienced and qualified to undertake. This varies considerably between architectural practices, and clients cannot be expected to know the scope and limitations of the services on offer. Open and frank discussions with the client can help to explore areas of uncertainty and identify the need for additional services from fellow consultants.

6. Failure to reply to the client’s letters/emails and/or telephone calls.
According to ARB, communication problems are the cause of many complaints. One of the biggest complaints is the failure to advise clients about increased costs. All professionals should have a clear policy on how they respond to communications from clients and project participants, and this should be set out in the quality plan and/or office manual. Failure to reply is unprofessional and bad business practice. Good architectural practices tend to be proactive in tackling problems and taking the initiative to contact clients before they discover the problem from another source. This is about managing the client/architect relationship, which can be helped by bringing the client into the project at strategic intervals, for example at design reviews.

7. Failure to deal with post-completion issues.
The failure of architects to deal with problems that arise after completion of the project and the payment of fees is not a sensible policy. Quality of the ‘after sales’ service will be instrumental in helping to retain and further develop a positive architect/client relationship, which will influence the possibility of future work from that client. The problem is usually that the fee has been spent and the resources are not always available to deal with the post-completion issues. Accurate estimation of design effort and the allocation of resources to post-completion issues are essential management functions, which allows the office to function
efficiently and helps to ensure that enough time remains to maintain a professional service after project completion.

8. *Clients given bad advice.*
This tends to relate to architects advising the client on matters outside their scope of expertise, for example on engineering matters and financial/VAT issues. This can be avoided by clearly setting out the extent of the services provided and also defining areas that are not covered by the fee agreement. This is best done via face-to-face discussion and confirmed in writing.

9. *Conflicts of interests.*
All business relationships, for example with contractors, must be declared to clients early in the appointment process. Clients expect their professionals to be open about such matters and with many architectural practices working with formal and informal alliances, it is particularly important to be clear about how such relationships may influence the client’s project.

10. *Work delegated to juniors.*
It is common for projects to be secured by partners and directors, and after some initial involvement by them, for the work to be delegated to design managers and the less senior members of the office. This is common practice in all professional service firms, but the failure to explain how the work will be handled within the office can cause problems with the client, who may be expecting the partner to work on the project, not a junior.

Adopting a professional and consistent approach to the management of the architectural practice and its projects may not eliminate all problems, but it will help architects to avoid the problems reported above and will go some way to keeping clients happy. Adopting a consistent approach to management will also help the business, as demonstrated in Vignette A.

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**Vignette A – why apply management?**

*By looking at the performance of two architectural practices it is possible to further address the question: why management? The architectural practices were both located in the same metropolitan area, were the same size and had similar mixed project portfolios. From the perspective of a client there appeared to be little to differentiate them. Indeed, a large client body decided to appoint each practice to work on a project. The projects were comparable in size, complexity and programme, and the outcome of the competitive tendering processes resulted*
in the same contractor being appointed for both projects. This allowed the possibility to make some comparisons between the two architectural practices in terms of their performance.

From the outset of the monitoring period one of the architectural practices appeared to be more efficient and effective than the other, that is it gave the impression of being well managed. Office A delivered information on time, responded rapidly to requests for information, dealt with design changes quickly and interfaced very well with the contractors and the client representative, resulting in a high quality project, delivered on time and to budget. Office B was consistently late in supplying information (which was often incomplete), was slow in responding to requests for information and dithered over design changes. The amount of communication between the architect and the contractor was considerably greater compared to that with Office A, mainly a result of trying to deal with issues that should have been right first time. This project was also completed on time and to a high quality, due mainly to the contractor’s efforts, but it was slightly over the original budget. The final artefacts (the quality of the design) were not very different, although the effectiveness of the projects differed markedly, as did the profitability of the architects and the contractor.

On the first project, both Office A and the contractor reported a profit. On the second project, Office B claimed that the project had been a financial disaster, (unfairly) blaming the contractor and the client. On this project the contractor also claimed to have lost money, mainly because of the poor service delivered by Office B. The client and the contractor reported that they would welcome the opportunity to work with Office A again, but not Office B. Indeed, a few months after the projects were completed the client commissioned Office A to work on two new projects, but not Office B, preferring to give a different architectural practice a chance to demonstrate their worth.

What made one office more successful than the other? Office A was well managed, employing appropriate management systems and the staff was happy using the office management protocols, which had been designed to help them do their job more effectively, efficiently and consistently. Office B also had a management system, but few of their staff used it because it was regarded as too cumbersome and time consuming, resulting in inefficient working practices and an inconsistent service for their clients. Although it was not possible to obtain any financial data from the owners of the architectural businesses, Office A claimed to be ‘doing okay’ in the middle of an economic recession, while Office B claimed that it was ‘almost impossible to make a profit’ on their projects, citing low fee levels as the problem. In conversations with the owners of the business it was clear that Office A understood the benefits of simple, yet well designed, management protocols: Office B did not. Office A regarded management of design (as a process and a product) as being essential to everything they did, that is it was integral to their daily activities; Office B saw management as something additional to the design of buildings, and hence had failed to integrate management and design. In addition to the financial implications for the businesses, the difference in managerial approaches was also evident in the morale and wellbeing of the staff. The staff in Office A appeared to be happy in
their work, and when questioned reported that they were content and that the management procedures of the office helped them to do their job more effectively. The atmosphere in Office B was less positive, with the staff reporting high levels of stress and claiming to have to work very long hours to complete their tasks.

Why design management?

It is not necessary for every member of an architectural practice to be a business executive, or for that matter passionate about management, but it is important that architects understand the commercial environment in which they work and the value of managing design consistently and efficiently. The challenge for the business owners is not to impose restrictive managerial and administrative constraints on creative individuals; rather it is to provide better, more appropriate, management that both supports the creative process and facilitates the delivery of an excellent service. To do this it is necessary to understand the value of good design management and the role of the design manager, the rationale behind this work.

In many small and medium sized architectural offices it is the owners (directors, partners and associates) who manage and oversee design quality, which is often performed in a ‘hands on’ manner. Close proximity of staff within an intimate environment allows informal exchange of knowledge and relatively consistent standards of work. There may be little in the way of formal procedures and reporting, but because the office is small all staff should know what is required from them. In medium to large offices it is more likely that one or more individuals will be designated ‘design manager’, overseeing design quality on behalf of the business owners, acting as the interface between the owners and the staff working on the projects. Because of the size of the offices it is less easy for staff to interact on such an intimate level and so it is necessary to state what is expected of the staff (and the design manager) in the office handbook or via quality management documentation. These expectations will be reinforced via daily interaction, and more formally in office meetings. In Vignette A neither of the architectural offices employed a design manager, although the role was performed implicitly by the owners of the more successful business (Office A).
The design manager role first appeared in the 1960s, although it has not been particularly common for architectural practices to employ design managers. Instead it has been the contractors who have embraced the design manager role, with construction design managers now a common sight in the majority of the large to medium sized contracting organisations. Together with changes in procurement routes and the uptake of technologies such as BIM this has resulted in contractors taking on greater responsibility for design, often pushing the architects out of the decision making process. This may have implications for the overall quality of the building design as well as implications for the architect’s business. More recently architectural practices have started to respond to the changing market and have started to employ design managers and/or to explicitly promote their design management services.

The role of the design manager

At a strategic level, design managers are responsible for all aspects of design. Although the role encompasses many project management skills, a passion for design quality makes the role unique. It is the design manager who is employed to oversee (manage) all design activity within the office and to ensure a consistent and coordinated approach to every project in the project portfolio. This relieves the designers and engineers of unnecessary administrative and managerial burden, allowing them to concentrate on what they do best: design and engineer. To be effective in the role design managers need to understand how designers, engineers and contractors work. This requires a broad understanding of a wide range of discipline-specific knowledge. He or she should also be able to communicate effectively across a broad spectrum of organisations and levels and demonstrate consistent leadership. This calls for a collaborative approach, excellent interpersonal (‘soft’) skills and the ability to make informed decisions on a strategic and operational level.

- **Strategic decision making.** Strategic decisions are concerned with the long-term direction of a project or an organisation. It is the strategic decisions that set the agenda for the effectiveness and
profitability of each project (and hence profitability for the business). At a strategic level the design manager will be working closely with the business owners to ensure that project and business deliverables are met.

• **Operational decision making.** Operational decisions concern day-to-day problem solving in the workplace. Operational decisions are about getting tasks completed and are concerned with the flow of resources (information, people and materials) and the adherence to processes. At the operational level the design manager will be liaising with a wide range of designers and forming the interface between the designer team and the contractors. It is the architectural design manager who will interface with the contractor’s (and subcontractors’) construction design manager(s).

Tension between the decisions made within the office and those made at the individual project level makes design management a fascinating, challenging and rewarding activity. Creative tension can help to stimulate innovation in product and process and fuel a proactive approach to producing great architecture. In simple terms, the design manager is tasked with the management of people, technologies, information and resources:

• **People.** Design as an activity involves interaction with a wide range of ‘designers’ and supporting technical staff. Design is carried out primarily within professional design offices and collaboratively within projects through the use of collaborative information technologies. The design manager needs to provide the right physical and virtual environment in which individuals can share knowledge and work together to create designs that respond to the client brief. The output of the design process is design information.

• **Technologies.** People need technologies that enhance their working lives; thus computer software and hardware have to be carefully selected to match the requirements of the office, as do information communication technologies (ICTs) and building information models (BIMs). Establishing a good fit between the available (and affordable) technologies and those who use them will enhance performance.

• **Information.** Design involves interaction to create, review and coordinate a vast quantity of information. The design manager’s role is to ensure that the information leaving the office is consistent
in terms of quality, is complete and is error free. This information must be translated by constructors into a physical artefact. Once received, one of the construction design manager’s most important tasks is to review the information to ensure that the building can be constructed safely and efficiently. Any queries will be addressed to the architect’s design manager.

• **Resources.** Allocating the correct amount of time and the most appropriate people to a specific design task is a fundamental skill of design managers. Additional resources, such as the availability of appropriate software, ICTs and BIM will also play a part.

Design managers are first and foremost responsible for providing leadership to the designers, both within the office and (indirectly) via individual projects. In the design office environment the emphasis is on *creating* design value and transforming it into design information. In the project environment the emphasis is on *delivering* design value by translating information into a physical artefact, and is usually managed by the contractor’s design manager (see **Figure 1.1**). These are culturally different worlds connected by a common desire to deliver value to the client and make a return on investment. Increasingly, the relationship between the designers and the contractors is being transacted by design managers employed by designers and contractors.

**Figure 1.1** Design manager’s relationship with construction design managers.

![Diagram](image)

**Figure 1.2** Synergy between office and project.
It is the synergy between individual projects and the design office that affects the financial health of an architectural business. More specifically, it is the effectiveness of the relationship between clients and architects that is fundamental to the creation and delivery of exciting architecture (Figure 1.2). Engagement with the sponsors of building projects allows for the discussion of goals, opportunities, risks, values and business culture; the closer the interaction between the design office and the client, the better the understanding.

What value does a design manager bring to the business?

Employing one or more design managers is expensive and so it is necessary to clearly demonstrate their value to the business before a decision to employ is taken, as is the case in Vignette B. A similar sentiment can be extended to the promotion of staff to a design manager role because with increased responsibility comes the expectation of a better salary.

Demonstrating value is not an easy task because many of the actions of the design manager are concerned with assisting individuals within the office, and these are not easy to measure or quantify. However, the value of the role should not only be assessed in terms of time/resources/cost savings but there is also a major benefit in terms of staff morale and general wellbeing. These may be relatively intangible indicators, although they can be demonstrated in low staff turnover, low levels of stress and little or no incidences of staff burnout. Freeing up the business owners
(partners and directors) to concentrate on the business and client relations is another benefit, which is not easy to put costs to, but which adds considerable value to the business.

**Vignette B – why employ a design manager?**

Consider the case of a medium/large architectural practice with a good portfolio of clients, a good reputation for the quality of their architecture and a busy project portfolio. Despite this, the owners of the business were struggling to make a profit on their projects. Employees were consistently working long hours and the general morale in the office was starting to suffer. The partners sought external advice from a consultant, and taking that advice, invested in an experienced design manager. The design manager’s task was to make the office more profitable without compromising the quality of the architecture being produced.

The role was to provide leadership on design by:

- overseeing the project portfolio, making strategic and operational decisions about resourcing of individual projects against the office resource;
- managing the designers in the office, providing guidance and support;
- becoming the main point of communication for external project partners (e.g. clients’ representatives, contractors’ design managers and fellow consultants);
- liaising with the partners and staff;
- identifying inefficiencies and addressing them.

The design manager first asked all employees, including the partners, to describe their working day and identify one area that they felt could be improved. Once collected and analysed, these data were fed back to the office in a staff meeting as a means of starting a discussion about effective working habits. The design manager also spent time watching what individuals were doing within the office prior to suggesting any changes. By watching and listening the design manager was able to identify good and poor working habits. The good habits could be shared within the office and the poor habits addressed and eliminated. This was achieved by introducing a regular knowledge sharing/learning event. Within six months the following benefits were reported:

- helped to ensure a consistent approach and standard of design information;
- reduced staff hours to a standard working week;
- increased productivity;
- improved staff morale;
- freed up time for the partners to deal with strategic business issues, especially interfacing with clients.

After twelve months the initial benefits had been retained and in some cases further improved:

- Productivity improved by approximately 15% compared to the initial baseline figures. It is important to note that this was achieved by making small, incremental, improvements in working practices; it was not achieved by making major changes to the operation of the design office.
Taking on the role

Management is concerned with leadership and taking action. Fortunately, the creative thinking skills encouraged in architectural education are also highly relevant to management, as both are concerned with framing and solving problems. Creative management is less concerned with systems and procedures, and more with individuals and their ability to apply their knowledge, skills and competences efficiently. Good managers know how to work with people and systems; they understand the importance of getting the right people for the required work, getting everything in place before work starts and providing appropriate leadership.

Design professionals will develop management competences as their careers develop, with those excelling in management moving into formal or informal design management roles. The formal design management role carries a considerable amount of responsibility and can be a highly rewarding career move, in terms of both job satisfaction and financial reward. Some architects will be promoted to a design management role by their current employer, while others will move to a new employer to take up the position. In both situations it is important to define one’s management style and ensure the owners of the business and the staff understand how one intends to operate. It is also essential to resist the temptation to design, which may undermine the designers and will distract the design manager from the design management task.
When entering a design office as a new member of the office it is inevitable that the design manager will initially be perceived as an outsider and as ‘management’ by the designers. In the first few weeks the design manager will be greeted with a degree of caution and the staff will be defensive and guarded when communicating. New design managers should expect to take somewhere between three and six months as a minimum to get to know how the office and the staff work and start to develop empathy and trust. The challenge is slightly different for those promoted internally. They will be familiar with office systems and the staff, which makes the job a little easier at the outset. However, they may be too familiar with office systems and staff, which may make it difficult to be objective and see what needs to be improved. Moving from being a member of the design office to a management role will put the individual in a different position and relationships with staff will change, and this can also prove problematic for some individuals.

All new design managers should have a desire to take on the role and have empathy with designers. They should:

- **Observe and listen.** Watch how the members of the design office work and interact with their colleagues. Listen to the hum of the office as designs are conceived and developed, and be alert to the discussions. It is the day-to-day actions of the staff and the informal conversations that reveal how well the office procedures fit the working methods of the staff, often helping to identify inefficiencies or bottlenecks in the flow of work.
- **Develop.** Develop empathy with all staff and build trust. Try to get to know individual strengths and weaknesses as fast as possible, since it helps with programming and allocation of duties. Find out what each member likes doing and also what they dislike about their job function and try and work with them to maximise the positives and minimise the negatives.
- **Discuss.** Discuss individual workloads and existing procedures with all staff members. Encourage an open communication culture in which individuals are happy discussing difficult issues, confident that the design manager will try and support them.
- **Act.** It may be possible to make a series of minor and incremental changes quite quickly to help improve the effectiveness of the design studio. All changes, no matter how small, must be discussed with the staff and adjusted to accommodate feedback before they
are implemented. Failure to do so will result in a loss of trust and the development of an ‘us and them’ culture, which is not conducive to effective design management.

• Provide feedback. The design manager acts as an interface between staff and the owners of the business and must develop a team ethos. Strategic feedback helps to share knowledge and keep all members of the business up to date with developments. An essential job requirement is to keep everyone informed.

By undertaking these tasks design managers will be well positioned to minimise ineffective habits (process waste) and maximise good habits (process value). By concentrating on the individuals within the office and providing leadership it will be possible to develop and maintain an efficient and happy working environment.

Scope of the book

The act of designing can be both intoxicating and addictive, but design is not the only differentiating factor when clients or contractors are making their choice of consultants. Architects need to demonstrate the ability to deliver high quality designs and a high quality service. This means that architects need to keep up to date with current management thinking and its application to everyday practice if they are to remain competitive. This is no easy task. Management literature varies enormously in its scope, drawing on disparate fields such as labour economics, sociology, human resources and industrial psychology. Each of these interrelated fields helps to provide a set of lenses through which to view the world, but no one model or theory transfers easily to the professional service firm. Managerial principles and techniques applicable to industrial production or mass consumer markets, based on standardised processes, identical products and repetitive tasks, may not be relevant to a creative, client-driven enterprise such as an architectural practice. Indeed, one might be excused for arguing that few of these approaches are applicable to professional service firms. Management literature is also full of ‘instant’ solutions to rather complex sociological challenges, and so we should not be too surprised when they are found to be poor solutions when viewed with the benefit of hindsight. Which brings us to the question:
what type of management is appropriate for architectural firms? It is a question this book aims to answer.

This book provides a simple and pragmatic guide to the management of projects and design offices from an architect’s perspective. The aim is to provide insights into the world of design management and demonstrate the value that design management offers to architectural practices and their clients. The objective is to address the managerial frames in which design activity – problem framing and problem solving – is enabled and delivered. Emphasis is primarily on the softer issues underpinning the management of design with a focus on how people behave within a project environment and within the design office. The argument is for better integration between creative organisations and creative projects. This is achieved through a better understanding of how we interact with others and how we apply and react to managerial procedures. As a starting point the book adopts the philosophy advocated by Brunton et al. (1964) and explores the synergy between design offices and their project portfolios.

In recognition of the distinction between design management in projects and design management within the design office the book is presented in two interdependent parts. Part One addresses the management of projects. Emphasis is on the design of the most appropriate project culture to stimulate creative design and realise value in exciting and functional buildings. Part Two explores the management of the professional design office. Emphasis is on the design of the most appropriate office culture; implementing flexible systems that allow creativity to flourish and the staff to enjoy the act of creating great architecture. Each chapter concludes by looking at the synergy between project and office from the perspective of the design manager. Notes and suggestions for additional reading are also provided. The principles and tools outlined in the chapters that follow aim to show that creative design management can offer considerable benefits to all architectural businesses, regardless of size and market orientation. It is through a professional approach to design management that design organisations are better positioned to make a positive input to the quality of our built environment.
Part One

Managing Creative Projects
Chapter Two

The Business of Projects

Architectural practices are project-driven organisations. They are dependent on the sponsors of construction projects and in many cases the major contractors for their existence and profitability: no projects, no business. In a competitive marketplace architectural practices must be able to articulate the value of their designs and clearly set out how they are going to manage risk, costs and programmes and deliver a high quality service. It is the individual projects that provide a vehicle to practise design and hence realise architecture. The primary goal is to deliver maximum value for the customer, while making a reasonable profit on the resources invested. To do this in a consistent and effective way requires the implementation of quality management and an appropriate philosophy for minimising waste and maximising value to the business. This will be achieved through a consistent approach to design management within the office and an appropriate level of control over design decisions at the project level. The former is in the hands of the architectural office; the latter is in the hands of the project contributors and is influenced by the type of procurement route, contracts and shared responsibilities.

Understanding projects

Architectural education is first and foremost concerned with educating architects in the art of design. As such, there is little space left within the curriculum to devote much attention to the commercial realities of projects. This tends to be learned through the act of engaging with projects in the workplace. It is here that many architects quickly come to realise
that there is a significant difference in understanding between the designers, clients and contractors. This stems from different perspectives:

- From the client’s perspective the project is a means to an end. Designers and contractors are employed to fulfil a need.
- The focus of the designers is on creating design value and generating a fee.
- Contractors’ aim to deliver value to the client and return a profit on the resources invested.

These are culturally different worlds, brought together temporarily through a project. In essence a project is the harmonious weaving together of people, materials, technologies and place. Being able to understand and hence respond to different perspectives, needs and wants will be influential in helping the architectural practice to deliver a quality service. The role of the design manager is to analyse the project context and respond to the project deliverables in a timely and consistent manner.

**Project deliverables**

Project management literature has identified three project deliverables that compete for attention and hence place a degree of tension in the system. These are cost, time and quality, represented in Figure 2.1. The theory is that placing emphasis on one project deliverable, for example time, can cause the other deliverables to suffer. This would equate to fast project, high cost and low quality. Of course, with adequate forward planning and excellent design and realisation teams, it is possible to deliver high quality buildings quickly and at reasonable cost. These three aspects are explored a little further, together with the addition of a fourth parameter: design.

- **Quality.** A lot of work has been done in manufacturing to ensure processes are defect free, thus ensuring a quality product every time. Artisans would guarantee a similar level of assurance through application of their craft. Clients will want to see evidence of quality control and quality management procedures. The quality of the finished artefact will be partly subjective, but mainly objective when analysed against the client brief.

*Figure 2.1 Project deliverables.*
• **Time.** Time is a precious resource that has an economic value. For commercial enterprises the sooner clients receive their building the greater the financial return. Building designers and builders able to minimise the amount of time required to assemble a building, from inception to occupancy by the client, have a competitive advantage over those who cannot, which is a service many clients are willing to pay a premium for. Similarly, architects that consistently deliver designs and buildings on time will have a competitive advantage over those who cannot.

• **Economy.** Financial control of individual projects is paramount in the minds of clients, who demand cost certainty, and is a natural focus of project management. Although financial control and monitoring is important, decisions should be taken with due consideration for the building design and the performance of the building over its entire life cycle. Design managers will contribute to project cost certainty through management of the design decisions made and encoded in project/contract documentation.

• **Design.** Design is often the missing factor in the mind of the project manager; at best implicit in quality. It is the design manager who has to champion the design – promoting the value of design to all project stakeholders and defending the design team and design decisions.
These parameters need to be viewed in terms of the prevailing legislation, environmental sustainability and ethical business.

Quality

Quality is a negotiated, and often subjective, project parameter that is determined by budget, time, the decisions made, and the actions taken during the project. Trying to define quality objectively is a real challenge because of the complex nature of building and the large number of parties who have a stake in achieving quality and different perspectives of quality. Design managers will be concerned with the quality of the product and the quality of the service provided.

Quality of the product is usually the quality of the drawings and other supporting design documentation. Indirectly this also relates to the quality of the finished building, although the build quality is largely outside the control of architects in the majority of contractual arrangements. Quality of the service provided will mostly relate to the client’s perceived level of service. This will be coloured by the interactions with the client throughout the life of the project.

Quality control

Quality control (QC) is a managerial tool that ensures work conforms to predetermined performance specifications and adherence to current codes, standards and regulations. For professional service firms QC is concerned with checking project documentation against the agreed standards. Checking drawings, written specifications and associated documentation before issue, and checking other consultants’ documentation for consistency with the overall design concept and project parameters, will help to control the quality of the information produced. This, in turn, will help to reduce the number of requests for information during the construction process and may go some way in helping to reduce the number of requests for design changes.
Quality assurance

Quality assurance (QA) is a formally implemented management system that is certified and constantly monitored by an independent body, such as the British Standard Institution (BSI), to ensure compliance with the ISO 9000 series. This is a highly effective managerial system that can bring significant benefits to an architectural practice. The design manager’s role is to ensure that procedures are simple and enhance the effectiveness of work within the project and within projects.

Total quality management

Provision of a quality service is fundamental to the competitiveness of a modern organisation. Attempting constantly to please the client or customer is central to the total quality management (TQM) philosophy. It is a people-focused management concept that aims at continual improvement and greater integration through a focus on client satisfaction – essentially a soft management tool involving pride in one’s work and the constant desire to improve upon past success. This is a philosophy ideally suited to professional service firms.

Time control

One of the peculiarities of construction projects is the differences in approaches to programming between design and construction. Designers are familiar with programmes that relate to tasks and activities. These, often simple, programmes reflect the iterative nature of design and design activities that are not easy to break down into time related elements. Hence programmes identify key dates and activities, while also allowing some latitude to allow for tasks being completed faster or slower than anticipated. In the design process uncertainty is high and many factors are not known. It is only by designing that the solution becomes more detailed and the uncertainty reduces, and hence programmes become more concrete as the design evolves. In contrast, constructors and project managers are more familiar with programmes that specify deliverables
(milestones) in considerable detail. At this stage in the project certainty is high. The design is complete (or substantially complete) and it is a relatively straightforward task to break the project down into clearly defined work packages. These work packages can then be costed and accurate timescales and interdependencies allocated to each package. The resulting construction programmes are usually highly complex Gantt charts that may have little meaning to designers. It is these differences in the iterative nature of design and the linear nature of construction that can lead to clashes between the design team’s programme and that of the contractor. This usually arises because of an inability to recognise the different requirements of designers and contractors and the failure of the architect’s and contractor’s design managers to discuss time sensitive issues before issuing their programmes.

Providing designers with very detailed programmes and lots of deadlines is usually meaningless and often self-defeating. Having a design background allows design managers to plan for the vagaries of design and produce programmes that have meaning and value to the designers. Design programmes need to be relatively flexible to accommodate the act of designing, while also responding to the sequence of construction. Breaking tasks down into weekly tasks and activities may be sufficient for the majority of design projects. This allows the progress to be monitored, while also allowing designers a certain amount of latitude. Simple programmes are preferred by designers to complex Gantt charts.

The importance of early decisions

Projects are often rushed into without adequate understanding of the importance of the early phases. Research in business management has consistently revealed weaknesses in the front end of poorly performing projects. This can be found in design and construction projects, with problems encountered in the realisation and use phases tracing back to poor decisions early in the life of the project. The recipes for successful building projects appear to be related to the assembly of the most appropriate team and comprehensive briefing to determine project parameters. Here the creation, retention and realisation of the design vision throughout the life of a project are of paramount concern. Building sponsors must accept that too much haste in the early days of the project life may have severe consequences for the project. Architects, project
managers and other key consultants must demonstrate the value to their clients of starting projects from a solid foundation.

There a strong correlation between successful projects and the time spent assembling the most appropriate people and organisations to work together collaboratively. Time invested early in the life of a project can make a significant impact on the future ability of the actors to interact efficiently and effectively. Far too often projects are conceived and launched without pausing to think of the consequences. Sponsors of building projects may be reluctant to invest resources (money and time) in preliminary team composition when the likelihood of the project progressing is uncertain. Early discussion of values is a fundamental prerequisite, and this may be achieved by getting key actors together to explore possibilities and discuss preferences: an approach central to the partnering philosophy and lean production ethos. It follows that the person responsible for putting the team together and implementing managerial frameworks has a crucial role to play. Selecting the right project manager and design manager for a project is therefore a critical first step.

Cost control

Architects are often portrayed by their competitors as having little or no interest in cost control. While it may be true that architects are not qualified to give cost advice, they will develop a very good understanding of costs simply by engaging in projects. It is this understanding of costs that allows designers to make informed design decisions in accordance with the project budget. Advances in computer software have made it much easier for designers to cost their projects. For example, the ability to add cost information into a virtual computer model (e.g. BIM) makes it relatively straightforward to have cost information to hand as the design develops.

In the very early stages of projects there will be some uncertainty over the cost of the project. It is only as the project is detailed and areas of uncertainty are resolved that more accurate costs can be determined. Detailing the design results in a greater degree of certainty and as a direct result the cost of realising the design also becomes more clearly defined. Costing the detailed design will be influenced by the approach taken.
Off-site assembly is very tightly controlled and the producer will provide a total production cost that is very accurate. Repeat building types should also provide a high degree of cost certainty, since the building costs are known from past projects, the main uncertainty being the ground conditions and factors relating to the site, such as boundaries and roads and conditions attached to town planning approvals. Nonrepeat building designs may be more difficult to cost with as much certainty as the repetitive designs and may be influenced by the amount of off-site manufacturing to be used. Working closely with manufacturers, suppliers and specialist contractors can also help in the development of relatively accurate cost information.

Design control

The architect’s influence on the quality of the built environment has fluctuated over time as the fashion for different types of procurement has varied, and, with it, architects’ ability to control design quality and hence deliver value to clients and society. In some cases architects have deliberately withdrawn from, or have been pushed out of, the construction process, providing design-only services to building sponsors and/or contractors. Here, the architect’s influence over the design as it progresses through the various stages to a completed building may be negligible, as others with different objectives exert control and take decisions that can impact on the value, performance and image of the completed building. At the other end of the spectrum architectural practices have taken full control, managing design activities throughout the entire life of the project, from inception to completion (and often beyond into facilities management). In this business model quality is delivered through single point responsibility and the architect has a direct and continual interaction with the building sponsor. In between these two extremes there are many varied approaches to architectural practice, some of which prove to be more suitable, and hence more successful and profitable, than others. Regardless of the business model adopted it is crucial that the architectural business knows its position, roles and responsibilities in every one of its projects.
Design managers will be interfacing with the main contractor’s design managers, who will also be concerned with design quality, but who will be operating within a different set of (commercial) values compared to the architect’s office. Thus, although the contractor’s design managers will also be trying to champion design quality, they will be highly sensitive to, and influenced by, the financial implications of the decisions they take on behalf of the contractor. This usually means that the architect’s design manager will need to support and defend his or her designers as the contractor’s project managers apply pressure to change the design. Constant changes are demotivating to those charged with revisiting design decisions and revising drawings and associated information. It is also wasteful of resources, and while it may not be possible to completely illuminate changes, it is possible to reduce the number through simple management systems. Design control is discussed further in Chapters 4 and 5.

**Figure 2.2** Duality of decision-making and the influence on cost.
Design teams (in the widest sense of the term) bear a great deal of responsibility for the outcome of building, their collective decisions influencing the efficiency of realisation, project duration, cost and quality. Figure 2.2 represents the relationship between making decisions and the ability to influence cost over the life of the project. As the project progresses the ability of the design team to influence cost decreases relatively quickly. This curve is also representative of the ability of the design team to influence quality and project duration (by substituting these for cost in the figure). Thus detailed planning at the start of a project is essential to enable the design team to take full account of downstream activities. From this figure it is evident that as the project develops, the cost of design changes will increase. When designing to allow innovative techniques to be used by the contractor it is important that the contractor is involved early and that the performance parameters are not set so tightly that the ability to innovate is negated.

Assessing value and risk

Construction clients are increasingly expecting more (better quality buildings) for less (capital investment). This expectation puts pressure on designers and constructors to add value to the services they provide. Added value is a technique used for measuring organisational productivity and relates to the contribution (value) a process makes to the development of products or services. By reviewing the activities required to fulfil a business activity it is possible to identify activities that add value (value adding) to the business and those that do not (nonvalue adding). Value adding activities need to be nurtured, while the nonvalue adding activities need to be eliminated.

Architects need to understand their role within projects and hence their ability to influence design quality. The initial task of the design manager is to develop an understanding of the project context in terms of the value and risk it represents to the business. This involves an evaluation of the resources required and some attempt to establish who is responsible for what. In order to do this it is necessary to understand the dynamics of projects and the role of the architectural business in each and every one. Before committing to a project it is necessary to understand what value it
may bring to the business, in terms of cash flow and profitability (see Chapter 12) and also in terms of prestige. Some fundamental questions need to be addressed, such as:

- What are the opportunities for delivering good architecture?
- Who will be responsible for design?
- What are the risks to the business?

To answer these questions it is necessary to understand value and risk for the specific context of each project.

Value

Architects play a pivotal role in helping to interpret the client’s aspirations and create value through design, with other actors adding value through related services. Value is what an individual or organisation places on a process and the outcome of that process, in this case a building project and the resultant building. This is often related to price (e.g. value for money), although other factors relating to utility, aesthetics, cultural significance and market are also relevant. Values are our core beliefs, morals and ideals, which are reflected in our attitude and behaviour and shaped through our social relations. Our values are not absolute, existing only in relation to the values held by others and as such in constant transformation. In design and construction projects the management of value is dealt with through value management and value engineering activities. Value-based management uses face-to-face workshops as a tool to allow actors to discuss, explore and agree to commonly held values, often expressed in a written document as a set of value parameters and prioritised in order of importance to the project team. Working with shared values is a fundamental principle behind philosophies such as partnering and other forms of relational contracting.

Project values

Each project must be tailored to suit the individual requirements of the client and the context of the site, which will vary significantly between projects. Projects are characterised by:

- Values of the client
• Values of the project team
• Values associated with the site.

The values of the client need to be explored and defined through a well-managed briefing process (see Chapter 3). The values of the project team are defined by the way in which the team is assembled (individual values and competences), the procurement route used (which influences the attitude of actors) and the way in which the team is managed (which influences interaction). Figure 2.3 illustrates the interaction between client and project team values and the learning that takes place as values are explored and agreed. This is influenced by the experience of the client and of the project team, whether it is assembled for the first time or a relatively stable grouping of individuals and organisations. The values associated with each site also have a role to play – a complex mix of values associated with use, context and community. Together these values combine to make a unique formula for each architectural project.

Figure 2.3 Architectural project values.

Risk

Underlying all projects is the amount of risk an individual and their organisation is prepared to take. This is primarily related to the amount of uncertainty and risk tolerance of the individuals and their immediate
managers. This is coloured by organisational culture and rituals as well as the interaction with a diverse range of project stakeholders, some of which will be more risk averse than others. Risks can be managed using a variety of risk management techniques and uncertainty can often be dealt with via clear communications and identification of roles and responsibilities. Risk management should be linked to value management.

Value and risk management

Value must be explored and clearly expressed as early as possible in the life of the project. Similarly the risks and uncertainty associated with the project must be identified and the consequences managed; otherwise value will be compromised. Value management techniques aim to articulate value for the project as perceived by the key project participants. Risk management techniques aim to identify risks and uncertainty and mitigate their adverse impact on the project. Value management and risk management are complementary activities that inform the design team, and should be incorporated into the project framework. Apart from helping to maximise value and minimise risks the techniques help participants to develop a deep understanding of the project and a sense of ownership. By working together the opportunity to develop the team culture and share knowledge through interpersonal interaction is also enhanced. Although it may be difficult to quantify all of the benefits of integrating value and risk management within the project framework, it would appear that such efforts are instrumental in determining project success.

Both value and risk management techniques rely on the interaction of key project participants to discuss the value and risk associated with the project. Discussion and sharing of values is largely achieved through face-to-face discussions within facilitated workshops and subsequently tested and reinforced through day-to-day interaction. Agreed values are prioritised in a list of value parameters that forms the basis of a partnering agreement and relational forms of contract. Workshops should be held at an early stage in the project to allow interaction between project participants to share values, experiences and knowledge. Participating individuals and their organisations bring differing values, knowledge and interests into the construction team and differences of opinion will emerge as interests and values are developed and challenged. Recognising that
differences of opinion may emerge as interests and values are developed and challenged, and hence values and priorities may change as the project proceeds, is also crucial. To recognise and respond to the values of others, and to align and reinforce the values of the project team, there is a need for effective communication skills.

Procurement and influence

Procurement of design and construction services is paramount in the successful delivery of the client’s goals and values. The client is not only faced with a variety of formal contractual routes from which to choose but also a wide variety of professionals from which to seek advice, all competing for the client’s attention and apparently offering the best service. The initial choice of professionals will strongly influence the outcome of the project because of the social interactions that are set up. Clients need to consider a number of factors before making a decision on procurement, ranging from timing and flexibility to make changes, through to risk management, cost certainty, liability and quality. Technologies can also influence procurement decisions, for example utilising BIM requires a collaborative approach and an appropriate relational contract.

Procurement systems influence the manner in which the design and construction phases are organised, and hence how individuals interact and communicate through formal (and informal) communication channels. Contracts will dictate the responsibilities of the actors and their individual level of control over the whole, or parts of, the process. In some respects the choice of procurement route is about control and power over the project, information flow, communication routes, technologies, decision making, finance and design quality. In simple terms there are four approaches:

- Client-led relationships are common on very small projects (e.g. house extensions and some self-build projects). The client appoints consultants and contractors to carry out specific works packages through separate contracts. Interaction between professionals and builders tends to be rather minimal.
• **Design-led relationships** are known commonly as ‘traditional’ systems of procurement. The client appoints an architectural practice to design and oversee the construction of the building. Contractors are usually selected through competitive tendering, with the lowest tender being selected, although it is possible to enter into negotiation with preselected contractors. In this relationship, the architect is responsible for putting the team together, managing the project and controlling design quality.

• **Construction-led relationships** typically take the form of design and build (design and construct) or design/build/operate contracts. Originally the contractor carried out the design work in-house and managed the construction of the building using directly employed labour. With the vast majority of main contractors now subcontracting all of the work packages it is questionable whether or not this is a construction-led or management-led relationship. Architects are dependent on contractors for their business and may have little or no contact with the building sponsor. Alternatively, architects may be novated to the contractor. As subcontracted suppliers of design services to the contractor, architects may have little control over the design during realisation and hence the overall quality of the completed building.

• **Management-led relationships** cover management contracting as well as design and manage. In this relationship there is no prime contractor; instead a manager oversees the integration of works packages. Architects in this relationship will supply a works package to the management contractors, sometimes referred to as design and manage. With increased use of prefabrication and off-site production, and a reduction in the number of activities and trades to manage on the site, this form of procurement may be attractive to a growing number of architects and building sponsors keen to improve design quality.

Projects represent a temporary overlap of authority and there may be rivalry for power within the project team, which is associated with the allocation of resources. People tend to remain loyal to their employer, not the project, which can cause difficulties for the project manager. Leadership is important in terms of delivering value through design, and consideration must be given to contractual arrangements that allow architects to control design quality rather than abrogate it to others.
Interaction within projects

Construction project teams are most commonly set up for the life of a project and disbanded on successful completion of the building (or at specific stages of some large and complex projects). This creates new relationships for each project and provides the project manager and design manager with the immediate challenge of team building and establishing open communications between the project participants as quickly as possible. Further challenges relate to the timely exchange of accurate information and managing the web of interrelated and interdependent activities necessary to achieve project completion.

The way in which people interact within the project environment and with their colleagues in their respective organisations will have a major influence on the success of individual projects and the profitability of the participating organisations. This is common to all projects, regardless of the managerial and contractual frames employed. This ‘space’ between organisations and the individuals working within them will influence the interaction practices and hence the effectiveness of individual project outcomes. Interdependency and uncertainty of the relationship within projects helps to contribute to a dynamic and exciting environment. It also means that some effort is required in trying to map and then manage the relationships that evolve during the project life cycle. This will help to stimulate collaborative and integrated working.

The construction sector is not homogeneous; it is a fluid and dynamic collection of specialists with temporary groupings of individuals and organisations. Many suppliers work across different sectors; for example the manufacturers of an energy-saving paint also produce skin products for the cosmetic industry. With a few exceptions of repeat building types and clients with very large property portfolios there are no established supply chains, unlike, for example, the car industry. This means that in the majority of cases the organisations and individuals selected to participate in a project will differ from the one that preceded it. This poses challenges for those tasked with assembling the temporary project organisation. It also poses challenges for those participating with organisations and individuals they did not know prior to the start of the project. Communication is fundamental in helping individuals to quickly develop working relationships and establish trust in their fellow project
participants. For real integration to work there needs to be social parity between actors, which means that professional arrogance, stereotypical views of professionals and issues of status have to be put to one side. It also means that, in many cases, project teams need to be restructured and the project culture redefined through the early discussion of values. Management approaches such as value management and value-based management tend to encourage and promote integration by bringing together individuals in managed workshops and associated managed interaction. For integral working to be effective it is necessary to ensure the following:

- **Early involvement.** This will vary between professionals and trades and be dependent on the scope of the project, but involvement should be no later than the detailing phases or conceptual phase for major trades. Early involvement provides all actors with the opportunity to contribute to the design, detailing and planning stages before decisions are finalised. This can help to realise additional value and eliminate waste from later stages of the project. Early involvement can also provide the opportunity to negotiate payment terms and contract conditions.

- **Shared tools.** To work collaboratively and concurrently on design projects requires all team members to use the same information technology (IT) and ICTs. Rivalry between tools will result in inefficient communication and disjointed working methods. Shared digital models (such as BIMs) provide the means to collaborate in real time and achieve integral work.

- **Shared benefits.** The aim is to provide benefits for the entire project team, including shorter programme time, easier identification and resolution of problems (and fewer disputes), better integration of building components, increased efficiency and better working relationships; in addition, financial benefits should be commensurate to the level of commitment to the project.

- **Shared values.** Emphasis should be on value-adding activities and innovative solutions. Team members need to agree their collective values and goals.

- **Shared risk.** Risks should be identified, quantified and minimised. Remaining risk should be shared and/or an agreement made to allocate risks to the actors best able to manage them.
Project frameworks

Differences between projects add to the excitement of managing projects, but they also help to demonstrate the need for a familiar framework to help guide actors towards the project goal. Architectural offices tend to use some form of standard approach to the management of projects, with procedures and protocols set out in an office or quality manual. Similarly, engineers and contractors use their own management frames, which can sometimes lead to incompatibility. Whatever the framework used it is crucial that the best structure is in place for the context and that everyone knows what they are working with any why.

A number of well-known frameworks and models exist for the administration and management of projects, their suitability dependent on ensuring the best fit between project and office culture. Models represent a rational and often prescriptive approach. Frameworks help to give a degree of formality to subsets of work and help to formalise the interface of work and workers. The formality of the framework is such that it is sufficiently understood by those contributing to the process to enable informal interactions within and around the frame, that is it is interpreted liberally. It is necessary that everyone understands the project, roles and responsibilities and a simple graphical illustration of the project stages is a very effective way of achieving understanding (see Figure 2.4).

**Figure 2.4** Simplified conceptual model.

Managerial frameworks should facilitate design work, communication, knowledge sharing and information flow. The process needs to be mapped and a suitable operating structure devised to manage the various activities in an efficient manner. It is a sensible policy to assemble the main actors, discuss how the project should be planned and agree on the most
appropriate framework in which to work collaboratively (a bottom-up approach). This tends to be a more effective approach than implementing a system and expecting everyone to be comfortable with it (a top-down approach). From the perspective of the architects, the model must allow space for spontaneity and creativity. Frameworks should be customised to suit the project context and as a minimum should contain:

- Clearly defined stages, roles, tasks and responsibilities
- Value and risk management workshops at strategic intervals
- Project milestones
- Progress meetings and design reviews
- Last responsible moment for decision making
- Control gateways to coincide with the end/start of different phases
- Learning opportunities and feedback loops.

### RIBA Plan of Work

One of the best-known guides for managing design projects is the Royal Institute of British Architects (RIBA) Plan of Work. This was first developed in 1963 as a tool to help architects manage their projects; since then it has been revised to reflect changes in how we build. The guide continues to be used extensively by architectural firms and has parallels with guides produced by architectural bodies in other countries. The Plan of Work has been criticised (mainly by nonarchitects) as being a linear model that promotes a segmented approach to the management of projects. Although this may appear to be the case when read literally, it fails to recognise the way in which architects use the model. The Plan of Work provides a familiar guide that helps designers navigate their way through highly complex and interwoven activities. The guide is not followed strictly, since design activity requires constant iteration and reflection as the design work develops. A fluid approach is possible because of the guide, forming a backbone to decision making and delivery of work to defined milestones.

The most recent iteration, the RIBA Plan of Work 2013, is based on eight stages, which may overlap to suit different procurement routes. The Work Stages are:

0. Strategic Definition
1. Preparation and Brief
2. Concept Design
3. Developed Design
4. Technical Design
5. Specialist Design
6. Construction
7. Handover and Close Out
8. In Use.

Other models are also available that claim to be less linear, although these too break down functions into discrete work packages and/or areas of responsibility. Process models can help to illustrate, or model, a web of relatively complex activities under a generic framework applicable to all projects. These models are more suited to large and complex projects, and application to small projects may be unnecessary and inappropriate. Emphasis tends to be on integration of activities, concurrent development of work packages, knowledge transfer and change management. Value management and value-based management models are based on the discussion and agreement of values via facilitated workshops. Consensus and the creation of trust are fundamental components of these models. Workshops start with team assembly and continue to project completion and feedback. Workshops encourage open communication and knowledge sharing while trying to respect and manage the chaotic nature of the design process. Cooperation, communication, knowledge sharing and learning as a group will help to contribute to the clarification and confirmation of project values. Getting to know fellow actors and the development of trusting relationships is an essential feature of the model. The model is suited to collaborative contracts and relies heavily on the skills of the process facilitator to drive the work forward.

**Control gateways and learning opportunities**

A feature of good design management models is the inclusion of control gates (see Figure 2.5), alternatively referred to as approval or sign-off gateways and design reviews. These events bring key stakeholders together to discuss, agree, approve and ‘sign-off’ the project at key stages. For small to medium sized projects these evaluation events are often
arranged at the end of an RIBA stage. For larger projects the control gateways are also arranged within stages to reflect the approval of key works packages. The project plan should clearly identify when and why evaluation activities are to be held and this should be reflected in the project programme. Evaluation of the project allows the project team to evaluate the progress of the project against specific targets set out in the project brief. Progress to the next stage should only be approved if the project is progressing as planned. Learning opportunities also need to be designed into the project programme; these are discussed in Chapter 7.

**Figure 2.5** Control gateways and constraints.

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**The project-to-office interface**

Successful design organisations are good at establishing a synergistic relationship between the office and the individual projects that fuel it. Projects appear to ‘fit’ the organisational culture of the office, and the subsequent development of projects helps to grow the organisational knowledge and business acumen of the office. Design managers must be
able to balance the requirements of the project with those of their organisation. This involves a deep understanding of the client’s needs, project goals and limitations. It also involves a thorough understanding of the design and construction environments so that value codified in design information is transferred from design to construction as seamlessly as possible without compromising design intent. Fundamental to the discipline is a clear definition of the organisation’s mission and the mission of the project. A good design manager should be concentrating on realising the potential of those being managed and at the same time removing the fear and stress that often arise through poor management and working to unachievable deadlines. Workflow should be continuous and not obstructed by inefficient communication or unnecessary bureaucratic barriers.
Chapter Three

Establishing the System Architecture

It is in the early stages of a project that the majority of opportunities are generated (or lost) and the risks minimised (or generated). Early decisions also influence the health and safety culture, attitude to quality and social and economic conditions that are subsequently infused within the project. Studies have shown that investing in early teambuilding can be beneficial to the smooth running and successful completion of projects, with the time and effort invested upfront recouped as the project progresses to completion. The establishment of the temporary project organisation is an area most associated with the project manager, although design managers also have a role to play. Building the project’s system architecture is a highly complex undertaking, requiring an understanding of interpersonal communication traits and an appreciation of how groups and teams function effectively. Design managers need to demonstrate the necessary leadership skills to encourage and guide the design team, and this starts with getting the most appropriate systems and people in place to work on the project.

Starting as you mean to go on

It is crucial that the project expectations and protocols are in place as early as possible, preferably before work commences. It is much easier to start a
project with the most appropriate people, tools and structures than to try and adjust it once the project has started, when it is too late. Exploring and sharing project expectations helps to avoid misunderstandings and disagreements later in the project. Client expectations can be addressed and confirmed through a thorough briefing process (see Chapter 4). Expectations of the main project contributors can be discussed in preliminary meetings and via value management exercises.

**Establishing a design management protocol**

Design managers have a responsibility to ensure that the appropriate protocols are in place at the start of the project. This will help to give some structure to the management of client expectations. It will also help to eliminate any uncertainty in terms of who is responsible for what. This should, ideally, be linked to the project quality plan and should include the primary issues that need to be discussed and defined early in the project, such as:

- Change control process (change tracker)
- Client approvals and feedback processes
- Communications protocol
- Design status schedule and checklists (including design fixity process)
- Dispute resolution process
- Document control procedures
- Drawing standards
- Feedback (learning) events schedule
- Information exchange protocol
- Key dates and responsibility for delivery
- Meeting schedule
- Progress reporting responsibilities
- Requests for information (process and time)
- Roles and responsibility matrix
- Software compatibility (e.g. ICTs, BIM)
- Specialist design (scope of design packages)
- Status of the briefing documents (brief tracker).
Closely associated with establishing an appropriate protocol is the need to develop the right attitude to projects. One approach that has been shown to deliver value to design organisations, clients and other project contributors alike is lean design management.

**Lean design management**

Waste can be reduced and efficiency improved through good design and management practices. This means starting the project with the right attitude to waste reduction and value creation. The term ‘lean design management’ refers to processes that directly address customer value by confronting waste in the design and promoting efficiency in the management of the design process. Lean thinking techniques borrowed and adapted from lean manufacturing can provide architects with a useful array of tools through which the value of the design can be enhanced and waste reduced. The five principles of lean thinking are to specify value; identify the value stream; enable value to flow; establish the ‘pull’ of value; and pursue perfection. Although developed specifically for manufacturing and mass-produced products, the philosophy is relatively robust and can, with some interpretation, be applied to a project environment. Taking our cue from lean thinking, the five principles of lean architectural design management would be:

- **Specify value.** Clearly and precisely identify the client’s requirements and identify the specific functions required to deliver a solution. Client (and other project stakeholders) requirements are identified through the briefing process and subsequently tested and refined as the design develops. The specific functions required relate to the management of the entire project, from inception to realisation of a beautiful and functional building. Value in an architectural sense will relate to exchange, operational, aesthetic and cultural values.

- **Identify the value stream.** Identify the fastest process to deliver the building through the integration of the functions identified when specifying value. The target should be delivery at the defined (high) quality and (low) cost in a safe, environmentally sustainable and ethical manner. This is linked to the use of the most appropriate procurement route and design management models, which help to determine how value flows within the project. Standard generic
approaches may not be applicable to all design projects and contexts.

- **Enable value to flow.** Remove any unnecessary or redundant cost items from the design to get to the optimal solution. Looking out for redundancy (in process and product) while designing can help to mitigate unnecessary costs. Value management and engineering can also help to identify and remove waste during the design and detailed design phases before the design is realised in a physical form. Reducing waste is sometimes misinterpreted as meaning to reduce variety and maximise repetition, which does not accord with many designers’ values.

- **Establish the ‘pull’ of value.** This means frequently listening to the client and other key stakeholders during the project and responding iteratively. This task is made easier by including the client in the process, for example through formal design reviews and value management workshops. Project and post-project reviews are an additional tool for establishing the pull of value.

- **Pursue perfection.** Incorporate cost-reduction methods and tools into the office culture and practices to enable continual cost reduction for the architectural office and for all clients via their projects. To do this effectively it is necessary to understand workflow within the design office and the interface with the project portfolio. This brings us full circle to understanding the symbiosis between projects and design office.

Lean thinking can be applied at different levels in the transformation process, from the whole project to distinct phases and substages. This helps to provide a picture of the whole project and can assist in the planning and scheduling of the various work packages. Approaching design from a lean thinking perspective also helps to emphasise the need for designers to understand how design value is physically realised and the cost of this transformation process. Depending on the type of project and the approach adopted by the design team, this may involve a greater understanding of craft techniques or manufacturing production techniques, and the associated cost and time parameters. Emphasis should be on the whole life cycle of the building and environmental sustainability. Thus attention should be given to minimising waste, reducing whole life costs and building in flexibility and adaptability for future building users. To do
this requires knowledge of the entire design and realisation process, including demolition, recycling and recovery management techniques.

Lean thinking is about getting the right culture within the organisation and within each and every project, a culture of continual improvement and a culture of continual questioning. It requires the design manager to be alert to areas of work that could be done more efficiently, that is he or she needs to be sensitive to wasteful habits and constantly evaluating the value of every action within the office. This requires a positive attitude by all office members to continual learning and improvement. One of the most engaging ideas from the lean literature is that of flow, and the need for continuous flow to help reduce process waste. From an architect’s perspective, flow can be viewed as the flow of design information and the flow of resources:

- **Flow of information.** What information is required? When is it required? Who requires it? In what format do they need the information? Understanding the needs of the users of the information can be highly instrumental in helping to determine what is produced, when it is produced and how it is to be exchanged with those who need it.
- **Flow of resources.** What resources are required to produce the design? How many people are required and what skills do they need? What are the most appropriate ICTs to facilitate smooth workflow?

This means that attention has to be paid to the assembly of the project team as early as possible in the project and effort made to map relationships, responsibilities and interfaces through the life of the project.

## Team assembly

Resources invested very early in projects can help to reduce uncertainty, improve communication and assist in the efficient delivery of projects. This can lead to improved performance, fewer errors and disagreements, and reductions in project costs, from which all participants benefit. Ideally, the assembly of the project team should be started before the briefing stage commences, although this may not always be possible or
desirable. The manner in which the various actors interact will create and shape the project dynamic.

In many small to medium sized practices project architects take a project from inception to completion with additional input coming from persons outside the office. Thus individual projects tend to be a personal crusade rather than a ‘team’ effort in the true sense of the word. On larger projects small teams may be set up within the office to deal with specific stages of a project, and then disbanded or reallocated once the task is complete. Such groups will be either project-specific or task-specific (e.g. the conceptual design group or the detailing group). The design manager’s role is primarily to coordinate, facilitate, motivate and stimulate these groups of individuals so that they can grow into cohesive, essentially self-autonomous groups. Good managers need to work constantly to transform a group of people with varying skills and interests into a focused team, and then work hard to sustain the energy and commitment – often in a climate of inadequate resources and tight deadlines.

In the vast majority of construction projects the participants are brought together to work on one project only. Following completion of the project, or more accurately completion of a participant’s work package, the relationship between the individual and the project stops. This means that, with the exception of large and repetitive projects, it is common for a project team to be composed of different actors to the previous one. This is often true even where the same organisations are involved, simply because different individuals within the organisation have been assigned to the project according to internal workload commitments. Thus communication is required to support industrial relations and hence provide the means by which teams can develop quickly and effectively. Relationships can be volatile and adversarial, making it difficult to form and thereafter maintain interorganisational relationships. To a certain extent initiatives such as partnering, strategic alliances and integrated supply chain management help to mitigate the effects of fragmentation, although, as with more traditional approaches, there is still a heavy reliance on the ability of the team members to interact and communicate effectively. Thus, regardless of the approach adopted, the basic tenets of running a project remain the same, that is we are reliant on getting the right people together for the right job. Competences and the development of competent practices are key factors in the success of the construction
team. The attributes and actions of key construction personnel strongly influence the success or failure of the project.

Given the large number of professionals involved in projects, and the often complex interconnections between them, it would be sensible to ask some simple questions relating to the assembly of the project. Some of the questions that could be addressed include:

- Which professionals and trades are required to deliver the project?
- If we use a different type of construction technique, are more or less specialists required?
- When and how do the individuals connect with one another?
- Could those connections be done in another (better) way?
- Could the number of connections or interfaces be reduced or simplified?
- What could go wrong with the connections?

Confronting such questions as early as practically possible can help to ensure a good fit between the project members. Similarly, it can help to identify potential problems with some of the interfaces, which can then be mitigated and accommodated in the planning and scheduling of the project.

**Selection criteria**

Organisations have direct control over the type of people who make up the office culture and contribute to its profitability. New staff can be selected not just on their technical ability but also on their ability to fit into the prevailing organisational culture of the office, that is their ability to interact and communicate with their new colleagues. In a project environment the composition of organisations and hence the individuals representing those organisations will be undertaken by the project manager or client’s representative. The result is that relationships are indirectly imposed on (sometimes reluctant) individuals who have been allocated to the project by their line manager. The project manager rarely has any direct influence on the individuals allocated to the project by the organisations that comprise the temporary project.
With a shift from procedures to people has come a greater emphasis on the competences of the actors involved as well as their emotional (EQ) and social intelligence (SQ). Pre-selection or pre-qualification of project managers, architects, engineers and other key actors has become more widespread. In some cases project managers are asked to undergo psychological tests in an attempt to determine their suitability for major projects. In many cases the selection will be based on past experience, which is explored through a series of interviews to see if the individual is compatible with the client. Similarly, clients are paying greater attention to the people who will work on the project and it is relatively common for clients to ask to see the CVs of the main participants. They will be looking for a balance of qualifications, experience and evidence of continual professional development. Some clients will also ask to meet with the individuals who are likely to work on the project to look for social compatibility. Evaluating potential project participants is not just about their skills set, it is also about compatibility with other participants and the potential to work together, that is it is about matching competences and personality to specific temporary roles and tasks.

Depending on the project context and stage, selection criteria could include the following:

- **Attitude.** The attitude of organisations and individuals to others (and the project in general) must be addressed to ensure compatibility with the project goals. Levels of trust and distrust are influenced by attitude, and so too is risk.
- **Availability.** Are the individuals available for the full timeframe of the project or are they likely to contribute for a short period, before moving on to other projects.
- **Communication skills.** Are individuals capable of communicating within and between disciplinary groupings in an effective manner?
- **Compatibility.** If organisational and individual values are not compatible it is likely that communications will not be as effective as they should be and the risk of natural conflict might be increased. Care is needed to ensure that the members of the temporary project organisation do not agree on every issue and have the confidence to challenge their fellow participants. Groupthink must be avoided.
• **Cost.** Cost of staff is an important consideration and a mixture of experienced and less experienced contributors can help to keep the costs to an acceptable level.

• **Experience.** The individual’s experience and relevance of that experience to the project will influence the type and extent of interaction. In an ideal world a mix of experienced and less experienced participants would provide a well-balanced temporary project organisation (TPO). Project teams comprising a large number of inexperienced participants should be avoided because the lack of experience will be ineffective. Similarly, teams comprising a large number of very experienced staff should be avoided, since it is inefficient, expensive and wasteful of resources.

• **Maturity and emotional stability.** The ability to be able to cope with stress, unexpected events and pressure during the project, and be emotionally stable and consistent in dealing with others, is a sign of maturity. This is particularly relevant to those in managerial positions within the TPO.

• **Motivation.** Motivation levels can influence interaction within the TPO, although this is difficult to gauge from an interview or CV.

• **Personality.** It is important that individuals are able to work together; thus individual personality clashes should be avoided. However, this can only be explored through interaction, ideally teambuilding workshops, prior to the commencement of the work. If it is not possible to arrange a workshop then selection is limited to the individual’s reputation or experience of that individual from previous projects.

• **Qualifications.** Educational background and qualifications give an indication of an individual’s academic ability. Evidence of lifelong learning will help to demonstrate an individual’s passion for professional and personal development. Qualifications can help to establish whether or not professionals and trades people have the right qualifications for a specific context.

• **Skills.** Skills are demonstrated by educational and training qualifications and performance on previous projects. Skills relate to technical ability (as expected of the discipline) and social skills, such as the ability to communicate across various levels within a project and the ability to work with other disciplines. Skills are usually demonstrated on previous projects; thus individuals tend to be evaluated based on their most recent project(s).
• *Values*. The discussion of values is also related to the roles undertaken by individuals and their individual and collective responsibilities. Early discussion and agreement of roles and responsibilities is necessary to avoid, or at least mitigate, problems later in the process. Consultants should be invited to discuss their values with the client and project manager. Appointment of the consultant should be done after some degree of compatibility has been established.

**Selection of managers**

The experience and personal characteristics of the managers will have a significant impact on the development of the project. Project managers (overseeing the entire project), design managers (responsible for design quality) and construction managers (responsible for the quality of the building works) occupy highly influential roles, and their allocation to a specific project should not be undertaken on a whim. Emphasis should be on appointing the most appropriate project manager for the project, and, as highlighted in the previous chapter, this first requires a thorough understanding of the project context. For example, a fast-track commercial project will need project managers with very different experience and competences to those engaged on refurbishment work.

Selection of key individuals creates interfaces, boundaries between the individuals and the organisations that employ them. Individuals are usually assigned to projects by their employers. Sometimes experienced clients will ask to have specified individuals working on their projects because they have had a good experience in the past. Selection of key individuals to work on a project could entail one or more of the following techniques:

• *Shortlist*. This is drawn up based on education, qualifications and experience (and sometimes the capacity to do the work), as listed above.

• *Interviews*. Interaction via formal and informal interviews helps to establish an individual’s social skills.

• *Psychometric testing*. Aptitude tests are used to measure intellectual capacity for thinking and reasoning. Tests are designed for a specific role and undertaken in examination conditions. They are
usually used for senior managerial appointments at an organisational level, not a project level.

- **Workshops.** These are used to explore the values held by the participants with the aim of assembling a team of individuals who share similar values.

## Organisational versus project resourcing

In an ideal world the most suited people within an organisation would be selected to work on the project. However, it is common for people to be already committed to another project (or projects) and so they may not be available. Thus less-suited individuals may be allocated to the project, simply because they have spare capacity. The resourcing of projects can result in tension between the demands of the office and the demands of a project and/or client. Forward planning is crucial for the efficiency of the organisation as it collectively seeks to appoint the people with the best fit to new projects. Therefore, it may not always be the ‘best person for the job’, rather those least busy and hence available to contribute. Tension between the demands of different projects within the organisational project portfolio must be managed with sensitivity, so that the architect’s office makes the best use of its employees; the temporary project organisation benefits from the most suitable people and the individuals benefit from being given challenging and interesting projects to work on.

## Building effective relationships

Start-up meetings or workshops may be used to bring together representatives of the main stakeholders. These early meetings should include the client and/or the client’s representative, architects, engineers, project managers and, if known at the time, the main contractor and/or specialist contractors. Representatives of user groups may also be present for some building types such as social housing. These ‘getting to know you’ meetings should be used to explore the values of the stakeholders. Various approaches are taken to start-up meetings and workshops. It is common practice for the project manager to take responsibility for
arranging and directing the meetings and workshops. Another approach is for an independent person (someone with no contractual responsibility for the project) to act as a facilitator. The facilitator’s primary aim is to encourage open communication and the development of working relationships based on shared values and mutual trust. This takes time and a number of workshops and activities may be needed to help build a team spirit. Subsequent workshops should focus on improvement of team interaction and further development of relationships based on trust.

**Communicating to achieve objectives**

The efficacy of the project and the financial health of the design business will be affected by the way in which individuals communicate. Communication involves the use of the most appropriate communication technologies, such as project websites, and the assembly of organisations and people who are able to communicate effectively. Interpersonal communication is required for effective teambuilding and the undertaking of daily tasks. Interaction affects the strength of relationships between the actors and ultimately colours their ability to transfer knowledge and appropriate task-based information to complete projects successfully. Building, the discussion and subsequent sharing of values, resolution of minor differences and conflicts, question asking and the creation of trust between construction team members are just a few of the factors that are crucial to the smooth running of projects and are reliant on the ability of the actors to communicate effectively and efficiently. It follows that the interaction of individuals and organisations should be the primary concern of those charged with managing projects.

Effectiveness of communications will have a major effect on the project outcomes and hence will affect the profitability of the organisations contributing to the project. Without effective communications it is unlikely that the participants will succeed in realising the project objectives. The word ‘communication’ in the majority of the communication literature means the sharing of meaning to reach a mutual understanding and to gain a response. This involves some form of
interaction between sender and receiver of the message via synchronous and/or asynchronous communication:

- *Synchronous communication* involves team members communicating at the same time through face-to-face dialogue and interaction in meetings, telephone conversations and video conferencing.
- *Asynchronous communication* is the term used when parties do not communicate at the same time, for example by email and through intranets, by post and facsimile. Messages are sent and responded to later, and this can be a quick and highly effective way of exchanging information.

The creation of meaning between two or more people at its most basic is an intention to have one’s informative intention recognised. Simply informing someone by any action that information is to be disclosed is considered to be an act of communication. There are many ways in which people make their introduction and let others know information is about to be disclosed, or by their nonverbal actions set a context for discussion. The message and clues can be very subtle but still convey considerable information to the receiver of the message. When people communicate they intend to alter the cognitive environment of the persons whom they are addressing. As a result, it is expected that the receiver’s thought process will be altered. Communication performs much more complex tasks than simply letting someone know that we are about to send information. For understanding to take place most theorists claim that a background of shared social reality needs to exist. To engage in meaningful communication we need to build on information and develop a context supported by cues and clues. These guide us to use subsets of knowledge and help us to link information together. Clues used come in many different guises. The appropriate mode of referring to something or someone in conversation depends on what common ground a speaker and addressee share. It is this common ground and the development of a shared understanding that make communication possible. Similarly, a lack of common areas of understanding can create difficulties in communication and lead to misunderstanding.

Communication in any group has social and task dimensions. Task roles are those that determine the selection and definition of common goals, and the working towards solutions to those goals, whereas socioemotional roles focus on the development and maintenance of personal relationships.
among group members. Open and supportive communication is conducive to building trust and facilitating interaction between project members. Unfortunately, when communication between team members is most needed, during times of uncertainty and crisis, relationships often break down through the development of defensive behaviour and hence ineffective communication. Open exchanges of information and sharing task responsibilities are essential for effective collaboration and teamwork. Interaction that builds and maintains the fragile professional relationships necessary to accomplish tasks is fundamental to project success.

Face-to-face interaction is essential for addressing contentious issues, problem solving, conflict resolution and building relationships. Improvements in the effectiveness of communication between individuals and groups can help to increase the performance of individual organisations and hence that of the project. Best practice in construction teams is characterised by open exchanges of information and good communication, enabling responsibilities and ownership of tasks to be negotiated and shared.

**Interfaces and language**

There is a need for effective communication on two levels: intraorganisational (within organisations) and interorganisational (between organisations). Organisational and cultural boundaries within construction projects are constantly changing; individuals enter and leave the team at certain stages (i.e. they have separate goals) and the team changes in size and format. It is at boundary conditions that individuals may well use different language to express themselves. Obvious cultural boundaries are the interfaces between client and brief-taker; brief-taker and design team; design team and contractor; and contractor and subcontractors. Other more subtle boundaries, for example between architects and engineers, also exist. In many cases the interface is effective and projects progress well, delivering a building that satisfies both client and end users; conversely, interaction difficulties are experienced and may quickly spiral out of control into a dispute.

Professionals have developed specialist languages, using words that are specific to their professional background to enable them to communicate
specific facts and ideas quickly to fellow professionals. This professional jargon is a codified language that is difficult to understand for those lying outside the professional culture. Use of certain words or phrases may lead to confusion if not supported with sufficient background information and explanation. Some words will carry more meaning and information when used in a specific context and when exchanged with actors who share the same language. Confusion can also arise when workers from different parts of the UK use different words for the same thing and regional dialects offer the potential for further misunderstanding. Add in the increasing migration of construction workers in Europe and it is not uncommon to find construction sites with a multinational workforce using their native tongues to communicate. The potential for misunderstanding is never too far from the surface in such environments, even where everyone’s intention is to do a good job.

Trust

Trust has become a topical issue in a sector renowned for its adversarial culture and general inability to trust others. As actors start to work in a more collaborative way, for example through partnering arrangements, the issue of transparency and trust takes on more significance. We have to trust the people that we work with and they have to trust us. This state is not achieved overnight; the development of trust has to be earned and this usually takes a long time (and trust can be lost in an instant). Trust is largely about our confidence to trust others’ commitment, and commitment to shared project goals and values. So we do not trust an organisation per se; we trust the individuals working in the organisations with which we have contact on a regular basis. When actors fail to live up to expectations, trust starts to erode, and it is very difficult to regain the same degree of trust once it has been damaged.

The development, learning, testing and reaffirmation of trust will require personal contact. Within the design office there is regular interaction between staff and the degree and levels of trust are usually well understood; indeed, many architectural offices rely on trust and mutual respect in preference to rules and regulations to achieve their objectives. By contrast, management by trust is not easy to achieve in a project context. With people interacting only occasionally and holding different organisational values and objectives, the development of trust is far more
challenging because people have little opportunity to get to know each other well enough to develop trust. This is why we have contracts.

- Within the office, trust will develop over time as relatively stable relationships are developed.
- Within the project environment, relationships are less stable and participants work in different organisations on a daily basis. Thus the opportunity to interact is less compared with the office. Thus trust is more difficult to develop.

Managing meetings effectively

Meetings are held because people who have different jobs have to cooperate and communicate to accomplish tasks. In addition to facilitating the exchange of information and decision-making activities, meetings are also used to appraise, bond, control, coordinate and resolve. They should not be considered as isolated events where decisions are made; instead they need to be seen in a wider context. This includes the incremental cycle of social interaction that is used to share and process information, make and confirm decisions and develop and maintain relationships. Whatever framework is chosen for a project it will involve a number of meetings, and these need to be strategically planned to be effective. Many different types of meetings are convened during the project to serve a variety of complementary functions. These range from the informal to the formal and the impromptu to the strategically planned, the main ones being to:

- Start projects
- Build and maintain effective teams
- Explore values and agree value parameters
- Discuss and review designs
- Discuss project progress
- Resolve disagreements
- Exchange knowledge
- Close projects
- Hand over projects
• Analyse projects.

Managers should also recognise that many decisions are made outside the meeting forum, either before people start the meeting, in discussions during refreshment breaks or after the closure of the meeting. These tend to be face-to-face discussions between two or three individuals anxious to reach consensus over a particular issue in order to present a united view. Managers should ensure that participants have adequate time to meet before the start of the meeting, for example by walking around the site to discuss progress, and that refreshment breaks are long enough to allow individuals to reach agreement over contentious issues.

From the perspective of the design office, meetings can be categorised as being internal (office members only) or external to the office (external actors also present). A fairly typical model would involve a regular weekly meeting to discuss progress on projects with members of the office only and a regular monthly meeting with specific clients and team members to discuss project performance. Both formal, regularly held meetings and informal, impromptu meetings provide effective vehicles to discuss and share knowledge. Meetings may be internal or external to the architect’s office:

• Internal meetings. Internal meetings are limited to the organisation’s members (or in large organisations to a particular division’s members). In this familiar environment it is possible to be relatively informal and relaxed, since the others at the meeting should be trusted. Discussions tend to be relatively open, with shared objectives. Internal meetings can be used to share knowledge within the office. The use of feedback through ‘quality circles’ or ‘suggestion systems’ is central to the Japanese philosophy of TQM. Quality circles are used to bring together employees, managers and directors to discuss and analyse aspects of the firm’s service provision through the use of group problem solving. Quality circles function at their best as small groups (between 5 and 12), where the firm’s members meet on a regular basis, often outside regular working hours. In addition to helping to solve job related problems, quality circles also seem to increase individuals’ satisfaction with their firm by increasing participation in important decision making activities. Quality circles can have a negative effect if ideas and decisions are perceived to be ignored by their managers.
• **External meetings.** External meetings include members from other, possibly competing, organisations or divisions. In this environment people are expected to act in a more formal manner and will, naturally, be less trusting of others at the meeting. Discussions tend to be relatively guarded and objectives may well vary between participants. Examples of external meetings include site progress meetings and meetings at which the client is present, for example design reviews. When actors external to the office participate in meetings, the rules change. Communication is with individuals from other organisations and so the type of language used and the openness of discussions needs careful consideration. In partnering arrangements and integrated teamworking the meetings should be conducted in an open manner and there may be a well-developed sense of understanding and trust between members. In competitive situations the communication may be more defensive and closed. If relationships have become adversarial, the communication exchanges will be defensive and closed.

Meetings are time consuming and expensive events. Well-managed meetings are a highly effective forum for group communication, and used sparingly their value to the design organisation and the progression of individual projects will become obvious. To ensure these events are effective it is necessary to:

• Establish clear aims and objectives for the meeting.
• Determine who should attend and why.
• Allocate time to suit the purpose of the meeting and stick to it.
• Decide on the most appropriate location (e.g. the site or the architect’s office).
• Distribute an agenda and associated reports in advance of the meeting (no less than three working days before the meeting).
• Chair the meeting to allow all participants an opportunity to contribute.
• Encourage reluctant communicators and limit the contribution of individuals who prove to be too vocal.
• Consider phased participation for large meetings.
• Build in short refreshment breaks for meetings that are scheduled to last for longer than one hour.
• Confirm all decisions and allocate responsibility and timescales for achieving tasks, and confirm these in the minutes.
- Distribute minutes promptly after the meeting (within two days).

The project-to-office interface

At this early stage in the life of projects it is difficult to predict with any certainty whether the project will proceed as planned. The energy and excitement of the early meetings with clients can be misleading as projects get delayed or do not proceed for reasons completely beyond the control of the office. This means that any predictions of resources required for individual projects will be, at best, rather sketchy. However, this cannot be used as an excuse for not making a provisional plan (with appropriate contingencies). Resources will be needed and this will impact negatively on other projects unless some form of (fluid) plan is in place. Architects have to take a view as to how much time they are willing to expend without receiving payment in the hope that the project proceeds. In many cases architects are working as enablers, helping the client to put various initiatives in place before the project can proceed. This work is of considerable value to the client and architects should charge a fee for their involvement. Clients appreciate open discussion on such issues and need to enter into an agreement with the architectural office regarding the scope of the work and the fee.
Chapter Four

Exploring Client Value

A fundamental component of every project is the ability to determine fully what the client requires and expects. This is achieved through the briefing process, where the client and brief-taker interact to explore possibilities and preferences. The outcome is a set of documents, the brief, that clearly states what is required, why and when. It is the brief that informs and guides the design team. The brief will also be used by the client to check that the finished building satisfies their wishes. Given the importance of briefing and the resulting brief it is necessary to manage this iterative process to allow some flexibility, yet also to ‘fix’ the brief at specific milestones to help make the process manageable. The design manager may be directly involved in the briefing process in some offices, but indirectly involved in terms of managing meetings and coordinating resources to ensure the brief is as well developed as possible given the constraints of time and finance. As the project develops the design manager will be overseeing the process to ensure that the design and construction phases respect the brief or, conversely, if changes to the brief are deemed necessary and that it is agreed and signed off by the client.

Understanding the briefing phase

Client briefing is the term commonly used to describe the phase in a project when the sponsor engages professional advisers to discuss and explore their dreams and aspirations. Briefing is a creative process
comprising a series of activities concerned with exploring, exposing and confirming client requirements and values. Briefing should result in a clear, unambiguous and concise list of project requirements, codified in the written briefing documents. Emphasis is on data collection and analysis, the discussion and agreement of values and the confirmation of requirements. These activities inform the design and are an essential element of the design process, requiring excellent communication skills. The briefing documents are in effect a specification for the building, expressed as a set of performance and prescriptive requirements. These requirements are subsequently questioned, challenged, revised and restated and reaffirmed during the design phases, hopefully resulting in a set of production information that reflects and enhances the client’s needs and aspirations. This is an iterative and dynamic process that poses a number of challenges for the design manager. Although process maps show relatively distinct stages for briefing activities, the reality is that the process may be difficult to map given the relatively fluid nature of projects at an early stage. It is also extremely difficult to separate briefing activities from design work in many projects, with many designers developing conceptual designs as a means of exploring the client’s milieu and hence developing the brief. The written brief also has a number of different, sometimes conflicting, uses. For example, briefing documents form the basis for communication between the client and the project team, and as such they form part of the contract between the client and project team. The brief also forms a benchmark for post-project evaluation, in which the aim is to try and match client and user satisfaction with the original brief.

Articulating client needs is one of the most important events in a project. The project brief sets the scene for design decision making. Good design and satisfied clients tend to be related to a well-managed briefing process. Vague project briefs waste time because additional effort is required at a later stage to define and redefine client requirements. A poorly managed briefing exercise can lead to poor information and hence the inability of actors to determine the client’s requirements adequately. Uncertainty may lead to the development of an unsuitable design and subsequent redesign in the conceptual stages to match client values. Worse, the disparity between what the client wanted and what is being provided may not become evident until later in the project, with requests for expensive rework during construction and the possibility of disputes and conflict
arising as a result. Briefing is often rushed into without adequate consideration for the consequences and, as with team assembly, time spent here can result in significant savings later in the process, helping to reduce uncertainty and mitigate wasted efforts. Better understanding of the briefing process is a fundamental requirement for better management of the client briefing and hence the actions that follow.

Briefing is a major communication channel that relies on effective communication and excellent listening skills. Effectiveness of communication between the client and the brief-taker(s) is a critical factor and it is here that empathy between the client and briefing team needs to be established and maintained for the briefing process to be effective. Empathy between the client and the brief-taker is crucial to the development of effective dialogue, the sensitive and considered exploration of values and the development of a working relationship based on trust and openness. The persons best qualified to take the brief should have an excellent understanding of the value that design can add to the client’s business or life, and also understand and empathise with the client’s business values and/or lifestyle. The briefing process can be helped by the use of visualisation techniques, brainstorming and group/team exercises. The effectiveness of the process may also be linked to the procurement method and the early selection of advisers. The manner in which the briefing process is managed will be influenced by the size and complexity of the project. The effectiveness of the briefing process will be influenced by the ability of the individuals involved to tease out the salient points, articulate these points and then communicate the information to the design team.

Approaches to briefing

Client expectations place considerable pressure on professional advisers to seek feasible and economic solutions to the client brief. For major projects, a project manager or client’s representative will normally assist the client with the development of the brief, and it may be difficult for the designers to have direct contact with the client and building users. On smaller projects it is more common for the architects to be fully involved in the briefing process, working closely with client and users.
Management of the briefing process is determined by project context as well as the attitudes, values and habits of the team assembled to work on the project. There is no doubt that the briefing process is a creative activity during which the client and the designer need to develop a close understanding, mutual respect and trust. From a management perspective it is important to recognise that the briefing process is an iterative process. Controls are required to fix the brief at certain stages to make the design process easier to manage. Although it is rare for practitioners to make any distinction in their approach to briefing (the approach being tailored to suit the client context), in the literature there are two distinct approaches or schools of thought relating to briefing.

The first school claims that client values should be fully explored, discussed, agreed and written down in a project brief before any design activity commences. Thus the project brief is a ‘static’ document, from which the design is subsequently developed. Changes to the brief can only be made with the consent of the client. In this approach briefing is separate from the other stages in the design process. This may be the most sensible policy from a design management and client relation perspective, since it is one way of narrowing the gap between client expectations and those of the design team. This approach is also required for public projects to allow for competition, with the brief developed by professionals who will not take part in the project. Developing a static brief is also central to a well-designed quality management system, in which the brief is agreed and signed off by the client. From a management perspective a static set of documents is the easiest to deal with, but given the time pressures brought to bear on projects (by the client) it is rarely possible to fix the whole of the brief before design activity commences. Thus parts of the brief are fixed and signed off by the client, with areas of uncertainty left for agreement at a future date in accordance with a project programme. Thus the term static may be a little misleading, since there is opportunity to reassess, agree, restate and approve the project requirements at predetermined points. This can help to save time on the overall programme, but still complies with quality management systems. The biggest challenge is that the client’s requirements change as the design activities reveal alternative approaches and options; thus the document can become outdated and no longer read by designers unless it is updated. The static approach also assumes that the brief-taker is capable of expressing the client’s needs in a written document; the reality is that communication
between the client and designer is necessary to explore the issues fully, during which time the briefing documents will need to be reassessed.

The second school argues that the briefing process should continue into the conceptual design phases and beyond (some would argue into construction). The philosophy here is that briefing is an iterative process that occurs throughout the design (and construction) phase. Often, especially in very small projects, there is little distinction between briefing and design activities and in some cases there may be no written brief, merely a set of drawings and diagrams that reflect the client’s agreed requirements. Design as a means of exploring client requirements can be a powerful tool and can be a very efficient approach for certain types of projects and clients. The ‘end’ of the briefing process coincides with a set of completed design drawings. In many respects this view represents the classic creative and chaotic stereotype of design as a creative process. Such an approach may suit some clients, certain projects and architectural offices, but it does make it very difficult to manage the briefing process in line with quality management procedures. If things do go wrong later in the process it is almost impossible to trace design decisions back to clearly defined client requirements, since the two became blurred during the process.

Effective and efficient briefing relies on several interdependent and generic areas, starting with the definition of an appropriate framework for the process, the project plan. This may be a simple bar chart following the RIBA Plan of Work, identifying key dates, responsibilities and last possible moments for decision making, or a more sophisticated schedule of activities. The first task is to discuss and agree an appropriate programme for the project, taking into account the client parameters and the design office resources. The programme should clearly indicate critical dates and establish a schedule for design team meetings, strategic reviews and approval gateways. The framework sets the agenda for communications and information flow, which should be clear, concise and timely and include knowledge from other projects and products. From this, informed decisions will be made and fixed progressively through the briefing period. Given the iterative nature of briefing, all decision making should be delayed until the last responsible moment in an attempt to maximise value for the client and minimise risk. It is during the briefing exercise that major risks should be identified, discussed and recorded. When more than one professional is involved it is essential to establish
responsibilities for certain aspects of the briefing process. It is also necessary to incorporate evaluation opportunities – control gateways – at strategic points in the project to coincide with the fixing of decisions. This helps to clarify decisions and re-emphasise roles and responsibilities. The aim is to explore and better understand underlying agendas and drivers behind the project and hence articulate client values and needs, through both prescriptive and performance requirements.

**Understanding the client**

The design and construction process is the interplay between two complex, emergent and highly dynamic systems: the client and the project participants. Exposing, exploring and capturing client values and goals in a structured manner is necessary and to do this effectively architects must understand their customer and their needs. Value management and lean thinking both aim to maximise value for the customer and minimise waste. Without understanding the customer the concept of value is difficult to define, and without a tangible concept of value waste is equally difficult to define in a meaningful sense. This is an important point to make in the context of design management, since it is the customer values that are being managed. The route to a leaner design and construction process should thus begin with a deeper understanding of the client.

Most textbooks tend to take it as a given that the client is a well-defined entity, a single person or a group, which has consistent values and value parameters that can be expressed in clear terms. In the majority of cases the client is a highly complex and dynamic system. On small domestic work the client may be the wife or husband, representing the interests of their family unit. In this situation the client is committing their own finances and a considerable amount of emotion to the project. Capture of the family’s needs and aspirations can be undertaken on a face-to-face basis with all family members. On larger residential, commercial and industrial developments, the client is a business organisation. In this case the client’s representative may be one or more people (hence the term ‘client team’), charged with doing a job. Rarely are they themselves the investors, owners and users of the building. This makes the capture and
communication of ‘client values’ particularly difficult to achieve in practice and necessitates representation of, for example, user groups.

Architects should represent the interests of three distinct groups: the building owner, the building users and society. These three groups value different things at different times in the life of the building. The predominant focus is on when the building is completed and taken into use, where durability, usefulness and beauty may be used as an expression of the primary view of each of the three groups. However, there also exists the perspective of the value of the building in the future or for future users, and the value while the building is being realised. Value cannot be measured or expressed and communicated explicitly, but must be learned and understood through a process of interaction and exchange. This transaction is most evident in the briefing process, a learning process for all participants.

### Client owner

Clients are usually defined as being first-time clients (inexperienced), occasional clients (some experience of construction) and repeat clients (experienced). Clients may also be defined as having short-term (developer) or long-term (owner) interests in the completed building.

- **First-time clients.** The first-time client will need guiding through the design and construction process. This client may only commission design and construction services once, for example a house owner wishing to provide more space for a growing family. Here the brief will be a bespoke document. Effort may be required to ensure that the client fully understands the implications of the decisions being made. Visualisation techniques and simple graphics are very helpful in this regard.

- **Occasional clients.** The term ‘occasional client’ tends to be used to describe people or organisations that commission design and construction services on a relatively infrequent basis. The gap between commissions may be lengthy and the type of project may be very different to the first, thus learning from previous project experience may be challenging. The brief is likely to be a bespoke document.
• *Repeat clients.* Repeat clients tend to be major institutions, businesses and organisations with a large property portfolio. Typical repeat clients would be food retail businesses, hotel chains, etc. Here the commissioning of buildings is more likely to be part of a strategic procurement strategy, closely linked to the business objective of the organisation and their facility/asset management strategies. There may be an opportunity to establish integrated teams that move and learn from one project to the next. Similarly, the ability to make improvements to how design and construction activities are managed is also present with repeat clients. With repeat clients the brief may include elements common to previous projects that represent the values and knowledge of the client organisation and are codified in a standard brief.

**Client user**

User involvement is another key element of successful briefing. Building users can make a significant input to the data collection exercise since it is they, rather than the building owners, that interact with specific areas on a daily basis. Soliciting their views and listening to their requirements is a fundamental part of the briefing process. Identifying users can be problematic for many building types since users often constitute a disparate mix of people and groups. It is often impractical to try and capture the views of all potential users; instead representatives of specific user groups are identified and brought into the project briefing phase. For example, personnel managers, facilities managers and building maintenance managers all have a part to play in representing the interests of a wide cross section of building users. User consultation processes, via, for example, questionnaire surveys and workshops, help to provide essential information and knowledge for analysis, the results of which can be taken forward as a set of value parameters. This is ‘first generation’ user involvement and some flexibility (and vision) needs to be considered so that the second and subsequent generations of building users are also considered in the development of the brief.
Client society

The term ‘client society’ is used to refer to stakeholders who have an involvement in the project but are not part of any contractual agreement. Neighbours, local interest and pressure groups, town planners and building control officers will all be stakeholders, although in many cases these individuals may never use the building. Small extensions to residential properties may be of little concern to the community at large, but may have a significant impact on the immediate neighbours. For larger and more prominent developments there is often a need to engage in some form of public consultation exercises. These may be linked to the town planning process, or may be initiated by the building sponsor in a proactive attempt to hear the opinion of the local community. Public consultation exercises need to be carefully organised to allow members of the community a chance to contribute in a positive and timely manner. Similar to user involvement, there must be consideration of future societal needs since the building will still be around long after the current members of the client society.

Empowering the client

Briefing is, in many respects, an educational process. Clients can learn more about their organisational requirements by being encouraged to consider and articulate their values and requirements. Similarly, architects will learn a lot about specific clients and their business values. It is important that values and ideals concerning sustainability are discussed as early as possible since they represent a particular philosophy that must be present in the brief in order to be effectively implemented. For example, stating in the strategic brief that the project is to encompass sustainable design may influence the selection of the design and realisation teams, that is organisations and individuals that can demonstrate their commitment to sustainable design.

For the briefing process to be effective the client and/or the client’s representative must be knowledgeable about their organisation and its values. Failure to create an effective dialogue with the brief-taker(s) is likely to result in problems later in the process. Involvement tends to be beneficial for clients. Involvement can, for example, help the client to get
a better understanding of the project dynamics and lead to a feeling of ownership and empowerment. Early involvement is also essential for developing open communications and trusting relationships within the project team. Early involvement of key actors also provides the opportunity to discuss important issues, such as sustainable design, whole life costing, adaptable designs and innovative approaches, at the outset of the project. Greater involvement of the client and user groups can also help to limit the number of design changes later in the process. Some clients are unwilling or simply unable to get involved in the project. They prefer a ‘hands-off’ approach and this can cause problems with communications and decision making if not handled sensitively. Client values, for example family values or business values, should be expressed in the value parameters for the building.

There is also a strong recommendation to include the building users in the early briefing process, although this is not always possible for all building types. However, some form of ‘user’ representation should be included in the briefing process and maintained throughout the duration of the project. The use of visualisation techniques, such as sketches and digital models, can help to tease out the client’s likes and dislikes. This is particularly important for clients new to building who may be unable to read two-dimensional drawings or fully appreciate the intricacies and implications of a written project brief. This should not be confused with the early design process; it is more a case of testing design ideas through precedent studies.

**Client design advisers**

In 2005 the RIBA started a register of Client Design Advisers (CDAs). The register lists experienced professionals that have been accredited by the RIBA to guide clients through the process of procuring a building. The aim is to provide clients with direct, independent advice so that value and quality can be maximised. CDAs are most likely to be architects, but they are independent of the design team, engaged by the client to interpret values and aspirations for the building. CDAs provide advice and assistance in the early stages of projects, with setting up projects and trying to ensure that design quality and value is achieved. The aim is to ensure that design is an integral part of public sector procurement programmes, helping to create high quality architecture for clients, users,
society and the environment. CDAs will first and foremost champion design quality, advising the client team on the client’s business case and project initiation, through briefing to post-completion. Value and risk management, as well as advice on topics such as partnering and team assembly, feature strongly. CDAs will help to champion the importance of good design and its relationship to excellent buildings.

Establishing value parameters

Clients vary in their ability to express their wants and needs. Some are able to do this well; others need some encouragement and prompting. Similarly, architects and other professional advisers vary in their ability to listen to their clients, interpret the meanings and express requirements in the written briefing documentation. The language used by clients is likely to be linked to their trade. For example, the sponsor of a supermarket may use very different language to the sponsor of a swimming pool or a family house. Architects need to be able to adapt to different languages, read between the lines and to a certain extent second-guess what the client wants. The development of a relationship through the briefing process will help both the brief-taker and the client to explore many issues and start to understand the idiosyncrasies of the various languages. The exploration of values and goals will also be enhanced through face-to-face communication. In some respects this is also linked to the client’s level of experience and sophistication. Clients need to be empowered and encouraged to take ‘ownership’ of the project, although not all will be willing or able to become involved. Throughout the briefing process the emphasis should be on the development of a shared vision between the project stakeholders. The term stakeholder is used to describe a representative of groups, for example a member of the client’s organisation, a member of the project team or a member of a local interest group, who hold a stake in the project. Some of these stakeholders will be employed to make decisions, some to shape decisions and others to try and influence decisions to suit their own interests. To discuss the stakeholders’ values and explore the aims and objectives for the project
requires the use of meetings. It is at these meetings that the dreams and constraints can be discussed and critical dates identified. Pressure to start as quickly as possible should be resisted until the value parameters have been defined and the methods of working agreed.

There are a number of strategies and tools available to help explore client values and hence identify the value drivers for the project. In the majority of cases there is a considerable amount of data that could be collected, but time and cost constraints make it necessary to limit the data collection exercise to a manageable, and affordable, task. The data must be relevant, and experienced brief-takers almost instinctively understand what is relevant and what is not, unlike those less experienced. The aim is to explore and hence define the client’s needs. These can be expressed as performance requirements, statements of need and/or value parameters. The temptation to offer solutions at this early stage should be resisted.

An experienced brief-taker is able to extract the salient points and communicate them clearly to others. However, written briefing documents do not, and cannot, convey the more subtle messages expressed by the client during interpersonal exchanges at briefing meetings. Some of these may well turn out to be important points that with the benefit of hindsight should have been stated clearly within the project brief. From a designer’s perspective, the ability to see for oneself how the client expresses his or her requirements, the level of enthusiasm shown for certain aspects of the building and the response to questioning is paramount to producing a design that reflects the client’s values. Senior partners are the normal contact with clients and it is they who often take the client’s requirements and develop the brief before handing the document over to designers in the office, sometimes via the design manager. This indirect communication is liable to misinterpretation and relies on good communication between client, partner, design manager and designer. Inability of the partner and/or design manager to pass on the client’s requirements in the form of a written document and accompanying verbal explanation may cause problems with interpretation and result in abortive work. Needless to say, some partners are better at this than others. It is helpful if the designer allocated to work on the project can be present at some of the meetings with the client, although for practical reasons this is not always feasible. It is through interaction with the client that subtle messages rarely captured in written project briefs are picked up by designers. To ensure a degree of balance it is advisable that two people,
preferably with different skills, are present in briefing meetings to ensure that client values are clearly defined and separate from the brief-taker’s personal wishes for the project. Essential characteristics of the brief-taker are:

- Being an excellent listener
- Ability to explore sensitive issues with tact and diplomacy
- Ability to record client requirements succinctly, yet without losing the spirit of the discussions
- Ability to communicate requirements clearly to others
- Willingness to separate the client’s requirements from those of the brief-taker.

Collecting data

Briefing is primarily a research exercise and, as with all research exercises, success is determined by the manner in which questions are framed. The brief-taker will interact with a small number of stakeholders during this phase. Most design organisations use a standard checklist for typical building types to help guide the data-gathering and analysis process. It is difficult to provide precise guidance on this; however, depending on the size and complexity of the project, one or more of the following data collection techniques may be used. With all of these techniques it is important to set out clear objectives and timescales.

- Workshops. The use of workshops can be time consuming, but they are an invaluable tool for bringing people together to communicate on a face-to-face basis. To make the workshops effective key project stakeholders should be represented and an experienced facilitator should manage the workshops. Various tools can be used to explore issues in a group environment, such as brainstorming, scenario planning, etc. It is the facilitator’s job to tease out information from the client, not to add his or her own views. Workshops allow the discussion of values and the establishment of value parameters. It is not possible to know client values in depth at the start of a project, so workshops are primarily concerned with exploring values and establishing a common vision. Knowledge and experience from other projects may be brought into the workshops, for example from facilities management, to better inform the whole life costs.
• **Value management (VM) exercises.** These are workshop-based meetings in which the client and key stakeholders explore how value can be added to the building design. A facilitator, independent of the design team, manages the workshops. By discussing relevant issues it is possible to explore and confront potential problem areas early and also identify areas where value for the client can be added. Clients are looking to achieve the best value possible from their investment and this has to be set against the whole life costs of the building.

• **Interviews.** Face-to-face interviews are a useful way of developing the client’s requirements and are often used in addition to workshops. Interviews with key personnel and selected building users or building users’ representatives can provide useful data in addition to that gleaned from the client. Standard questionnaires and/or checklists can help to guide structured and semi-structured interviews. Unstructured interviews may be a better tool to explore hidden agendas. The purpose of the interviews should be explained to interviewees prior to the interview to allow them some time to prepare for the interview.

• **Focus groups.** These are an effective means of exploring the views and needs of stakeholders from different backgrounds, and are often used for collecting information from representatives of users and community groups.

• **Questionnaires.** These are best administered on a face-to-face basis, but can be a relatively cheap and quick way of collecting data from several stakeholders if distributed by post or email. Questions should be carefully framed and simple language should be used to avoid confusion with professional language and terminology. It is common practice to include some form of face-to-face interaction with some of the questionnaire respondents and/or to test the findings in a workshop-type environment.

• **Documentary evidence.** A lot of information can be gleaned from existing information sources, such as plans, maintenance logs, existing user surveys and facilities management data. Annual reports, business plans, management structures and action plans can also be helpful.

• **Activity surveys.** Visual surveys of existing space usage over time may provide data that both supports and contradicts the perceptions of how space is used within the organisation. Space usage surveys
need to be undertaken over a period of at least one working week, and hence tend to be expensive in terms of the resources required.

- Post-occupancy evaluation (POE). Knowledge gained from previous projects completed for the current client and for other clients can reveal a considerable amount of knowledge about the product and the process, which can be fed into the briefing process (see Chapter 7). These data will have been collected from user questionnaires, interviews and observation of space usage and records from facilities management/maintenance, etc., regarding running costs and serviceability.

- Precedent studies and visits. A lot can be learned from others and it may be prudent to visit buildings, with the client and key decision-makers, that represent different approaches to the client’s needs to similar budget and quality parameters. Permissions will need to be obtained first, and this can be time consuming and not always forthcoming. Visits to buildings are invaluable in gauging the client’s reaction to internal space, something that is difficult to achieve even with the best three-dimensional digital modelling packages. Visits can be supplemented with photographs, drawings and digital presentations of similar building types. Simple techniques such as measuring out areas on the floor to give an impression of actual sizes can also be very effective.

- Simulation. The presentation of virtual designs to gauge the reaction of the client to, say, three different design solutions can help too. The initial response from the client, be it delight, shock or disappointment, can help to establish the client’s preferences and thus guide the process – sometimes linked to precedent studies and visits, sometimes forming part of early design work. Gaming techniques can also be used in workshops to tease out the values of clients and project participants.

Analysing data and prioritising values

The main focus of the data collection and analysis effort is the establishment of client values. The better these are known, the better the team can deliver. The general consensus is that values should not be agreed and confirmed until the latest possible moment within the programme. Face-to-face dialogue helps to explore and develop
relationships that can (or conversely cannot) develop into effective and efficient working alliances, essentially the preparation for the construction of efficient communication networks. Critical connections between decision-makers are explored so that everyone is certain before going into production, thus reducing downstream uncertainty. The outcome of the data-collection and analysis phase is the establishment of basic values for the project, a very pragmatic document that does not contain any drawings. These values should be prioritised to help make the decision making easier in the design and detailed design phases. A number of tools exist to help prioritise values, including value management and quality function deployment (QFD).

The written brief

The brief is a written document (sometimes supported with graphics) that aims to capture the client’s requirements. The design team will develop the conceptual and detailed design to meet the requirements as stated in this document. A good brief should contain the client’s objectives, the project timescale, the cost limit and an indication of the client’s expectations of the finished quality of the building. The written brief must be able to communicate the client’s requirements to individuals who were not party to the briefing process and who may never actually meet the client. Any questions that develop during the design phases will usually be directed to the design manager or the project manager.

It is the written brief that sets out the client’s image for the building and the lifestyle of the building users. The design team use this document, or group of documents, to develop a number of conceptual design proposals. The contents of the brief should be set out logically and clearly. The brief should tell a story, describing what is to be achieved, why it needs to be achieved and the evidence (from data collection) to support the dialogue. Drawings, charts, diagrams and photographs may be used to support the story. The document should present information that can be acted on by the design team. A typical project brief would have a structure similar to that outlined here:

• **Mission statement.** The reasons for the project, a statement of intent
• **Objectives.** Statements that set out how the intent should be realised
• Priorities. Objectives prioritised so that resources can be targeted
• Performance parameters
• Responsibilities of all key actors
• Timeframe for the project, including milestones and completion date
• Supporting information, for example charts, illustrative diagrams, photographs and drawings.

Statement of need

The first stage is the identification of need (Figure 4.1). Once identified, the need will be presented to senior managers for approval prior to proceeding further. If the decision to proceed is positive then plans are put in place to develop a strategic brief, followed by the project briefing documentation.

Strategic brief

The term strategic brief is usually used to encompass the primary drivers for the project and hence the project brief. This relates to stages 0 and 1 of the RIBA Plan of Work, the start of the information gathering stages. Information gathering relates to the type of organisation, its managerial structure, its policy towards change, future business growth, etc. The client’s core business will relate to its organisational culture and its value criteria. Values relate to quality, cost and time. Design values relate to aesthetics, image and esteem. These values need to be articulated and measured for them to be meaningful. The preferred or anticipated procurement route should be discussed at the strategic briefing stage because it will affect the relationship of key actors, and in some cases the way in which the briefing process is managed. Procurement decisions will affect who develops the project brief and the type of interaction between the client and brief-taker. Stakeholders will be keen to impose their values on the strategic brief. The strategic brief will contain text and be supported by charts, tables and diagrams.

Figure 4.1 Development of the briefing phase.
Project brief

The project brief should reflect the broad strategy explored and established in the strategic brief. The project brief relates to a specific site and its environment and project needs. The project values should relate to the client value criteria set out in the strategic brief. The outcome of the various data collection and analysis exercises needs to be stated in a written document. This should concisely and clearly describe the project objectives and priorities. Concisely written documents are less likely to be misinterpreted by others. Ambiguity must be avoided and superfluous information excluded. Values must be explicit. Typical areas to be explored and articulated in the project brief are discussed later. On a more detailed level it is common to develop briefs for related areas such as the fit-out and furniture. Project briefs may contain prescriptive and performance requirements. Performance requirements tend to be preferred because each requirement allows alternative design solutions to be explored within the defined performance parameters. The project brief will contain text and be supported by charts, tables, diagrams, drawings and photographs. Physical and computer models may also be used.

The project brief is a specification of client values and needs, not solutions. The conceptual design will then seek to reflect these needs. The design brief should be a concise document that clearly outlines the client needs and states essential project parameters and constraints. This will help the client and the client’s advisers to consider the best approach to the design and construction phases. The aim is to reduce uncertainty relating to the project. A number of checklists exist for different building types. Typical areas to be explored and articulated in the project brief are:

- **Context.** Site location factors, relating to physical and environmental factors and to social, cultural and political factors.
Urban design management. Location will colour contextual factors, such as community involvement.

- **Design.** Functionality, flexibility and adaptability of design. Space usage related to activities. Esteem and image.
- **Comfort.** Internal and external environments, user satisfaction.
- **Environment.** Approach to sustainability, environmental impact, energy usage, recycling strategy, etc.
- **Finance.** Sources and allocation of funding. Projected cash flows and provisional project budget. Design to target cost. Capital costs, operating and environmental costs, whole-life costing. Transaction costs.
- **Legal matters.** All legal aspects of the project, including contractual arrangements.
- **Risk.** Statement of significant risks to the project and stakeholders. Scenarios and contingency plans.
- **Statement of quality level(s).** Expected quality levels of the building and building elements. Expressed as a performance specification.
- **Time.** Key dates and significant milestones identified and set out in a provisional programme. Realistic dates and deadlines agreed and committed to by all key actors.
- **Responsibilities.** Identification of actors’ key roles and responsibilities and establishment of lines of communication. Key actors need to be identified and boundaries of responsibilities discussed and established. Mapping key stakeholders and their role in the project can assist with the identification of clear communication routes.
- **Procurement route.** Identification of an appropriate procurement route given the parameters outlined above.
- **Resources.** Parameters and limits.

**Standard briefs**

Many corporate clients use a ‘standard’ brief for their repeat building projects, such as fast-food units and retail units. These briefs set out, in varying degrees of detail, the technical and functional requirements for a typical building and reflect the corporate values and market image of the organisation. Some standard briefs are very prescriptive, listing, for example, materials that can and cannot be used, even the reference
number for the paint colours to be used. Standard client briefs are essentially documents representing preferred solutions based on the client’s previous experience. As such they represent an important source of knowledge. Standard briefs are not static documents; the contents are constantly being tested and revised with new project experience and feedback from maintenance and facilities management departments. Thus standard briefs are gradually evolving and represent an excellent source of expert knowledge developed by the client organisation over time, revised to suit changing circumstances and improvements to their standard requirements. They provide an excellent briefing document and detailed design guide from which to work. Some clients will include some elements that are performance based in an attempt to allow greater choice and encourage creativity and innovation within projects. These documents will contain text and be supported by diagrams, tables, drawings of ‘standard designs’ and (often prescriptive) specifications for materials and finishes. Lists of products that should, or must, be used and possibly a list of prohibited products may also be included. Where design organisations carry out repeat projects for clients, it is standard practice to develop a bespoke master specification and architectural details in response to the standard brief. Although many design organisations take client specifications as a definitive list, some designers will question the content from time to time, especially in situations where there is discrepancy between what a client wants and what other organisations/control agencies may require to ensure conformity. The client brief will be instrumental in steering both the conceptual and detailed design phases.

**Communication of the brief**

A clear understanding of the actors expected to read and act on the written project brief may assist in the writing and communication of the project values, that is the brief should be written for a target audience. The target audience may influence the language used within the brief; however, the golden rules of clarity, brevity and consistency should always be followed. Some commercial clients may impose restrictions on who is allowed to see written briefs when, for example, security and/or commercial advantage are paramount concerns.
Reviewing the brief

Care should be taken to ensure that the project brief is to the client’s approval before proceeding to the design phase. Alternatively, if the brief is being developed concurrently with the conceptual design it will be necessary to introduce a number of opportunities at which the client is able to approve the current status of the briefing documents. The usual tool for bringing the client and other participants together is a series of managed meetings at which the brief (and design) is reviewed. Reviews should be relatively straightforward events, where the brief is ‘signed-off’ at appropriate control gateways in accordance with standard quality management procedures and the project plan. The review affords the opportunity for client and consultants to check and agree that the brief is complete (the problem formulated) and is an accurate representation of the client’s aspirations before proceeding. When discrepancies are uncovered it may be necessary to undertake additional work before proceeding further. In some cases it may be possible to proceed with the understanding that some issues have not been resolved but will be tackled in subsequent stages. If an intermediary is involved in the briefing stages (e.g. an independent project manager), it is important to ensure that the scope of the architectural firm’s input is clearly defined and approved by the client. Such procedures are central to quality management. The interface between the project manager and the design manager should be established and roles defined before proceeding with the conceptual design stage.

The project-to-office interface

During the development of the brief there will be an opportunity to assess the likelihood of the project progressing to the feasibility stage and beyond. At this juncture it will be necessary to reassess the resources required for the project and assess the design firm’s exposure to risk. The design manager’s role is to prepare an outline plan of the resources
required, together with a number of contingency plans. These will be determined by the fee income and the project timescale. Consideration must be given to the current and future availability of office resources, especially resources already committed or about to be committed to other projects. Funds and time may be limited; thus the firm must utilise its skills to best effect. This is a delicate balancing act because the design manager will be trying to maximise resources, limiting over- and undercapacity within relatively tight parameters. The better the briefing process, the easier it will be to plan office resources for the following phases. Poorly defined, rushed project briefs will cause a high degree of uncertainty for the design manager, and the temptation to progress the project without going through appropriate control gateways should be resisted. Adequate time must be allowed for this phase and this must be reflected in the fee agreement with the client. This is a challenging time in terms of trying to allocate resources to the project when many factors are ill-defined, uncertainty is high and the risk of the project not proceeding or being delayed is foremost. The design manager will need to manage the external relationships with the client, users and community representatives. Additional external relationships with key project actors will also need attention during the briefing phase. The external lines of communication will need to be balanced against the requirements of the design office in such a way as to enhance the creative input to the briefing process.

Continual iteration of the brief involves close contact with the client and client’s representatives. This is a period of learning for everyone involved and a period when trust and mutual understanding are developed between the design office and the client. Time spent in getting the brief right before design work proceeds and assembling the most appropriate organisations and people to work on the project tends to be a good investment, reducing uncertainty and the risk of major problems later in the project. Some clients may need convincing of this and architectural offices must be prepared to argue for adequate fees to carry out the briefing functions effectively and professionally. The link between the client and the design office is crucial for the development of an effective brief and working relationship, through which new business may follow. Thus the client-to-office interface is also concerned with the marketing and development of new business opportunities.
Chapter Five

Creating Design Value

Once the design agenda has been established the focus turns to the development and subsequent detailing of creative design proposals. It is here that the majority of the design value is generated and subsequently codified in production information that will allow others to construct the building. Architects are the most prominent actors at this early stage, although they will be working very closely with others, such as structural and service engineers, in a cross-functional project environment. It is also common for craftsmen, specialist trade contractors and manufacturers to be involved at this early stage to provide information and advice on major technical issues to assist design integration and cost control. Depending on the procurement route chosen, principal contractors may also be invited to contribute to the design team’s deliberations. This is a highly creative, and to the casual observer rather chaotic, process that must be carefully choreographed by the design manager to provide the space for creativity to flourish within the project parameters. The design manager’s role is to ensure that client value (design intent) is maximised during the various design stages. This requires careful planning and resourcing of projects as well as constant monitoring and adjusting to keep projects to programme.

Collaborative design

Architecture is a work of collaboration, requiring a balance of commitment and compromise, the discussion and sharing of values and the management of conflict as the multidisciplinary design team endeavours to realise client requirements through the co-creation of design. The design manager’s task is to provide consistent leadership,
emotional support and clear direction to this diverse and temporal grouping of individuals throughout this creative and challenging phase. The way in which design work is resourced, scheduled and controlled at the office and project levels will influence the performance of the design team and colour the design decision making process. Communication within the design office and between other design offices – increasingly conducted via design managers – is crucial. This will take place on an interpersonal level and within small groups and multidisciplinary teams. Communication is facilitated by information communication technologies, building information models and computer software – allowing the creation and realisation of organic, fluid and creative structures. This has altered the relationship between the form of the building and its construction. It has also started to alter relationships within the construction team, shifting emphasis towards integrated, concurrent and collaborative design. Digital technologies have helped to establish direct links between manufacturers and architects; thus the transition of design information through a prime contractor is, in some cases, no longer necessary. Web-based communications allow design teams to work on projects concurrently, helping to promote teamwork and knowledge sharing. Increased coordination of skills and knowledge can help to make the processes more efficient and productive, helping to facilitate communication between actors. The increasing use of building information models (BIMs) may also help actors to communicate more effectively and efficiently at this and subsequent stages in the development of the design.

The design process can be characterised as a continuous process of change in which design information has to be documented, clearly structured and continually updated if mistakes are to be prevented. Knowledge about the design exists on a cognitive level of each team member, on the level of collaborating design organisations and on an external level via the client, users and other stakeholders. Fortunately, well-designed document management systems and information systems help to control the vast amount of data generated for each project.

Designers repeatedly generate new knowledge about the design by collecting, sharing and transforming information. Team communication in terms of face-to-face communication is essential to facilitate these processes. From the perspective of the design team the specialist design knowledge is usually embedded in the team and needs to be
communicated to become useful knowledge for the design to be produced. To exchange design knowledge, participants need to communicate synchronously and asynchronously using all the available means of communication. Not all designers participate in the same way at the same time. There are many who participate as individuals, working alone for crucial periods and then returning to the project network. Design team members greatly depend on the most current design information to work out their own design tasks.

Collaboration between design team members and integration of design work may be very fluid at the conceptual stage and managerial controls should be as liberal as possible so that creative design may be encouraged, yet tight enough to ensure that design development is supported and delivered to agreed project milestones. Managerial control will be necessary to ensure efficient coordination of work packages and the completion of work to agreed quality standards and timescales. Contributors to design activities may hold different views as to their perceived amount of risk in relation to design liability, and this may well influence how they behave during the development of the design. The design team will be developing working relationships and effective communication structures, and this requires leadership to allow the designers to quickly develop into a creative and efficient team.

Given the relatively creative and fluid nature of the conceptual design phase it is necessary to have an underlying framework that stimulates creativity, yet also provides definitive milestones for delivery of design work packages. Without a framework the development of the design will be virtually impossible to manage. Assuming that the design team has been assembled with care, and that efforts have been made to maintain the team spirit during the conceptual stages, any problems that develop are likely to be minor and easily resolved.

**Detailing the design**

In the majority of projects there is a clear cut-off between the conceptual and technical design phases. It is here that the culture changes from the abstract to the concrete and different people become involved. Conceptual architects give way to constructing architects, architectural technologists
and architectural engineers aided by a variety of technicians and associated support staff. Specialist contractors may become more involved in the process and contractors and workers may be keen to offer feedback from their direct site experience to help the detailing process. Much of this is highly specialised design work and is provided by specialist trade contractors. Manufacturers of building products and components also have an active role, often assisting with technical input and the provision of detailed drawings and specifications for their building components and products. Emphasis tends to turn away from aesthetics towards practical issues concerning time and cost and ease of manufacturing and assembly. There is, however, a need to retain a high degree of creativity at the detailing stage. Client values codified in the conceptual drawings need to be translated seamlessly into production drawings and subsequently into manufactured products and components. Thus synergy between the conceptual design and the detailed design is important. On very small projects it may be possible for the architect to do the detailing also, and here the flow of conceptual design thinking into the detailing stage should be relatively straightforward. In the majority of projects, where detailing is carried out by individuals not party to the earlier creative design thinking phases, effort is required to ensure that the transfer of design intent is done efficiently.

During this period numerous decisions concerning how the building is to be realised are made, confirmed in the contract documentation. How the detailing is managed, who contributes to the detailing phase and when the detailing is carried out continues to be a matter of some debate with the constructor sector and varies widely between projects. However, at some juncture in the life of a project the scheme has to be detailed, and this involves the input from a wide variety of actors. In contractor-led projects the contractor will usually deal with the detail design, encompassed in the production function. In architect- and management-led projects it is not uncommon to complete all, or substantial parts, of this work before the main contractor takes over.

From a management perspective the detailing phase is concerned with interfaces, boundaries and joints. Coordination of many different works packages and production information takes high priority. Different values, goals and attitudes of the actors need to be recognised and accommodated in the planning process. Some estimation of perceived difficulty is
required in order to adequately resource and programme detailing activities.

Detailing is a crucial phase during which the value of the design can be enhanced and waste of materials and resources minimised. Many of the decisions made during the detailing of the design will have been determined to lesser or greater extents by the approved conceptual design. This does not mean, however, that this phase is simply a case of applying standard details and specifications; rather it is a creative phase in which many details are explored from first principles and well-worn approaches to detailing constantly questioned. This phase is a challenging one for all actors as various works packages are coordinated and eventually brought together as a final set of information that informs the physical manufacturing and assembly stages. It is about processing and producing information, coordination of interdependent elements of work, timely transfer and easy access. It is a phase in which close working relationships underpin efficient information sharing and effective decision making. Utilising the knowledge of other actors is fundamental to delivering value.

Crucial areas are:

- Close working relationship between conceptual designers and the detailers
- Understanding of production/assembly constraints and opportunities
- Appreciation of production costs.

**Relationships with manufacturers, suppliers, contractors and tradespeople**

Successful design relies on cooperation between manufacturers and suppliers of materials and components and designers. Manufacturers have a vital role to play in helping the designer to detail particular aspects of buildings, especially in circumstances where the detailing may be unfamiliar to the designer or to the design office. On large projects and projects with unusual details, many manufacturers will offer to provide the technical drawings and written specification clauses for the designers; for example cladding companies will provide a complete package. This saves
the design team a lot of production work, shifting their emphasis to coordination and checking information from other sources.

Manufacturers (many of whom have their own detailing/technical departments) have a much better understanding of their materials and building components than the majority of designers and technologists could ever hope to achieve. For many designers the service provided by the manufacturing company and/or supplier is equally as important as the characteristics of the product. Help with detailing difficult junctions and writing the specification will be welcomed by busy designers with tight deadlines. Technical helplines and the prompt visit to the office by a technical representative to assist and provide product-specific knowledge are important services that can give manufacturers competitive advantage over their immediate rivals. Efforts to develop a working relationship between manufacturer, designer and contractor are a small investment for all parties to ensure a relatively trouble-free partnership.

Relationships with main or prime contractors will vary between projects depending on the type of contractual arrangement. Even when competitive tendering is used there may be informal links between designers and trades people, who may be contacted for ‘informal’ advice on detailing and technical issues. Working with specialist contractors and trades people can help architects to develop their knowledge about constructability and hence inform the design process.

Design conversations

Design dialogues and face-to-face meetings are useful vehicles through which to discuss and explore possibilities and preferences as well as allowing exchange of knowledge between the interested parties. Interpersonal communication provides the opportunity for actors to develop mutual understanding of others’ knowledge and attitudes and hence work more closely in sharing information and coordinating the various works packages. Face-to-face communication is a rich instrument to enable discussion of the design, especially in early design stages when much design knowledge is implicit and still held in the minds of the design team.
Design dialogue is a means of communication that offers the highest possible exchange of signals, clues and messages, and thus the best opportunity for understanding the characteristics of the design project. Both sender and receiver are able to communicate directly by use of body language, their voices and also by making sketches. Dialogues are a very effective tool for discussing design problems related to the design tasks of other contributors, by visualising the design using sketches and explanatory stories. They can also be used to develop a better understanding of others’ roles in the design process and to fine-tune each other’s design tasks.

**Meetings and workshops**

During the design phase meetings tend to be dynamic and often called at short notice to discuss, present and resolve design problems. Face-to-face meetings are crucial to the development of the design in an integral manner, although they also serve an important function for getting to know the other team members better and contributing to team development. Meetings tend to fall into two types: those to discuss design development and those in which the progress of the project is discussed. Design development meetings may include the members of the design organisation only or more likely a number of other specialists comprising the core design team. The purpose of these meetings is to discuss and explore the development of the design. Face-to-face discussion helps to establish options and preferences for particular solutions. It also helps to reveal individual attitudes and values. Bringing various actors with complementary skills together in the same place to discuss the design is a key feature of a more integral design approach. Brainstorming sessions may also be used to develop specific aspects of the design. Discussing progress and proper closure of design tasks is important and progress meetings need to be scheduled on a regular basis to review progress in accordance with the overall programme. The client, along with key actors, should be invited so that they can be informed of progress and have the opportunity to contribute to the development of the design as part of the project team. Although it is inevitable that issues relating to the development of the design will be discussed in these meetings, the primary purpose is to discuss progress in accordance with agreed time, cost and quality parameters. These meetings are a good opportunity to
agree and sign off the work. They are also an opportunity to reassess provisional programmes and revisit cost estimates.

Facilitated workshops are also used as a means of exploring creative responses to the project brief. Facilitated workshops may be used to explore how the basic project values may be fulfilled and risks and uncertainty managed. A number of design options are presented, reflecting how they meet the project brief while at the same time addressing the contractual project framework. Project economy can be discussed along with restraints imposed by, for example, authorities and relevant codes. Proposals can be considered and ranked or prioritised according to value. At least two or three workshops may be required because there will be a lot of information to work through. The outcome of the facilitated workshop is the selection and agreement of the proposal best suited to the values expressed in the briefing documents. This proposal will be subsequently tested as the design is detailed.

In the early phases of the project the design development meetings and workshops serve a dual function. Actors with different backgrounds and levels of education are often brought together for the first time; thus workshops are about exploring appropriate means of communication and developing working relationships (team building), which evolve alongside the development of the design. Meetings can be used to:

- understand and explore the design team’s interpretation of the brief and to reach consensus about the design (at specific junctures in the programme);
- resolve conflicts and discrepancies between various design work packages, thus allowing the design to develop;
- exchange experiences and knowledge about design possibilities and realisation processes;
- develop a team ethos by bringing people together to discuss often difficult issues face to face;
- evaluate and review the development of the design;
- review the progress of specific design packages against the master programme;
- start the design process to introduce team members and clarify their role and tasks. It is common to involve the client in this meeting also.
Presenting design proposals

The ability to clearly communicate design ideas to clients and other project stakeholders is an important skill. Presentation requires the use of a wide range of communication media, from written reports and drawings to verbal presentations supported with graphics. The way in which the design team presents their design proposals will provide a client with a lot of information about how the designers are likely to manage the project. Similarly, the ability of architects to answer questions related to the design and matters of cost and time will tend to be rather revealing about the ability to deliver a high quality design on time and within budget.

Complete and comprehensive coverage of the following will be expected:

- Terms of reference and responsibilities
- Analysis of the site, brief and related parameters
- Approach to the problem represented in design drawings and supporting information, which may include alternative design solutions
- Estimation of cost (including all professional fees)
- Estimation of the programme (including the identification of uncertainty)
- Recommendations
- Discussion with the client and project stakeholders
- Approval from the client to proceed.

Design critiques, charettes and reviews

As the design ideas develop it will be necessary to critique, discuss and review designs to ensure that the maximum value is being delivered and to coordinate design activity. The frequency at which the design is analysed will depend on the characteristics of the project and to a certain extent the working methods of those involved. The three most common forms of review are the design critique, design charette and design review.
Design critiques

Design critiques tend to be relatively informal events conducted within the sanctum of the office. Designs can be discussed openly and critically with a view to improving the value of the design before drawings and associated information are released to the client and/or other project participants. Some offices conduct design critiques on a relatively ad hoc basis, reacting to the speed of development of the design. Other offices have a more systematic approach, programming the design critique for a particular day and time and inviting staff working on other projects to contribute their views and share their knowledge.

Design charettes

Design charettes are short, intense, periods of design activity that aim to solve a design challenge. These tend to be used in the conceptual phases of projects, although they can also be utilised to great effect when trying to resolve a detailing challenge. They can also serve a function in helping to develop teams due to their intense and collaborative nature.

Design reviews

Design reviews are planned events, forming an important part of the programme and the project quality plan. Reviews form control gateways at predetermined key stages in the life of the project. To work effectively design reviews should include the project team, consultants, the quality manager, the planning supervisor and the client or the client’s representative. Design reviews should include the presence of the client and consultants working on the project so that the project team reviews the design and any alterations agreed by the team and recorded in the office plan. The review system is essentially a series of gates in the design process through which the project cannot pass without a thorough check from the quality manager and the approval of the client and participating consultants. These meetings provide an opportunity to discuss and agree the design before proceeding further; more specifically they should address:

• Design verification
Design changes
• Compliance with the brief
• Statutory consents
• Constructability
• Health and safety
• Environmental impact
• Budget
• Programme.

Design reviews provide a forum for helping to identify errors and omissions. They provide a checkpoint for ensuring that the design meets the client’s requirements and the architectural practice’s quality standards. It also gives the planning supervisor an opportunity to check the scheme for compliance under the Construction (Design and Management) Regulations (CDM). More importantly, it provides a window for debate and feedback. It is important to keep these meetings organised but as informal as possible so that ideas can be discussed freely and all members of the project can participate in the process. Planned design reviews, where client, external consultants, designer, design manager, project manager and the planning supervisor can review and discuss potential problem areas and take appropriate decisions, should form an essential part of a health and safety strategy. The design review has another purpose: the check for compliance with environmental/sustainable policies and practices. These may be a combination of the client’s requirements and the firm’s own pursuit of environmentally responsible policies and will have been discussed and agreed at the briefing stage. As the project proceeds, many situations arise and change; therefore it is important to constantly review the project’s environmental impact against the predetermined criteria.

**Design quality indicator**

The design quality indicator (DQI) has been developed as a tool for assessing the design quality of buildings. The tool may be used at key stages in the development, realisation and use of the building and is well suited for use in conjunction with value management and risk management techniques. The four key stages are briefing, mid-design, at occupation and during use. The tool relies on participants completing a questionnaire that addresses the three fields of build quality, impact and
functionality. The results are then expressed illustratively as a design quality indicator spider diagram (Figure 5.1). By using the tool at key points in the project it is possible to track the importance given to all ten factors and this helps to focus attention on areas that have not been adequately addressed. The tool is useful for developing and maintaining a clear vision for the building design. It also helps to capture knowledge for guiding future projects and the ongoing management of the building.

Figure 5.1 Design quality indicator.

Programming and coordinating design work

As the design progresses, time and cost certainty should increase as the number of unknowns reduce. A number of tools can be used to help design and project managers schedule the multitude of tasks required to realise a design project. Clear goals, timescales and value parameters will have been established and agreed at the briefing stage. This global project view then needs to be broken down into manageable work packages using
the work breakdown structure. This helps to identify the tasks required, identify and allocate responsibility for specific works packages and also identify interdependencies between work packages. Risk and uncertainty may also be revealed during this process. The challenge is then to estimate how much effort will be required to complete these tasks (see also Chapter 11). Various programming techniques are available to map activities, ranging from Gantt (bar) charts to network analysis, precedence diagrams, line of balance (elemental trend analysis) and time chainage diagrams. These are explained in project management books, so only a brief overview is provided here.

**Work breakdown structure (WBS)**

The aim of the work breakdown structure is to partition the project into smaller, manageable parts. This is usually broken down as a series of tasks, subtasks, individual work packages and levels of responsibility and effort. This is a common technique in project management and has been proven to be an effective way of helping to organise and manage projects. The technique can be applied to design projects, although it should be noted that it does not deal with the complexity of interrelated design effort and coordination of design activities. However, at a simple level it can help managers to picture the process as a series of activities and hence help to develop schedules of work and work programmes.

**Gantt (bar) charts**

Gantt charts are a very useful way of representing tasks from the start of the project to its completion (Figure 5.2). Individual tasks are illustrated as a bar on the chart, showing start and completion dates and project milestones. This helps to provide a visual overview of the tasks and may help to identify the more obvious coordination problems. Project milestones are clearly identified on the bar chart. Computer software packages allow for some highly sophisticated breakdown of tasks to be performed, although for many design projects a relatively simple representation is usually sufficient to help picture the sequence of design activities required. Gantt charts do not show dependency and so it is difficult to see which work packages may significantly affect the
successful completion of the project. Programmes form a benchmark to check progress of the various tasks at a given time. A number of different techniques can be used, but one of the most common is to use coloured traffic lights (green, amber, red) or faces (happy, sad) to represent progress. Alternatively, the completion of the task can be represented as a percentage, for example 75% complete.

**Figure 5.2** Simple Gantt chart.

![Simple Gantt chart](image)

**Network analysis**

The critical path method is a graphical representation of work packages represented as an arrow diagram (Figure 5.3). The arrows represent the tasks and the circles the events (which are numbered in sequence to completion). To undertake network analysis the planner has to first estimate the overall period for completing the (design) project. Individual operations are then identified and the duration assigned to each activity. The next stage is to establish the sequence of work, which is usually done by starting to sketch out the arrow diagram. This helps to identify which tasks are critical, that is need to be completed, before other tasks can commence. This can be done manually and/or assisted with computer software packages. Thus network analysis can help to identify dependencies and is often used in conjunction with a bar chart. It is difficult to show concurrent activities clearly on arrow diagrams without the diagrams becoming overloaded with information. Precedence diagrams follow a similar rationale to arrow diagrams, but the
dependencies and activities are represented differently. An activity box is used instead of arrows, which allows a number of different relationships to be expressed on the diagram. This makes the technique more useful than arrow diagrams for complex and concurrent activities. The important point to make is that by mapping activities graphically and identifying critical activities the design manager will gain a much richer picture of the design tasks, thus helping to achieve accurate programming.

Figure 5.3 Simple critical path chart.

Line of balance (elemental trend analysis)

The line of balance technique allows a graphical representation of the rate of work on different activities, represented by the inclined lines on Figure 5.4. If all activities developed at the same speed, the lines on the diagram would be parallel; however, the reality is that some tasks proceed much more quickly than others. Time buffers are represented as spaces between activities. As lines diverge the buffer increases and as lines converge the buffer decreases. Converging lines represent the potential for one activity adversely to affect the other. Line of balance was originally developed for highly repetitive tasks, although the technique may be useful for mapping one-off projects if the activities are well defined. Time chainage diagrams (or location–time charts) are essentially a combination of line of balance and bar chart scheduling techniques.

Figure 5.4 Simple line of balance chart.
Design fixity

When developing the design there are a number of elements that are in the direct control of the design team and there are also elements, for example achieving town planning consent, that are not directly controllable. Therefore design programmes have to allow some flexibility for the noncontrollable elements. Design managers may find that very simple techniques will be extremely beneficial when planning and reviewing design work. Design fixity (sometimes referred to as the ‘traffic light system’) is one such example of a very simple and highly effective technique. The idea is that designs are reviewed at scheduled intervals in the programme for their completeness. Invariably there will be aspects of the design that are complete, some aspects where more information is required and some areas of uncertainty. These can be identified during a thorough design review and are listed as follows:

- **Green light.** The design can be signed off and the design team can proceed to the next review event.
- **Amber light.** There are areas of uncertainty, but these are not preventing the design team from continuing with the design. In the meantime the area of uncertainty will need to be resolved to eliminate the potential for subsequent delay.
• *Red light.* The areas of uncertainty are such that it would be wasteful to continue with the design work without first resolving the uncertainty.

Design programmes can then be reviewed and adjustments made to accommodate the various levels of completeness.

## Approvals and compliance

Approvals represent important milestones in the project. There is often a degree of uncertainty associated with gaining approvals because the decision making is done by others and lies outside the control of the design office. This means that all programmes need to allow for a degree of uncertainty and clients need to be kept informed of progress. The main approvals addressed here are town planning, building control and environmental compliance.

## Town planning

Development cannot commence without first receiving town planning consent. In the UK the town planning process is a democratic exercise and there is always a degree of uncertainty and risk that the decision could be delayed (e.g. to allow the planning committee to visit the site) or refused (e.g. because the proposal is contrary to the local plan). Delays in receiving an approval (or refusal) can upset carefully made programmes. Therefore, some degree of flexibility is needed in project programmes and office resourcing. A democratically elected planning committee decides planning consent, and the decision of the committee is outside the control of the applicant and their agents.

Few development proposals are straightforward and the interaction with town planning officers, the planning committee and local user groups should be handled with tact and diplomacy. Although the architectural press likes to publicise the cultural differences between developers and architects (trying to get approval) and the planning department (trying to control development), the reality is that the cultural differences are
manifest in the attitudes adopted by both sides. A variety of strategies may be used to suit different clients and contexts:

- **Passive.** The design is developed, the application prepared and then submitted with little or no interaction with town planning officers. The applicant then waits to hear the outcome of the planning committee’s deliberations. There is no attempt to manage the application process.

- **Open.** The scheme is developed in conjunction with discussions with the town planning officer and other stakeholders representing the interests of the community, such as local authority highways engineers, environmental officers, etc. Discussions tend to be open and the design team is seen to be responsive and sensitive to the requirements and wishes of the local authority and other stakeholders. This approach can consume considerable staff time, but tends to be beneficial in achieving planning consent with few, usually reasonable and expected, conditions. This makes the subsequent detailing and programming of the scheme a relatively smooth process.

- **Defensive.** Interaction between the planning department and the design team is conducted with closed and defensive communication, with no attempt to build a relationship. The defensive attitude tends to reveal cultural differences between the parties very quickly and it is not uncommon for personality clashes to develop as a result. Because of the defensive attitude it may be difficult to predict the outcome of the application process, which will involve uncertainty for the programme.

- **Aggressive.** In situations where it is clear that the proposed development is contrary to the development plans of the local authority (and approval is highly unlikely), it is common for the design team to take what many planning officers would perceive as an aggressive approach. Interaction is likely to be very limited and possibly adversarial. The approach is to submit two or even three different schemes to try and cause the planning department as much difficulty as possible. The intention is to appeal the expected refusal. Double-tracking and even triple-tracking (with slightly different proposals), with a view to appealing, is not liked and is perceived as aggressive behaviour by town planners; clients on the other hand may have a quite different view.
The act of achieving full planning approval will ‘fix’ the design layout and appearance of the building and associated site works. Changes to the approved design, for example the layout, appearance and external facing materials, will need to be referred back to the planning department for approval. This can prove to be time consuming and there is no certainty that the revisions will be accepted. Achieving full planning approval is usually the trigger for clients to decide to proceed with the detail design work, building regulation submission and contract documentation. This is a convenient point at which to bring the team members together to reappraise the programme, budget and design before proceeding further.

**Building regulation approvals**

Detailed information describing the construction of the proposed building must be submitted for approval to the local authority building control department. Architectural details must demonstrate compliance with the Approved Documents (England and Wales, Northern Ireland) or Guidance Documents (Scotland), which set performance requirements to be met or bettered by the proposed design solution. The Approved Documents are intended to provide guidance for some of the common forms of construction while encouraging alternative ways of demonstrating compliance under the ‘deemed to satisfy’ standards. Designers and builders have a choice: they can accept the suggested method in full, in part or not at all if they can demonstrate an alternative method of compliance. In reality, many designers and builders find it quicker, easier and more convenient to work to the solutions suggested and illustrated. Alternatives are more time consuming to develop and may take longer to be approved compared with a more conservative, ‘safer’ approach. The performance approach provides a route to greater levels of creativity and innovation and may provide the opportunity to design using less material and resources than might otherwise be required. Adequate time must be allowed to suit the approach taken and some flexibility may need to be built into the project master programme to allow the design team to respond to questions and provide additional information if requested.

For small and relatively routine projects the application procedure should be relatively straightforward with a high degree of certainty over the decision. For larger and more complex buildings the process will involve a greater degree of consultation and is likely to be time consuming. It is a
sensible strategy to work closely with the local authority officers to ensure that any areas of uncertainty can be discussed and dealt with before the application is submitted, thus helping to avoid unnecessary delays because of insufficient information. Appropriate permissions must be in place before demolition and/or construction work commences.

Environmental compliance

Design managers will be responsible for overseeing environmental compliance. In the UK this will usually involve the Building Research Establishment Environmental Assessment Method (BREEAM) and the Code for Sustainable Housing, Standard Assessment Procedure (SAP) approvals (used for energy rating of dwellings) and associated legislation pertaining to a specific project. It is an area in which the prime contractor’s construction design managers will also play a significant role.

Coordination of production information

In addition to encouraging and stimulating creative design proposals the design manager will be concerned with coordination of work within the office and between design team members. Although this is an area of work that has been made much easier to deal with through the widespread uptake of ICTs, collaborative digital models and BIM, it still requires careful monitoring of staff performance and allocation of the most appropriate staff to the task (see also Part Two). It is not uncommon for firms to lose money at this stage, necessitating (often expensive) shortcuts further along the process. The design manager has an important role here, acting as a motivator to staff while also monitoring the progress of the design in accordance with the programme and intervening if and when required. Coordination activities are rather extensive, but tend to include the coordination of:

- Design works packages (and information flow)
- Costs
• Value parameters
• Quality of information (signing off).

During the detailing phase the design manager has a number of responsibilities. Not only has he or she to ensure that target dates are met for the production of relevant information, but also the quality of the information must be constantly monitored and checked for compliance with both the firm’s standards and those of the client, as set out in the project quality plan. More specifically:

• Drawings should constantly be monitored for accuracy. It would be reckless to issue drawings to parties outside the office without checking them for accuracy. Good control can reduce potential claims and avoid the need for additional work at a later stage.
• All project information should be coordinated through the use of drawing registers; this is equally important for electronically generated/stored images as for information on paper.
• Design changes should always be referred back to the client for approval, a fundamental aspect of any quality assurance system.

The project-to-office interface

Design quality is central to the emotional and financial health of the architectural office. Being able to deliver design proposals on time and to budget is characteristic of a well-managed office. The relationship between independent projects and the office project portfolio is particularly important during the conceptual design development phase. The amount of design effort required must be estimated as accurately as possible and resourced in relation to the office project portfolio. Similarly, the interface between the office and other project participants must be managed sensitively. Failure to deal with these factors will most likely result in poor programming and coordination of design effort, and deadlines may be missed. Boundaries in project management models are, especially in the early stages, rather superficial. For example, working on the conceptual design involves some thought and work related to detailing and realisation. Additional time spent in the design phase to resolve a
specific design issue may be recouped in the detailing phase because important decisions relating to the detailing have already been made. Such fluidity makes scheduling resources a challenge unless the design manager allows for some flexibility within individual work programmes. The design manager’s role is to encourage creativity, while ensuring that deadlines are met and the quality of the design is acceptable to the office.
Chapter Six

Realising Design Value

It is at the realisation phase when the client’s values, codified in drawings, specifications, schedules and bills of quantities, are translated and converted into a physical artefact by the contractor. This is generally known as the assembly, construction, production, implementation or realisation phase and is covered extensively by the large body of construction management literature. It is here that the culture of the project changes significantly, with emphasis shifting from the design team to the production team. At this phase in the project the architect’s design manager(s) will interact with the contractor’s design manager(s) to help resolve any queries with the production information and to manage changes to the design. The focus for the project manager is on realising the project to budget, within programme, safely and to agreed quality parameters. The focus for the architect’s design manager is on ensuring that the value generated in the design is realised in a physical form. This requires a balance to be struck between commitment (not changing the design) and compromise (changing the design for the better) throughout the project life cycle. It is the procurement route that determines the extent to which the architect’s office can, or cannot, influence design quality at this stage. The architect’s design manager has to manage the interface between the design office and the contractor, usually via the contractor’s design managers. It is inevitable that there will be requests for information and requests to change aspects of the design during the life cycle of the project. The design office must have some capacity to respond in a timely manner and have appropriate protocols in place to manage such requests. Failure to do so will result in inefficiencies and the potential for claims against the design office.
Getting involved

Architects often talk of ‘making buildings’ but very few build in a physical manner. Design is codified in drawings, schedules, models and associated written contract information. Factory workers and site-based operatives then translate this information into physical activities and physical objects. This work is, with the exception of very small building works, subcontracted by a prime contractor to specialist subcontractors and suppliers, i.e. it is the contractor that usually manages the realisation phase. Detachment from construction activities may be a sensible business strategy for some design offices (sometimes seen as helping to reduce risk), but the dislocation from the physical act of building is a little disconcerting. Good architecture requires a thorough understanding of the technologies being applied, regardless of the construction methods employed. Experience of construction and reflective feedback into earlier conceptual and detailed design stages is crucial in the drive for continual improvement and crucial to ensuring safe and efficient constructability. Understanding the complexities of production, especially the interface of design, technology and management, will help designers and engineers to realise their detailed designs better. It may also help architects to contribute in a positive manner to the management of the realisation phase and to be better equipped to advise clients.

Before the drive for professional status architects were directors of the work and were in direct contact with the workers and the work they produced. There was no intermediary in the form of a main contractor or project manager. Drawings were rarely needed because of the empathy that existed between designer, craftsmen and materials. A combination of more complex technologies, an ever-increasing choice of building products and a growth in the number of intermediaries has resulted in architects becoming disengaged from the physical act of building. More recently, with the revised interest in prefabrication, off-site production and supporting digital technologies (such as BIM), architects have started to become more involved in the realisation of buildings, working more closely with manufacturers and specialist subcontractors, and (in some cases) have become better positioned to influence the implementation of client values. Collaborative and integrated working has helped to close the gap between the design and realisation cultures, and design and
management procurement has put architects back in direct contact with the workers and the physical artefact. This can help to improve working relationships and also the quality of buildings.

Alternative method of management

Arguments for a design-led form of contractual arrangement are not new. In the 1980s there was a proposal for an Alternative Method of Management (AMM) from the architectural profession. This recognised the growing importance of subcontracting and removed the main contractor from the process. Such a system is, theoretically, well suited to architectural firms since the ability to communicate their ideas directly to the subcontractors and the ability to learn directly from them can go a long way in improving the quality of the finished product. The problem comes from the environment in which construction takes place, an adversarial, fiercely competitive market, in which main contractors will not readily relinquish control. AMM was not adopted widely, partly due to the architect’s weak position, but mainly because the system relied on cooperation and contractors were not prepared to accept this. Since this period a small number of architects and engineers have seized the opportunities presented by off-site manufacturing and information technologies by offering a complete design and production service to clients. The return to the site has also been made possible by sophisticated computer software, BIMs and digital manufacturing. The architect’s role is akin to the manager of an assembly process: coordinating fixing and fitting operations as discrete works packages.

Design and manage

The term ‘design and manage’ is sometimes used to describe an architectural practice that also manages the physical realisation of the design. Use of discrete works packages allows the architect to communicate directly with trade contractors and eliminates the need for a main contractor. Employing individuals with contracting and management skills (contracts managers), the architectural firm is in a position to manage, administer and coordinate the subcontractors, taking advantage of the minimal capital outlay required. Architectural firms can control the
whole construction process, thus ensuring continuity in the product quality chain, while also charging a management fee. The client has single point responsibility while the independent selection and control of subcontractors provides the opportunity (theoretically) for improved completion times, improved quality, reduced costs and improved communication within the project team. Communication routes are more direct because subcontractors are in regular contact with both client and architect; thus feedback and learning is much improved, as is the rapid resolution of uncertainty (reducing the number of claims and variation orders). Subcontractors are paid directly by the client; hence they receive payment for work quicker than they would when working for a main contractor. This procurement method has many similarities with design and build but the difference is that the team is led by a design-conscious professional rather than a cost-conscious one.

From the client’s perspective the concept of single point responsibility is appealing since the client has to deal only with one firm, regardless of when queries or problems occur. From the architectural firm’s perspective such an approach represents a large increase in both responsibility and the exposure to risk, although the approach usually relies on full client involvement and the client’s willingness to share risk and reward. Even for the architects that work closely with construction the idea of getting involved in construction management may be unsuitable because it introduces overheads (management staff) that may be financially difficult to justify across the whole project portfolio. Appropriate experience, skills and aptitude may have to be bought and brought into the office, which is not without an element of risk. This approach may be best suited to small and/or repeat building types, which will allow the design office the chance to build up knowledge and experience to move into larger and more complex undertakings. Alternatively, some practices may set up a separate legal enterprise to deal with the construction management part of the business.

Clients may take some convincing that architects can manage construction activities effectively and efficiently, and may be reluctant to engage with design and management. By entering the contractor’s territory architects will meet resistance and some contractors have been known to respond by removing architects from their list of approved suppliers. Another disadvantage, in the short term, is that time and projects will be required to develop the appropriate experience and knowledge to offer these
services competitively. As a general rule of thumb it may take two to three small projects before the architectural firm is able to make a profit.

**Working with the contractor’s design manager**

The architect’s design manager will need to work closely with the principal contractor’s design manager(s). This relationship will be determined by the type of procurement route used and the personalities of the design managers involved. Although a wide variety of terms are used, contractors have two interrelated job functions for their design managers, either ‘pre-construction’ or ‘construction’ design managers. Initially the construction design managers were located on the construction site, dealing primarily with issues concerning the coordination of design information (including clash detection), requests for information (RFIs) and managing design changes. This is a similar role to the long established resident engineer and resident architect. More recently construction design managers have become involved with pre-construction design activities, ranging from first contact with clients, client presentations, dealing with town and country planning applications, coordinating and managing the development of the design, dealing with sustainability issues and environmental compliance (using evaluation tools such as BREEAM and Leadership in Energy and Environmental Design (LEED)) and reviewing the design to ensure that health and safety risks are designed out or mitigated (e.g. complying with the CDM Regulations). These pre-construction design tasks would traditionally have been associated with architects and engineers but they now come under the remit of contractors in many contractual arrangements. BIM has also pulled the construction design manager towards earlier involvement in the design process. It is here that many of the problems of coordination, clash detection and compliance are addressed and resolved collaboratively in a single virtual model before the physical act of construction starts.

The architect’s design manager will need to establish who he or she is expected to communicate with within the contractor’s organisation, establish appropriate channels of communication and establish clear lines
of responsibility for various tasks. Responsibilities for design work and for managing different aspects of the project will be determined by the procurement route and terms of appointment.

**Pre-contract issues**

The success of tendering and negotiation depends on first narrowing down the potential organisations and individuals to those who are known to be respectable and trustworthy. This may be a time-consuming task, requiring the analysis of a considerable amount of information relating to the organisations in question. It is becoming common for the project team to invite prime contractors and specialist contractors to discuss the project and to try and establish a working relationship based on shared project values. Organisations that hold different values to the project team should be rejected at this stage. There are essentially two approaches to realising the design in a physical manner: to competitively tender the work or to enter into negotiations to agree a contract sum. The choice of one method over the other will relate to the type and size of the project and various conditions relating, for example, to the competitive tendering of public projects.

- **Competitive tendering.** A select list of contractors is invited to price the work and submit a tender price. In the UK it is common to appoint the lowest tender, although there is plenty of evidence to suggest that this is not always the wisest thing to do. The policy is often to get the job at any cost and then make numerous claims for extras. In some countries the practice is to find the average tender price and appoint the tenderer closest to the average. The argument here is that the tender price is likely to be more representative of the final cost and there will be less likelihood of claims for extras.

- **Negotiation.** It is becoming more common to use negotiation since it is considered to be a less wasteful process and is widely promoted as offering more value to all parties. The project manager will invite the contractor to discuss the project and to prepare a priced bill. Working closely can provide several advantages, although the price can never be shown to be the cheapest.
Pre-contract start-up meeting

Before starting to realise the building in a physical form it is critical that the design is approved by the client and that it is as ‘perfect’ as possible given the project constraints; that is the design should be fit for purpose and satisfy the client’s value parameters set out in the briefing phase. The final gateway review provides an opportunity to discuss and confirm the design, budget and programme before physical realisation commences. Any changes after this event are likely to be expensive. The process of tendering and/or negotiating the contract sum may well have identified some errors in the contract documentation that should be corrected and reissued to the contractor prior to the work commencing. A process plan is produced that helps to map the various production activities and help identify missing information.

The pre-contract meeting is an important event in which the key participants can discuss the project before work commences. Although much of the emphasis may be on contractual and legal matters and the resolution of any outstanding questions, the pre-contract meeting serves to establish the culture of interaction between the design team and the realisation team. It is during this meeting that the design team should clearly set out the philosophy and values behind the design. This helps to emphasise important aspects of the design and helps to set out the rules of engagement for making changes should they be necessary.

Programming

With off-site manufacturing the programming at this phase will be concerned with the preparation of the site to receive the manufactured components (e.g. foundations and services connections) and the safe delivery and assembly of the component parts. The site works can usually be completed, checked and signed off well in advance of the scheduled delivery of the manufactured components, which can help to simplify the programming. In comparison, site-based construction involves considerably more activities to be coordinated. Workflow planning allows different trades and activities to coexist on the site without hindering the work of others. Specialist subcontractors and trades will supply detailed
programmes for their work packages and a method statement that explains how the work will be carried out in a safe and efficient manner. The construction project manager’s job is to coordinate the different works packages so that work may flow smoothly and safely. To do this it is necessary to use programming techniques. These will vary depending on the type and complexity of the project, but typically will include one or more of the following:

- Gantt (bar) charts
- Network analysis (critical path)
- Precedence diagrams
- Line of balance (elemental trend analysis)
- Location time chart (time-chainage diagrams).

**Buffer management**

Buffer management is a very simple concept that aims to manage the interface between clearly defined work packages. This is achieved by allowing space (time) between separate activities on the master programme. Buffering allows for some flexibility in the length of time taken by work crews and also allows time to check and sign off the work before the next trade takes possession of a defined space. This helps to prevent conflicts between different trades and subcontractors trying to work in the same area at the same time and thus hindering one another in the process. Buffering techniques can help to simplify the flow of work and mitigate the knock-on effects of local delays on the work of others. Buffering works packages may also be a safer way of operating on highly complex projects and in areas of buildings where working space is restricted, thus minimising the number of people and activities taking place in that space. Some managers would argue that buffer management techniques add unnecessary time to the programme and hence add waste. Others would argue that buffer management is an essential tool to ensure safe and continuous workflow, and is essential to a well-managed project. Used in conjunction with self-managing work crews, buffer management techniques have proved to be highly effective on large projects (such as hospitals) where a production line approach can be utilised to great effect.
Acceleration

Accelerating the speed of work so that the project, or a phase of the project, can be completed earlier than initially programmed is different to fast-track projects. The decision to accelerate is made when the work is in progress and will involve a certain amount of uncertainty, revised scheduling and planning and reallocation of resources. Acceleration may also have implications for the scheduling of work in a safe and effective manner. When accelerating the work the direct costs (labour, plant and materials) will increase and the indirect costs (supervision and administration, temporary accommodation and associated costs) will decrease because of the earlier completion. Accelerating the work may require work to be carried out during the weekends (for which permission will usually be required) and will usually involve payment for overtime and incentive-based payments to ensure the work is completed on time. Additional supervision may also be required for weekend working and for the supervision of an increased number of work crews. Scenario planning may help in deciding how best to accelerate the work and the impact in terms of workflow and costs.

Interaction during construction

Interactions during the early stages of a project are usually conducted in a relatively free and open atmosphere because the level of information in the system is relatively low and unstructured. Over time the amount of information increases and informal and formal structures emerge, creating implicit rules of engagement. Goals and targets are set and the pressure to develop and exchange information increases. The number of people contributing to the process and the amount of information are at their peak during the construction process, and it is here that the possibility for misunderstandings and conflict is highest. Pressures resulting from limited time and increased workload can affect the ability of team members to work together, leading to changes in communication patterns that may either impede or improve performance. Although drawings, specifications
and schedules forming the contract documents are often assumed to be complete and free from error, the reality is that they are not. Even where the information package is ‘complete’ before production begins in factories and on the site, there are likely to be a number of requests for clarification and additional information. Much of the interaction during the construction phase is therefore concerned with the final development of detailed designs, changes to construction details and coordination and integration of the specialised components to ensure that the building can be assembled safely and within agreed parameters of time, cost and quality. A key objective for designers is to ensure that the information flow does not interrupt the construction process, but this is not always achieved in practice. It is probably unrealistic to expect the participants to know everything or be prepared for every eventuality. Thus all actors need the appropriate skills to be able to provide and extract the relevant information to stimulate and influence the behaviour necessary to deliver the project successfully. On fast-track projects the information provision to the contractor is phased and carefully coordinated to ensure a timely flow of information at specific milestones in the project.

Clarification of information and discussion of progress and problems are usually conducted within formally scheduled progress meetings and ad hoc meetings called to discuss a specific problem. When discussing complicated issues each actor will need to explain the situation in such a way that others (less familiar with the issues) may understand the context and hence be able to differentiate between what is important and what is not. Professionals may use different communication mechanisms, expressions and emotions to ensure that others pay greater attention to their message. Actions that ensure other professionals’ attention is focused on their interaction may be very useful in environments where large quantities of information are exchanged. Open and supportive communication is conducive to building trust and facilitating interaction between construction team members. Defensive behaviour tends to develop during problem solving and this can adversely affect the ability of team members to work together. It is when communication between team members is most needed, during times of uncertainty and crisis, that relationships tend to break down and communication becomes difficult.

Open exchanges of information and sharing task responsibilities are essential for effective teamwork. Interaction that builds and maintains the fragile professional relationships necessary to accomplish tasks is
fundamental to the project’s success. It is important that research identifies how interaction can be used to strengthen and maintain relationships, enabling participants to work on tasks effectively. Open exchanges may involve both supportive and critical comments. Open communication can be very effective, but if it is not managed in a sensitive and appropriate way for the context it may be destructive to relationships. All actors need to be equipped with the appropriate communication skills to ensure that matters that may cause conflict can be openly discussed while at the same time ensuring that the relationship is maintained and not damaged. Negotiation, influence and persuasion have an important role to play within a business setting. Thus it is necessary to develop communication skills and understand the effectiveness of negotiation approaches so that they can be adapted to suit the business or project context.

Construction progress meetings

Construction progress meetings are fundamental to the smooth running of the construction contract. They are usually held on, or adjacent to, the construction site in temporary site accommodation and attended by key participants in the project. The site meeting serves as a forum to discuss the technical coordination of the work as well as helping to develop and maintain relationships between the actors who have the most influence and control over the project. The purpose of meetings seems to have changed little over the years: a forum to resolve misunderstandings and reduce friction, while allowing discussion and decisions to be made, to allow the work to proceed. Informed decision making is an essential part of construction projects, providing the basis for work to proceed.

There are few construction publications that give real guidance on which or how many professionals should be present in progress meetings. General management text suggests that for economic reasons and optimum results the number of people attending meetings should be kept to a minimum. The group should be just large enough to include individuals with all the relevant skills for the problem solution; this is known as ‘the principle of least group size’.

Construction professionals enter and leave the process at different times and contribute to different extents depending on their particular expertise,
and so it is likely that different professionals will attend sequential construction meetings. Problems with group development may be experienced when membership of the meeting is not stable. Where people have taken part in a series of meetings on related subjects, and different people are present in each of the previous meetings, the group participation is the same as if the group had met for the first time. This phenomenon is due to the fact that groups need to go through socioemotional development. As new members enter the group they cautiously interact, testing and checking behaviour and responses, understanding the roles and behaviour of others, and then establishing their position within the group and adopting the group norms. While an individual may be able to influence the group, their influence is dependent on the nature of the group that they have entered and the context that the group has set. Considering the temporary multiorganisational nature of the construction team and the often lengthy time period between projects, it is difficult to perceive a situation where a team on one project would continue to work together on another project without any personnel changes. Equally, depending on demand, professionals may or may not choose to attend meetings. Such instability may affect group development.

Misunderstanding and conflict

Communication problems tend to be most prevalent during the construction phase, when the level of information and the pressure to perform is at its highest. Increases in the amount of information have been linked to increased levels of conflict. This would suggest that the construction phase, where the majority of professionals associated with the process are involved and where the cumulative sum of information reaches its peak, would be prone to conflict. Problems will arise and the design office must be prepared to deal with them quickly and accurately in accordance with the contract conditions. Disagreements between the design and the construction team tend to be related to requests for changes, the quality of the work, time and cost overruns. Many of these
problems can be resolved during regular site progress meetings, via an impromptu meeting on site or through discussion over the telephone.

Personal differences between architects and construction managers may result in, or conversely prevent, conflict. The different backgrounds, education and training of actors may lead to different perceptions of what is of greatest importance to the project at any point, and this could result in disputes. Professionals tend to concentrate on their own area of specialist knowledge, yet devote little attention to understanding other aspects of work that may present difficulties when attempting to integrate work packages. Each specialist must have an understanding of how his or her work package is affected by, and affects, the work of others. As actors realise that components, ideas and beliefs do not integrate, conflict inevitably emerges.

Dealing with conflicting ideas is an essential component of effective integration. When faced with a situation that requires a multidisciplinary input, two problems emerge: the professionals will concentrate on the detail associated with their specialism and when proposing solutions the actors will attempt to reduce their organisation’s resource costs. Professionals tend to use interaction to influence the discussions so that the resulting decisions favour the individual and their organisation. During the construction process, problems both large and small may emerge that will affect individuals and their organisation’s ability to perform the tasks with the resources originally allocated to the project. Meetings, negotiations and discussions are held to resolve problems.

Problem solving often involves a redistribution of resources (possibly meaning that some will benefit and some will not). Similarly, solutions to problems require something to change, and the act of change is not always attractive to all actors. Combined, these factors could lead to a defensive attitude among some actors and conflict may emerge as organisations defend their allocation of resources. There are two types of conflict:

- **Natural conflict** is the intended or actual consequence of an encounter, resulting in stronger participants benefiting from the clash. This is inevitable and thus some plan to deal with it can be made in advance.
- **Unnatural conflict** is where a participant enters into the encounter intending the destruction or disablement of the other, usually with the intention of making a financial or personal gain. This is quite a
well-known strategy of less scrupulous contractors looking to increase their profit margins on a project.

Conflict needs to be managed so that it does not suppress information or become personal and dysfunctional and damage relationships. Most conflicts are managed by exploring alternative solutions and different perspectives, and encouraging all participants to engage in discussions and, hopefully, reach agreement. Conflict may be beneficial or destructive to team performance:

- **Benefits** include increased understanding of issues and opinions, and greater cohesiveness and motivation. When group members disagree and explore why they disagree, they expose key issues and points of misunderstanding. Groups that experience tension and conflict often feel closer and stronger after working through a crisis.
- **Disadvantages** include decreased group cohesion, weakening of relationships, ill-feeling and destruction of the group. If conflict goes on too long and is not resolved, it will decrease cohesiveness within the group; conflict between people can be distasteful and personalised, having little relevance to the task or problem. Most people do not like to be criticised and all conflict has a negative socioemotional impact, which must be recognised.

## Requests for information and design changes

Comprehensive, error-free information equates to fewer requests for information, which in turn allows the office more time to spend on creative matters. Similarly, high quality information may result in fewer requests for design changes.

### Requests for information (RFIs)

If information is found to be incomplete, erroneous, confusing or even missing it will trigger a request for information from the contractor. RFIs
can be reduced significantly by the use of BIM, which allows clash detection to be resolved as the design proceeds. However, there may be areas of the design that have not been fully detailed and therefore more information will be required to allow the contractor to construct the building.

**Design changes**

Changes during construction are wasteful of resources and in the majority of cases have significant cost and time implications. Although every effort should be taken to limit the possibility of uncertainty at the production stage, it is likely that some changes may be deemed necessary. Changes to the agreed contract documentation will result in adjustment to the agreed contract sum. Most changes result in revising work and/or additional work as well as disruption to the programmed workflow. The inevitable result is an increase in costs, which someone has to pay for. Therefore it is necessary to track all requests for design changes, and efforts should be taken to minimise the number of changes that occur during the realisation phase. Changes may be required for a variety of reasons, some of the most common related to the following:

- *Unforeseen circumstances*. For example, problems in the ground or surprises when opening up an existing structure. This can be mitigated through extensive surveys prior to work commencing, but the risk of some unforeseen event cannot be completely eliminated. This is normally covered in the contingency sums.
- *Client requests*. These are normally related to clients revising their requirements, that is changing their minds, which can be mitigated by involving the client fully in the earlier design phases.
- *Designer request*. This tends to be related to the realisation that something could have been better and/or to poorly conceived design work.
- *Contractor request*. Requests may be related to constructability issues and availability of materials to suit the programme. It is important to distinguish between those items that are a genuine problem and have to be revised (e.g. clashes of services) and those requests made to suit the contractor (e.g. change of materials to save the contractor some money).
• *Problems related to the information provided*, resulting in requests for additional information and clarification.

Off-site production changes are not possible once manufacturing commences; thus the design team and client must be absolutely certain that the design is correct before production starts. With site-based production there is always a possibility of making changes as the building is erected, assuming someone is willing to pay for the privilege. There may be considerable pressure to change the specified product and/or specified level of performance during the tendering and realisation phase of the contract. Most changes are formally requested and approved before being implemented and are subsequently recorded in the as-built documentation. However, there is evidence that unscrupulous contractors and subcontractors may change specified materials and components for cheaper alternatives and not inform anyone. A vigilant clerk of the works can help to prevent some of these unwelcome habits; so too can the employment of reputable contractors and subcontractors.

**Tracking design changes**

Changes, regardless of their origin, need to be referred back to the design manager and checked against critical documents, such as planning approvals and the project brief, before they are implemented. Requests to change building products and details have implications for the durability of the building and must be given careful consideration before a decision is made. In many cases this is not a quick process, since the changes may have implications for other interconnected aspects of the building. This means that the manager of the construction contract must make requests for changes in adequate time and be prepared to wait for an informed decision. Contracts stipulate clear rules and timescales for requesting and responding to changes. All approved changes must be recorded and the drawings, specifications and schedules revised. This will ensure the ‘as-built’ drawings are an accurate record of the completed building. Changes made without the knowledge of the contract administrator will not of course be recorded in the as-built information.
Closing out projects

Completion of the project and handover to the client is known as closing out the project. This is the stage at which the project has reached its stated aims; that is the works have reached practical completion. It is common in large and complex projects to phase the work and release practically complete sections of the work at predetermined dates; thus the project is handed over in stages, usually known as sectional completion. These formal handovers to the client are important events and need to be managed so that the client experience is a good one. The client rarely forgets messy handovers. Closing out the project should be a cause for celebration for all project stakeholders and it is common for architects and/or project managers to arrange an event to mark the successful completion of the project. From the architect’s perspective this is a good opportunity to engage in public relations activities.

Practical completion (referred to as substantial completion in some contracts) refers to the date the contractor is contractually bound to complete the work. There is some debate as to what constitutes work that is ‘practically complete’, but it is usually taken as the date the client takes possession of the building (or section of the building). At practical completion the client takes possession and hence responsibility for the building and the defects liability period commences, commonly 6 to 12 months. It is good practice to identify any outstanding work and minor defects prior to practical completion; however, it is common practice to deal with the defects list (‘snagging list’) at practical completion. The contractor then has 14 days to rectify the work.

At the end of the defects liability period there is a joint inspection of the works to check that everything is in working order. Any defects will need to be dealt with promptly by the contractor. When any necessary defects are rectified, the works are deemed to be complete and the final certificate is issued.

Post-project problems will also need to be tackled quickly and efficiently and some time will need to be factored into the design office overheads to deal with unexpected problems after the project is signed off. The manner in which the architect and others respond to post-project problems and
enquiries will influence the client’s perception of the project stakeholders and may influence the likelihood of future work for that client.

Problems can and do sometimes spiral out of control, resulting in time-consuming and expensive action that will usually require some form of independent intervention to resolve the problem. One of the aims of good design management is to avoid, or at least mitigate, serious problems and hence avoid the need for legal proceedings. Few parties benefit from conflict and legal proceedings other than the legal profession, and it is not in the interests of any of the project stakeholders to get dragged into long-running legal wrangles, which will hit profitability and may damage hard-earned reputations.

The project-to-office interface

In many projects architects have little real control over as-built design quality, regardless of the contract used. They are, however, frequently judged on the quality of the finished building in addition to the quality of their service provision. Thus the quality of the finished building does have a role to play in marketing and reputation of the architect’s practice. Involvement in construction will be determined by the aspirations of the business owners and their attitude to risk. The structure and market orientation of the office will also be a determining factor. From a business perspective the amount of involvement needs to be assessed against the business plan, the experience and skills of the office and the firm’s exposure to risk. Organisational learning is another consideration. In providing design-only services, it is difficult to benefit from the experienced gained through the construction phase. By being directly involved in managing construction activities, there is a real opportunity to integrate design and construction knowledge to the benefit of the project and the business.
Chapter Seven

Evaluation and Learning

Evaluating the performance of projects and products can reveal a wealth of knowledge for possible inclusion in current and future work. The intelligence gleaned provides the means to increase the office’s design knowledge and also improve its working methods. One of the design manager’s tasks is to ensure sufficient time is built into all project programmes to provide opportunities for learning and reflection. The size and structure of the office may influence how this is best done, be it relatively informal in small offices or a more structured and regular series of events in larger offices. Whatever the approach, feedback must be conducted in a systematic way and form an integral part of project and organisational learning. Time for this important activity must be factored into the office overheads and incorporated into all project programmes. The design manager must put into place systems of knowledge capture and implementation so that the office can collectively learn from individual project and product evaluation. Systematic learning from the process and the product should form part of the office management system. Strategic incorporation of feedback from specific stages in the process is an essential component of a reflective and reflexive approach to management. Similarly, feedback from the building in use will help to identify knowledge for incorporation into current and future design projects. Experience should be incorporated into key project phases, in particular the briefing phase, to help inform new projects, benefiting from good practices and helping to avoid poor practices being repeated from project to project. Appropriate data-collection tools need to be used, the data analysed and the knowledge shared within the office, and where appropriate within project teams. Failure to incorporate learning opportunities will usually result in a loss of valuable knowledge, not
through any reluctance to analyse performance but because other tasks become more pressing and the opportunities pass by.

**Lifelong learning**

The most successful organisations are not just those with strong ideas, desirable products and a commitment to high quality service; they also possess the managerial framework that allows their staff time to think and reflect on their work, while providing the opportunity to discuss topical issues with other members of the organisation, make clear decisions and move forward. If new ideas are to be accommodated the firm must be so structured as to be flexible enough to allow minor adjustments with minimal disruption. Learning may help to identify business efficiencies and new markets for professional services. Success of the firm will be influenced by its ability to learn continually from its collective experience of clients and projects. This knowledge must be retained by the firm and disseminated to its members, a process much aided by computer-based expert knowledge systems. Acquisition, retention and dissemination of knowledge are a complex process requiring strategic management. In terms of the development of the professional service firm and its ability to respond to external forces quickly and effectively, the knowledge acquired through projects can contribute to competitive advantage. This means that there must be a system in place to measure performance, as discussed below.

Individuals should be engaged in continual learning and updating of skills through regular continual professional development activities, and these should be linked to better performance within the office and project environments. Evaluation and learning is a continual programme with long-term objectives for all stakeholders: looking at how things are, watching how people behave, listening carefully to what people say, asking carefully framed questions and presenting the findings to senior managers and user groups with the intention of affecting positive change.

The philosophies of lifelong learning and continual professional development are fundamental to the continual development of individuals and their organisations. Both professional and trade bodies require their members to engage in, and provide evidence of, their commitment to
continual improvement. There is a wide range of activities that constitute lifelong learning activities, ranging from reading books and articles, to attending conferences and training programmes, through to undertaking a programme of study at a college or university. The challenge for individuals and organisations is to integrate the learning opportunities into the normal working week, that is making learning part of a balanced programme of work. This can be achieved through the following:

- Experiential learning from projects and the product
- Reflection on work
- Learning from how others approach their tasks
- Learning from books and articles via evidence-based learning
- Learning in action via action learning
- Learning through storytelling.

It is well known that individuals have different learning styles; therefore it is essential to understand how we best learn before embarking on a learning activity. This will help to maximise the limited time available and help to ensure a successful outcome. Evaluation and learning takes place on three levels, at the individual, organisation and project:

- **Individual needs.** Self-evaluation and learning is, perhaps, the easiest method, simply because it is under our own control. Engaging in reflective practice and undertaking formal (re)training courses may enhance our knowledge and skills. A relatively small amount of time is required for reflective practice, while training programmes may last for a few hours, half a day, a full day or even a few days, depending on the extent of the programme. Self-development may also be enhanced through research, for example undertaking a taught Masters degree or a research programme (Masters by research, MPhil, PhD). This involves a greater degree of commitment and resources.

- **Organisational needs.** Well-managed organisations have a comprehensive staff development plan and the resources to implement it. Organisational development will rely on a combination of individual self-development and formally organised group staff development activities in which specific staff will participate. Whether these sessions are optional or obligatory will depend upon the culture of the organisation and the importance of the subject matter. Investment in employee development schemes can help an organisation to stay competitive and respond to
changing market conditions. As individuals grow their knowledge and skills the organisation collectively benefits.

- **Project needs.** Evaluation of projects spans organisational boundaries. Unless the activity is built into the project plan and facilitated by the project manager it is unlikely that learning from projects will be undertaken within the TPO. Instead, individuals and organisations will implement their own evaluation methods, usually retaining the knowledge gleaned for the event for their own employees’ use. One way of trying to bring about learning across the entire TPO is to use meetings. Used sparingly, knowledge exchange meetings can form a platform for participants to share their knowledge with other participants with the view of bringing about improvements to the project performance.

### Measuring performance

Measuring performance is becoming increasingly widespread as organisations contributing to AEC projects aim to improve their performance through better management practices. A commitment by all members of the organisation to continual improvement is an excellent starting point, but if performance is to be improved there must be procedures in place to report progress, measure it in a meaningful manner and then disseminate the results. Reward systems may also be introduced to encourage all members of an organisation to participate. For evaluation to be successful, organisations and projects must have a clearly defined set of objectives against which performance can be measured. These need to be set out in the strategic and/or project brief; otherwise trying to gauge success becomes a meaningless exercise. It is important to remember that the exercise is not just concerned with metrics; it is also about the right attitude to continual improvement.

To improve performance it is necessary to use some form of measurement. The mantra is ‘If you cannot measure it, you cannot improve it.’ A number of parameters may be used that are specific to projects or organisations. Alternatively, nationally recognized key performance indicators may help with measuring performance against a much wider database. The Construction Industry Board produced the framework for key performance indicators in 1998. Working with the DETR, Construction Best Practice Programme, Construction Clients Forum and
the Movement for Innovation, data are collected, collated and published. The indicators are designed to allow all parties to the construction process to check how they are performing against the industry as a whole. There are ten key performance indicators, seven related to project performance and three related to the performance of the organisation:

Project performance:
- Client satisfaction with the product (building)
- Client satisfaction with the construction process
- Defects
- Predictability of cost
- Predictability of time
- Actual cost
- Actual time.

Company performance:
- Profitability – an important indicator for all organisations
- Productivity
- Safety.

Performance measurement is not just concerned with metrics; it is also about the right attitude to continual improvement. Measuring needs to be tailored to the size and scope of the organisation. Not enough data collection and analysis can result in a misleading picture and conversely too much measuring can be wasteful and ultimately self-defeating.

Learning from projects

Learning is taking place throughout the life of a project. The challenge for the design manager is to incorporate specific events into project programmes in which knowledge can be exchanged and captured for use on current and future projects. Project control gateways are designed to discuss progress and hence engage in feedback related to specific activities. Similarly, formally constituted construction progress meetings provide another forum in which progress is discussed. Events at which the project team congregate may help to identify areas for improvement; however, the focus will be on the progress of the project and it is not
uncommon for learning from the experience to be lost in the noise. For this reason it is recommended that specific learning events are built into project programmes at strategic intervals, where the focus is on reflection and learning, not project progression (Figure 7.1). Learning feedback loops are crucial to the delivery of effective projects and to organisational learning. Similarly, the use of post-project reviews can help to identify good and bad experiences.

Figure 7.1 Learning events built into the project programme.

Construction professionals have often been criticised for not engaging in systematic project reviews, the feeling being that valuable knowledge is lost between projects. This appears to be related to the constant pressure on professionals’ time rather than any inability to do the review. Some organisations do fail to build systematic project reviews into their working practices and project plans, but this is becoming less common. Failure to review projects may lead to the loss of important knowledge, resulting in the failure to identify and subsequently share good practice. This can lead to the replication of errors and missed opportunities to improve performance.

Reviews need to be facilitated, preferably by someone who has not been involved in the project and therefore lies outside the project culture. This can help actors to be a little more open and candid in their opinions. The facilitator is also more likely to ask some pertinent and perhaps unexpected questions of the project participants. On a practical level, two project architects facilitating each other’s projects can achieve this. Similarly, it may be useful for the design manager to facilitate such meetings. The outcome of the project reviews should be recorded in a concise report and sent to all those involved. All review activities need to
articulate clearly the aim of the review and state those most likely to benefit from engaging in the event. The key objective may be to focus on team performance, cost control or control of design changes. Some design managers will include reviews at strategic points in projects, to focus on a topical issue. If actors are unwilling to engage in knowledge exchange, or are too candid, then it may be prudent to consider a tactical substitution for future projects.

Through-project reviews

Through-project reviews are normally incorporated into quality management systems and may be linked to routine project evaluation activities at control gateways. The benefit of conducting project reviews at key stages in the project is that there is less reliance on the memory of the actors compared with post-project reviews. Knowledge harvested from such events can also be incorporated into other projects running concurrently, thus making the process more relevant to those involved. Care should be taken to identify learning opportunities clearly and separate this process from routine progress meetings. The advantage of through-project reviews relates to the accessibility of key actors and current knowledge, assuming that the project culture is such that actors feel comfortable discussing areas for improvement. If the project team is different each time it is unlikely that relationships will have developed to such an extent that the actors are willing to discuss issues openly, although this should improve as the project continues. Project team learning is essentially a collection of different learning experiences at group level, and this differs from learning in the more stable office environment. Through-project reviews should:

- Involve all key actors involved in the project at the time of the review. There are likely to be changes in some of the actors present between early and later reviews.
- Include the client.
- Clearly identify the topic that will be discussed.
- Disseminate findings to those present.
Post-project reviews

Post-project reviews (sometimes called project post-mortems) are an important component of any good quality management system. Evaluation at the end of the project aims to measure the success of the project against the goals set out in the brief. This exercise may generate valuable knowledge for inclusion in future projects, which will draw on and adapt the information, knowledge and experiences (both good and bad) generated during previous projects. This helps to keep organisations working efficiently while providing benefits for new projects. The members of the project team mainly hold this knowledge; indeed team assembly is usually based on an actor’s previous project experience (building type, complexity, cost, performance, etc.) rather than professional discipline or educational qualifications. Post-project reviews are usually conducted at the end of a project or after the completion of a major phase of large projects. These meetings are often conducted by the project manager and/or design manager. The review will include input from major contributors to the project and is usually conducted as a meeting or a series of meetings. Participants are encouraged to share their experiences of what went well and what could have been done better, so that future projects can benefit from the learning process. Some organisations may also conduct their own ‘internal’ post-project reviews to assist with organisational learning.

In situations where post-project reviews are incorporated into the management plan for specific projects, they may be an ineffective means of knowledge capture because:

- Some of the actors may have moved on to other projects and be unavailable for post-project data gathering. Many actors are only involved for a short period of time, to undertake a specific work package, after which they move to another project. This makes it very difficult to consult them after the event and helps to highlight the need for systematic project reviews during the lifetime of the project.
- Pressures imposed by new projects may override those of completed projects; thus the review may be rather rushed and inconclusive or may not happen, once again highlighting the need for reviews during the process.
• Actors may not remember all relevant facts, and if the review is conducted a long time after the start of a project it is highly likely that the opinions given are not as accurate or as informed as they might otherwise have been.
• Professional rivalry may lead some actors to give a limited account of the project, saving the ‘real’ knowledge for the benefit of their organisation and their career advancement.
• Professionals are reluctant to admit that they have made mistakes or have not performed as well as intended. Few of us feel comfortable discussing failures and mistakes openly and honestly unless there is an atmosphere of trust and mutual support (which is difficult to achieve within an organisation and even more so in a temporary grouping of project participants).
• Not all clients will be interested in post-project reviews. If the client is not a repeat client, they may have little to gain from taking part in a project post-mortem.
• Disagreements, disputes and conflict may make it impossible to conduct a post-project review.

Learning from the product

Architects and engineers have long been criticised for walking away after the building is complete with scant attention paid to feedback or indeed the use of the building over the years after completion. With increased pressures to reuse existing buildings, through upgrading, extension and repair, architectural firms are starting to reconsider their role and expand their service provision into the facilities management area. The original design team is arguably in the best position to provide advice regarding the maintenance, repair and upgrading of the finished product because of their intimate knowledge of the building design.

From an economic viewpoint buildings represent substantial assets to their owners and users, frequently requiring maintenance, repair and upgrading. Responsible owners have long recognised the long-term financial benefits of regular maintenance of their (often substantial) assets; however, many building owners have no provision for maintenance. More surprising still is that a building owner who has gone to great lengths to employ
professionals to design and oversee the construction of their building, taking great care in the selection of the contractor, should then employ a wide assortment of firms (often with no professional input) to carry out alterations and maintenance, often without reference to the original design philosophy. From an asset management viewpoint, such an approach is not particularly sensible. From an environmental viewpoint, the aim of the design team should be to extend the building life for as long as possible, through careful design and material selection, in order to conserve the scarce resources that are locked into the fabric. Once the building is constructed there is a need to consult the original documentation (if not the original team) before alterations or maintenance are carried out.

Facilities management covers a wide range of activities ranging from space management and maintenance management to financial management, operations management and people management. Although definitions vary, the core function of the facilities manager is to support the core business activities of the organisation. The interface between facilities management and design is important if a building’s potential is to be realised. The maintenance of a current set of plans and a maintenance database is paramount if a building is to be cared for and utilised effectively during its various lives. The challenge for all parties concerned with building maintenance and asset and facilities management is one of collecting dispersed, often inaccessible, information; this may lead to a loss of design and technical expertise that first created the building.

Of the vast quantity of information generated for individual projects, much is related to the process of building (project-orientated information), with a small amount of information, such as drawings, specifications and maintenance logs being applicable to the actual finished building (product-orientated information). Professionals involved in the building project will retain project information and product information for a set timescale, primarily for legal reasons. However this information is also a source of knowledge for new projects, and data retrieval and data mining computer software can greatly assist the design organisation’s ability to retrieve past project information quickly. Project information may have little or no value to the owners/occupiers of the completed building. Product information such as floor plans, details of construction and legal consents are needed by the building owners and its managers (not necessarily the client or original owners). Such information is easily
stored and accessed electronically; however, many designers are reluctant to release this information, fearing loss of future business (e.g. copyright laws and Intellectual Property Rights (IPR)). Increased interest in both building and service maintenance, coincident with the growth of the facilities management discipline, has brought a greater awareness of the value of accurate, accessible information.

Post-occupancy evaluation

There is an obvious link between the way in which we interact with buildings on a daily basis and how well the project team performed. Collection and analysis of data from the building in use is termed post-occupancy evaluation (POE). This may be conducted by members of the original project team and/or by consultants who have had no involvement in the design and realisation phases. Evaluation is usually undertaken at planned intervals after occupation, for example at 12, 24 and 60 months. POE may be used to check that client and user values, as stated in the written briefing documents, were implemented as intended. The problem is that the users may be different from those represented in the early briefing exercises and this needs to be considered when analysing the data. The focus of the data collection may be coloured by the remit of the data-collection exercise and the actors’ experience of the project. Key areas of concern related to building owner/occupier and building user interests are:

- **Space use.** Is the space functional and being used efficiently and as planned? How has the new facility impacted on working practices and productivity?
- **Time.** Has the new facility helped to improve flow of people within the building?
- **Wellbeing.** Is the perceived comfort and satisfaction of the staff acceptable? Has the internal environment helped with productivity?
- **Esteem.** How does the new facility impact on company image and what do the users feel about the building?
- **Energy use.** Is energy consumption as expected?
- **Maintenance and operating costs.** Replacement of components, cleaning, security, etc.
Collection of reliable data is much easier for some of these factors than others. For example, energy usage will be documented through meter readings, and smart systems can provide a wealth of information for analysis. In contrast, observing how people use space on a daily basis is more challenging. The intention of POE exercises is to report on existing performance and identify changes from the original brief. Recommendations for corrective action and a summary of the lessons learned can be made following analysis and reflection on the data collected. Addressing the issues should justify the expense of the action, leading to improved performance. Concomitant with other data collection exercises, the purpose should be clearly defined and necessary approvals sought and granted from appropriate managers before data collection begins. Similarly, methodologies for evaluation should be kept simple, have measurable outcomes, be properly resourced and have a realistic timeframe. Data collection techniques used for POE studies include:

- **Observation.** Participant and nonparticipant observation can reveal rich data, but it is very time consuming and building users may resist an outsider’s presence. Few of us like to be watched as we work. Remote monitoring and surveillance through closed-circuit cameras raises ethical issues and should only be used with the appropriate consents and safeguards in place.

- **Walk through surveys.** Observational surveys are used to try and get an impression of how space is being used by looking at, and listening to, users. The term ‘walk through’ is a little misleading, since data collection usually involves standing or sitting within spaces to observe users going about their daily work, often in conjunction with random informal discussions with users.

- **Questionnaires.** User satisfaction questionnaires can help to reveal perceptions of building users/owners/managers. Space usage questionnaires are also used, but may not give an accurate picture since they rely on people remembering when (and how) they used specific areas.

- **Interviews.** Interview techniques are useful for gathering user perceptions and opinions.

- **Focus groups.** These can be used to explore specific issues with a variety of stakeholders and user representatives.

- **Measurement.** Hard data collected through measurement is often easier to access and analyse: measuring space usage through
electronic sensors and measuring energy usage, frequency of cleaning, replacement of short-life components, etc.

- **Benchmarking.** This allows comparisons to be made on a number of levels, including other buildings.

# Evidence-based learning

It is necessary to balance experiential learning with knowledge gleaned from relevant published literature. Trying to make sense of daily challenges can be enhanced by comparing experience with relevant academic research findings and the views of others. Constant questioning can help to keep knowledge fresh and relevant while stimulating innovative approaches to routine methods and procedures. Many professionals find it difficult to find the time to read research literature, often relying on the professional journals as a source of information and knowledge of the latest trends and innovations. There are many other sources of knowledge that should be explored, some of which may offer more value to practitioners than others. Typical sources include:

- **Textbooks.** Although mainly aimed at students, these represent a useful source of distilled knowledge that is readily accessible.
- **Professional journals.** These deal with topical issues and help to keep practitioners updated with developments in a range of areas, from design through to legal issues.
- **Research journals.** Peer-reviewed articles may offer practitioners some useful information; however, time will be required to search papers that are relevant to the interests of the practice.
- **Conferences.** The conference circuit tends to be occupied mainly by academics, many of whom have never, or seldom, practised. Thus practitioners may find the language used and the applicability of the espoused theory difficult to relate to daily practice. Conference proceedings may also be difficult to access, although a growing number are now available via the Internet.
- **Continuous professional development (CPD) activities.** These are aimed at practitioners and tend to draw on information gleaned from conferences, journals and textbooks, usually enhanced with a fair amount of anecdotal evidence from active practitioners. Training and education through short course provision as part of a
CPD programme offers a quick and often effective means of improving and extending knowledge.

The biggest challenge for the practitioner is finding the time to search out and read material relevant to their particular context and needs. For some professionals a good textbook may represent better value compared with attending a conference for a day; it depends on personal interests and level of interaction with the academic environment. Whatever the approach taken, it is necessary to look outside one’s immediate field of experience and try and relate it to the experience of others.

**Reflection in action**

Unfortunately, more experience does not guarantee more learning. Learning from experience (experiential learning) tends to be most effective when the experiences are painful or novel in some way. Learning from our mistakes is not a good policy if we wish to stay in business, nor is it consistent with the total quality management (TQM) ethos. The opportunity to learn from novel experiences may diminish as time passes. Thus reflective practice after the event is important because the individual will reflect on his or her actions, which may have been rather ordinary and uneventful, rather than waiting to learn from a novel experience. The reflective practitioner has the opportunity to reflect on procedures and habits taken for granted, but which may be open to improvement when analysed. A number of tools to assist with reflective practice range from keeping a reflective journal to organised discussion groups with peers (quality circles). Reflection on practice is an essential component of professional development and the better the management of individuals’ direction, the better equipped the firm is to respond to change.

The concept of the reflective practitioner is well known to designers and forms an integral part of much architecture and built environment education. The action of designing is itself a reflective activity and design thinking is a fascinating area of research. Reflecting on the progress of projects may be a less attractive proposition than reflecting on our design decisions, but it is here that much can be learned about how design intent is realised. Individual reflection in action is a private activity, largely hidden from colleagues unless we decide to share the experiences.
Experiential learning is an important aspect of design management. Keeping a logbook of experience and having advice from a mentor (if practical) is one way of recording and learning from experiences. Reflection on daily events combined with evidence from published sources should form a systematic part of a professional’s continual learning.

**Reflective diary**

A reflective diary or reflective log is an established tool for helping individuals to develop their knowledge and ability to respond to situations. The intention is not to record every event in detail, but to record and reflect on events that are significant to an individual, the aim being that reflection puts the individual in a better situation should the same or a similar event occur in the future. The reflective diary may be a digital file (kept, for example, on a laptop) or a notebook or sketchbook, which tends to be preferred by designers because it is easier to add small, schematic sketches. Frequency and style of entries is very much a personal choice. Some designers add entries to their diaries following a ‘significant’ event, for example a project suffering a major problem or conversely a major success. Others add entries on a weekly or even daily basis, recording and reflecting on less significant, but equally important, events associated with their job function. The recommended format is a simple three-stage approach in which individuals:

- *Describe the situation.* A concise outline of the event, problem or success, the actors involved and the issues that are to be reflected on. Keep it factual.
- *Reflect on the event.* What could have been done differently? This tends to be personal.
- *Consider action.* Explore some scenarios. For example, how would you respond if faced with the same event in the future? What would you do differently? Is more knowledge, education or training required to help you be better prepared?

Reflective diaries are personal documents used by individuals to help improve performance. Indeed, many find it useful to reflect in the evening while at home. Diary contents are confidential; however, the process of reflection may result in the realisation that some issues cannot be tackled
in isolation. These need to be raised within the organisation and/or within the project team at an appropriate juncture. A reflective diary is also a good tool to identify things that went well and things that need to be improved. These issues can then be taken forward to regular knowledge-exchange meetings and, if appropriate, the annual staff review.

Knowledge-exchange meetings

Meetings provide an excellent forum in which to discuss performance. Meetings should be held at regular intervals as well as at the end of the project, thus benefiting as the project proceeds. Each meeting needs to be facilitated (preferably by someone who was not involved directly with the project). The salient information needs to be recorded and clear actions identified. This new knowledge then needs to be disseminated to the appropriate parties and incorporated into practices and procedures at the earliest opportunity (see also Chapter 11).

Storytelling

Storytelling can be a very useful way of helping to explain situations and transfer knowledge to others, and its use in architecture is relatively common. Informal dialogues and small group communication may be utilised to tell stories to new members of the office as a means of socialising them into the office norms and to help illustrate good and bad practices. Anecdotes sometimes become legends within the office, with the familiar opening line similar to ‘Did you hear about the time when … ?’ opening the way for a tale relating to office and project morals, providing an indication of the values held and expected within the organisation. No doubt the yarn involves a healthy mix of fact and fiction; indeed, the truth is often stretched to make a point, but the aim is to get a message across that will be remembered. Stories are highly effective in helping to explain why things are done the way they are and/or to make a point. Storytelling is an effective vehicle for transferring knowledge within or between small groups of people. Used effectively these conversations can help to expose and develop the knowledge held within offices and project organisations.
Learning from our peers

Another approach to learning is through watching, listening and analysing the actions of our office colleagues and our fellow project participants. An enormous amount of knowledge can be gleaned, time permitting, simply by trying to make sense of what is going on in the work environment. Within the office interaction is relatively frequent and all-pervasive, and there are plenty of opportunities for learning if we can make the time to do so. Interaction within the project is less frequent, usually occurring in meetings and workshops and at a distance via ICTs; thus opportunities to observe and listen to the actions of others are fewer. Design managers need to be able to watch and listen to the hum of the office and the pulse of projects, but they also need to try and instil these qualities within the office to help create a learning organisation.

Action research and learning

It is through reflection on individual and collective experience, combined with theoretical debates and analysis of research findings, that we are better able to implement improvements to our working practices. This involves planned (considered) change, much of which will be incremental and relatively gradual, but some of which may be more radical and substantial.

Action research is applied research that aims to actively and intentionally effect a change in a system, in this case a social system. This involves the active participation of the researcher(s) in the client system. For action research to have any value it must, like all other research, be conducted in a systematic manner within a defined programme and be adequately resourced. The success of this type of research will depend on the experience and competences of the researcher and the synergy between researcher and client. Success will also depend on the level of commitment shown by those taking part in the research. Ethical issues and the value of the research to both the client organisation and the researcher need to be discussed before entering into an agreement. The ethnographer may be someone with research training already working in the office (e.g. someone with a research degree) or a researcher may be invited into the
client’s organisation to carry out the research. The main stages in the sequence are illustrated in Figure 7.2 and follow a sequence similar to the following:

- **Start.** The client usually presents the problem, that is it is driven by the organisation and discussed with the researcher. Clear goals, resources and timeframe are agreed. The amount of access to often confidential and commercially sensitive organisational settings also needs to be discussed and agreed.

**Figure 7.2 Sequence of action research stages.**

- **Diagnosis.** This stage involves the researcher and client discussing and agreeing to the most appropriate management concepts and research tools to address the problem. An action plan is agreed.
- **Action.** The action stage involves the ethnographer collecting data from the workplace as the client implements the agreed action.
- **Evaluation.** Data are assembled and analysed jointly by the client and the researcher, the outcome of which should be recommendations and advice that can be taken forward and, if appropriate, developed into a new action plan. It is important to recognise that some action research may be inconclusive given the dynamic nature of design and construction projects. However, given the nature of the research it is unlikely that the effort will have been wasted since it will help to highlight how people act in the workplace.
- **Closure.** At the end of the programme, generalisations may be made that help to inform business practices and it is likely that new problems and challenges will have emerged to be tackled in related research. Depending on the agreement between the client and researcher the results may then be disseminated through publication, or retained for internal use only.
Action learning is a term used to describe an inductive process in which managers seek to solve organisational problems within the workplace. This form of management development involves learning via the process of problem solving within a group, that is learning to learn by doing. As with action research, the problem needs to be clearly defined and the boundaries of the group determined before the process begins. Similarly the results of the study need to be analysed and disseminated within the organisation at the end of the programme. A facilitator is required to facilitate the progress of action learning.

In-company learning can be assisted by consultants and also through interaction with academic institutions. Universities have invested in working closer with industry to share their knowledge through alliances on applied research and work-based educational schemes. The work-based programmes can be student-centred, with the majority of the work being undertaken in the workplace, or teacher-centred, with a structured programme of lectures, seminars and assessment. Many successful programmes combine both approaches and aim to develop the skills of staff around specific projects and/or work tasks. Work-based learning and development programmes seek to:

- Identify shortfalls in existing knowledge and improve it
- Identify new areas of knowledge and expertise
- Encourage staff to share their knowledge (e.g. through internal seminars)
- Better understand work practices with the aim of reducing waste and improving efficiency.

**Learning through looking and listening**

An important competence of the design manager is the ability to look at and listen to the activities of the staff in the office and, where possible, the interaction with others involved in projects, which usually takes place in meetings. An enormous amount of knowledge can be gleaned simply by trying to make sense of what is going on in the work environment. For this reason design managers should not occupy an office that is physically separated from the design studio. Detached from the action they will be less knowledgeable about individual projects and will have to rely on what
individuals tell them they are doing, which even with the best intentions is likely to differ a little from what was actually done. Being in a position to listen to the hum of the office and see what is being done allows the design manager to spot good and bad practices.

The project-to-office interface

Following project completion the design manager’s role changes to an ‘after sales’ role. The project will be finished and with the exception of formal visits, for example to sign off any outstanding work and inspect latent defects, there may be no contractual reason to stay in touch with the client. New projects will be exerting demands and pressures on the design office and the design manager will be interfacing with actors working on new projects. It is, however, extremely important that contact with the client and the building should be maintained. This allows the possibility for the design office to learn from the building in use and also helps to maintain contact with the client and key actors, for example facilities managers, with a view to future work. Although client contact may be dealt with formally at partner/director level, the design manager is likely to have developed a rapport with the client or client’s representative during the project and this can be an important informal link to new work opportunities.

From a business perspective there is an obvious need to keep in touch with the client and the building manager/owner after the project is finished. Marketing to existing clients will be easier if regular contact is maintained after the closure of the project. From a technical perspective the office can benefit from assessing the way in which the building has weathered. This may be assessed from a visual inspection, but it is also necessary to know how much cleaning and maintenance is required, and this can only be gleaned from talking to those responsible for keeping the building serviceable, a policy that may also lead to future work for the office. To be successful, the project and office cultures must be committed to a learning culture in which open communications and the ability to engage in constructive criticism are encouraged. A blame culture at the project and/
or organisational level is not conducive to continual learning. Professionals should be engaged in continual learning and updating of skills through regular continual professional development activities, and these should be linked to better performance within the office and project environments. Evaluation and learning form a continual programme with long-term objectives for all stakeholders: looking at how things are, watching how people behave, listening carefully to what people say, asking carefully framed questions and presenting the findings to senior managers and user groups with the intention of effecting positive change.
Part Two

Managing Creative Organisations
Chapter Eight

The Business of Architecture

Design offices are creative, stimulating, exciting places in which to work. The managerial structure of the firm and the organisational culture that develops within the office will have a significant impact on the manner in which individual projects are developed, and hence the profitability of the business. To succeed in business requires the same obsession with detail that is needed in the design of buildings: a fastidious approach to every aspect of the business. Successful service firms tend to be distinguished by the skills and behaviour of the firm’s leader(s), combining design vision, business skills and leadership in a seamless and effective manner. The owners’ values will be reflected in the structure and culture of the office. The culture of the office and its market orientation will form part of the organisation’s corporate values. These values will influence, and be influenced by, the managerial frameworks used within the organisation, frameworks that should help to encourage and maintain a creative and dynamic atmosphere. The social life of the design office needs careful consideration to create the best possible environment for people to interact, create and share knowledge and contribute to projects without undue hindrance from onerous management systems, a poor working environment or inappropriate treatment. In many respects the issue is about designing and achieving an appropriate fit for the market. In all but the smallest of offices the design manager will form the link between the business owners, staff and project stakeholders.
Architectural practice

The majority of architectural practices are very small, a characteristic of other professional service firms such as accountants and lawyers. Surveys of architects in the UK and other countries have shown that the make-up of the architectural profession by size has remained relatively consistent over the years. Approximately 70% of offices are in the ‘very small’ band (1–5 architects), 15% in the ‘small’ category (6–10) and the remaining 15% in offices with 11 architectural staff or more. Although the large offices make up a small proportion of offices when measured by size, they are responsible for a considerable amount of work, and because of their size they tend to be structured and managed in a different way to their smaller counterparts. Around half of all architectural practices are run by a sole principal. Some of these businesses are one-person enterprises, although many solo practitioners employ a wide range of staff. Alternatively businesses tend to be formed as a legal partnership, comprising two or more partners, or as a limited company with directors. Less common forms of architectural practice are public companies and group partnerships and cooperatives. Given that around 85% of architectural offices employ ten architects or fewer, much of the management literature addressed to large organisations may be inappropriate. Small professional service firms do not have the resources to employ, for example, a personnel manager; it is a job done by one of the senior architects or directors within the office in addition to his or her other duties.

Regardless of size, design organisations must harness a number of skills in addition to design talent if they are to be successful in business. The office needs clear direction and effective leadership as well as the ability to anticipate future markets and adapt to change. Management systems need to be simple and flexible enough to allow the creative side of the business to flourish. A combination of hard and soft management systems is required. The hard management system is the formal structure and systems employed by the firm, such as quality management, and is task-orientated. The soft management system sits within this and is concerned with the informal, intuitive nature of the firm, concerned with an individual’s competences, values and feelings. Ideally soft and hard systems should complement each other and be capable of adjustment and
change if the organisation is to become and remain a profitable undertaking. As professionals the architectural business must be true to:

- Clients
- Oneself and the members of the design office
- Society.

The professional service firm

The grouping together of professionals to sell their services to clients more effectively than could be achieved by working alone is known as a professional service firm. These businesses are typically formed as legal partnerships or as limited companies, with partners and directors, respectively, responsible for the management of the business. Their main asset is the people who work within the firm. Other terms such as ‘people firms’ and ‘knowledge-based firms’ are also used to reflect the combined skill, knowledge and experience of the business. The professional service firm comprises a number of highly skilled individuals who carry out complex work for clients by means of projects. According to the leading authority in this field, David Maister (1993), there are two special characteristics of the professional service firm: customisation and client contact. Together they demand that an organisation attracts and retains highly skilled individuals. The high degree of customisation causes difficulties in terms of management, especially since situations may be relatively unfamiliar and thus standard management techniques inappropriate. The high degree of client contact, mainly via face-to-face communication, requires very special interpersonal skills for which quality and service have special meanings. This interface deserves as much attention as that given to design activities, because without clients there can be no fee income and hence no business.

Professionals are first and foremost concerned with satisfying their clients’ needs and are notorious for regarding the running of their businesses as a secondary part of their work. Architects, for example, are primarily interested in design and the creation of value for their clients. Management of the organisation is too often seen as a secondary activity. Professionals are often charged with ineffective management of their business, squandering profits and missing opportunities to grow the
business, leading to lower profits and threatening their organisation’s long-term viability. Architectural firms have not escaped from such criticism, seemingly ill at ease with the concept of business management despite the fact that architecture is both a profession and a business. Some authors have claimed that the task of managing a design organisation differs from managing other types of business because it operates under special rules associated with the creative process. In part this is true; however, it should be recognised that design organisations have a number of characteristics that set them apart from other knowledge-based professional service firms such as accountants and project managers. **Figure 8.1** shows the four main characteristics of all architectural offices, which are:

**Figure 8.1** Characteristics of the architectural firm.

- Creative
- Regulated by professional bodies
- Dependent on one market sector: construction
- Service providers.

**Creative firms**

Clients commission architects to provide individual design solutions to unique problems. Architects deliver value to their clients by generating
(and delivering) creative design solutions. Research has found that architects have a strong identification with work that is creative, despite the fact that they often work in highly specialised or very technical areas. The majority of architects also wanted more design work (including greater involvement at the initial design stage) and to be able to work more autonomously. Individual control over design is important to designers. The challenge is to provide a stimulating and creative office environment that allows the space for creativity within a professional management structure.

Professional firms

Architects and their fellow professionals are regulated by their professional institutions and bounded by their respective codes of conduct. In the UK the title ‘architect’ is protected and all architects must be registered with the Architect’s Registration Board (ARB) in order to use the title. Most will also choose to join the Royal Institute of British Architects (RIBA) or a similar professional body such as The Association of Consultant Architects (ACA). Although the professional institutions were originally set up as a means of protecting their members’ interests, some of their professional rules have limited the manner in which their members can trade, for example by restricting the manner in which they may advertise their services. Registered firms must comply with the relevant professional institution’s code of conduct; otherwise, the firm is free to act in any legal way it chooses. All firms must carry professional indemnity (PI) insurance. The professional firm holds integrity and impartiality as fundamental values, aiming to serve the interests of both their clients and society via ethical business practices.

Construction sector dependency

Architects have a special relationship with one industrial sector, construction. It is the economic climate of the construction sector that influences the economic fortune of architectural practices. In periods of economic growth architects will be in demand, while in periods of recession and stagnation the demand for buildings, and hence design services, will be low. Construction sector dependency is further
complicated because architectural firms are concerned with issues of design and realisation (construction), themselves culturally different worlds brought together temporarily via a project. Architectural firms cannot isolate themselves from the construction sector because others, such as architectural technologists, building surveyors and contractors, will be competing for work, which will impact on the architect’s business.

Service providers

Architectural firms are concerned with providing services to their clients, the extent of which varies depending on the market orientation of the business and the requirements of individual clients. Client orientation and the multiproject environment mean that architectural businesses have to be dynamic and adaptive to changing contexts. The quality of the service provision, as perceived by the client, is based on the overall experience of the service provided and, depending on the scope of service, the quality of the finished product. Quality of the service provision is largely in the hands of the design office, although the client’s perception will also be influenced by the performance of other design and project team members.

Professional service firms face a number of well-documented challenges related to their service provision. The services provided may be seen by clients as intangible, and they are context-specific, have a limited shelf-life and may be difficult to keep consistent.

- **Intangibility.** The product of the design business is often hard to see. Clients may see a set of drawings and a finished building, but the work that goes on to produce these products tends to go unseen and hence is not appreciated. This intangibility of service means that professional service firms must constantly communicate with clients to explain the value of the services they offer. Photographs of current and completed projects, design proposals and design awards are displayed in the office reception and web-based homepage in an attempt to communicate the type and quality of the services provided.

- **Context.** Services are client specific and are usually specific to a geographical location. Many small design offices limit their client base to a defined geographical area around their office(s). While
this can help to reinforce a local presence, it also makes the office vulnerable to fluctuations in local market conditions.

- **Consumption.** Services cannot be stockpiled like products. The service is consumed as it is produced; therefore careful workload planning is needed to match the resources of the office to the demands of clients. New projects need to be scheduled to suit the office resources available and hence determine the firm’s ability to deliver the work to agreed time and quality parameters. Good client relations are required if the workload is to be planned to suit the office rather than the client. Staff time needs to be utilised effectively to ensure profitability, and this may mean bringing in freelance staff to help with temporary increases in workload.

- **Consistency.** Consistency of service is another problem. The solo practitioner may be able to provide a consistent service relatively easily. He or she acts in a similar manner with each project and the consistency of service is relatively easy to control. Put two, three or more professionals together and there needs to be some coordination of activities and values. Establishing and maintaining a good reputation for a high level of service takes a lot of effort, especially if the architects ‘together’ have different approaches to serving their client base. All staff must have a clear understanding of what is an acceptable and unacceptable standard of work. The use of TQM and regular quality checks can help to maintain a consistent level of service. A stable core of staff can also help.

## Clients and the market for services

Architectural firms are faced with concurrently managing large numbers of small, extremely complex and bespoke projects for a variety of clients. Clients seek value in their choice of consultants by trying to match quality of service and quality of the finished product with price; design is not the only differentiating factor. Clients also form an important part of the design firm’s organisational culture and affect projects in a positive or negative way. Ideas must be tested against the client’s requirements,
budget, regulations and programme. Good communication between client
and architect is critical, not just to the success of a project but also to
long-term client relationships. Satisfied clients are the most important
source of new work, either through further commissions or through their
recommendations to others. An ability to understand clients is essential for
developing designs and also for ensuring the business is able to provide
appropriate services for its clients. Clients vary in their level of experience
of design and construction projects and in the way they commission their
consultants (see also Chapter 13). From the perspective of the design
office, clients tend to fall into one of the following categories:

- **Cooperative clients** are willing to work with the design office
towards a common goal. Emphasis is on sharing values through
open communication and maximising value for all stakeholders. Effort
will be required from both parties to retain a cooperative
relationship through the life of the project.

- **Challenging clients** constantly demand a high standard of service.
Challenging clients are good for the office; they help to maintain
focus on standards and a succession of challenging clients will
result in an improvement in the level of service provision.

- **Uncooperative clients** tend to offer constant resistance and criticism
and need careful management; otherwise the office is unlikely to
make a profit. They will not want to be too involved in the project
and values will not be shared willingly. Uncooperative clients may
also present problems when it comes to paying invoices for work
carried out on their behalf.

Some clients may demonstrate all three of these characteristics over the
lifetime of a project and so the design office needs to remain vigilant and
expect some changes in behaviour, especially during challenging periods.

**Managing the client relationship**

The architect–client relationship needs to be both nurtured and managed
so that both parties benefit from the relationship. Client empathy is crucial
to clear understanding and clear communications, which in turn are
critical to the effective generation and delivery of design. Management of
the client–architect interface involves a number of specific and
interdependent skills, ranging from the ability to listen to the client (and
key project stakeholders) and managing client expectations to developing client trust.

- **Listening to clients.** The most critical skill and an important part of good communication skills is listening to clients; the better the understanding of clients’ values and needs, the better the design office is positioned to provide appropriate services. Listening skills are fundamental to effective briefing and to the development and maintenance of a strong client–architect relationship.

- **Managing client expectations.** The key to a good relationship is getting the expectations to match the outcomes. Open communication will help to highlight differences in expectations between client and designer. Clients often need educating about the building process; the more they can be encouraged to become involved in the design process, the easier it is to identify their values and hence meet their expectations. Quality management systems are a useful tool in this regard since they help the firm to keep the client informed of changes and their implications.

- **Building client trust and satisfaction.** The key word here is integrity. Clients place their trust (and their money) in the hands of their consultants and will expect their advisers to be open and honest at all times. Satisfaction with a particular project will be related to the client’s perceptions of the services provided. The more involved the client is in his or her individual projects, the easier it is to develop trust and hence satisfy the client.

### Managing the service provision

Architectural practices differ in size, the type of services they offer and the type of work they do. Some firms are set up to design one particular type of building only, for example medical facilities. These firms are able to gain work from a specific market niche because of their high degree of specialisation. Equally they are vulnerable to a downturn in activity in that particular sector. Other firms will design any type of building regardless of size or location and tend to be referred to as general practitioners. Research has shown that around 80% of architectural firms specialise in at least one building type, such as housing, industrial or retail. This will affect the type of client that is attracted to the design office. Service provision should match the needs of the clients and the business
objectives. In business the key to success is to provide a service of superior quality to a client at a competitive price, and provide it in such a manner that the client will appreciate the value of the service (and the end product). Typical service provision includes:

- **Design only.** Conceptual designers or ‘signature architects’ are primarily concerned with the creative act of design and the development of highly creative and innovative design proposals, which others then have to detail and make work. These architects become well known for their creative and often daring designs, winning commissions for their design skills. This is a very small market and only a few design offices are able to operate in this way and be financially successful. Most offices have to supplement their highly creative work with more mundane work (which they tend not to publicise), in order to generate enough income to keep the office financially viable.

- **Traditional model.** This covers the familiar services provided by the architect from inception to completion. It is the most common type of service provision for architectural practices. Many practices also provide project management services.

- **The ‘one-stop’ shop.** Some architectural practices have diversified and offer a one-stop shop to their clients. As a total service provider the services would range from site identification through design to construction, maintenance and facilities management, and disposal/recovery management. By their very nature these organisations are also able to offer discrete packages, such as design-only and project management services to suit the needs of a wide client base.

## Management of the business

The idea that architectural practice requires redefinition and transformation has been voiced on many occasions. To a certain extent change will be forced on architectural practices simply through changes in the environment in which business is conducted. Increased competition combined with the dissemination of professional knowledge through IT will have a major say in shaping the future of many architectural firms. Other drivers, such as government-led reports urging greater efficiency, place additional pressures on professional service firms by making clients
more aware of areas for improvement and hence more demanding and critical of the services provided. Technological advances also provide the opportunity for change, with ICTs, integrated design and manufacturing and off-site production helping to revolutionise the way in which the built environment is realised. Advanced technologies have also provided the potential to change the way in which architects manage design and construction projects, for example through new working relationships between manufacturers and architects and a closer connection with clients. Impetus for change will also come from within architectural firms, keen to make a positive contribution to our built environment through the creation of creative designs and the realisation of exciting and stimulating buildings. Sponsors of building projects and building users alike have come to recognise the value that good architecture can bring to their lives. The way in which the project is planned and managed, and the attention to design throughout the life of the project, will have an impact, either negative or positive, on the finished building and hence the building users.

Clients have become more demanding and the pressure to deliver faster and cheaper is increasing. Market forces have forced some design offices to refocus and improve the management of their business in order to survive. Some firms have responded by concentrating on their core competence of design, outsourcing much of the technical work and abrogating responsibility for project management to others. Many other architectural businesses have expanded their core competences and offer a wide range of management-orientated services in direct competition with other providers. Different approaches are reflected in the culture of the office and the types of client and project the office is willing and able to take on. Different approaches are also reflected in office size and ambition. Strategic planning and creative thinking are essential for survival and continued profitability in a highly competitive marketplace. Considerable effort, talent and a certain amount of luck all play their part in the success of the business; so does planning a strategy for the future. Effort is required to distinguish the business as something unique and different to the competition, while balancing the level of risk with the anticipated rewards. This means establishing a strong image supported with a clear statement of values and communicating a consistent message to clients.

The design organisation’s workload and construction output are interdependent with the economic fortune of the country or region in
which they operate. The constant challenge for any business is that periods of economic growth and recession are not easy to predict; thus some flexibility is required within the organisation. In addition to the global and national economies, there are the local economies related to geographical areas and specific building types. The successful firms are those best able to market their services to the most profitable (or potentially the most profitable) market sector or region. Design practices often have advance warning of swings in the economy (be it on the macro or micro level), reflected in an increase or decrease in enquiries from clients, but there is little they can do other than be prepared to adapt to the changed economic circumstances. The effect of economic fluctuation is reflected in the number of staff a firm employs, with firms increasing their size in a boom and decreasing staffing levels in a slump. These transitions pose challenges for maintaining a quality service and a competent staff.

Developing a portfolio of clients from different sectors gives the design office a better chance of survival in a recession or downturn in one particular sector. As a general rule it is a dangerous strategy to rely solely on commissions from one market niche and/or commissions from a select number of clients. Supply chain management, strategic alliancing, partnering and framework agreements all, to lesser or greater extents, are about working with familiar and trusted partners. The danger lurks in becoming too dependent on too few networks for business. Taking a flexible approach to employing staff and to the amount of space required may help to make the business more responsive to market fluctuations. However, this cannot substitute for clear direction from the owners and the creation of an effective environment in which the project portfolio can be managed. Successful management of the business is based on a thorough understanding of how professional service firms operate and why some firms are more successful than others. This relates to clarification of the business strategy and understanding the challenges facing the business.

Organisational typologies

Organisations tend to be classified as strong delivery firms, strong service firms or strong ideas firms. Organisational typologies are strongly influenced by the values and aspirations of the owners (Figure 8.2).
• The strong delivery firm is organised for efficiency, relies on standard design solutions and has a formal structure and a relatively stable working environment. This firm tends to specialise in a limited range of building types (e.g. speculative office developments or retail), which makes the type of work and the type of client relatively predictable. By reducing client involvement and standardising the production process the firm has little need to change very often.

• The strong service firm is organised for service and tailors its services to the specific needs of its clients. It has a flexible managerial structure and a highly dynamic internal environment that allows the office to respond quickly to the differing needs of its clients. Individual and creative solutions are favoured over standard responses and greater client involvement in the project is encouraged.

Figure 8.2 Organisational typologies.

• The strong idea firm is organised for innovation and seeks to provide innovative solutions to unique problems. It has a flexible, informal structure and a highly changeable environment. Standard design solutions are rarely considered because clients employ the firm for a unique project.

It is easy to find examples of architectural businesses that fit within these categories, although organisations may change their typology over time or may operate within two or three of these categories simultaneously. For example, many design offices claim they are able to offer strong delivery in addition to strong service and also with strong ideas, thus claiming a foot in all three camps.
Organisational configurations

In addition to the type of firm, the type of organisational control, usually reflective of the principal’s personality and leadership style, needs to be considered. Organisational configurations comprise entrepreneurial firms, bureaucratic firms, professional firms and innovative firms:

• The entrepreneurial organisation is owned and managed by a single partner or director, and with the large number of small firms operating as architectural offices this is a common format. The organisational structure is very simple and the owner makes all major decisions. Because of its size the firm is capable of being very flexible and highly adaptable, but its size also prevents it from dealing with large projects unless some form of strategic alliance is made with other organisations. Quality of the service provision is dictated and dominated by the owner, which makes it predictable if a little idiosyncratic. Employees tend to work for the owner rather than with them and are expected to follow their leader’s architectural style. Success or failure is mainly dependent on the principal’s ability to bring in a steady supply of new projects.

• The bureaucratic organisation is very organised, highly formalised and described as ‘machine-like’, and hence is disliked by creative people. This is more suited to medium sized to large architectural practices, although it can be found in smaller concerns. The standard of service provided is highly professional, sober and predictable. Staff have very clear frameworks in which to work and are not expected to deviate from the modus operandi of the office. This type of organisation is regarded as stifling creativity and is more suited to a stable, relatively inflexible environment.

• The professional organisation comprises a number of professionals, all directors, sharing the same office and staff, but principally working independently of one another. This business is normally constituted as a partnership or a limited company, which is a common arrangement. In this format the directors all work independently, albeit within a common business framework. Care is required if problems of coordination are to be avoided. Clients may be confused by the wide variety of approaches taken by the owners. Similarly, staff may find it difficult to adapt to different directors’ working methods and to cope with the overlapping demands placed
on them by the different owners. The project portfolio will need sensitive coordination and management to ensure resources are allocated to suit the needs of the business, rather than the individual needs of each owner.

- The innovative organisation is based on expertise and has the most flexible structure. It is responsive to change and does not use standard solutions. This is regarded as inefficient and demanding on the members of the firm, although some may argue it provides an exciting culture in which to practise architecture. Usually these firms are set up for single projects, perhaps as a result of winning an architectural competition. Because they are innovative and emergent organisations, established and formalised patterns of management are not used and the quality and consistency of service may be difficult to predict.

Design firms are not stable entities; they change over time in response to external pressures (e.g. clients and projects) and internal pressures (e.g. changes in staff). It is not uncommon for the office to change as it matures and responds to its business environment. An innovative firm may eventually morph into a bureaucratic organisation. Many design firms are quite adaptive and can adjust their culture to suit a particular client’s needs. It is not unusual for architectural firms to have their culture changed by their interaction with, for example, repeat clients.

**Control and leadership**

The management of staff and the running of the business are very closely linked in professional service firms. An essential requirement is that the management intentions of the directors or partners should be clear and effectively communicated to all staff. Effective management of the firm should be concerned with both the organisational structure of the firm and the motivation of its members. The organisational structure of the firm is concerned with the ‘control’ of its members’ activities, through job descriptions and bureaucratic rules. However, individuals will exercise free will and may choose not to comply with the constraints placed on them if the controls do not fit their work ethic. This trait is strong in creative individuals, such as designers and architects, who appear to take pleasure in ‘bending the rules’ and/or ignoring managerial controls. Design offices should be stimulating environments that encourage people
to work creatively and communicate easily with one another within a managerial frame. This demands consistent and unambiguous leadership. The objectives of the firm, the range of services it offers and the purposes of its managerial controls need to be clearly defined and adhered to by all members of the organisation. Mission statements and the statement of goals will form the basis for management decisions and will also help with day-to-day management decisions.

Regardless of size or orientation, every design office needs to have someone in control. This person is usually the senior partner or managing director of the office. It is not uncommon for individual members of the office to have only a partial understanding of, and interest in, what the firm is doing. Designers will be primarily concerned with their individual workload and their projects, but many will also be interested in helping to keep the business profitable. Communications within the office should facilitate interaction between the owners and the staff so that all members of the office can share the same values and goals, perhaps reinforced by reward systems based on both individual and organisational performance. Managers will influence the behaviour of individual designers through general policy decisions, individual project management and the day-to-day design office management. Managers will also influence the process through their managerial style, be it autocratic or democratic. Control can be divided into three levels, ranging from strategic policy decisions to individual project control and day-to-day managerial control:

- **Policy decisions.** Policy determines how the office is managed and how design activities are coordinated and quality levels controlled. This is facilitated by the use of quality management systems and ITs.

- **Individual project control.** This will be tailored to suit individual clients and the specific characteristics of the design task. Quality parameters will be set out in the project quality plan.

- **Day-to-day managerial control.** Management of individuals within a design office varies widely, from leaving staff to make their own decisions with minimal input from their managers to very tight control where decisions are closely monitored and approval is required from the design (or technical) manager for the slightest variation in office procedure.
The business plan

The business plan is an important element in establishment and maintenance of a strong image. The business plan should contain a clear mission statement and the main objectives and strategy for the firm. This plan is sometimes referred to as a statement of values. The business plan will result from a strategic evaluation of external and internal factors. The external factors are:

- Clients and the market for services
- Competition for clients and services.

The internal factor is:

- Office structure and ambition.

From this, decisions can be made on the target clients/market segments, the type of services that can be offered (specialisation) and the price to be charged for the services.

Architects must learn to separate the design side of the firm from the business side. A good business plan should allow the freedom for a firm to respond to a situation spontaneously and creatively. A poorly considered plan is likely to inhibit, rather than assist, the creative potential of the firm. The design of the core business and the planning of the firm to achieve its aims and objectives should not be carried out until the directors have carefully investigated and evaluated the market for the firm’s professional services, considered the balance between risk and reward, and investigated issues concerned with specialisation and diversity. The firm will then be in a position to plan its priorities and goals, instigate strategies for achieving them and write a mission statement. Priorities should be established and considered against known resources and then committed to paper as part of the business plan. The strategic plan and the mission statement must be regularly evaluated and revised to reflect changing market conditions. It is only when the strategic plan and the mission statement have been committed to paper that the marketing strategy can be considered.

- Strategic plans. The strategic plan is a tool to guide the business on a day-to-day basis; it should be concise and accessible. An overlong document that employees ignore is of little use. The strategic plan should form an essential part of the office manual or quality plan. It should clearly show the aim of the business in the next twelve
months and over the longer term, say the next three years. It is only by agreeing and committing these plans to paper that the necessary resources can be put in place, training programmes identified and marketing strategies established. Once agreed, strategic plans provide a useful framework on which human resources can be allocated and assessed against cash flow projections (Figure 8.3). The managerial style of the firm’s owners will influence the development of the strategic plan. In a top-down approach the owners will determine the plan and impose it on the employees. A bottom-up style of management involves all employees in the decision making process. Although there are advantages and disadvantages to both approaches, it is important that all members of the firm are consulted so that they can develop a sense of ownership. This will help the firm move forward as a cohesive unit with well-defined and well-understood aims and objectives.

Figure 8.3 The strategic plan and the project portfolio.
• *Mission statements.* The purpose of a mission statement is to put down in writing, clearly and concisely, the firm’s direction – its aims and objectives. Some mission statements are designed for use only by the firm’s employees, while others are designed to be read by clients as well as the staff, i.e. they are designed to be part of a firm’s marketing strategy. A statement of values would be a good example. The mission of the firm can only be committed to paper once the directors and staff have a clear understanding of where the firm has come from and where it is heading, have analysed the market for their particular services and have discussed and agreed the strategy for the firm – the strategic plan. Mission statements must be realistic, representing the values of the owners and the resources available to achieve the mission.
Strategic alliances and joint ventures

One way of growing the business is to enter into a strategic alliance or joint venture with firms that offer complementary services. Collaboration as part of a virtual team is becoming common, as different professional service firms group together to offer a more comprehensive service than they could if working independently. This means that solo practitioners and small architectural offices are able to operate as much larger concerns for some projects, without physical office location or office size being a barrier.

Outsourcing

Outsourcing specific work packages offshore to benefit from cheaper labour has become common practice in many business sectors, especially the service sector. Professional firms have been quick to realise cost savings and increased organisational flexibility afforded by outsourcing their noncore services. This started with some administration work, but has grown to cover a great deal of technical work, for example the production of working drawings. Some design offices have outsourced aspects of their work for a long time, for example specific detailing requirements outsourced to consultants with whom they have developed informal working relationships. Outsourcing packages of work to others can form an effective way of managing the design organisation. Some design practices are starting to specialise in design and information management, i.e. they do the conceptual design work but outsource the task of producing the project documentation to a variety of specialists ranging from technically orientated professional design organisations to specialist subcontractors and suppliers. While this may be a cheaper option than producing the work in the office, care must be taken with the quality of the work provided. This means investing time in developing relations with the service providers, checking out their systems and meeting their people to ensure that they understand the culture and ethos of the office they are working for. This upfront cost is usually recouped quickly. Advantages of digital outsourcing include the ability to respond quickly and efficiently to client demands. Disadvantages tend to relate less to technical challenges and more to the cultural issues and the sharing of design values.
Risk and reward

A balance must be maintained between the firm’s level of exposure to risk and the level of the reward (fee income). Generally, the success of a business venture is proportionate to the risk that the owners of the business are willing to take. Therefore it is essential to recognise the anticipated level of risk and set the goals of the firm within these parameters. New service provision and new market niches represent a real enhancement in risk, but they may promise high rewards. The challenge is to try and forecast the degree of return against the amount of risk, usually with incomplete information. A number of tried and tested techniques are available for forecasting, from probability to sensitivity analysis and scenario planning. Scenario planning is a useful way of considering likely outcomes of different variables, from the optimistic to the pessimistic. Risk management techniques can help to minimise the risk of a claim against the business. Assessing the risk associated with each client and each project is another useful approach to identifying potential hazards and mitigating them. In extreme cases this may mean pulling out of a project before entering into a contract with the client. Questions about the firm’s ability to respond to change, the applicability of the firm’s skills and the client’s reaction to any planned changes can be explored through such methods. Unfortunately, the further ahead one tries to forecast the less accurate the prediction is likely to be.

Market analysis

New opportunities and threats to the business should be assessed at regular intervals. New opportunities may arise quite quickly and the business must be in a position to respond. Other consultants pose a constant threat to an organisation’s market share and consequently to its survival and profitability. When sufficient information has been collected the firm can carry out an analysis of its strengths (S), weaknesses (W), opportunities (O) and threats (T), known by the acronym SWOT. Many people, including the owners of the firm, find evaluation to be a stressful experience, but if the firm is to develop, all of its members must be
prepared to learn from their collective experience and then act. Evaluation can be carried out on a number of different levels:

- Evaluation of the entire firm, the complete system
- Evaluation of particular business strategies
- Evaluation of projects (and clients)
- Evaluation of staff performance.

Evaluation should be appropriate to both the size and development stage of the firm. Timing of the evaluation needs careful consideration; some firms may feel it should be carried out monthly, some quarterly and others annually. Again, it will depend on the size and age of the practice.

- Evaluation is expensive because of the time it takes to carry out the evaluation effectively. The process should be kept as simple as possible; the production of a series of lengthy documents that few people have the time or inclination to read may well have a negative effect on staff morale.
- Data are historical and should be used in a positive manner to shape the future direction of the firm.
- There must be an effective and meaningful feedback system to all staff.
- Take action. Do not put off difficult decisions until the next evaluation; intervention may be the only solution.

Market analysis will involve an examination of the markets in which the firm currently operates (and which it would like to enter in the future), known as an external analysis. An examination of the firm’s own strengths and weaknesses constitutes an internal analysis. This information can be used to inform benchmarking activities.

**External analysis**

Market analysis should be carried out regularly, for example every four to six months. The market will be changing and competitors will also be attempting to gain an edge and increase their market share. Competitors open and close offices, reinvent themselves and offer new services every day of the year; if the situation is not monitored the firm could very easily miss an opportunity or, worse, find itself in trouble because of new (and
unexpected) competition. Anticipation is an important business skill. An external analysis of the market needs to consider the following:

- **Economic and political climate.** Government policy, government spending and changes in legislation will affect building activity, as will economic growth and interest rates.

- **Social and technological climate.** Social changes may lead to a demand for certain building types, while changes in technology may lead to new building products.

- **Market for services.** The market for services is related to building types and service provision. Growing and shrinking markets need to be monitored carefully with regard to client behaviour and client characteristics, referred to as market segmentation. A large proportion of the information is available in the national press, specialist journals and from professional bodies such as the RIBA and the Royal Institution of Chartered Surveyors (RICS). However, information relating to client wants and needs is difficult to appraise without talking to them directly.

- **Competition.** Competition will come from within the architectural profession and from other trades and professions. Their strengths and weaknesses must be considered.

### Internal analysis

Coinciding with an assessment of the market should be a careful audit of the firm’s skills, client contacts and opportunities. A regular analysis of employees’ strengths and weaknesses will identify areas to be strengthened through further training and education. Analysis of marketing activities and client satisfaction will help to identify areas to be consolidated. The firm will build on its collective experience, and a frequent evaluation of its successes and failures – its strengths and weaknesses – is just as important as an evaluation of the market for the firm’s services. Clients will also be looking at the firm in a similar manner; therefore it is important to recognise and manage the image that the firm is giving out to people outside the firm.
Performance criteria and benchmarking

Whatever strategies are adopted to meet and anticipate market forces, the firm’s success will depend on the consistency of the service provided to its clients. Clients will expect their consultants to deliver what they promised. The professional service firm must perform well across a number of key areas. There will be a number of ‘essential deliverables’ related to each client. Failure to live up to the client’s expectations may cause problems and could result in the loss of future business. The essential deliverables will include:

- Responsiveness and quality of the service provided
- Quality of the design
- Quality of the completed building
- Cost certainty
- Time certainty.

Benchmarking is a comparison-based management tool that can be used to help an organisation gain competitive advantage. There has been a lot of emphasis on the value to be derived from benchmarking activities, less on the amount of time and resources required to undertake benchmarking in a meaningful way. Advocates of benchmarking claim that the true measure of a firm’s performance can only be gauged by using all three of the following:

- **Internal benchmarking.** The firm needs to examine its working methods and make any necessary improvements. For the architectural firm, internal benchmarking may be interpreted as a comparison between different projects where a quantitative comparison is possible based on an analysis of staff hours against profitability. This is easiest to carry out since the information is readily accessible within the office systems. It is, however, often the most difficult area to come to terms with for directors and staff alike.

- **Competitive benchmarking.** The firm needs to look at the industry in which it operates to learn from examples of best practice demonstrated by others. This area of benchmarking involves comparison between the architectural firm and other consulting firms operating in the building sector. Assuming that accurate
information can be obtained, the firm is able to compare its performance with other service providers. Care should be taken to compare the firm with one of a similar size and market orientation.

- **Generic benchmarking.** The firm must look outside its market niche to learn best practices from other sectors/industries. Although the benchmarking literature refers to generic benchmarking as a comparison between business processes regardless of the industry they come from, the architectural firm needs to exercise a certain amount of caution when borrowing ideas from manufacturing processes based on mass production and repetition. Architects should consider other consultants, such as accountancy and advertising, to see if lessons can be learned from them. For example, the manner in which advertising agencies compartmentalise jobs to maximise individual talent may be suitable for some architectural businesses. By carrying out the benchmarking exercise on a regular basis a firm may well broaden its knowledge base and pick up different ways of doing things.

**Growing the business**

Design organisations will pass through a number of distinct evolutionary phases over time, from inception to survival and then (hopefully) to success. These are relatively predictable stages, often resulting from growth of the design practice in response to client demand, rather than from any specific business strategy. At the inception stage the challenge is to get enough clients and projects into the office to be financially viable; the main concern is staying in business and building a good reputation. This is a very difficult stage and many businesses do not make it. The survival stage describes a period when the office has enough work to stay financially solvent and the business is growing. Staff numbers may have expanded to deal with the increasing workload and the pressure to be more successful will increase. Some offices will have a deliberate policy of staying small, trying to balance the flow of work with the office resources. Third comes success: the firm has proved itself in the marketplace and has grown in size and complexity. The possibility of failure will exist throughout a firm’s life, regardless of its developmental stage. Some firms never make it past the inception stage, while others may get stuck in the survival stage and never reach the third, successful, stage.
Some architects are content to operate very small practices and have no intention of growing the capacity of the office. Others may start small with the intention of building a much larger office as the workload increases. Whatever the intentions of the owners and staff, knowing where the business is positioned in the marketplace and where it is heading is crucial to success. Strategies for new service provision range from increasing market penetration, generally regarded as the safest option, through to diversification, which usually carries the highest risk because new skills have to be developed and communicated to potential clients. There are four main strategies:

- **Provide existing (familiar) services to existing (familiar) markets.** This strategy involves little in the way of change.
- **Extend existing services (familiar) to new (unfamiliar) markets.** This strategy will rely on an effective marketing campaign to raise awareness in a new market niche.
- **Introduce new services (unfamiliar) to existing (familiar) markets.** This will rely on interpersonal relations with the existing client base and so less emphasis will be put on marketing.
- **Introducing new (unfamiliar) services to new (unfamiliar) markets.** This is the most challenging of the four strategies in terms of establishing a presence, requiring considerable investment in marketing.

### The office-to-project interface

Architectural firms depend on a steady flow of projects in order to survive and prosper. Each project is an income-generating activity when well managed but a loss-making venture when poorly planned. In this multiproject environment each project will exert particular demands on the office resources. Similarly, each project will influence the culture of the office through interaction with the client and other project participants. It is important for the success of the project and the profitability of the office that the client and the project fit the office culture. Failure to
achieve a suitable fit will usually result in unprofitable projects and difficulties for the office in terms of unnecessary rework.

The business strategy will influence the type of clients that the office engages with and the type of buildings that it specialises in. This will colour the profitability of the business and to a certain extent will influence how individual projects are comprised and delivered. Offices that constantly complain that their clients are too difficult and unprofitable and that their projects are fraught with difficulties need first to re-examine their business strategy. It is about the fit between client and project values and the values of the design office; the better the fit, the better the satisfaction of all parties. When problems with compatibility of values occur and subsequently reoccur between the projects and the office, then it is time to reassess the business strategy. The project portfolio must fit the collective values of the office and the business plan, otherwise it is unlikely that the firm will be profitable. Over a period of time the interaction between the office and a variety of projects will influence the culture of the office and help to colour the business strategy. Some offices will change little; others will morph into quite different organisations as they seize opportunities for new business.
Chapter Nine

Managing Creative People

Good people are the design organisation’s principal asset and also the most expensive resource. Depending on size and structure, staff may account for between 50 and 80% of the total running costs of the business. Somewhere around 65% is a useful guide figure when calculating costs. Putting together a collection of individuals with complementary skills and competences and keeping them together is a fundamental concern for the professional service firm. Once assembled, all members of the office must be deployed effectively to ensure profitability and be motivated to search continually for improvements in working methods. Failure to achieve these goals will hinder the development and profitability of the business. The collective knowledge and combined skill-base must be managed sensitively, to maximise the potential of the office while respecting the wellbeing of its staff. Individual knowledge, skill and experiences of the staff combine to give the firm its unique culture, and the manner in which they interact will directly affect the quality of service provided. Within the office the design manager has two complementary functions. First, is the proactive management of the staff to ensure work is strategically planned to maximise the available resources and ensure work can flow with as few interruptions as possible. Second, is the day-to-day (operational) management of staff with design managers reacting to unexpected challenges; providing leadership and support in an attempt to resolve problems quickly and hence maintain work flow.
Getting the balance correct

A professional service firm’s most distinctive characteristic is that it only has the assets of its staff with which to trade, which makes the business very difficult to value financially. The assembly and maintenance of a dedicated staff are crucial to a firm’s success in the marketplace, and to stay competitive requires frequent evaluation and adjustment of staff skills and competences. This is particularly true of the knowledge-based firm where the proper selection, training and development of staff are essential if a high quality service is to be delivered. Design managers must be involved in staff selection and staff development programmes since these determine the firm’s culture and hence its effectiveness and profitability. A well-managed, professional service firm will draw on various interdependent, and complementary, types of intellectual capital. This is primarily human capital and system capital, although for project-orientated businesses the client capital is a crucial component, as is the capital resulting from collaborative and integrated teamworking (Figure 9.1).

- **Human capital** comprises the knowledge and talents that reside in the human brain. Architectural practices are heavily reliant on their human capital. This type of capital walks into the office in the morning and out again in the evening, or logs on and off the ICT system. The firm does not own human capital; it is rented via the payment of salaries for an agreed number of hours per week. Human capital is fickle and at times unreliable. Human capital must be managed with respect for the individual, otherwise it is highly likely that this valuable resource will move to another employer, taking vital knowledge and contacts with it.

**Figure 9.1** Intellectual capital of the architectural firm.
• *System capital* is know-how contained in a firm’s processes and documented in past projects held on databases. System capital changes as working methods and procedures are adjusted to reflect the experiences of the firm. The more a firm can incorporate knowledge into their systems, theoretically at least, the less their reliance on human capital. Quality management systems are a good example of system capital and ICTs provide a vehicle to build system capital through intraweb technologies and data-mining techniques. Knowledge capital is encoded in standard details, the master specification and BIMs.

• *Customer (client) capital* describes the value of a firm’s relationship with its clients. This is shared knowledge and not owned by either party. The type of client and the frequency of interaction with the design office are unpredictable.

• *Collaborative capital* is shared knowledge between collaborating organisations. It is generated through interactions between individuals working towards project goals. This knowledge is mainly project specific, unless firms are working within strategic partnerships and alliances. This is shared knowledge, much of which is embedded in project processes and the heads of the actors participating in the project.
A balanced team

Design organisations are constantly adjusting their size and focus to meet external pressures, often reinventing themselves through adversity, growing and shrinking to suit fluctuations in demand for their services. Because of the need for flexibility it would be misleading to write about design organisations as if they were stable organisations. Architectural firms are collections of individuals working with one another to achieve their goals and, more importantly, to survive and prosper. These social systems are seldom stable, but are usually quite hectic, dynamic and highly adaptive to suit differing client needs. To be competitive a balance has to be achieved between stability and adaptability. Within any design office there is constant tension between the needs of the office and the needs of particular projects. There is also a fair amount of friction between the needs of designers and managers, and a balance has to be found between creative and destructive forces. Design management could be viewed as a means of helping to keep things together, something that allows for a gentle shaking and trembling and allows space for individuals to realise their creative potential.

Figure 9.2 Office roles.
A well-balanced team would comprise a number of individuals with different education backgrounds and a wide variety of skills, drawing on the combined knowledge of the organisation. As a general guide the office should comprise individuals with different competences, often referred to as the finders, minders and grinders (Figure 9.2):

- **Finders** are individuals who go out and get work from clients. These are usually the partners and directors of a firm, supported by other senior members of the office.
- **Minders** are the individuals who nurse the project through its development to successful completion. The design manager would be a minder, as would those responsible for administering individual projects.
- **Grinders** are those who do the work, e.g. the architects, architectural technologists and architectural technicians charged with designing and detailing the project, along with supporting administrative and secretarial staff.

## Staff competences

Architectural practices tend to comprise different mixes of professionals to suit their market orientation and the needs of their client portfolio. Some firms will employ only architects, some of which will be design orientated, some technology orientated and some with a flair for management. Others may comprise a mix of architects and architectural technologists, sometimes supported with project managers and cost consultants. Solo practitioners tend to have rounded skills in design, technology and management, employing additional labour to suit the demands of individual projects.

Competitive design organisations need professionals with different skills, all working towards a common goal within a professionally managed office. The correct balance is linked to good recruitment decisions and the ability to retain talented and motivated staff at all positions and levels. The balance of staff in terms of staff profitability is also important from a financial perspective (see Chapter 12). Secretaries, administrators and personal assistants to senior managers also play a vital role in helping to keep the business functioning smoothly. The ability of support staff and
designers to work seamlessly will make a considerable difference to the effectiveness of staff.

The balanced professional (Figure 9.3) is a rather elusive individual, since most of us have strengths in one or two areas and weaknesses in others. Thus balancing design, technical and managerial skills in the office requires a collection of individuals with different competences that balance and complement one another. Putting these individuals together in different combinations will result in firms with a bias towards a particular area, for example design or management. This bias should reflect the firm’s market orientation.

**Figure 9.3** The balanced professional.

![Diagram of balanced professional](image)

**Office culture**

Every firm is unique; its character is drawn from the unique individuals that make up its workforce and the organisational structures that exist to control and manage their collective talents. Culture is manifest in the interaction of its members (the collective values of the directors, professionals and support staff) and those positioned outside the firm (the values of multiple clients, a wide range of consultants and suppliers of equipment and support services), as represented in **Figure 9.4**. The culture
of the firm will influence how its members communicate and how they make decisions. Perceptions of the firm’s past, present and future will influence the development of the firm’s cultural climate. Excellent organisations have a bias towards action and are close to their clients; they emphasise entrepreneurship and productivity through people and have a hands-on approach to management. Successful organisations also tend to stick to what they are good at (their core business); have simple and lean staffing levels based on small work groups to improve communication; and demonstrate ‘loose and tight properties’ simultaneously, i.e. liberal enough to encourage creativity while tight enough to ensure a consistent service level.

A firm’s culture is developed through interaction and communication. The firm’s culture is expressed in Figure 9.5, where the three main contributing factors – clients’, firm’s and individuals’ values (and needs) – are illustrated. The manner in which all three factors interact will influence the firm’s culture and effectiveness. Positive cultures can help to promote the firm’s growth and create exciting places to work. Conversely, the development of a negative culture can be detrimental to the business. The way in which people are treated in an architectural practice is related to its structure and personality and the interpersonal skills of the managers. There is plenty of anecdotal evidence claiming that people are treated badly in some architectural offices, with stories of excessively long hours for little reward. Such offices usually have a problem with turnover of staff and recruitment.

Figure 9.4 The design firm’s culture.
Figure 9.5 The design firm’s values.
Those able to motivate and reward staff fairly are well on the way to establishing a healthy and competitive business. Productivity and quality are related to the degree to which the professional is ‘engaged’ and committed, and to delegation and individual control over design quality. Two important factors central to motivation are known as intrinsic rewards and extrinsic rewards. Intrinsic rewards are based on the fulfilment of individual beliefs and values and are rather illusory. Intrinsic rewards include personal career advancement, recognition, achievement and enjoyment. Extrinsic rewards are more obvious since they are based on economic rewards. These include salary, pension, paid holiday entitlement, job security, working conditions and status. A good salary, benefits, bonuses and profit sharing are important, but so is status within the firm, recognition of a job well done and recognition by fellow professionals. Financial rewards are most effective when related to performance that is better than expected; thus a bonus paid based on project profitability can be particularly effective in reinforcing teamwork and efficiency. Rewards may also be given as social events and/or days out paid for by the architectural practice.

Senior managers’ expectations of their staff must be realistic and set at a level that respects staff psychological and physical wellbeing. Expectations must be communicated to employees through regular feedback, formal staff reviews and associated support activities. In a similar vein the staff’s expectations of their design managers and the firm’s senior managers are equally important. Staff expect strong
leadership and clear lines of communication and delegation, that is they require commitment from their managers. In many professional offices with problems of staff morale and motivation there is a clear mismatch between the directors’ expectations and those of its staff, usually a direct result of the two groups failing to communicate and in many cases failing to develop trust.

Psychological wellbeing

Psychological wellbeing is related to an individual’s perception of job satisfaction, the psychological and physical demands of their job and the work/life balance afforded by their employment and personal circumstances. Employees are likely to seek alternative employment if they are dissatisfied with their salary, have to work very long hours without any flexibility, suffer from burnout, are subject to stressful working conditions and feel undervalued by their employers. Some of these factors may be influenced by an individual’s relationship with work colleagues and compatibility with the prevailing office culture. Other factors are directly and indirectly influenced by the way in which the business is managed and the allocation of individual workloads.

There is growing awareness about, and concern for, the psychological wellbeing of employees. This trend can be seen in all areas of commerce, from manufacturing through to service industries, with reports of stress and burnout featuring highly in research studies. Rapidly changing conditions, the demand for more work in less time and increasing job insecurity are contributing factors. So too is poor management. A growing number of studies from construction sites, engineers and architects’ practices are helping to highlight a growing concern about the level of stress that employees are subjected to, and the growing incidences of burnout. A similar observation can be made of many support staff, partners and directors of professional service firms. The aim for managers and individuals alike is to achieve a good work/life balance (which will be different for every individual). This can go a long way to keep staff happy and to avoid the negative impact of burnout and stress.

- **Burnout.** Working too hard over too long a period will result in individuals becoming tired and less able to function effectively.
Mental exhaustion resulting from too much work is known as burnout. Burnout can have a negative effect on performance because tasks become increasingly difficult to achieve within the timescale and may lead to individuals experiencing stress. Sensitive work programming (and regular monitoring of workload) that allows some space for quieter, less demanding and more reflective activities can help to balance the high pressure times (which are inevitable) and allow individuals to recover. Allowing time for CPD between the end of one project and the start of another can also be an effective way of mitigating burnout and reducing stress levels.

- Stress. When individuals are given tasks to do that lie outside their area of expertise, are not given appropriate authority over decision making and are expected to deliver too much within the time available, it is highly likely that they will experience some stress. Uncertainty over what is expected by their line managers can also create stress. Although a certain amount of uncertainty in daily work is to be expected, high levels of stress can lead to psychological and physical problems. Stress can be readily mitigated through open and clear communications within the office and good managerial practices. This includes the establishment of clear roles and responsibilities and support from the design manager.

Burnout and stress are not necessarily related, although both are signs that there is a management problem and the senior managers must take action to mitigate both. There is a correlation between physical fitness and cognitive behaviour; a characteristic often overlooked is that the sedentary lifestyle resulting from sitting in front of a computer, at a desk or in meetings is bad for our health. It is important that staff take regular breaks and regular physical exercise.

Architecture is a high pressure environment, but this does not mean that work has to be stressful. Nor does it follow that staff should constantly be subjected to unrealistic deadlines and unreasonable work demands that leave them mentally and physically exhausted. All businesses must take measures to provide a supportive and healthy working environment. Good management and good managerial systems will make a positive contribution to the physical and psychological wellbeing of all employees, regardless of their position and job function. Realistic allocation of
individual work programmes will also help, which is the responsibility of the design manager. It is good practice to discuss workload with individuals before confirming programmes, which can help to provide individuals with a sense of ownership for the work and help to reduce uncertainty. When things do go wrong (which they will), the tendency of senior managers is to blame the staff, which is often a little unfair for a number of reasons. The organisation should have employed staff that are competent and then allocated them to tasks appropriate to their levels of experience and knowledge. If inexperienced, then they should be adequately supervised and mentored. The better-managed architectural practices operate as a team with shared responsibility and a high level of trust, sharing responsibility for the quality of the work and overall health of the business.

For many professionals the boundaries between work and life are blurred; it is one of the characteristics of being a professional. Few professionals work standard office hours, and they continue to think about projects and design solutions in the evenings and at weekends. Balance between family and work, the work/life balance, must be considered in the overall planning and resourcing of the office workload. Even in the best resourced and managed offices there will be occasions when staff are expected to work extra hours to complete work to a project milestone. This is a characteristic of professional work and the majority of professionals are happy to do this provided that it is not a regular occurrence and there is some trade-off (in the form of time off in lieu or additional payment for their time). Usually programmes allow for some flexibility in working hours to cover temporary and unexpected fluctuations in workflow. When staff are expected to work long hours on a regular basis, or feel under a tacit obligation to work for longer than stated in their contract of employment, this is a sign of a badly managed office, and a high turnover of staff is to be expected. Given the nature of professional work, many professionals find it difficult to ‘switch off’ after work. Normally this is not a problem, but in some cases this can affect an individual’s family life, which in turn may have a detrimental effect on performance.
Recruitment and retention

All organisations experience fluctuations in size, changes in direction and changes in personnel. Some of these changes may reflect planned incremental change as set out in the organisation’s strategic plan, for example expanding into a new market niche. Other changes may not have been anticipated, for example losing a client and a valuable source of income or conversely gaining a large commission that was unexpected. Fluctuations in the client portfolio will need to be reflected in changes to the competences and number of staff. Staff may join and leave the office for a variety of reasons. The most usual reasons for moving to another office are usually to improve their salaries and/or to progress up the career ladder. Other reasons may be associated with poor job satisfaction or personal reasons that have little or nothing to do with the job. Some attempt must be made to manage the comings and goings, both in the short term and strategically over the longer period. To do so requires an understanding of staff turnover, recruitment, integration of new staff and the office environment.

Staff turnover

Staff turnover is usually viewed as a problem rather than an opportunity for change. It is easy to see why. Apart from the loss of a valued employee, taking hard-earned knowledge with them (usually to a competitor), suitable replacements need to be found as quickly as possible, thus minimising any disruption to programmed work. The vacancy may need to be advertised and time invested by the senior members of the design office to filter the applications, interview those short-listed, select someone appropriate and agree the contract (salary and start date). Once appointed, the new member of the office must then be quickly integrated into the firm’s organisational culture, as discussed below. This is a costly, lengthy and often stressful process for all concerned because there can be no guarantee that the newcomer will ‘fit’ the office culture. References from previous employers and performances in job interviews can, as many of us have found to our cost, be misleading; hence a probationary period for new staff (usually three months, or longer for more senior appointments) is essential. If the new staff member is unable to work
effectively with existing procedures and colleagues during the probationary period, it is important that the problem is tackled quickly. If the appointment is not working out, this is the time to part company and start again.

Competitiveness of the organisation will be affected by short-term and permanent staff changes. In a boom period staff may move to increase their salary and their promotion prospects, with good staff being poached by competitors. In an economic recession staff are more likely to stay (unless made redundant), partly because there are fewer opportunities to move and partly because of fears over job security. Staff turnover can be controlled through good management, motivation and reward, training and effective interpersonal communication between the firm’s members. Keeping everyone informed of both threats and opportunities is one way of reducing uncertainty for all employees. High staff turnover is usually a pretty good indicator of a poorly managed firm.

Although individuals initiate the majority of staff changes (often to the surprise of their managers), there are occasions when managers need to make changes for the good of the business, that is to make people redundant or to dismiss them. Everyone must accept that organisations change over time and some may find that, for a variety of reasons, they no longer fit. Some may leave of their own accord and find more suitable employment, while others may have to be dismissed. Management’s only real social responsibility is to pursue their and their firm’s economic self-interest. While this may be true of some design organisations, others are often driven by a larger ethical responsibility for their staff, tending to put off difficult decisions because of their concern for the wellbeing of their employees. This is an admirable policy but it is sometimes done at the organisation’s expense, and care has to be taken not to damage the business. A professional service firm, especially the small to medium sized business, is only as strong as its weakest member. It is unfair to others in the office to carry ineffective staff, often leading to problems of motivation and always leading to a reduction in the firm’s overall productivity. Identification and recognition of the problem is the first step, followed by consultation with the employee to find a solution. Efforts must be taken to realign duties, reinforce organisational values and refocus ineffective members of staff. If this fails to get results then they must be dismissed. A tough but fair and open policy is required within the spirit of prevailing employment legislation.
The flow of staff from one business to another should be seen in a positive light. Movement provides the opportunity for individuals to gain new experiences and develop their careers, while bringing new knowledge to their new environment. Changes in staff also provide an opportunity to redefine roles and adjust the skills and knowledge to suit the strategic development of the business better. Modest staff turnover can help to prevent firms from becoming stale and can assist with the retention of a competitive edge.

**Recruitment**

Recruitment policy relates to the development and growth of the firm, whether it is the appointment of new staff because of business expansion or the replacement of staff that have decided to move on. Design firms compete for staff in the same way as they compete for clients, and the firm’s reputation as a place to work and for the quality of the service provided will affect the type of employee it attracts.

Staff should be hired with a view to the future growth of the business as set out in the strategic plan. Staff should not be hired as a knee-jerk reaction to the loss of a valued employee. The job function of the incoming member of staff needs to be carefully considered against the firm’s strategic plan before the job is advertised; a vacancy is an opportunity to strengthen the office capabilities. Temporary staff can be brought into the office while the longer-term aspirations of the business are addressed. New staff with new skills and different approaches can help the firm to develop in a positive manner. Before recruitment starts, the firm’s directors must agree on the qualities they are looking for and, just as importantly, discuss the issue with those who are going to interact with the new staff on a daily basis. New staff may be viewed as a threat by established employees, and therefore it is essential to keep everyone informed to limit any negative feelings; a good design manager will discuss the issue with existing staff before the vacancy is advertised.

Interviews are an opportunity to see which of the short-listed candidates are most suited to the office environment. An informal atmosphere is usually most conducive to open discussion and exploration of mutual values. Informal discussions with other staff and the design manager before or after the interview can also be useful for all parties.
A flexible workforce

Temporary workers are an important part of many business plans since they provide a considerable degree of flexibility and agility, allowing the business to respond more effectively and quickly to changing market demands. Depending on a country’s employment laws, design organisations usually have three main sources of temporary workers to draw upon:

- **Agency staff.** These can be contracted-in when (and only when) required to cope. This is a valuable yet expensive resource, used to cope with short-term increases in workload and/or to provide specialist skills and knowledge otherwise unavailable in the office. Specialist employment agencies may be used, although many small offices rely on occasional help from other small businesses and self-employed professionals, which is often cheaper than the agency rates.

- **Students.** Many architectural offices provide opportunities for students to gain valuable practical experience. Placement (‘year out’) students will be with the organisation for a defined period, that is 12 months. While they may be a cheaper alternative to hiring agency staff or outsourcing work, they will lack experience and will be highly demanding of design managers and/or their office mentor.

- **Outsourcing.** Outsourcing work to other organisations can help in periods of high demand and can also help to address a shortfall in a specific skill.

Offsetting the advantage of flexibility is lack of consistency, which can lead to ineffective communication and unbalanced groups and teams, even when an effective management system is in place.

Temporary workers will often lack firm-specific knowledge, that is they will not know the firm’s operating practices and compared to permanent employees may require a greater degree of managerial support from the design manager. Agency staff cannot be expected to have commitment to the organisation, since they are simply there to do a job. Similarly, the suppliers of outsourced work cannot be expected to understand or to share the organisation’s culture unless there is some form of long-term relationship.
Integration of new staff

The smooth integration of newcomers into the design office is essential if the firm is to function effectively. Induction into office practices and procedures, a process described as cultural socialisation, needs to be managed by the design manager. New employees will bring expectations and experiences to the firm that will be evaluated against their actual experience, which should, in turn, lead to adaptation to (not adoption of) the firm’s cultural norms. The ability of the newcomer to adapt quickly to the office culture is important for the continuity of the cohesive firm and is vital to continued success in the market. The new staff member will expend a lot of energy getting used to how things are done in this unfamiliar culture, how jobs are administered and how he or she fits into the existing social structure within the office, a challenging and stressful time for the newcomer and also for the existing members of the firm. In the early days the design manager must provide support for the newcomer and allocate work to allow for socialisation activities.

The faster a new member of the office becomes familiar with their new colleagues and with office procedures, the better for the entire organisation. Failure to provide relevant information and guidance quickly can result in the newcomer struggling to identify with the office culture. If this is allowed to happen the individual will take more time to socialise and identify with the organisational culture, with a resultant negative effect on the performance of the unit as a whole. In some circumstances this can lead to alienation of the newcomer and resentment among the existing members. There are a number of simple, yet effective, ways of encouraging socialisation. They should be set out clearly in the quality manual and discussed with the organisation’s new member. They are:

- Inform existing staff via formal weekly review meetings and discuss job roles and workloads before new members join the firm. This helps to stop existing staff feeling threatened by the arrival of a new and unfamiliar person.
- Assign an experienced member of staff to oversee the new member of staff for the first three months, to offer informal advice. This is sometimes referred to as the ‘buddy system’.
- Provide training in the office management procedures, quality assessment (QA) systems and health and safety procedures through a formal induction programme.
• *Keep a record* of the induction training.
• *Review performance* after the end of the probationary period. Set a date and stick to it so as to avoid uncertainty. At the end of the review one of three decisions has to be made: either (1) confirm the individual’s employment via a permanent contract, (2) continue with a further probationary period (only if there is good reason to do so) or (3) terminate the contract.

Interpersonal communication between new and existing staff is an important tool for introducing new members into the cultural norms of the office. This is done formally through job instruction and informally through the telling of stories and legends.

The effectiveness of the new member of staff can be improved by dedicating time to the integration process from day one of their employment, which is the familiarisation of both formal and social controls. It is no use sitting them at a desk with a copy of the office manual to read or, just as bad, giving them a lot of urgent work to be completed by the end of the week. The first few weeks should be seen as an essential training period, not just for the new employee but also for the existing staff. Time must be allocated so that all of the firm can be involved in this integration process because it is just as important not to alienate the existing staff as it is the newcomer; be open and clear about responsibilities and the role of team members. New members of the firm should be helped to grow into their new role. One technique, which transfers well to smaller firms, is to use the staff review system from the first week. The new staff member is asked to assess their own skills against the skills needed and to agree three objectives they hope to achieve in their first three months (usually the probationary period). At the end of the three-month period a staff evaluation is conducted.

Few architectural firms are large enough to justify the employment of personnel managers, so this job is carried out by the design manager or one of the firm’s more experienced staff members. This role is additional to an individual’s existing commitments and time must be made available for it – an investment that will quickly be repaid. If new members of staff are integrated quickly and smoothly they perform better sooner, a benefit to both the firm and the employee in terms of job satisfaction. Even if they decide to move to another firm after two years, they have been an integral productive part of the team during that time.
The office environment

Although it is common for architects to work as solo practitioners, the majority of designers work with others in shared physical office space and/or with others in cyberspace. Not so long ago, setting up and running an architectural business was relatively straightforward. Suitable accommodation was found and a brass plate put up on the door to announce one’s presence. Now ICTs provide the opportunity to work effectively and flexibly from remote sites. Many offices have taken advantage of the technology, allowing staff to work from home or the building site, providing employees with greater flexibility while at the same time reducing the amount of physical space required and hence reducing overheads. This tends to raise questions about the amount, function and location of physical office space. ICTs also allow individuals to work as part of a networked team from remote sites, in the ‘virtual office’, perhaps only coming together for design reviews and other meetings. There is, however, the need for face-to-face communication when developing designs, and this can be achieved by renting office space as and when required and/or by maintaining a small amount of architectural studio space. The main concern is that of clients. Many clients still like to visit the design office in person and meet some of the people who work on their projects. Thus some form of office presence is required. A well-positioned office that is accessible by clients and that acts as a ‘showroom’ for the work of the office may be sufficient for some organisations, with the majority of staff working remotely.

Remote working has a number of advantages and disadvantages. The principle of remote working should be familiar to the majority of professional design offices who use external consultants to help in busy times and/or to add specific talents for certain jobs. These flexible workers often carry out work outside the firm’s office, either from their own offices or from home. There are, however, a large number of people who enjoy the social interaction afforded by working together in an office; somehow communicating by telephone or by email fails to satisfy their desire to be with other human beings. There is growing evidence to suggest that people who work from home are prone to feeling isolated and are more likely to be overlooked when it comes to promotion – the out of sight, out of mind syndrome. Working from home does not suit all staff and it is easy to become distracted by, for example, pets and children.
Another problem is that of doing too much work, leading to burnout and thinking that they should be doing more (resulting in stress).

Working from home can be liberating and rewarding. In reality the majority of people who work from home tend to overwork and may feel isolated since they are not visible in the office and may suffer from social exclusion. Design managers must be aware of the advantages and disadvantages, discuss working preferences with each staff member, continue to monitor and evaluate performance and adjust working practices accordingly. Quality of work must be monitored for consistency with the office standards. Current opinion is that a mixture of office interaction (interpersonal communication) and remote working is the most appropriate option for all concerned, the balance being a personal matter. For the owners of a firm the main issues centre on trust (to put in the work), quality of the work (more difficult to supervise at a distance) and delivery (on time). Telecommuting can be employed effectively. If appropriate management systems are in place and the available technology is utilised, there is opportunity to reduce the amount of floor space rented or purchased, with reduced overheads. So there may be significant savings in the cost of space needed to accommodate employees. Another bonus is the flexibility afforded to the firm’s members; happier employees equate to better quality of work and greater commitment to the firm.

Skills development

Professionals have a duty to keep up to date with the rapidly increasing and changing body of knowledge; expertise based solely on experience is not sufficient. Practitioners must continue to validate their knowledge against current information, that is they must be committed to lifelong learning. Knowledge and practice become obsolete, often faster than we would like to acknowledge, and to stay in business it is inevitable that some form of planned professional development must form an essential part of our daily activities. The use of the words ‘planned professional development’ is deliberate since the needs of the individual and those of the organisation must clearly be identified before continual professional development programmes are instigated. Areas for enhancement and improvement may be identified by the firm’s management through an
annual staff appraisal or identified by individuals through reflection on their daily practice. Professional development of staff during their working career is important because:

- It helps to ensure staff are knowledgeable about recent developments and helps them to stay abreast of current information and practices with regard to their own area of specialism.
- It is essential in helping staff to develop new areas of specialism (thus going some way to keeping staff happy and motivated).
- It helps to keep the office knowledge fresh and the business more competitive. Mistakes (through ignorance) are less likely.
- It is required by clients (seeking reassurance that the professionals they commission are competent).
- It is demanded by professional bodies for continued membership.

Knowledge acquisition and the development of new skills may go some way to keeping individuals happy, while at the same time helping the design office to maintain a competitive edge through its collective development.

**Career development**

Society has become more mobile and few people expect to stay in the same job or same firm for their whole working lives. Some people may be happy to take a relatively relaxed view of their career, responding to challenges as they arise, but the majority will attempt to manage their destiny. This means setting targets for vocational development and balancing them with family life. A personal profile can help to identify skills and experiences, strengths and weaknesses. This can then be matched to the marketplace to identify opportunities that are most likely to bring the greatest satisfaction.

- **Priorities.** The most important aspects need to be listed, for example salary and perks, job flexibility, balance with home life, professional standing, type of projects, location of office in relation to home, etc.
- **Formal qualifications.** Academic qualifications and professional standing provide a solid foundation from which to build a career. These generic academic skills will be adapted to suit the job when
starting work and developed through additional training and education while in work.

- **Transferable skills.** In addition to design skills there are a number of key transferable skills that need to be developed, which relate to communication, organisational skills, self-management, teamworking and ability to work with various ICTs.

- **Work experience.** List the type of businesses worked in and achievements (which can help to identify strengths and weaknesses).

- **Work satisfaction.** Identify the greatest sources of personal satisfaction.

- **Personal attitude.** Personal characteristics and values are important. Personality traits, such as whether an individual is an introvert or extrovert, organised or chaotic, spontaneous or considered, will influence how well they fit a particular office culture. Personal values should also fit the office values.

## Continual professional development (CPD)

Most design offices will recognise the benefits to their business that dedicated, motivated and ambitious individuals contribute. However, in the background is the concern that valued employees may leave and take their knowledge and skills to a competitor. The true professional recognises that professional development is never complete; there is always something new to learn and a new situation to experience and respond to. The RIBA’s interest in CPD started in 1962, although it was not until January 1993 that the institution made participation in CPD a duty of membership, helping to maintain the value and integrity of the professional qualification. Chartered architects are obliged to undertake a minimum of 35 hours of CPD activity a year, to draw up a personal development plan and to keep a record of the activities undertaken. Members of other professions, such as the Chartered Institute of Architectural Technologists (CIAT), the Chartered Institute of Builders (CIOB), the Institution of Structural Engineers (IstructE) and the RICS are also required to pursue CPD and keep appropriate records of achievement as set out by their respective institutions.
Lifelong learning helps all staff to stay knowledgeable and provides a vehicle to strengthen the business acumen of the firm. CPD can also act as an agent of change by introducing new managerial techniques to practitioners. Organisations must establish a policy to maintain a fair system for all employees, regardless of position. A carefully designed and adequately resourced staff development programme will not only help to keep existing employees motivated but will also help to attract new staff. The better the knowledge of the individual members of the office, the better the collective knowledge of the organisation and the better it is able to compete. There are four main steps to follow:

- Identify areas and prioritise CPD activities to suit both individuals and the business.
- Coordinate individual CPD activities to suit individual work programmes.
- Evaluate individual CPD activities, discuss and disseminate within the office to help share knowledge.
- Evaluate CPD and discuss future plans during the annual appraisal.

CPD is one of the keys to gaining and retaining competitive advantage through the constant updating of the design organisation’s collective competencies. However, there is a catch. Both time and money must be allocated (and fairly distributed) for education, training and staff development. The boom or bust nature of the building industry can make it difficult to adhere to previously agreed and planned time and financial budgets for these activities. In a boom the money may be available but time may be in short supply as the firm struggles to meet the growing workload, while in a downturn the time may be available but the finances to cover the costs may be limited. For many small design firms operating in a climate where fee levels and profit margins are low, the allocation of valuable resources to CPD may be very limited, and some firms look to their employees to assist with the cost of some educational and training programmes. Costs must be factored into office overheads and time must be factored into individual work programmes. The office will need to:

- Provide an annual budget to cover the cost of staff education and training programmes.
- Allocate someone in the office to monitor CPD activities, that is keep records and motivate individuals to continue during difficult times.
The aim is to ensure that:

- CPD activities are beneficial to both individual and organisation.
- Individual and organisational needs are discussed at the annual staff review.
- Individuals share their new knowledge and skills with their colleagues.

Motivation to learn should be part of the psyche of professionals. Pressure to perform one’s role more effectively, pressure to get promoted to more responsible positions, the fear of losing one’s job, and professional body requirements for CPD, all form part of the motivation to learn. For motivated professionals the design manager will need to do very little other than provide some informal support when needed. However, there are periods when even the most dedicated of professionals goes through some difficult times. This may be related to their work, the office culture or personal circumstances outside the remit of the office, and learning may not be the most important criterion. The design manager needs to be able to identify when individuals are not performing efficiently and try and help.

**Performance review**

Linked to the issue of motivation and reward is the staff performance review (staff appraisal). The performance review should be conducted as a formal interview between the employee and his or her manager. In the majority of offices the senior partner will conduct the review, preferably in conjunction with the design manager. In large offices the task may have been assigned to a partner or senior manager responsible for staffing matters. The interview is usually carried out with employees once a year and prior to the annual review of salaries (which should be a separate event). Points to address from both the employee’s and the manager’s perspective are:

- *Quality of work.* Has the work met the expectations of the office and clients? What are the individual’s strengths and weaknesses? Could the strengths be utilised and supported more effectively? Do the weaknesses need to be tackled through education and training and/or more sensitive delegation of duties?
• Contribution to teamwork and office morale. How has the individual influenced the culture of the office? Have they demonstrated leadership abilities? Do they have a positive, neutral or negative influence on other staff members? How do people outside the office, that is clients and key project team members, perceive them?
• Contribution to the profitability of the firm. Has the individual brought new business to the firm or suggested cost-saving ideas (and if so, how is this to be rewarded)?
• Staff development. What new skills has the individual acquired since the previous review? Have CPD activities been met?
• Staff grievances. Are there any areas of concern or problems? Can they be resolved to both parties’ satisfaction?
• Personal factors. Are there any personal/family issues that have affected, or are likely to affect, performance? How can they best be accommodated to suit the individual and the office?

Adequate time should be set aside for the discussion (minimum one hour, maximum two hours) and to make a record of what was agreed. Managers and staff must make a commitment to try and meet their obligations over the next twelve months. The meeting needs to be conducted in an open and supportive environment that allows an honest exchange of views on a one-to-one basis. Carried out properly, it will benefit both the firm and the individual. Staff reviews may be perceived (and sometimes used) as a tool to reinforce hierarchical systems; they can be self-defeating if not handled with a degree of sensitivity and common sense. The staff performance interview provides an excellent opportunity for vertical communication and should be carried out prior to an evaluation of the organisation’s health. Feedback through regular knowledge-sharing activities and project reviews is also important but should be kept separate from the individual staff review. It may be appropriate to undertake a project-specific performance review either at the completion of a job or at a stage during its life cycle. This is in addition to individual staff reviews and is a natural development/extension of the design review.
The office-to-project interface

It is the interaction of individuals from different organisations that makes up the social network of the temporary project team. Healthy projects need dedicated, enthusiastic and happy participants who have complementary skills and experience. Getting the right mix of people and organisations is a concern for the project manager. The design manager will also be concerned with the smart resourcing of the project portfolio and delegation of tasks to those most competent. This will help to keep a healthy balance between the demands of multiple projects and the office resources. Managers must recognise that the interaction of staff with project members located in other offices and locations may affect individual performance, both negatively and positively. The ability of staff to communicate clearly and effectively across different levels and with various types of organisations and individuals is an important competence.
Chapter Ten

Managing the Design Studio

An empowered, knowledgeable, proactive and well-resourced staff working with simple managerial frameworks and systems in a stimulating environment is fundamental to the development of creative architectural design and delivery of a high quality service. Design is the core business of architectural practices and so the strategic and day-to-day management of the design studio is a fundamental concern of the design manager. Creating stimulating physical and virtual environments in which designers can interact and work collaboratively will facilitate a creative office culture.

A creative space

Understanding how designers interact within the design office is paramount in the creation of excellent architecture and the profitability of the architectural business. By observing and listening to designers undertaking their daily work, and encouraging feedback, it is possible to implement and/or adjust managerial frameworks to assist the designer better in his or her task. Failure to understand the needs of the professionals working within the office may have an adverse effect on the ability of the office as a whole to perform. Similarly, understanding the relationship between independent projects as they pass through the office can greatly assist with workflow and the resourcing and coordination of design work.

Individuals working in design offices tend to be extremely committed professionals, constantly striving for perfection, and are self-motivated.
One of the design manager’s tasks is to ensure a good fit between individual needs and organisational support. This will help individuals to be self-managing, thus making the job of the design manager considerably easier. Apart from recognising human needs in the workplace, the three criteria for stimulating effective design work are:

- **Control over design.** The amount of control an individual has over ‘their’ design project can be an emotive issue. A high degree of autonomy relates to a sense of ownership and pride in the job, and a low degree of control relates to individuals feeling helpless and undervalued. It is not uncommon for conflict to occur between the amount of individual control required by designers and the level of control that is exerted by managers. The vast majority of architects are highly motivated, like doing things their own way and are particularly resistant to overzealous management. Other professionals that share the creative design office, such as architectural technologists and technicians, may be a little more pragmatic in their approach, yet they too dislike restrictive controls. Lack of control, either perceived or real, caused by too much managerial interference may result in staff becoming less proactive.

- **Organisational support.** This relates to clear leadership from managers and appropriate frameworks for undertaking the job. Related issues are the availability of design information to avoid guesswork and allow informed decisions to be made, and the ability of the design office to learn from its collective experience. This involves the use of feedback opportunities to ensure continued learning and ensures all individuals are included and, importantly, do not feel ignored.

- **Design of the architectural studio.** This has a role to play in the effective production of work. The layout of workstations and associated space may depend on the physical architecture of the office, and may not always be ideal. However, recognising the need for designers to interact while working can help with the layout of the studio space. Space will be required for computer workstations, displaying and discussing designs, quiet study, meetings, making and storing physical models, and storage of paper files and drawings, etc. The way in which projects are organised also has a role to play and some flexibility is required to allow small design teams to work in close proximity on specific projects. Designers need to be able to work together on and across projects, and the
ability to communicate and share knowledge informally is necessary to avoid design errors and wasted time searching for information.

The project portfolio

Appreciating the value of and risks associated with each project is fundamental to effective portfolio management, and hence the profitability of the business. Despite employing competent professionals it is not uncommon for design projects to exceed the allocated time, run over budget and/or fail to deliver the expected results. Although the causes can be complex, it is not uncommon for the problem to be related to the inability of the design office to prioritise projects and manage resources to fit the projects within the project portfolio. This requires an understanding of each project to assess its value to the office and the level of risk associated with that project. It also requires some effort to position new projects within the project portfolio. Project portfolio management requires some hard decisions to be made based on the perceived value of each project to the design office. This sometimes means saying no to a client because the project cannot be accomplished with the available capacity of the office. It also means that projects may need to be reprioritised to accommodate a high value project. Portfolio management requires all projects to be prioritised in terms of the value they deliver to the office (financial value, esteem, etc.) and the risk they represent. This is partly related to the characteristics of the client and also the characteristics of the project. A database of all projects will greatly assist the design manager in allocating resources to individual projects, but this must be related to the strategic plan of the business and hence the attitude to various types of project.

Managing multiple projects

Understanding the relationship between independent projects as they pass through the office can help with efficient resourcing. Projects can be managed more effectively if their characteristics are understood. Two characteristics can help with managing resources within the office: the
urgency of need or the priority and the value that the project provides to the design business:

• **Priority.** The priority of each project is the client’s urgency of need. Tension is created within the office by projects having different levels of priority, which creates internal competition for resources. Mapping all projects against a master schedule (Figure 10.1) will provide an overview of project deliverables (project closure). The mapping can be carried out on different levels, for example splitting the projects down to key milestones such as the completion of the concept design work.

• **Value.** The value of each project relates to its size, esteem, fee income and overall contribution to the smooth running of the office. By ranking projects according to size, esteem, fee income and contribution it is possible to make an objective assessment of the importance of the project. This is usually undertaken using a simple scale from high to medium and low value.

The characteristics and number of projects can have a significant effect on the ability of the office to make a profit.

**Figure 10.1** Mapping the multiproject portfolio.
• Small, high priority, low value projects may help to fill a gap in capacity, but too many will place an unnecessary burden on the office. The same activities need to be followed in the majority of projects and a large number of small projects can make it difficult to return a profit. The large number of clients also places considerable demand on interpersonal communication and hence time.
• Large, longer term, high value projects are the target of most offices, although given the amount of competition these are harder to acquire compared with the smaller projects. Large projects provide stability to the office since they are easier to resource and they provide a relatively continuous flow of money into the business and work for the staff. A portfolio of large projects also means fewer projects and hence fewer clients compared with a portfolio of small projects.

Responsibilities and reporting

The project portfolio should be managed by one person in the office, and this job is usually undertaken by the design manager. The design manager will be responsible for assessing the value and priority of the project and for keeping the master schedule updated. The design manager will also be responsible for allocating resources and for balancing competing projects to avoid conflict. Individual projects will be managed by a project administrator, usually an architect or architectural technologist. The project administrator will be responsible for the project and will report to the design manager on a regular basis about individual project progress. Reporting should include any problems (known and anticipated) that may affect the completion of the work and the anticipated impact on the completion date of the project.

The design manager’s role

The design manager’s challenge is to stimulate, facilitate, motivate and enable creative activity to flourish through effective programming, clear communications and mutual trust. The design manager’s role is not to
micromanage project work; the staff are hired to do that. Design managers need to maintain a distance from individual projects in order to retain an overview of the entire project portfolio. High quality work will be helped and assisted by smart staff recruitment and retention strategies. One individual in each organisation must take overall responsibility for the quality and timely provision of design information for the entire project portfolio. In small offices this role is often undertaken by the senior partner, in medium sized offices by a partner or associate and in large offices by someone who carries the title design manager. Whatever the job title, the design manager should have the following competences:

- **Motivation and leadership.** Ability to stimulate and motivate team members through commitment and personal enthusiasm. Ability to establish and build effective working teams and clearly define responsibilities within the overall project framework. Ability to build trusting relationships and develop mutual respect.
- **Planning and delegation of work.** Assessing and managing individual workloads with due concern for other team members. ‘Helicopter perspective’ – to stand back from the immediate concerns and take an overview of priorities. Organising and chairing meetings. Realistic delegation of work packages to others.
- **Communication.** Communication skills to explain concepts and ideas as well as to transmit changes in individual tasks, responsibilities and project goals, often through drawing and sketching. Interpersonal skills include the ability to listen to the team members, give and receive constructive criticism and include feedback to individuals and the office in general through knowledge-sharing activities. Communication skills are essential, especially where design activities are separated from the production team; also crucial are integration, teamwork and effective communication.
- **Flexibility.** Flexibility in responding to changes, both from external and internal sources within the framework of a quality management system. Tolerance and ability to work in uncertain areas.
- **Problem solving.** This is where an individual with design training has the advantage over one with managerial training. Design managers must be able to advise staff on design, technical and managerial issues. This means being able to answer questions that relate directly to projects and (indirectly) to office standards and procedures.
• Ability to deal with stress. The amount of time to produce work is under constant pressure, and coupled with increased complexity of buildings it is probable that some staff will, at various times, experience a degree of stress. The sequential model does offer one substantial benefit here since each individual within the team has assigned boundaries, controlled by the preprogrammed design reviews; there is more stability in the system and therefore less uncertainty. The stress must, however, be ‘absorbed’ by the design manager and supporting management systems. It is important to manage stress through effective and considerate delegation to avoid a negative stress situation.

The actual role will vary between different organisations; however, a design manager would be expected to lead and coordinate the design and project teams and report directly to senior management. In all but the smallest of offices the design manager will form a link between the designers and the senior management team and in some cases will be the link to clients. Thus design managers occupy a boundary role, essentially providing a buffer between the staff and the managers. In addition to demonstrating leadership, typical responsibilities of the design manager include:

• Allocating and coordinating work and team resources
• Maintaining and monitoring progress and work programmes
• Maintaining and developing standards and systems to achieve all key targets and promote continual improvement
• Liaising with clients, interpreting briefs and design requirements, assessing feasibilities, preparing working drawings and supervising works on site
• Assessing and analysing tender submissions and draft reports for approval.

Enabling and encouraging

Individual members of the organisation will each have a number of strengths and weaknesses. The challenge for the design manager is to tease out and enhance individual strengths and identify and mitigate the weaknesses. Individuals usually have pretty strong views about what they want to do and not do as part of their job function, but such desires may
not always equate to their strengths and weaknesses. Good design managers are sensitive to individual skills and needs and will try and balance these against the overall demands of the design office. It is good practice to talk about this with individual designers and share observations. It is through open, trusting and honest relationships that the office can maximise its potential, to the benefit of all concerned.

Some staff will be more motivated, more talented and better at delivering their particular package of work than others. Design managers must understand this and allocate duties accordingly. Good staff should be rewarded and their good habits shared with others. Individuals that are underperforming need to be identified quickly and appropriate action taken to help rectify the problem. The problem may be relatively simple and easily rectified through advice and discussion with colleagues. In more serious cases it may relate to updating of skills through training and education programmes and/or the reallocation of duties.

Models of design management

The task of designing and producing contract documentation is difficult to define since it continues, with varying degrees of frequency, throughout the design and construction phases. Many of the actions that the designer goes through are, in the main, subtle and difficult to observe. As a result, the process may be difficult to manage unless it is fully understood and the implications of decisions taken recognised by designers and managers alike. Getting it wrong can be expensive (the cost of correcting the mistake and damage to the reputation of the office), and therefore adequate systems need to be in place to prevent mistakes extending beyond the office boundary.

The point was made earlier in this book that management is about action. It is, however, necessary to have some form of framework in which to work. Frameworks will vary between different design offices, ranging from very loose to very rigid procedures and associated controls. For example, quality management systems can be, contrary to many people’s
belief, designed to allow a great degree of creative freedom. Unfortunately, many systems have not been given adequate attention and end up as a poor fit to the *modus operandi* of the design office. This is usually a result of a top-down approach with little regard for those actually doing the work. Working from the bottom up tends to result in a better frame that fits the working habits of the office and encourages work of a consistent quality. Design management is inextricably linked to, but often independent of, the management of the organisation and its profitability. It is an area in which the conflict between designers and managers is potentially greatest. Good design management is concerned with finding a balance between creative freedom and managerial controls, and this can only be done in relation to the specific context of an individual design office and the type of clients it works with. One of the design manager’s key functions is to use a design model that the members of the office are comfortable with, which helps to maximise resources and promote creativity. Process models should provide a clear framework and thus a supportive environment in which design and designers can flourish. Consideration must also be given to the model used for specific projects, so that coordination problems are avoided. In architect-led projects this should not be a problem, but for projects managed by others it may necessitate some project-specific amendments to the design management model.

**A quality framework**

Consistency and quality of the service provided will be influenced by the effectiveness of the design management model. A quality management framework, certified to the ISO 9000 series, can provide appropriate controls in which to manage design activities in a consistent manner. This, together with the project quality plan, will provide the backbone of a well-managed practice and may allow a firm to adopt other management innovations. Quality of service provision will depend, primarily, on:

- Management structure of the office
- Skills and dedication of the staff
- Interaction with clients
- Interaction with other project participants.
Total quality management (TQM) encompasses everything the design firm does. The quality of the working environment is seen to be an important influence on the quality of what is produced. It is a people-focused management concept that aims at continual improvement and greater integration, with a focus on increased client satisfaction. It is a very simple, holistic approach to quality that transfers well to professional service firms because it is a philosophy rather than a technique – essentially a soft management system. However, the philosophy of TQM needs to be introduced to everyone in the firm and extend to include suppliers, contractors and even the client, which in many cases may require a cultural change. Within the architectural firm a change to TQM can be achieved through a combination of leadership by management, the implementation of systems (QA), CPD and, most importantly of all, employee involvement through teamwork. The Japanese refer to this as Kaizen, a step-by-step approach to continuous improvement, and it has similarities to the concept of having pride in one’s work. If a firm is to achieve competitive advantage through TQM, both its customers (clients) and its suppliers (consultants) must be involved in the process.

Adoption of TQM is important from a business viewpoint, but it is also important to look at it in terms of the quality of life for those involved. A well-designed quality management system has the potential to make life at work easier and more enjoyable and allow more time to be spent on delivering exciting buildings. Good QA systems can also help to manage stress (more certainty) and burnout (tasks are clearly defined and managed). Quality service can be achieved by giving attention to the following:

- Consistent standards for individual projects
- Consistent approach to client relations
- Consistent quality review processes
- Clear responsibility.

One of the most important attributes of a simple, well-designed and easy-to-use quality assurance system is that it can be used as an underlying framework for all of the firm’s activities. Such a system provides the firm with:

- A clear management structure that is understood by all of the firm’s members
• Policy and procedures to enable the delivery of the service promised to the client
• Control and review of the design process and production information
• Control of job documentation via the ‘job quality plan’
• A training policy for all staff and directors
• A comprehensive risk management system.

Implementation and development costs relate to the appointment of an external consultant, purchase of reference documents, production of the quality manual, training, formal certification, auditing and maintenance costs. Quality management should be introduced gradually so that staff, external consultants and clients are comfortable with resulting changes and improvements in service delivery. Once it has been adopted, it is important to maintain the momentum through review of the quality business plan and the commitment of all staff to continuous improvement. Commitment comes from initially raising staff awareness about quality management, through specialist training for both the quality manager and the auditors, to general training and updating as jobs progress through the office. All members need to appreciate that this is a collective effort and they must understand, agree and commit to a constant drive for improvement. TQM cannot be enforced through management checks and instructions; it has to be desired and worked for with examples set by senior management. The firm must invest in adequate education and training if this is to be achieved. The use of in-house training sessions and CPD is an essential factor in the education and motivation of all the firm’s members. The quality manager and the directors of the firm must be able to set examples and motivate all of the firm’s staff because TQM is a team effort.

A question of fit

The manner in which individual design projects are managed in the office is very much a matter for the office management team. Some models may be more productive and profitable than others. Essentially there are two main design management models: the traditional model and the sequential model (Figure 10.2). The traditional model is based almost exclusively on the RIBA Plan of Work. This is also called the ‘job running’ model, the ‘whole architect’ model and the ‘generalist’ model. It relies on the skills
of one individual to do the work and administer the project from inception to completion. This model can be found in the majority of literature on job running and underlies the manner in which architects are taught to design in architectural education. The sequential model (or process model) relies on the complementary skills of individuals working on specific areas of projects. Individuals work within their area of specialisation, for example architectural detailing or contract administration. This team of specialists may be self-managing, but it is more common for a design manager to oversee the coordination of the work packages. Design offices may use one approach exclusively or different approaches to suit the project context. For example, the traditional model may be used for refurbishment and small new-build projects, with the sequential model used for repeat clients and commercial new-build projects. Subtle differences may be found between comparable design offices using the ‘same’ model depending on how the office is managed and the degree of flexibility afforded by the systems in place.

Figure 10.2 Comparison of traditional and sequential models.

A demand of both models is that the strengths and weaknesses of each individual working in the office are identified. This is perhaps a little more important for the sequential model, but, regardless of the approach used,
the design manager needs to know who is working on what and how it fits with their individual skills. Mapping the ability of staff against their experience (Figure 10.3) may help to provide a relatively crude but effective visual guide for the design manager. When mapping staff competences it is necessary to update the matrix at regular, say six-monthly, intervals to reflect the development of individuals as they mature through project experience and CPD activities.

The traditional model

The traditional model is relatively simple, familiar and convenient to use for a wide variety of project types. It tends to be used extensively within the architectural profession in the UK, from solo practitioners through to the majority of medium sized offices. When a commission is received, a project administrator (also referred to as a ‘job architect’ and a ‘project architect’) is appointed to take the project from inception through all of its different stages to practical completion. In this model the project administrator often acts as a project manager by default. The project administrator is relatively autonomous in the administration of the project, with the design manager overseeing the progress and coordination of all projects. Depending on the size of the project and the size of the office, the project administrator may have assistance from other members of the office. In this model the individual is required to exercise skill throughout all stages of the project, thus acting as a generalist rather than a specialist.

Figure 10.3 Mapping staff skills and experience.
Advantages

The benefit of this system is that it is familiar to designers and others contributing to the project. It is consistent with the manner in which architects, technologists and surveyors are taught, with little interaction with other disciplines through their training. An architect, sometimes with support from technologists and technicians within the office, is responsible for administering the project from inception to practical completion and final certification. The design manager oversees progress of all projects within the office. Thus the design manager tends to be concerned mainly with delegation of work, problem solving and reporting progress to the firm’s directors.

Disadvantages

While this is usually the only option for solo practitioners and very small architectural firms, it could be viewed as wasteful of skills and time in a larger office because it is rare for an excellent designer to excel also at
other quite different functions, such as detailing, contract document preparation or project administration – tasks that could be carried out by someone who has better skills in this area. Thus there may well be a weakness in the service reflected through an inappropriate use of resources; it is certainly not cost-effective and not a strategy to employ if competitive advantage is required. Another problem arises if a member of staff leaves the firm (taking knowledge of the job with them that may not necessarily be recorded) or for some reason has to be replaced with another job architect; continuity is lost and time is required for another architect to ‘pick up’ the project.

Suitability

The traditional model is most suitable for small projects, especially work to existing buildings such as extensions and improvement work and repair and conservation projects, where continuity of thought is particularly important. Small-scale new-build projects also suit the traditional model. This model tends to be used by solo practitioners and small to medium sized offices.

The sequential model

The alternative approach is to assemble a group of individuals with a variety of specialised skills who are capable of working as a team under the control of a design manager. With this system each individual is responsible for clearly defined segments of the project, and since his or her administration duties are reduced there is more time to specialise in their chosen area. The sequential model is based on the earlier observation that every project has four distinct phases – briefing, design, production information and construction – and each phase requires individuals with specialised skills. Such a system demands individuals not just with different abilities and interests but also with different training; it is unrealistic to expect qualified architects to be the best people for all of the jobs. For example, a simple sequential model would require individuals with specialisation in the following phases:
• *Briefing phase.* Requires project management and design skills – architects with additional project management experience or project managers/construction managers with design experience.

• *Design phase.* Requires design skills – architects.

• *Detailing and production information phase (detail design).* Requires detailed knowledge of construction, materials and building methods – architects and architectural technologists.

• *Construction phase.* Requires contractual, legal and time management skills – construction managers and project managers.

Although it may be argued that such an approach is only applicable to medium sized to large offices, from the breakdown above it is clear that four individuals could operate as a very effective firm. Add an additional member to deal with the financial/administration side of the business and the total is five – a small practice. In larger offices it is possible to delegate specific tasks within a certain phase; for example, large design departments have specialists in areas such as feasibility studies, client briefing and specification writing, which is usually termed ‘functional specialisation’. This model has parallels with the building sector, where specialist subcontractors are employed to supply specific items, for example cladding or brickwork.

Good managerial skills are required to ensure such a system operates smoothly and the links between the specialist disciplines are as seamless as possible. This requires a dedicated design manager capable of getting the best out of the team, which itself must be fully integrated. Clear communication is essential, as is the ability to keep everyone informed of decisions, and this is where the design review operated as part of a quality management system becomes an essential tool, because it provides regular meetings where all those concerned with the project are brought together. Thus, regardless of which stage the project has reached, the project manager, designer, detailer and construction manager will all be present to contribute to the design and maintain its integrity as it proceeds from conceptual scheme to finished product on site. The case for involving the client or the client’s representative in the design reviews is also made.
Advantages

The advantages of the sequential model are that individual skills are maximised and utilised; there are no frustrated designers working on areas in which they are not particularly comfortable or experienced. Designers can concentrate on the latest trends and developments in design, technologists can keep up to date with the latest developments in materials and products and the construction project managers will know their contracts as well as, if not better than, the contractor, thus helping to improve communication and reducing the potential for claims. This also allows a more structured approach to the planning of work within the office, since individuals will know how long a particular task will take because they have done similar tasks before. With the traditional team, the project is limited to the speed of the individual, who may be a fast designer but a slow detailer, and as a result the programme may be difficult to manage. Clearly the sequential system can help to produce a more consistent and higher level of both service and product – usually more profitably for the firm and more cost-effectively for the client. Furthermore, quiet periods can be usefully spent researching and updating individual skills, knowing that such effort will be of use on the next job – not something that can be guaranteed with the traditional model, where the next project tends to be given to the individual with the lightest workload rather than the person who is best suited for the job.

Disadvantages

The factory production-line analogy is often (wrongly) drawn for the sequential model. Architects are still educated and trained on the assumption that they will be ‘running the job’ and actively involved in all stages of the project from inception to completion. Hence, many designers do not like the idea of losing ‘ownership’ of the project. Such fears appear to be particular to architects; other creative professions, for example advertising, appear to have no difficulty in working with such a model in which individuals with different talents work as a team with clearly defined, yet flexible, boundaries. There may be difficulties with workflow planning when projects vary significantly in size or experience unexpected changes to the programme, that is delays or requests to accelerate the work. Such situations can be accommodated relatively easily in the large
offices, but may cause problems for the medium sized to small offices in terms of effective resourcing.

Suitability

The sequential model is most suitable for new-build projects, especially repetitive work, for example repeat client and similar building types. It is used mostly by large design offices and some medium sized offices and is not suited to very small offices (unless work packages are outsourced), although ICTs allow the possibility of solo practitioners joining up and operating as a larger team, with different offices taking responsibility for discrete elements of the project to suit their area of specialism.

Managing design effort

The amount of effort and hence time required to undertake work is related to the way in which people solve problems. Estimating the effort required for a specific project and estimating the amount of time required to complete the work is important for helping to determine fee levels and manage workflow within the design office. Without good estimates it is impossible to determine whether or not a project is within budget and programme constraints. Unfortunately, design work is notoriously difficult to quantify, which makes the task of estimating the amount of effort and time required a challenge. In some respects the difficulty of accurately projecting the resources and time required is responsible for programme overruns and resources shortages, which tend to feature more strongly than bringing in the project sooner than expected with fewer resources than estimated. Accurately estimating the amount of work required is important because it relates directly to the cost of labour and hence the project cost. Fee income must be related to the amount of time available for a particular design task or work package, and this must be related to the individual skills available within the office and their charge-out (billable) rate. Recognising patterns of behaviour in individuals may help with the estimating and scheduling activities.
Time and cost control through careful estimating and programming is necessary if the firm is to operate at maximum efficiency. The majority of design managers tend to rely on knowledge gleaned from previous projects as a measure of the resources and time required to complete a new design project. Tools such as work breakdown structure and network analysis techniques can help to make the estimating exercise more accurate, but the very nature of design can render the most accurate of plans obsolete very quickly. This raises questions about the level of detail required when estimating and planning design projects.

**Estimating design effort**

It is not uncommon for architectural offices to use a very approximate breakdown of design effort related to project stages. The 40/40/20 model (40% up to conceptual design, 40% detailing, 20% realisation) is used, but this does not recognise individual project characteristics and hence is too general to use other than in very early scheduling exercises. To estimate accurately the amount of work required it is necessary to analyse the difficulty of the project in addition to the work identified through work breakdown structures. Individual jobs may vary significantly in size, complexity and the timescale for completion. Previous experience of the client and similar project types is often used as an approximate base indicator. However, it is better to consult data collected via performance management exercises, which will provide a solid foundation from which to estimate better the amount of time required. The following factors are major contributors to variations in effort required for design projects:

- Building size
- Building complexity (layout and design issues)
- Technical complexity (amount of innovation required)
- Unknown/uncertain factors (e.g. town planning conditions)
- Urgency
- Characteristics of the client
- Characteristics of the office design team (skills, experience and attitude)
- Characteristics of the project team (e.g. level of concurrent design)
- Availability of design and communication tools
- Management processes.
Resource allocation takes on even greater importance when dealing with existing buildings. Even where extensive investigations have been carried out, it is unlikely that precise requirements can be established until the building is opened up, that is as the work proceeds. Allowance will have to be made for changes (covered by the contingency sum), and the design manager must allocate sufficient time for the designer to deal with such changes (covered by some contingency in the programme). This is important, because the time pressures placed on the designer to make a decision may be more critical than on new-build projects. Depending on the size of the office and the degree of estimating sophistication required, some simple estimation of time is possible. This should be related to the amount of anticipated difficulty:

- Relatively easy (A). Allocate less time (e.g. 5%).
- Not too difficult (B). No special measures required.
- Very difficult (C). Allow extra time (e.g. 10%).

Table 10.1 illustrates the relationship between the estimated amount of design effort required and that actually expended, as recorded on staff timesheets. This is a relatively simple table, breaking down projects into three main stages: design work, detailing and realisation. Taken as a whole, these six projects were estimated accurately, with the difference between actual and estimated time within a 5% margin (with the exception of one project). These estimations were worked on a 40-hour week for simplicity, with staff contracted to work a 37½-hour week.

**Estimating capacity**

Estimation of the amount of work required for a particular project and/or stage of a project will enable the design manager to map individuals’ work capacity, and hence the overall capacity of the office. This is needed to help plan the smooth flow of work through the office and to identify periods when staff are underutilised. New projects must not be accepted without first mapping the estimated resource availability. A simple representation is usually adequate for planning and scheduling purposes within most offices, as illustrated in Table 10.2. In this model 10% capacity relates to half a working day; thus 100% capacity equates to a whole working week.
By mapping the capacity of the staff it is possible to see when people are underresourced and plan accordingly. Staff member A is fully occupied on a project until the end of week 3. Three days have been allocated for CPD activities in week 4 and a new project is scheduled to commence in week 5. Staff member B is fully occupied, apart from a small amount of capacity in weeks 1 and 2. Similarly, staff member C is occupied until the end of week 7, when new work is required. Staff member D is engaged on a large project with no short-term capacity. Staff member E will have no work from week 4 onwards, so new work will need to be found or they will need to be allocated to assist with one of the current projects.

Table 10.1 Estimated against actual hours.

<table>
<thead>
<tr>
<th>Project number</th>
<th>Difficulty</th>
<th>Estimated detail phase</th>
<th>Actual</th>
<th>Estimated detail phase</th>
<th>Actual</th>
<th>Estimated realisation phase</th>
<th>Actual</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 New</td>
<td>B</td>
<td>1000</td>
<td>1100</td>
<td>2000</td>
<td>1850</td>
<td>500</td>
<td>470</td>
<td>-80 (2.2%)</td>
</tr>
<tr>
<td>02 Existing</td>
<td>B</td>
<td>560</td>
<td>572</td>
<td>600</td>
<td>625</td>
<td>300</td>
<td>325</td>
<td>+62 (4.2%)</td>
</tr>
<tr>
<td>03 New</td>
<td>B</td>
<td>240</td>
<td>230</td>
<td>360</td>
<td>355</td>
<td>160</td>
<td>160</td>
<td>-25 (3.2%)</td>
</tr>
<tr>
<td>04 New (new type)</td>
<td>C (+7.5%)</td>
<td>750</td>
<td>810</td>
<td>1000</td>
<td>995</td>
<td>500</td>
<td>530</td>
<td>+85 (3.8%)</td>
</tr>
<tr>
<td>05 New (repeat type)</td>
<td>A (-4%)</td>
<td>140</td>
<td>120</td>
<td>100</td>
<td>98</td>
<td>70</td>
<td>75</td>
<td>-17 (5.4%)</td>
</tr>
<tr>
<td>06 Existing</td>
<td>C (-15%)</td>
<td>400</td>
<td>405</td>
<td>500</td>
<td>490</td>
<td>300</td>
<td>420</td>
<td>+15 (1.2%)</td>
</tr>
</tbody>
</table>

Table 10.2 Staff capacity mapped over eight weeks.

<table>
<thead>
<tr>
<th>Weeks</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff A</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>40%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Staff B</td>
<td>10%</td>
<td>10%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>H</td>
</tr>
<tr>
<td>Staff C</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Staff D</td>
<td>0</td>
<td>0</td>
<td>H</td>
<td>H</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Staff E</td>
<td>0</td>
<td>0</td>
<td>60%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

H = holidays.

It is necessary to update the schedule at the start of every week by reviewing progress on projects with individual staff and adjusting the schedule accordingly. It is inevitable that the schedule will need to be revised as work is completed earlier or later than anticipated. Additional factors, such as an unexpected delay to a project owing to factors outside the control of the office (e.g. delay in achieving town planning approval) or clients deciding to accelerate the work, can have a major effect on the
planned workflow. The degree of accuracy will decline the further ahead one tries to plan, and for many offices being able to schedule work accurately for four weeks hence may be sufficient to allow the office to function productively.

Achieving a balance between the amounts of time allowed by the client and those required to carry out the work is a difficult but essential managerial task. All stages of the job need to be planned, critical dates identified and design review dates fixed. This then has to be monitored and adhered to as part of a quality service provision. Time management is an important activity for all members of the office; therefore the planning and coordination of all employees’ daily activities are essential to the smooth running and competitiveness of the firm. Scheduling of the work needs to be carefully considered; it is just as dangerous to give an employee too little work as it is to give them too much. All programmes should have clear aims and objectives (goals). It is essential to anticipate problems and allow ‘time windows’ in the programme in which to handle them. A work programme that does not allow for the resolution of some problems will fail and may lead to resourcing problems within the office. If things go better than expected the time window can be used positively, for example for CPD activities.

Staff deployment

From a manager’s perspective, it may be useful to consider staff in terms of their experience. A balance of enthusiasm and experience is necessary. Individuals may be classified as inexperienced, experienced or overexperienced in terms of particular project requirements:

- **Inexperienced staff**: These are usually students or the recently qualified that are the cheapest resource in staffing terms. However, the need for constant nurturing and supervision makes the true cost of this resource considerably higher than it may appear from a balance sheet. A considered mix of advice from experienced colleagues, combined with an ability to question conventional wisdom, is desirable. Over time the inexperienced staff will become highly valued members of the office.

- **Experienced staff**: A design organisation’s greatest asset is its experienced and competent staff. Capable of working with minimal
supervision they usually produce accurate work fairly rapidly and are able to balance their individual workloads to meet project milestones.

- *Overexperienced staff.* Care should be taken to ensure that all staff stay up to date with current developments and do not rely entirely on overfamiliar (and rarely challenged) solutions. Some staff may become bored and complacent. Reallocation of duties usually dispels any complacency very quickly and tends to mitigate boredom.

What usually happens in a design office is that the design manager has to use the staff available at the time (those who are least busy with other projects). This sometimes means that the most suitable individuals for a particular project are unavailable. The result is to use those who are not most suited or to try and juggle resources. Another approach is to try and programme the project to suit staff availability, but this rarely accords with the client’s timeframe. This means that staff cannot be allocated to projects solely on their competences, experience or cost per hour. This situation can be avoided if the office is managed using the sequential system, where the job is passed along the supply chain, a systematic approach that can be very cost-effective for some clients and building types. Having an overview of who is working on which project is also useful (Figure 10.4).

**Figure 10.4** Projects mapped against staff deployment.

<table>
<thead>
<tr>
<th>Project</th>
<th>Partner</th>
<th>Associate</th>
<th>Architect</th>
<th>Technologist</th>
<th>Trainee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project 2</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Project 3</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project 4</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Project 5</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Staff holidays need to be managed to make sure that not too many people are absent from the office at the same time. Holiday cover will also be required for the design manager. Assuming sufficient notice is given,
holiday cover can be planned in advance and/or programmes planned to accommodate some short-term absences. Sick leave and compassionate leave by their nature are unpredictable and will disrupt most work programmes, especially when offices are running in a very lean mode. Most illness is relatively minor and absence from the office is relatively short term; however, this can still be disruptive to project programmes. Maternity and paternity leave is a little easier to work into programmes. Planning for staff illness, thus ensuring a continual flow of work, is a challenge. Businesses cannot afford to have staff underemployed ‘just in case’ and so it is necessary to bring in contract staff to cover short periods.

Delegation of work

Also linked to profitability is the issue of delegation. Delegation of work can only be done effectively if the people employed are capable of doing their job, which implies effective recruitment and continual improvement. All of the firm’s employees, from managing director to trainee, should take time to reflect. This must be programmed into the daily routine because it is too easy to be swamped by other (equally important) demands and not do it. Regular, positive feedback sessions are essential if the firm is to grow stronger from its collective experiences. By assigning responsibilities and maximising individuals’ different skills to the full, the framework is then in place to look beyond traditional design services to other sources of potential income from a sound financial footing.

Temporary distractions

No matter how well staff timetables and workloads are planned, there are a number of ever-present factors that may cause problems, usually at the most inopportune moment. Thus there will be the need constantly to monitor projects and people, make adjustments and redeploy staff. Unlike machines on a factory production line, people are rather unpredictable when it comes to performance. Another issue that design managers have to deal with, but that is rarely addressed in textbooks, is staff having a bad day (or two). Our environment and family affect us, sometimes to such an extent that we are distracted from our work tasks. Operating less
effectively than normal we are more likely to make mistakes. It happens to us all, although few would admit to it.

Identifying good habits and eliminating inefficiencies

One of the most challenging tasks for the design manager is the ability to identify procedures and habits within the design office that are wasteful. Identifying and reducing waste can add to the profitability of a business and can help to reduce the incidence of stress and burnout among staff. To identify waste, design managers must first understand how individuals work within the office. This can be achieved through regular interaction with project architects. Designers are quick to complain if they feel that their work is hindered by overbureaucratic administration/management procedures. However, those working on projects are often too busy to identify areas for improvement in daily activities; this needs to be done objectively by someone detached from individual project work. Design managers should allow time in their day to watch and listen to how people within the office go about their business and then analyse and respond. Some staff may complete tasks faster than their colleagues, be able to deal with queries from the site more effectively, etc. To some extent the good and bad practices may be linked to the personality of the individuals, but it is likely that these individuals do something a little different to their colleagues that sets them apart.

- **Good habits** that add value need to be identified and discussed within the office, with the aim of disseminating the knowledge to colleagues.
- **Bad habits** that create waste need to be identified and mitigated as quickly as possible.

Adopting a policy of continual improvement (and lean thinking) can be very helpful in identifying wasteful habits and procedures. Taking a lean approach is not about cutting staff and asking those that remain to do extra work; it is about the clear identification of work flow and efficient allocation of resources to the task. This is partly about office protocols and partly about the working habits of the individuals within the office. To
understand value also requires some acknowledgement of waste. It is obvious that an incomplete written specification or an unclear drawing will generate waste somewhere in the supply chain as the receiver tries to make some sense of the information. This usually leads to a request to the design office to revisit the information and to clarify any discrepancies, a task that will consume considerably more time than if it had been done correctly in the first place. However, there are other habits relating to the production of information that exist within design offices, and which need to be addressed to ensure efficient use of resources. Few staff will admit to the following bad habits, but they are not uncommon:

• **Overworking drawings.** This is a very common habit among architects and, apart from being unnecessary and wasteful, it can confuse the reader of the drawings. Accurate allocation of time for completing the work usually prevents too much unnecessary embellishment. Similarly, understanding the needs of those who will use the drawing may help the author to remain focused.

• **Underworking (incomplete) drawings.** This tends to be related to inadequate time to complete a task, resulting in incomplete drawings that have little value to the receiver.

• **Incomplete written specifications.** This is a very common problem and often a result of poor programming – failing to allow enough time for this activity.

• **Failure to follow office protocols and accepted standards** for information production. Assuming these have been implemented correctly, there should be no excuses for failing to comply.

• **Searching for information** that should be, or is, located in the office, but is inaccessible. This tends to be related to poor working practices within the office and failure to follow standard procedures.

• **Applying office standards and master documents inappropriately** (resulting in errors and subsequent rework).

• **Ineffective use of IT.** This is usually related to a lack of knowledge about how to use specific software packages and tools. It is easily rectified through induction of new staff, training and regular updating of knowledge and skills.
Avoiding design errors

Even the most experienced and talented members of the office will make mistakes. Design errors are expensive and time consuming to correct, with the cost and resources required to correct the error increasing as the design progresses through the detailing phases into realisation. It is imperative that design errors are identified as early as possible, preferably before the information leaves the design office. Design errors tend to result from problems with miscommunication between design team members and careless work. Failure to communicate and problems with understanding can be mitigated through regular meetings and the use of design critiques and formal design reviews. Use of collaborative technologies and BIM can also help to reduce errors. Careless work tends to be related to individuals being under too much time pressure and being subjected to too many distractions, which results in incomplete or incorrect work. Carelessness can usually be spotted through quality control procedures and the vigilance of the design manager.

Controlling rework

Trying to predict the amount of work that may need to be revised is very difficult given the collaborative nature of design. Within the office the amount of rework required can be kept to a minimum through careful control of the design work by the individuals involved in the project, access to current information, clear guidance and procedures, learning loops and the support of the design manager. Interaction with other project actors is more problematic, since the design office has very little control over the quality of the work produced by others or their ability to deliver accurate work on time. It is inevitable that a small amount of rework may be required resulting from coordination of design works packages, and this must be included in programmes and factored into work and fee costing. Familiarity of individuals within design teams will have an influence on communications and the ability to develop designs quickly and effectively.
The office-to-project interface

It is difficult to demonstrate the value of design to clients and other project stakeholders without effective management systems in place to stimulate creative work and control the consistency of the output. There are many ways in which creativity can be transformed into a finished building, and architectural offices differ in their approaches to managing design work. Whatever the approach it is important to recognise that the ways in which design activities and the resulting design information are managed will affect the effectiveness of the process and the quality of the completed building. Consistent approaches to all projects will help individuals and the design manager to work effectively and be better able to deal with unexpected problems.

Architectural offices cannot control the quality of work produced by other offices, but the design manager can influence it through good leadership and the establishment of a project culture that places design quality and client values foremost in the minds of all those contributing to the design effort. Interaction with other members of the project will ease or conversely hinder the coordination of design activities. Members of the office that communicate regularly with others outside the office need to have appropriate interpersonal skills.
Chapter Eleven

Communication, Knowledge Sharing and Information Management

Good communication, knowledge sharing and information flow are crucial to the smooth operation of the office and also to the effective delivery of projects. It is essential that all members of the office understand their role and understand what their coworkers are doing and why. This will help to reinforce the office culture, help to ensure a consistent level of service from all staff and enhance productivity. In small offices it may be possible to discuss work and share knowledge without too much in the way of formal procedures. However, the medium sized and large offices will need to put measures in place to ensure that individuals have the opportunities to discuss their experiences and share their knowledge. One of the design manager’s tasks is to implement, monitor and adjust procedures to facilitate interpersonal communication and knowledge sharing, thus allowing the efficient and effective production and flow of design information. This will be facilitated by using the most appropriate ICTs and BIM software to fit the office culture.
Communication within the office

In people-dominated businesses it is the interaction of individuals and their ability to share knowledge through effective dialogue that helps to create a successful business. Design work cannot develop without communication between collaborating team members. Some of this occurs between members of the office, and some between members of other offices via meetings, telephone conversations and the use of web-based collaborative technologies. Office culture is very much a product of the communication behaviour – the interaction practices – of its members and the way in which the office is managed. Some design offices are noisy, chatty environments that have a life and energy (a buzz); others are rather quiet and comparatively sober environments in which the staff communicate more discretely. Depending on the personal preference of individuals, some environments will be more suitable than others, and it is important to get the right fit. The introvert will not stay long in a noisy office; likewise the extrovert will quickly be ostracised in a quiet environment. Similarly, some design managers are happy working with noisy environments and will encourage open communication and knowledge sharing through storytelling rituals. Other managers prefer a quiet office, with interpersonal communication and knowledge sharing facilitated through carefully choreographed meetings and social activities. To the casual observer the quiet office may appear more ‘professional’ in its approach, but it may not necessarily be the most effective environment for interpersonal communication and informal knowledge sharing between projects. Owners of the business will also have personal preferences about the way in which the office members communicate.

The design manager has to create an office culture in which the members are happy to discuss their projects informally through daily interaction. This goes hand-in-hand with regular knowledge-exchange events that are built into office procedures. Mutual trust and respect are fundamental requirements here, both of which have to be earned through transparent management and reliable actions. The design manager’s role is such that he or she will have daily interaction with office members and will be highly visible within the office – essentially management by walking
around. During the working day a lot of informal communication will take place between the design manager and individuals as project progress is discussed, problems are aired and solutions agreed. Some of this interpersonal communication will be concerned with maintaining relationships and building relationships with newer members of the office, and some will be more task related. It is the interpersonal communication that helps to create a buzz within the office and through which professionals are able to share knowledge relatively informally and quickly, i.e. interpersonal communication is a metaphoric glue that holds the office together.

Informal conversations are an important process for understanding what are often considered to be ‘taken-for-granted’ statements; thus conversation is essential to overcome ambiguity. Background information, clues and what may be considered ‘small talk’ are important for building relationships and thus crucial for developing an understanding of unfamiliar contexts. Being able to enquire further into subject matter without the fear of embarrassment or ridicule, or risk of offending others, is achieved primarily through interpersonal interaction, which helps to build relationships and hence establish contextual information. In groups and teams it is necessary to know who is most knowledgeable and skilled in specific areas so that people can assume key roles in related tasks. When members freely interact and openly disclose information, other members gain access to, and clues about, a member’s knowledge and skills. Such information is key to establishing informal group roles and hence the effective use of the group’s knowledge in pursuit of business goals. Over time the knowledge of each member’s skills and attributes should make the office more effective. Roles and responsibilities can be assumed and the most appropriate person can be quickly allowed to undertake the task, without the need for lengthy discussions to determine who has the necessary skills or knowledge. Effective groups are those that are more productive and meet the organisation’s objective. The high level of productivity is achieved not only because they have procedures for solving problems, but also because the group is stable and less time is devoted to status struggles. Similarly, the members are aware of each other’s skills, attributes, knowledge and roles and only a relatively small amount of discussion is required to coordinate design tasks.

It is likely that there will be occasional disagreements within the office. Some of these differences of opinion may be related to work on projects,
especially if working to tight deadlines when levels of stress tend to be high. Other areas of disagreement may be personal and relatively trivial, for example two employees arguing about rival football teams. The scale of disagreement is likely to be relatively minor and light-hearted between employees – part of the office banter – but occasionally individuals can become emotive about specific issues they value highly (especially when they feel under too much pressure to perform their work). Design managers need to recognise disagreements early and, where appropriate, intervene to restore the status quo before the situation becomes untenable and individuals stop interacting. The office culture must remain positive, even in difficult periods, and the design manager has an important role to play in encouraging and maintaining a positive working environment.

Communication with other organisations

Communication with other project contributors will be conducted on a number of levels by a variety of individuals. The design manager’s role is to communicate with his or her contemporaries in the other offices so that work can be coordinated. Similarly, project architects will need to communicate with other members of the temporary project organisation in order to get things done. Many of the principles that apply to communication within the office also apply to communication with projects, but there is likely to be a difference in how open or defensive people are with individuals that work for other organisations.

Interacting with the contractor’s and MEP’s design managers will assist the monitoring of information flow and the resolution of challenges as the project proceeds (see Figure 11.1). In this role the design manager works at the boundary of his or her organisation, spanning different organisational cultures within the project (and within the project portfolio). It is this interpersonal link with other managers that helps to set the tone for the project.

Figure 11.1 Formal communication with other organisations.
The design manager has no direct influence over the behaviour of staff in other offices. Informal leadership and influence come into play here (Figure 11.2); so does the importance of recognising that different organisations have different values and goals and will give a different priority to projects. A particular project’s priority may be lower in some of the collaborating offices – but it is difficult for the design manager to know this. The challenge for the design manager is that he or she has no direct managerial control over team members employed by other organisations. Thus design managers need to try and influence the culture of projects by encouraging an open and trusting relationship with the other project participants.

Figure 11.2 Informal communication with other organisations.
Controlling what we give to whom

Controlling the quality and content of the information issued by the office may influence the profitability of the design office. A protocol must be established for each project and clear procedures established for issuing information. Some projects will be developed under collaborative and relatively trusting relationships; others will not. Thus there will be a need to control what is given to whom on a project-to-project basis. Ideally this strategy should be discussed and agreed with the client at the start of the project, although there may be cause to revise the policy as the project evolves (for example, if the project culture develops in an unexpected manner).
Drawing registers are an essential tool for monitoring the current status of drawings and associated documentation. All projects should be allocated a number as soon as the initial contact with the client has been made. This allows all time and expenses to be allocated to a specific project. A record of what was issued to whom, when and the status of the document (e.g. provisional, approved) is a fundamental element in controlling the development of design and project work. Information systems such as project web tools provide the means to control and track information sharing. With pressures on professional fees and the need for information to be produced more quickly, the checking function has been delegated to staff. Unfortunately, the ‘self-checking’ function is prone to error because of the originator’s overfamiliarity with the material. The design manager is responsible for ensuring that all information issued by the office maintains a consistent level of quality, is complete and free of errors. Special attention should be given to new members of staff, since they may be unfamiliar with office procedures and standards expected of them in the early days of their employment. Extra attention is also necessary for high priority ‘rush’ projects, which given the speed at which they may be completed may be more prone to errors. Outsourced work will also need to be checked to see that it has fulfilled the specified quality standards and is error free.

Effective communication strategies

Given the pressure of time and the desire to make a profit on all projects, it is important that communication media and associated tools are utilised effectively and efficiently. Design managers can help individuals to manage their communications through the use of managerial controls and procedures. Clear office policies will help to establish a working protocol for all members of the design office; however, individuals must take responsibility for their own actions. Too much casual conversation, too many meetings, disruption from unexpected telephone calls and spending too long dealing with emails will result in ineffective use of an individual’s time, and will detract from completing tasks. Similarly, poor
office protocols will also result in inefficient use of time. To avoid waste and allow individuals to work without their train of thought being interrupted unnecessarily, some degree of control is required within the office. Obvious areas to tackle include:

- **Meetings.** Meetings serve important functions, but they are also highly demanding in terms of the time required to prepare, travel to and attend. Before joining project meetings individuals must consider the value in attending. This can only be assessed if the agenda and aims and objectives of the meeting are clearly set out and communicated to those invited prior to the meeting. If a concise report is adequate, then this should be sent in lieu of attending.

- **Telephone calls.** These are highly disruptive to thought processes and the flow of work in general. People usually telephone because they want something (usually urgently), and expect the receiver of the call to drop everything and respond immediately. Some offices protect their employees from disruptions by operating a time window when staff can make and receive telephone calls. This can be an effective way of concentrating work effort and reducing disruption to colleagues at neighbouring work stations.

- **Email.** In a similar way to telephone calls, email can be disruptive and many offices operate a time window when individuals deal with their email.

- **Unannounced visits to the office.** Trade representatives and contractors may visit the office on the off-chance of speaking to a member of the design office. These visits can be disruptive, but also informative, so a clear office policy is required to guide staff.

It is not uncommon for professionals to work on many different projects concurrently. Invariably these all have different start and finish dates, vary in their day-to-day demands placed on the design team and, if not managed strategically as part of the office project portfolio, will place too much pressure on individuals. A degree of multitasking and self-management is required to ensure that all tasks are completed without an individual being distracted unnecessarily by the competing demands for their time. Some office members may need a little assistance with their time management from the design manager. The first step is to monitor how individuals communicate during a typical working week, to try and quantify the amount of time spent on income generating activities. These
data will provide a baseline from which to work and a basis for discussion with the individual in question. Agreeing a strategy to improve work flow will be helped by the implementation of tools and in some cases additional training and education. Reinforcement of the office policy and sharing of good practices within the office will also help to maintain communication efficacy.

Knowledge retention and sharing

For the professional service firm knowledge is its key resource; its core knowledge is the specialised knowledge that a professional would claim by virtue of his or her profession. Retention of knowledge is a constant challenge for the professional service firm; the majority of knowledge walks into the office in the morning and out in the evening in the heads of individuals. Knowledge-based systems should make it easier for employees to access relevant information and for the business to retain knowledge. Systems need policing for accuracy of information and currency of the information, in itself a demanding job that needs managing through the use of regular audits.

Knowledge sharing is crucial to the development and competitiveness of the office. It is not unusual to find that the staff fails to communicate with one another, not through any problems with their peers but from lack of time and lack of managed opportunities to interact. This is true of communication within the office (mainly face to face) and communication with individuals in other organisations (mainly through telephone and project webs). The physical use of space may have some bearing on informal communication via casual conversations during the working day. Open-plan offices may be more conducive to informal interaction than cellular offices. Similarly, the ability to accommodate all designers and the design manager on the same floor may have a bearing on the informality and frequency of communications. This arrangement is not always possible when architects occupy older buildings with small floor plans situated on several levels. Design managers need to encourage open communication within the office. Office members need to be encouraged
to talk about progress on their projects and share good and bad experiences. Opportunities for employees to get together and talk about their project experiences must be factored into workload programmes, otherwise knowledge sharing is unlikely to happen. Similarly, the design manager must have empathy with the staff working on the projects, that is he or she must be able to ‘talk’ the same language and share the same goals. Informal communication will help to develop shared understanding and is crucial to the development of a trusting relationship. The design manager must be respected by the project staff and trusted to look after their interests. Similarly, the senior managers of the design office must trust the design manager. Being able to talk openly and honestly about the development of projects and the manner in which the office is managed is an important requirement.

Although we learn to design via experiential learning and in many cases learn to manage through our good and bad experiences, it is important that the office does not make mistakes. Errors are expensive; therefore learning by trial and error has to be carefully monitored and errors kept to a minimum and within the confines of the office. One way to deal with this is to ensure that knowledge and reflective practice are shared with other members of the office. It is not uncommon for colleagues to be dealing with similar problems without being aware of the fact. This can happen when people are sitting close to each other, but it is more likely when individuals are separated due to the architecture of the office and when individuals are working remotely. Knowledge generated through the use of reflective action and quality circles should be incorporated into some form of knowledge base, which is easily accessible to both existing and new staff. It is through shared experience that the firm may be in a better position to compete. Such a strategy will depend on effective utilisation of information technologies and expert knowledge systems. It will also depend on the design manager’s ability to plan staff time so that they have an opportunity to reflect, both individually and within the team. Thus issues of communication, information management and knowledge acquisition, storage and retrieval deserve special attention.

**Strategic management of knowledge**

The size of the office and the manner in which it manages projects will influence the way in which knowledge-exchange events are planned and
implemented. Project related meetings, design reviews and internal design critiques are tools to assist in the successful completion of projects; however, there will be a certain amount of informal knowledge exchange that takes place in and around such activities. Strategic knowledge-exchange events should also be built into the weekly schedule. Figure 11.3 provides a representation of a typical weekly schedule for a medium sized office. In this model Monday mornings are reserved for discussion of projects and allocation of workload. Wednesday lunchtimes are dedicated to informal knowledge-exchange activities. Tuesday and Thursday are used for monthly meetings with major clients. Fridays are kept clear of meetings, since this is normally the day when deadlines have to be met.

- **Weekly portfolio review meeting.** The start of the week is a good opportunity to report and review progress on projects. It is also a good time to get all staff together to discuss individual projects and share knowledge between projects. This is a resource-hungry activity and it is necessary to organise the meeting in such a way that information can be presented quickly and concisely, while allowing time to discuss pertinent issues. The intention is not to discuss the intricate details of projects; this is done with the design manager through daily interaction. Rather the intention is to discuss factors that have some bearing on project success and that may be of interest to other members of the office. Problems are usually easy to identify, but it is also crucial to highlight good practices and project successes. The design manager should keep a record of the issues raised and analyse the data to see if there are any trends. It may be that a small adjustment to an office procedure would make a big difference to the efficacy of certain work.

Figure 11.3 Overview of knowledge exchange meetings.
Lunchtime presentations/interaction. The provision of a communal area for office members to eat together at lunchtime can help to foster relationships and provide the forum for informal discussion about many topics, including work. Some design offices leave this to chance; others have a policy of ‘managing’ the lunch-break in an attempt to better share project knowledge. Some offices hold lunchtime presentations once a week, which all staff members are expected to attend (if possible) and at which progress on a particular project will be discussed. Given that this is conducted in the staff’s free time, the trade-off is that the office supplies the lunch. These staged, but relatively informal, meetings tend to be popular with staff and have proved to help share experiences from different projects. The opportunity to discuss topical themes is also available. Administration staff and partners/directors also participate. These informal presentations should be held in addition to the formally scheduled knowledge-exchange meetings, not as a substitute for them. The design manager will need to prepare a schedule of themes/topics and presenters. As a general rule it is polite to ask if people would like to contribute and in what manner, rather than dictating a theme or time. Consideration must be given to pressure on individuals and presentations scheduled to avoid deadlines/project milestones. The time must be kept to one hour; thus the presentations should be short – approximately 20 minutes – with plenty of time afterwards for asking questions and discussion. The short presentation does not place too much pressure or additional work on those presenting. Evenings should be avoided because staff may have private/family arrangements and are likely
to be tired. A typical monthly lunchtime schedule could include project presentations/discussions, partner/design manager presentations, topical themes (possibly presented by an external speaker) and open discussion.

- *Monthly client meetings.* These provide an opportunity to develop the relationship between the client and members of the office, such as the partners, design manager and those staff working on the client’s project(s). Such events allow current projects to be reviewed and discussed, as well as introducing and discussing topical issues for possible inclusion. For example, the client may wish to know more about integrated project teamworking and the benefits and challenges such an approach would bring to their portfolio of projects. It is useful to take some time to reflect on these meetings and assess the points discussed, to see how they impact on current practice and their input to future development of the office.

This approach may to be too formal and cumbersome for small firms, although the principles highlighted can still be applied.

**Information management**

Building is concerned with information generation, transfer, exchange, use, storage and retrieval. Much of the mechanics is now dealt with by ICTs and BIMs but the creation and interpretation of information is still a personal skill, which necessitates an appreciation of the social complexity and context in which information is exchanged and used. Design managers will spend a considerable amount of time questioning information for relevance and accuracy, and will be responsible for ensuring a smooth flow of information. In most small to medium sized design offices the design manager will be responsible for all aspects of information management, with specific roles and responsibilities delegated to others. In large offices the information manager may be a separate, yet interdependent, function working closely with the design manager. As BIM becomes more widely adopted the differentiation between information managers and design managers may become increasingly blurred and some role redefinition is to be expected. Given
the importance of (design) information to designers it is necessary to consider the fit between information technologies and the people charged with producing and managing information. This calls for a thorough understanding of the information needs of the entire business and the relationship with the client portfolio before decisions are taken about the systems to be used.

Computer software packages allow designers considerable freedom in their design approach and have revolutionised the manner in which architects design, and in some cases deliver, buildings. Most obvious developments are the use of BIMs, visualisation tools, structural modelling, modelling of building performance (e.g. lighting, fire escape, thermal performance) and graphical database software tools. Related areas are electronic filing of project information, database management and tracking of financial affairs. Other tools that help to facilitate the exchange of information are office/project extranets, which allow drawings to be worked on concurrently and issued without the need to print numerous paper copies. Digital architecture has also helped to make the outsourcing of production information to suppliers offshore financially and technically feasible. In many cases this has led to changes in the type and number of personnel employed in the design office, with less emphasis on the information producers and more on information coordinators and managers. As BIM starts to become adopted more widely there appears to be a need for a BIM manager, a role that supports that of the design manager.

The value of information

Information is data in a usable form. Information provides a means of communicating with people who do not know one another and who may have little personal basis for mutual understanding. Information allows people to make decisions and take action; thus attention needs to be given to the quality and flow of information. Data have a cost and information a value. The cost of researching, analysing, using, storing, transmitting, etc., is relatively easy to quantify compared with the perceived value of the information to the user. Information only has value if it is accurate, timely and properly used by the receiver. The value of information depends on the people who are going to use that information, the circumstances in which they use it and their perception of its value to them at any particular
time. Meeting the criteria of accuracy, timeliness and appropriateness is a constant concern for design managers, as is the issue of relevance to the intended audience. Once information flow has been mapped and understood, the design manager is in a better position to put in place appropriate frameworks for the management of information. Similarly, an understanding of waste can help with managerial tasks.

The value of information held within the organisation should be assessed through the use of regular information audits to weed out unnecessary information. There is no point in storing or transmitting valueless information; it costs money to store and to access and may lead to confusion. The challenge is to be able to distinguish between information that has value and that which may be superfluous. Filters and delimiters are required as part of a management policy and ideally as part of a quality management system. Completed projects will need to be archived and appropriate information retained to suit legal and contractual requirements.

**Making informed decisions**

Professionals are paid for making informed decisions. Information and knowledge are central to the decision making process; the more relevant and complete the information, the better an individual is able to make an informed decision. It is a little unusual for an individual to have all the relevant information to hand; thus some action is required to obtain further information and hence reduce the level of uncertainty before a decision can be made. Searching for information can be a frustrating and wasteful exercise if the office does not have clear protocols about information storage and access to online providers. Typically, the person seeking information has an incomplete picture and may have only partial knowledge of the information he or she wants. When making decisions we can decide to:

- Wait for additional information.
- Act on the information available to us.
- Generate ‘new’ information, e.g. produce a drawing.
- Seek further information, e.g. search the office database.
- Opt out of the situation, e.g. delegate the task to someone else.
Informational needs will vary through the different stages of the project life cycle and must be carefully controlled to ensure that information is both up to date and relevant. Effort is also required to avoid information overload. Speed of access to relevant information is vital to both the efficient management of individual projects and the efficient use and maintenance of the building and its services. The manner in which firms organise and access information will be dependent on the size of the office and the size/complexity of individual projects. A solo practitioner may need information about specific stages of a project a few times per year from a reliable and current source. Large practices tend to implement their own systems and retain much of the information in-house, accessed via an Intranet. Here the challenge is concerned with keeping the information current, given a finite amount of time and money.

Preparation of information

Creative work is expressed in the form of instructions to manufacturers, other consultants, contractors and subcontractors, usually expressed in the form of drawings and written documents, collectively known as production information. Information must convey the intentions of the designer (producer) to the contractor (receiver). This may appear to be an obvious statement, but those producing the information must constantly bear in mind the fact that readers of the information will not have been party to the decision making process that led to the contract documentation. Receivers of the information can only read the documentation to see what is required of them. Therefore it is essential to ensure that the information being produced has value to the receiver. Instructions must be clear, concise, complete and free of errors, and meaningful, relevant and timely to those receiving and using the information. The design manager’s role is to control the quality of the information created and ensure information is shared across projects where appropriate. There are some fundamental rules to follow:

- **Clarity and brevity.** Effective information has clarity and is concise. The skill is to convey only that which has relevance and hence value to the intended receiver. This can be a matter of knowing when to stop drawing and writing.
• **Accuracy.** Drawings and instructions should be given accurately and precisely and the documentation should always be complete.

• **Consistency.** Use of graphics, dimensions and annotation should be reassuringly consistent across the whole of the contract documentation.

• **Avoiding repetition.** Repetition of information in different documents is unnecessary and wasteful of resources, and when the information is repeated slightly differently (which it invariably is) it can lead to confusion.

• **Redundancy.** There is always a danger that superfluous or redundant material will be included on drawings or in the written documentation when ‘borrowing’ information from previous projects or from office master documents.

• **Checking.** Always check information before it is issued to others to help reduce the potential for misunderstanding and errors.

### Recycling project information

ICTs, CAD and BIMs have made it very easy to reuse information within the office, transferring details and specifications from one project to another in the blink of an eye. Typical details and specifications may be customised to suit the organisation and hence become office ‘standards’ or ‘masters’ that are reused across projects. These are based on good practice (as viewed by the design office) and represent the collective experience of the office. Advantages relate mainly to the time saved in not having to redraw details and search for information, but other advantages relate to consistency and quality control. The main disadvantage of recycling information is that it can stifle creativity and innovative solutions to problems. This is why some architectural practices try to design from first principles (when the fee justifies the means). Care is necessary to ensure that the information being reused is accurate and complies with current regulations, so regular checks are necessary.

### Outsourcing information production

Outsourcing the production of information to others has been a feature of many design offices for a long time. Before the advent of digital
Many architectural and engineering offices would outsource packages of information production (i.e., the detailed drawings) to specialists, especially in busy periods. This was, and still is, done to keep the number of staff employed to a feasible level and to allow for flexibility in workload. What has changed is the scale and ease of outsourcing within the engineering and architectural professions. Now it is possible to outsource information overseas to help keep costs to an acceptable level and also to help speed up the process of producing information.

Managing information flow

A great deal of information will be transient – required to help get tasks completed – with comparatively little retained after completion of the project. The retained information will relate to as-built drawings and other project documentation required for operational and legal purposes. A brief summary of the different categories of information is provided in Table 11.1. Design typologies and standard details are used frequently by some developers, who hence have little need for the services of a professional designer. Specialist areas (with specific informational requirements) include permission for development (closely linked to design quality), project management, repair and maintenance.

Table 11.1 Information drivers.

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<tr>
<th>External sources</th>
<th>Internal sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business information</td>
<td></td>
</tr>
<tr>
<td>Market niche, competitors, collaborators and supply chain partners (consultants, manufacturers, etc.)</td>
<td>Staff records, financial records, individual projects, mission statement, marketing literature, equipment and materials</td>
</tr>
<tr>
<td>Design information</td>
<td></td>
</tr>
<tr>
<td>Literature from manufacturers, professional journals, academic peer reviewed journals, books; design typologies developed by other design offices, legal (e.g., planning and Building Regulations), guidance documents, e.g., ISOs, health and safety</td>
<td>Standard details and specifications, design typologies from previous projects, design guides developed in-house</td>
</tr>
<tr>
<td>External sources</td>
<td>Internal sources</td>
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</tr>
<tr>
<td><strong>Project information</strong></td>
<td>Clients, consultants, contractors, statutory undertakers and local authorities, user groups. Standards and codes</td>
</tr>
<tr>
<td><strong>Product information</strong></td>
<td>Feedback from building performance, client and users</td>
</tr>
<tr>
<td><strong>Systems and management controls</strong></td>
<td>Management systems, controls and frameworks. Professional code of conduct, guidance and advice via professional journals. Project insurances</td>
</tr>
</tbody>
</table>

Understanding information flow within the office (and projects) is central to maximising the value of information and is fundamental to helping to reduce waste. Sitting around waiting for information because of a bottleneck in the system is unproductive and frustrating. Mapping and modelling information flow prior to the start of a project can help to avoid bottlenecks and time spent chasing information.

**Information overload**

A problem facing individuals on a daily basis, and their managers from a strategic perspective, is the vast quantity of information that is available. The volume of information has increased to such an extent that some form of specialised management structure and technology is required to store, process and retrieve relevant information to avoid a state of information overload. Information overload occurs when an individual or organisation receives more information than it can handle; thus some form of filtering is necessary to allow individuals to perform their work as efficiently as possible. Some design offices operate quite tight controls over who receives what and when; others leave information handling to the individuals in the office with access to the majority of information. Design offices are able to subscribe to online information providers that, for an
annual fee, provide access to current information such as regulations, standards and manufacturers’ information.

Implementing an IT strategy

Clients expect professionals to utilise the most appropriate and modern technologies to deliver their projects. Considerable financial investment is required for hardware, software licences and updates, security systems, technical support, maintenance, IT consultancy and staff training and updating. Whether systems are purchased or leased, it all adds up to a significant annual investment that needs to be factored into the budget. Typically practices can expect to spend around 5 to 10 per cent of annual turnover on IT, although this figure may vary quite considerably between architectural offices. Whatever systems are used they must be reliable, user friendly and affordable. Upgrades and changes to different software packages must be introduced strategically to allow a relatively seamless transition from old to new. Changes also need to be factored into the office work programme, preferably in less busy periods, because the effectiveness of staff will be reduced, albeit temporarily, while they familiarise themselves with the new software.

Information technologies should be seamlessly integrated with the working habits of staff. This often means that staff have to retrain to be able to use the technologies as effectively as possible. It also means that someone in the office has to take responsibility for strategically reviewing and managing the office IT requirements. Design managers will be well positioned to do this since they will understand the firm’s business and the particular informational requirements of the design office and projects. Understanding and knowledge of specific IT systems are less important since these can be purchased through an IT consultancy as and when required.
Determining the organisation’s requirements

Every IT system, regardless of cost and pedigree, forms part of a social system whose success or failure is linked to the dynamics of the organisations using it. The technology must fit the business objectives and culture of the office. Decisions relating to information technology are made by managers who do not use the technology on a regular basis, and who may not necessarily be best placed to make such decisions. It is the architects, architectural technologists and engineers who are best placed to understand their requirements because they work with ICTs and BIMs on a daily basis. This means that a bottom-up approach should form part of an effective business strategy. Design managers have a role to play here in constantly monitoring the requirements of the staff and relating this to the business objectives of the office. This helps to keep expert knowledge central to investments in information technologies and associated training and updating. Although these decisions often relate to drawing packages, e.g. CAD and BIM, it is crucial that a more considered and integral view is taken in terms of the immediate, short-term and longer-term needs of the business. Consideration should be given to:

- Integration and compatibility (with clients, consultants, manufacturers and suppliers, contractors)
- Expectations and needs of all office members
- Urgency (timescale for implementation and resources required)
- Software and hardware selection
- Staff training and updating
- Monitoring and feedback
- Future upgrades.

The office-to-project interface

Understanding the needs of other project participants – the way they like to work and their preference for certain software and communication
media – can help to improve understanding and coordination, while also reducing uncertainty and reducing inefficiencies on a project-by-project basis. The ability to communicate clearly and precisely to a wide variety of actors using a variety of media is an important skill. In many respects the challenge is about developing an appropriate language for use within the office, and one for communication with project participants. Compatibility between the office IT systems and those used by other project team members will influence the profitability of individual projects and hence the financial wellbeing of the business. To ensure an effective process and to help provide an excellent service to the client, it is crucial that IT is completely integrated with business processes. This means dealing with integration of people and technology early in the project team assembly stage. Compatibility problems may be resolved, or at least identified early in the project, and their effects mitigated through effective management of the process. The ability to learn from project experiences and share that knowledge within the office will also make a significant impact on the business.
Chapter Twelve

Financial Management

A smooth-running business must have a constant supply of money passing through its books to pay its staff, service its overheads and generate profits. Finance is an area of architectural practice that many designers feel uncomfortable with, but with the right advice from a good accountant there is no reason why the design office cannot function effectively and profitably. Cash flow is essential to maintaining the business. No cash flow, no business. Ensuring that more money is coming into the business than is going out will result in a profit. Lack of profit will result in the slow death of the business. The design manager’s role is to ensure that projects are managed effectively and efficiently so that financial targets are adhered to. This involves the application of appropriate checks, controls and balances to monitor the financial health of the business on a regular basis and being vigilant to identify improvements in workflow.

Cash flow and profitability

Too many architects earn a poor living through inadequate attention to the factors that determine the amount of money generated, and hence the health of their business. Financial management and accountancy tend to be associated merely with bookkeeping and completing the appropriate tax and VAT returns. However, they form a much richer process that relies on the ability to estimate design effort relatively accurately and hence resource projects efficiently, which allows cash to flow into the business. This requires a thorough understanding of the factors that influence the profitability of individual projects. Financial management of the architectural business is about maximising financial opportunities and
minimising financial risk. It is finance that drives the business and hence provides the opportunity to practise architecture. To create and maintain a profitable business it is necessary to:

- Charge realistic fees for the services provided.
- Ensure a consistent cash flow.
- Use simple accounting systems to allow the effective management of finances.

It is also necessary to seek appropriate advice from professionals with financial and business expertise. Banks offer excellent advice and help packages for new businesses, much of which is provided free of charge. Advice should also be sought from an accountant before the business is launched, with measures implemented to help make the business profitable from the start. Accountants can, for example, provide advice on how to benefit from taxation law and hence reduce the tax burden on the business. This may be something as simple as how the architectural business is legally constituted and the financial benefits of one type of arrangement (e.g. a limited company) over another (e.g. a partnership).

The relationship with clients and the ability to attract and retain profitable clients is a fundamental concern for professional service firms. Cash flow projections for the short, medium and longer term need careful consideration, monitoring and occasional adjustment. It is not uncommon for professionals to carry out a considerable amount of work ‘up front’ before they invoice and subsequently receive payment. Often the timeframe between starting a package of work and receiving any income may be several months. During this period money is required to pay staff salaries and service office overheads. Forecasting both workload and cash flow are very important tasks, but given the nature of the work both can be challenging to achieve with any degree of certainty. However, forecasts allow financial objectives to be set, resources allocated and progress monitored.

**Profit and loss**

There is a simple relationship between the income generated from each client and the costs incurred in servicing that client. The main expenditure is staff time; thus understanding how people spend their time is a crucial step in assessing profitability. On a simple level, client profitability is the
amount of money received from the client minus the cost of staff time and associated overheads (Figure 12.1). The cost incurred in servicing the client comes directly from the time spent in completing work for that client, as recorded on staff timesheets. Cost is calculated by multiplying the number of hours spent by the total cost of employing the members of staff who are working on that project. The operating profit over a 12-month period is the amount of income received from all clients minus the total expenditure over the same period. Profit is the surplus income after all costs have been deducted and before any taxes have been paid. Given that partners or directors privately own the majority of architectural offices, the profit may be defined as the surplus payable to the owners. The profit is purely an accounting exercise that can and will be manipulated (within the law) to make the most out of personal and corporate tax rates.

Figure 12.1 Servicing costs and profit related to fee income.

The profitability of the office may fluctuate over a given timeframe, depending on the strength of the market and the demand for services. Architectural firms are particularly vulnerable to shifts in the output of the construction sector, which tends to swing from one extreme to the other relatively quickly in response to national and international economic conditions. Given such dependency and uncertainty about clients...
commissioning services, it is necessary to have some degree of flexibility in the firm’s biggest expense, staff costs, if profitability is to be maintained. This means that the business must be designed to accommodate a certain degree of flexibility, able to respond to economic upturns and downturns quickly without damaging the financial health of the business. Profitability is also influenced by the contribution of its employees. The better-managed firms provide bonus schemes for staff who contribute to the profitability of the business through having the right attitude. Profitability is influenced by staff morale, leadership and managerial controls. Management systems cannot help to generate good morale, but they can help to provide a working environment that helps members of the office to do their job more easily.

Financial management systems should be simple and transparent, helping to maximise cash flow and facilitate effective financial management of the business. Accounts are used to provide a record of all financial transactions. This includes the income and expenditure of the business over a 12-month period, known as the profit and loss account. It also includes details of the firm’s assets and liabilities at a particular date, known as the balance sheet. The accounts will show whether the business has made a profit or a loss over the accounting period. In addition to any legal requirements, the accounts are necessary for determining tax liabilities and distribution of dividends to shareholders, and as proof of financial standing to clients and suppliers. The accounts will also be necessary when seeking a financial loan from a bank and to determine the value of the business in the event of a sale or change of partner.

The profit and loss account is essentially a simple spreadsheet that lists the income in one column and the expenditure in another. By deducting the total expenditure from the total income it is possible to see if the business has made a profit or a loss during the month. Income is from the fees received. Expenditure largely covers salaries, cost of the business premises, cost of equipment necessary to run the business, insurances and an allocation for depreciation of furniture and office equipment. Data from the profit and loss account can be used to compare the financial performance of the business against the projected performance (the budget).

The balance sheet provides a record of the assets and liabilities at a particular date. Assets include fixed assets (such as buildings, fixtures and
fittings, equipment, company cars, etc.) and current assets (which include cash deposits at the bank, fees due from work in progress and debtors). Liabilities are the money owed by the business to suppliers and banks (loans). The balance sheet will also list the capital invested in the business, for example the partners’ capital or capital raised from the issuing of shares.

Sources of income

Professional design offices are able to generate income from a variety of sources. The most obvious is from architectural work and the associated field of project management. Less obvious sources may include areas such as architectural photography, technical writing for product manufacturers, building product invention and design, teaching and commercial research activities. Depending on the market orientation of the firm and the collective skills of its members, some avenues of income may appear more attractive than others and should be reflected in the business strategy.

It is the ability to attract work continually that ensures a constant income stream (see Chapter 13). How, what and when a firm should charge for its services has caused a lot of angst over the years, as architects have been forced to drop their mandatory fee scales and experiment with different means of generating income. Competition from other players has also placed downward pressure on fee levels. As a general rule the amount of fee charged will depend on market conditions, that is the fee charged is that perceived to be what the market can stand or, more specifically, what the client can afford. It is usual to find regional variations and variations within specialised building types. A particular skill of senior partners and directors is being able to pitch the fee at the right level, which requires a considerable amount of knowledge, experience and negotiating skills. The fees charged should be adjusted annually to reflect inflation and wage increases, thus helping to retain an appropriate profit margin. All changes in fee level must be communicated to clients well in advance of any proposed rise. On projects that are expected to last over several years, it may be possible to include a defined amount of price adjustment within
the client agreement. If this is not possible, the fee agreement should include some provision for rising costs over the period of the project.

There are a number of ways to charge for the services provided. The benefits of one method over another will depend on the type of services required, the preferences of the client and the design office and the project context. Whatever fee agreement is entered into, it is crucial that the architects and clients are absolutely clear what services are to be provided (and what are excluded) and how much they will cost. This helps to avoid any confusion, disputes and excuses to delay payment of fees at a later date. The most common methods of generating fee income are through percentage fees and time charges. Lump sum fees and conditional fees are also used. Additional costs, such as travel to the construction site to attend meetings and cost of printing drawings, will usually be charged to the client in addition to the agreed fee.

**Percentage fees**

Percentage fees are based on the final cost of the building work, the contract sum. They are the most common type of fee charging when providing a full service. Percentage fees will be discussed with clients and agreed on a project-to-project basis to reflect the extent of work required. As a very general guide the percentage fee may be between 5 and 8% of the contract value for new-build commercial projects, and between 10 and 15% for more complex work such as small domestic-type projects. If there is a high degree of repetition in the design the fee percentage may be reduced to reflect the reduced amount of work in relation to the final cost of the building work. Work to existing buildings tends to attract higher fees because of the additional amount of work involved, and somewhere around 15% is not uncommon. The RIBA publish indicative percentage fee scales based on average costs and building complexity. These may be of some assistance to those less experienced with percentage fee negotiations. As the contract sum increases, the level of fee will be reduced. Fee income will decrease if the final contract sum is reduced; conversely the fee will increase if the final cost of the project is greater than that budgeted. Critics of percentage fees claim that it is in the designer’s interest to allow the contract sum to increase because they will then be entitled to more money. This tends to overlook the fact that architects are professionals, and thus must apply integrity to all aspects of
their work. Exceeding the contract sum is not a good advert for any of the actors involved in the project and a great deal of effort will be spent in trying to deliver the building within budget. It is usual for percentage fees to be paid in instalments based on the estimated final cost, with the requisite adjustments made to reflect the final agreed contract sum.

**Time charge (hourly rate)**

Hourly rates are often disliked by clients because the time can (and often does) add up to a large fee that may be unexpected. It is good practice at the start of a project to agree a time limit that cannot be exceeded without the client’s permission, thus giving both client and designer some degree of certainty over expenditure and income respectively. Charging an hourly rate would be appropriate to the provision of partial services, additional services, specialist consultancy and additional work beyond the architect’s control (e.g. additional work requested by the client). Architectural practices will charge different hourly rates for different members of staff, based on the level of experience and perceived value of the work. Different rates may also apply to the type of work required. For example, legal work would normally attract a higher hourly rate than, say, more usual architectural consulting. As a general rule of thumb, the minimum charge-out rate for a member of staff should be no less than three times their gross salary (including pension and National Insurance (NI) contributions). Based on a 35-hour week, for 45 weeks per year (1575 hours) and a gross staff cost to the office of, for example, £50,000 per year, this would equate to $3 \times £31.75$, approximately £95 per hour. Hourly rates will vary depending on the market for services and location; the more complex and specialised the service, the higher the hourly rate. In situations where work is required urgently and the staff are working overtime, the hourly rate would need to be increased (say by 50%) to reflect the increased salary costs. This would need to be agreed with the client in advance.

**Lump sum**

A lump sum fee is a figure agreed with the client in advance of the work and is not negotiable. Some clients favour this type of arrangement since
there is no risk of the fee increasing, unless they request additional work for which there will be an additional fee. In a lump sum arrangement the client has cost certainty, but the architectural practice carries an increased degree of risk compared with other fee arrangements. It is essential that the architects include a contingency within the lump sum to allow some provision for uncertainty. Calculations to establish a lump sum are usually made on the number of hours anticipated to complete the work (which can also be checked against a percentage fee and adjusted accordingly). A contingency figure of, say, 10% is then added to the final figure to allow for inaccurate estimating. Lump sum fee arrangements should not be entered into unless the extent of the work is well defined and the timescale is fixed, both of which will need to be agreed with the client. The architectural practice will also need to make clear the exact nature of the services provided for the fee. To aid clarity it is also common to define the services not provided within the lump sum agreement. For small projects the lump sum may be paid in one instalment on successful completion of the project, although it is more common to agree a series of staged payments.

**Conditional fees**

Conditional fees are otherwise known as ‘no hay, no pay’ or ‘no win, no fee’ arrangements. The payment of an agreed fee is conditional on achieving a successful outcome for a defined project. There are situations where such arrangements may be entered into: for example, some clients will commission professionals to prepare designs so that they can try and buy a site and/or achieve planning permission. An estimate of the risk involved (resources committed balanced against the prospect of no income) needs careful consideration before such an agreement is entered into. In such arrangements the fee will only be paid on successful completion of the project; that is the condition. Because of the risk involved for the practice, the agreed fee will be higher than would normally be charged for such work and is normally paid in one installment. Conditional fees are a high-risk strategy and some architects do not regard this method of generating fee income as befitting a professional firm. In addition to getting a fee, the hope is that the project progresses further and the client commissions additional services under more standard forms of agreement.
Fee bidding and negotiation

Whatever fee system is agreed with a client, it usually follows a period of discussion and negotiation to find the best approach for both parties. Following the abolition of the RIBA’s mandatory fee scale in 1986, it has become common for clients to invite design organisations to tender for work (submit a fee bid) or negotiate the fee. Many professional firms do not like fee bidding since it is often perceived as unprofessional, although they still expect contractors and subcontractors to tender for work. On a more practical level, fee tendering is unpopular because it requires the architectural office to carry out a lot of work in preparing the fee bid, without any guarantee of success. This places additional pressure on the firm’s resources. It is not unusual for a client to invite tenders from at least three firms with specialism in the same area; thus firms find themselves competing against one another. Depending on the size of the project and the client’s requirements, it can take a great deal of staff time to prepare a well-presented tender document. The amount and type of information required for a fee bid will vary between different clients. There are essentially two methods of submitting a bid:

• *Fee only.* The title is a little deceptive because the firm will also be expected to submit details of their firm’s track record, details of their quality systems and often the qualifications and experience of the staff, in addition to their fee for carrying out the specified work and a programme for completing the work.

• *Fee and design.* This usually requires the same information to be provided as for a fee-only bid, but will also involve some design work. The scope and nature of the design work will vary between clients and building types, but it is not uncommon for clients to request plans and elevations for commercial projects. Clearly this involves a lot of work for which the firm will not be paid and, as a general rule of thumb, fee and design tenders will take at least three to four times the effort to prepare compared with the fee-only bid.

Fee tendering is a time-consuming activity but can be carried out relatively efficiently if the office has a good database of past projects, is able to estimate design effort relatively accurately and has a database of associated financial data. For small design firms fee tendering has to be accommodated within the fee-generating work; for larger firms it is often
possible to employ at least one person to spend their time on fee bidding, falling within the firm’s marketing activity and costed accordingly. There is a common misunderstanding that the cheapest fee bid wins. All clients will require a mix of experience, expertise and creativity, in addition to some assurance that the office can execute the project efficiently and professionally. Negotiation of the fee can also be a time-consuming activity, but less so compared with fee tendering.

Clients will balance cost against likely performance because it generally holds true that you get what you pay for. In general a client’s assessment, and subsequent decision, is based on the organisation’s:

- Past experience (demonstrated through past projects)
- Current expertise and creativity (demonstrated through current projects)
- People to be allocated to ‘their’ project (experience, expertise and balance of creative, technical and managerial skills)
- Management acumen, the ability to execute the project effectively (within time and budget and to specified quality standards)
- Financial stability.

Clients will want to know what value the architectural office can add to their project. The fee is not necessarily significant in this decision making process because it is usually discussed in detail after a decision to use a particular firm has been made, i.e. the fee will be negotiated. From the architect’s perspective the skill is trying to match the client and their requirements to the level of fee charged. Architects will also need to assess the client’s intentions and the pros and cons of working with them. Meeting to discuss fee levels is a good opportunity to make an initial assessment of the client and if there are concerns that the client is likely to be unprofitable, then the job should be declined.

**Invoicing and cash flow**

Attempts must be made to plan the start and completion of projects in relation to office resources, thus ensuring a steady supply of work for staff as well as a relatively constant income stream. Prompt invoicing will help to facilitate cash flow and reduce the need for borrowings. It is highly
likely that different projects will have different arrangements for when fees are scheduled for payment. Typically, invoicing is related to achievement of project milestones or by regular (monthly) instalments. Generating and maintaining a regular schedule of payment dates will considerably aid financial planning and workload planning (see Figure 12.2). Making some effort to ensure a relatively regular income each month will also help to ensure salaries and suppliers can be paid without the need for a loan from the bank.

Figure 12.2 Relationship between the project portfolio and cash flow.

Management of the fee income is influenced by the way in which the firm is managed, and the partner/client relationship. It is clearly in the interests of the business to maintain good client relationships through regular dialogue and the provision of an excellent service. The senior partners and directors must ensure that their clients fully understand and agree with the fee-charging arrangement and the dates of stage payments. Each office should also have a clear policy on its terms of trade, which may help to achieve prompt payment.

All architectural offices require a simple and clear accounting system. Fee invoices must clearly and simply state the work done, the amount owed and the date on which payment is due. Invoices must be issued promptly (on the agreed date if applicable) and any late payments flagged up immediately. Some firms charge interest on late payments as a standard policy; others are reluctant to apply such a policy for fear of damaging
client relations. Whatever the policy, it should be communicated plainly and clearly to the client at the time of the fee agreement, not afterwards. It is unfortunately common for clients to question even the most straightforward of invoices, thus delaying payment. To help avoid, or at least limit, such behaviour it is crucial that the invoice is not presented in an incomprehensible fashion, but simply states the work done and the amount owed.

**Debt recovery**

Too many small businesses fail because of cash flow problems caused by late payments. This applies to all businesses, from architects and engineers through to contractors, subcontractors and tradespeople. Research has shown that only around one-third of clients will settle their account within 30 days, with large companies taking somewhere between 45 and 60 days. Some clients will delay payment for as long as possible, even when there is no good reason for doing so. This means taking a realistic view of cash flow and utilising reliable accounting systems in an effort to track the amount of debt. Businesses also need to take positive measures to ensure that as much money as possible is paid within 30 days to assist cash flow and minimise borrowing. Debt collection needs to be planned and an agreed strategy employed for all clients. Accountants will provide advice and guidance on this. Businesses must be prepared to take legal action and not back down. The general advice is that administration staff should undertake debt collection, not the fee-earning partner or director. Architects and designers will be emotionally involved in their projects and this does not make for good debt collection, besides which their skills lie elsewhere. In medium sized to large offices it may be possible to justify the part-time or full-time employment of a financial administrator; for smaller firms it may be necessary to outsource this task. When dealing with repeat clients, previous experience of their payment habits may make it a little easier to predict how quickly the debt will be paid. Known bad debtors should be avoided if possible, since it is unlikely that they will ever become profitable clients.
Controlling expenditure

Income generation has to be balanced against expenditure. The aim is to make a profit and hence stay in business, and this can only be done through careful control of expenditure. This means taking a considered approach to how staff are employed and utilised, how space is used and how office overheads are kept to reasonable limits.

Staff utilisation

Skilled, dedicated and enthusiastic architects, technologists, technicians, project managers, design managers, administrators and secretaries are an expensive resource and it is crucial that their time is utilised effectively. This means engaging in some form of time planning and management as well as thinking very carefully about the number of staff required and how they are to be employed. For many small design offices it may be a sensible policy to employ staff only when the need arises, by outsourcing some of the work or employing staff on a temporary (fixed-term) basis. The use of contract staff is very common in the architectural and engineering sectors. Working overtime is another way of coping with temporary increases in workload, but this must be paid for by giving staff time off in lieu or by paying overtime for the additional hours worked. Costs related to salaries include NI contributions, pension scheme, private health insurance and payment of professional subscriptions (e.g. Architects Registration Board (ARB), CIAT, RIBA), as well as the provision of specific perks, such as company cars.

The number of hours that can be invoiced to clients in a year will depend on the salary paid to the employee, their position within the firm and their effective utilisation. This is usually referred to as the number of chargeable hours or the firm’s capacity. The number of chargeable hours provides a useful indication of the amount of fee income likely. Take the example of a five-person office, each member working a 35-hour week for an average of 45 weeks per year, a total of 1575 hours per year. The utilisation rate of each employee would be something similar to that shown in Table 12.1 for a 12-month period.

Table 12.1 Staff utilisation.
The partner would be expected to spend a large amount of time on attracting new business and strategic management work; thus utilisation would be, say, 30%. (Some offices assume that the senior partner will not generate any chargeable hours and factor this into their overheads.) The associate would have an office/design management/project architect function, and utilisation is likely to be around 50%. The architect and the technologist would be expected to be the most highly utilised in terms of chargeable hours, both around the 80% mark, allowing 10% of time for administration and 10% for training/professional updating. The trainee will be relatively poorly utilised in the first few months, but this should grow quite quickly to somewhere around 50% when given adequate support by the design manager. The problem with this plan is that it does not allow for staff being sick, nor does it allow for clients not paying their invoices in full. So the figures above could be seen as an optimistic forecast of fee income. However, it is a very useful way of helping to ensure a good balance of staff in terms of the financial health of the business.

All staff should try and identify bad habits (waste) and eliminate it from the daily routine, thus making the whole process more efficient and allowing all members of the office to be more productive. Areas where time, and hence money, is wasted can be found in everyday activities. The ‘classic’ is time wasted trying to find project files and repeating work already done by someone else. This can be addressed by good data management systems, monitoring data from timesheets and by the design

<table>
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<tr>
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<th>Utilisation rate</th>
<th>Chargeable hours</th>
<th>Hourly rate</th>
<th>Projected fee income</th>
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<tr>
<td>Partner</td>
<td>30%</td>
<td>472</td>
<td>£160</td>
<td>£75,520</td>
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<tr>
<td>Associate</td>
<td>50%</td>
<td>787</td>
<td>£120</td>
<td>£94,440</td>
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<tr>
<td>Architect</td>
<td>80%</td>
<td>1260</td>
<td>£95</td>
<td>£119,700</td>
</tr>
<tr>
<td>Technologist</td>
<td>80%</td>
<td>1260</td>
<td>£95</td>
<td>£119,700</td>
</tr>
<tr>
<td>Trainee</td>
<td>50%</td>
<td>787</td>
<td>£30</td>
<td>£23,610</td>
</tr>
</tbody>
</table>

Total projected fee income for 12 months: £432,970

Fee income = chargeable hours (capacity) x hourly rate (price)
manager walking around and looking at what is happening. In well-managed offices all staff are aware of their charge-out rate and the number of hours they have to work on specific jobs. This makes it easier for individuals to manage their workload to agreed targets, although the design manager may need to offer support and encouragement from time to time.

Cost of physical and virtual space

The environment in which individuals work will influence their productivity, creativity and sense of wellbeing. Even though many professionals work remotely, it is still common for professional offices to maintain physical office space, which has to be paid for. Space planning and management is a useful exercise to help keep the amount of space within workable and economic limits. Flexible working and careful design of the office can greatly assist in keeping the cost of space to a sensible level and, hence, can help to keep the business financially competitive. A number of options include:

- Purchase of office space (a building or part of a building)
- Leased office space (with shared facilities may be a cheaper option)
- Work from home (may suit very small businesses and some staff employed by the larger offices)
- Work as a virtual office (perhaps with a small head office to provide a physical presence).

Overheads

In addition to staff costs and the cost of office space, there is the equipment necessary for the business to function. This includes basic essentials such as fixed telephone lines and mobile phones, Internet access and the hosting of a homepage, computer hardware and software, the cost of maintaining Intranets and project websites, printers, pens, paper and drawing equipment, office furniture, filing cabinets, etc. Cars are another expense, whether leased or purchased. Small practices usually require staff to provide their own car, which must be insured for business purposes. Financial reimbursement is based on the number of miles travelled each month. Larger businesses usually provide company cars.
Insurances are a legal necessity and their combined cost can add a significant amount of expense to the cost of running the business. Architectural firms must have professional indemnity (PI) insurance, public liability insurance, employer’s liability insurance and premises and contents insurance. Additional insurance costs relate to company car insurance and staff benefits, such as health insurance. Premiums are usually increased on the anniversary of the insurance and will certainly increase following a claim.

**Financial monitoring and evaluation**

Monitoring and evaluation of financial data are an important activity for which time must be allocated. The performance of the firm should be evaluated at planned intervals against the strategies previously agreed. Adjustments may be needed to suit changing circumstances. Most offices will monitor the economic pulse of the office on a weekly basis, updating the budget to include new projects, delayed projects, completed projects and problematic projects/clients, as well as changes to staff costs and overheads. Evaluation and financial monitoring should aim to:

- *Assess the extent to which projects have achieved their stated objectives.* These should be related to previously determined standards of design, programme, resources, budget, profitability and client satisfaction.
- *Consider the improvement of working methods.* Objectives may have been met, but there may be scope for improving the way in which future projects are managed more effectively, and hence more profitably.
- *Optimise the use of resources.* Has the firm been managed effectively given the resources available? Have the individual talents of the firm’s members been optimised?
- *Assess the current standing of the business* in the market in terms of market share.
Collecting data – the timesheet

Well-designed costing systems are important to monitor the progress of individual jobs, assessing the efficiency of the design firm as a whole and helping to identify areas for improvement. There needs to be a mechanism for collecting and analysing financial data, which will enable a calculation of client (or project) and staff profitability to be made. The most common tool used to collect information is the staff timesheet, which can be completed electronically and analysed using simple computer software. The historical data collected from timesheets provides useful information to inform estimation of design effort, budgets and fee levels.

There is considerable variation in the use of timesheets within design offices. A small minority of firms do not use them, preferring to monitor costs based on the amount of income entering the practice minus that expended, and relying heavily on subjective decisions. In some cases this is a sign of poor financial management, although some very small offices can and do operate quite happily in this way. Some offices use timesheets but fail to use the information collected to their best advantage. They simply use the timesheet as a crude way of ensuring employees have put in the requisite number of hours each week, which is to miss the point. At the end of the project the data may be analysed, although it is more likely to be ignored unless there has been a problem and/or the project has lost money; again this is not a particularly good use of the information collected. Efficient design offices recognise the benefit of analysing the data collected on timesheets to monitor the financial pulse of the firm on a regular basis.

The format of the timesheet should be as simple as possible without losing information on critical areas. The amount of time an individual spends on a particular phase of a project is easy to collect, input to a spreadsheet and then analysed. Similarly, the time spent on other matters such as professional development, holidays and sick leave needs to be recorded to give a complete picture of an individual’s billable hours. Analysis of the data collected should be undertaken on a regular basis (e.g. monthly) to assess the profitability of clients and staff.
Client profitability

Analysing the amount of time spent servicing a client provides a cost (including all overheads) that can be compared to the fee income. Some care is required in the timing of such calculations because there are different phases in the office/client relationship. Taking a snapshot at one point during the project is likely to be misleading. Putting aside marketing costs (included in overheads), there is the cost of pitching for work, the preliminary client contact and the exploration of interests and values to ensure a good fit between the client and the office. Time is also required to understand the client and to secure the commission. In many situations this can be a lengthy process, as clients assess various options and place demands on the office prior to any income being generated. The second phase relates in many respects to the early team composition and early briefing phases, where client and project members are getting to know one another. This, like the start-up phase, involves senior staff whose time is expensive, and these are areas where many design offices underestimate the amount of time required to cement relationships and build trust. Once through this stage the project proceeds to the design and construction phases. Here the level of client input and the agreed level of service agreement need careful monitoring (Figure 12.3). During the life of a project many factors are outside the control of the client and the design office. For example, a delay in gaining planning permission and requests for additional information can consume unplanned resources, and so too can disagreements and disputes with contractors.

Clients vary in their demands made on a design firm, with some demanding considerably more attention than others. Clients new to the office and those experiencing their first building project will usually require more attention than more experienced clients who are already known to the office. This means that the fee level must be set at an appropriate level to allow time for increased or decreased levels of interaction. The vast majority of clients are honest, enter into a project with good intentions and act with integrity, usually paying their invoices on time. There are a few clients that are not so well intentioned and are better avoided, although they may be difficult to spot until it is too late. Some unscrupulous individuals will try to make money by exploiting professionals, making excuses not to pay for work and threatening legal
action. Fortunately, the managers of architectural offices tend to be good at warning their peers in other offices about such individuals.

Figure 12.3 Client profitability.

Staff profitability

Staff costs may account for up to two-thirds of a design firm’s expenditure; therefore thorough analysis of timesheets is needed to monitor the amount of time spent on fee-generating work (that chargeable to clients) and that spent on tasks associated with overheads. Some members of the firm will be more efficient at certain tasks than others (a point that applies to all staff, including the senior managers and support staff). The point was made earlier about the ability of the design manager to allocate the right staff to the right task, hence ensuring staff satisfaction and helping to ensure the office makes a profit. This job is made easier with accurate information on which to base those decisions (Figure 12.4). Each member of staff will have a target number of hours for each phase of a project, which must not be exceeded. Data should also be analysed from a staff-specific view to identify which staff do particular tasks quicker or more slowly than others, with a view to reorientating their duties. For
example, a comparison of the hours spent per stage by individual architects and technologists on their past five projects may be revealing. Individuals tend to differ in the amount of time they spend on certain stages of each job. On the assumption that the competitive firm maximises its strengths and seeks to minimise its weaknesses, it may be sensible to allocate staff to the aspects of the job at which they are most proficient and/or provide additional training and education. This can only be done if the data are available on which to base informed decisions.

Figure 12.4 Staff profitability.

Crisis management

It is impossible to avoid the odd crisis or two, so it is necessary to be prepared. A contingency plan will help to mitigate the financial impact of the disaster and allow the business to function as normally as possible. Clients going into liquidation, the loss of a key member of the organisation because of sudden illness or serious accident and damage to office space because of fire or theft are all examples of unexpected events
that will have a major effect on the business. We tend to be relatively resourceful when faced with an unexpected crisis; however, it is prudent to plan ahead so that the continuity of the business may be maintained. Problems tend to occur at the most inopportune moment and fall under three broad areas: economic, human and physical.

- **Economic.** Economic disasters are often caused by events over which the organisation has little control. Typical examples would be a rapid economic downturn in the national economy resulting in a downturn in client activity, or a client going into liquidation and not paying their fees.

- **Human.** We try not to think about staff being away from the office for a long time due to sickness, nor for that matter about the untimely death of key personnel. Given the importance of staff to the wellbeing of the business, it is crucial to have a contingency plan to allow the organisation to function until a suitable replacement can be found. Staff on long-term sick leave will need to be replaced with temporary staff, which is both disruptive and costly. The death of a director or partner will have implications for the constitution of the business that can take a long time to resolve.

- **Physical.** Other disasters may be relatively innocuous in nature. A storm-damaged office roof may just allow enough water into the office to destroy a large quantity of drawings and/or important equipment. More obvious threats are theft of equipment and damage from fire, vandalism and terrorism. Temporary failure of a computer system may cause considerable disruption and result in missed deadlines.

The majority of clients, suppliers and staff will be sympathetic and understanding if a plan is in place to resume normal service as soon as possible. They will be less accommodating if there is no up-to-date contingency plan and their project is perceived to suffer.

**Crisis recovery plans**

Contingency plans need to be agreed, implemented and reviewed periodically for their applicability to changing conditions. A crisis management group needs to be set up that consists of those in the office who best understand the whole of the business. An individual should be
put in charge and a plan formulated, which is then communicated to all members of the organisation. As a minimum the following should be considered:

- Where the business will operate from if the physical office space becomes unusable
- Access to telephone lines and computers
- Hard/digital copies of essential information held off-site and easily accessible
- Someone delegated to take charge if key personnel are suddenly incapacitated
- Strategy to cope with the inability (or refusal) of a client to pay the fees due.

Hard copies of the following should be kept in an alternative location to the main office:

- Contact details for all staff, suppliers and customers
- Copies of all information on the organisation’s IT system
- Copies of financial and tax matters relating to the business
- Legal documentation relating to individual jobs
- Legal documentation relating to the business.

All of this information must be kept up to date and a planned periodic review must be agreed and adhered to. Rather than regarding this task as a time-consuming burden, it should be seen as an opportunity to review business plans periodically and look towards new technologies for automatic replication of data. There is the potential for cost savings, which can offset the cost of disaster recovery planning. Organisations with clear plans may also benefit from reduced insurance premiums.

The office-to-project interface

Profitability of the design office will be determined to a large extent by the performance of people working on individual projects. Smooth-running projects will consume fewer resources (staff hours) than projects that are fraught with difficulties. Smooth running projects also
allow invoices to be issued to schedule and there is a higher chance of being paid on time if things are progressing well. When unexpected problems arise during the life of the project, time will be required to resolve them satisfactorily; this often involves the input of other, more experienced (and more expensive) members of the office whose time has not been factored into the calculations. This will impact on other projects as individuals are reallocated, albeit temporarily, to try and solve the problem quickly. Occurrence of problems also tends to result in delayed invoicing for payment and (not surprisingly) reluctance on behalf of the client to pay promptly. Thus the success of individual projects will have a positive or negative effect on cash flow. This relates to the success of the early stages of the project in which the project team is assembled and the brief developed. Assessment of projected client profitability and job profitability is required before committing to a project. It takes a lot of nerve to say no to a client, but this may be necessary in the longer-term interests of the office and its continued profitability.
Chapter Thirteen

Attracting and Retaining Clients

It is of little use developing a creative, dynamic, competitive and well-managed design office if clients are unaware of the services on offer. Effective promotion of the organisation and the services provided are fundamental to the attraction and retention of profitable clients. Promotion of a strong individual message (a brand) is a key requirement for effective marketing and relies on communication of the firm’s culture and values to its clients. This is not a one-way process; clients actively seek out information about professionals they feel will help them to realise their dreams. The term ‘client’ is used in this chapter to refer to the individual or organisation that commissions work from the architect’s office. This may be the sponsor of the building project or it may be an independent project manager or contractor. As a boundary role between the design office and clients, it is the design manager who will be influential in helping to promote the business through regular interaction with people outside the office. Communicating with existing clients and trying to get the attention of potential clients will be an essential aspect of the design manager’s role.

Promoting a brand image

Businesses need to know their brand, their unique characteristics, before spending time and money on marketing activities. What are the core values that are being communicated to clients and fellow project
participants? If some clear and precise answers can be given to this question it is time to start promoting the brand.

Marketing activities should be integral to the organisation’s business strategy and also to its organisational culture. Everything a firm does will have a secondary function related to the promotion of the office image. The manner in which designs are presented to clients, meetings administered, problems attended to, etc., is all part of the promotional initiative. Every letter, every telephone conversation, every drawing says something about the design office. Combined, these messages provide people outside the firm with information about the firm’s approach to every aspect of its business.

All clients, regardless of their level of experience, will have a perception of what it is an architectural firm does, just as they will have a perception of what the structural engineer or general contractor does. Their perception will vary depending on the amount of contact a client has had with architectural practices and the type of practices with which they have communicated. For many the word architecture is synonymous with design; as such, the architectural firm offering a diverse range of services that includes management, either as a one-stop shop or as discrete packages, may find that marketing their services to clients meets with some resistance, or goes unnoticed, because the service is unfamiliar to them. In a highly competitive environment in which professional boundaries are fluid, it is crucial that the architectural practice is able to distinguish itself from the competition.

The unique relationship between the client and the design office is akin to a courting ritual – a process in which attention is sought, and once contact has been established there is a period of tentative interaction during which the parties try to establish common values and establish a basis of trust. Hopefully the outcome of the courting ritual will be the start of a working relationship in which both parties grow to trust and respect one another. This relationship is subsequently formalised in some form of contract for services, but continues through the project and beyond, often into new projects. Over time, design organisations will develop a portfolio of projects and cement relationships with a variety of clients.

There are four interrelated stages in the development of a client’s relationship with the design office:
• *Marketing activity before initial client contact.* To a large extent businesses are reliant on clients seeking them out, and marketing activities are necessary to help raise the profile of the office within targeted niche areas. This stage is about visibility in the market and giving out an attractive message to clients so that they make contact with the architectural practice.

• *After client contact but prior to entering into a contract for services.* This is a crucial stage during which the client and architect are trying to match values and the level of service required. This relies on interpersonal contact between the client and senior staff in the practice. Dialogue is used to test each party’s ability to perform specific functions within given parameters.

• *During the project timeline.* Interaction with the client during the development and realisation of the project is important in maintaining a sense of ownership and mutual respect. Close contact can help in discussing and resolving problems as they arise.

• *After completion of the project.* Establishing repeat business will be very closely related to how the office (and other actors) performed on the project. Repeat business will also be affected by the frequency with which the architectural practice retains contact with the client and the users of the building post-completion.

### The client’s perspective

Clients discriminate. They are expending a lot of money and emotional energy on a project and naturally they will require some form of reassurance before committing to a binding contract. Clients will also expect excellent performance for a fair fee and the majority of clients will put a lot of effort into narrowing down the choice of consultants to a small number of potential project partners. In researching the market, clients expect to see evidence of well-managed, coherent, consistent and reliable businesses, not a group of professionals pulling in different directions. The image communicated by the office to clients will be instrumental in the client’s decision to enter into a dialogue with that office. The client will be looking not just at the main contact with the firm, usually the principal, but also at the staff who will be engaged on his or her project, that is the profile of the whole firm. The messages that the firm gives out to its
external environment need to be managed, ranging from the drawings produced to the decor of the office and the manner in which telephone calls are dealt with by the office receptionist. Typically clients will want to see details of:

- **Track record of the firm.** Length of time in business, reputation for creativity and delivery, relevant benchmarking and other performance indicators for projects, references from previous clients, etc.
- **Project portfolio.** This will include details of completed building projects, including the budget and timescale, supported with drawings and photographs. Current design and construction projects (with particular reference to the client) should also be included.
- **Client portfolio.** List of clients that the office has worked for in the past and current clients (where appropriate). Client testimonials are useful in helping to provide evidence of excellent service provision.
- **Staff portfolio.** This should include academic qualifications of all staff, and details of training and professional updating. Special skills and competences should be highlighted.
- **Communication skills (and speed of response to enquiries).**
- **Experience, motivation, maturity and emotional ability** (mainly perceived through meetings with the members of the office).
- **Evidence of lean processes and procedures.**
- **Financial security of the office.** Demonstrated with bank references.
- **Health and safety policy.**
- **Insurances.**
- **Quality management systems.**

Some of this information will be available on the office web-based homepage and via other promotional sources. More detailed and commercially sensitive information will only be released after the client has entered into a dialogue with the office.

**Approved lists**

A great deal of care is required in the selection of the most appropriate consultants. Some may be known to the client organisation from previous project work and through strategic partnering initiatives; others may be
new and hence constitute an unknown entity in terms of behaviour and performance. Clients with large property portfolios usually operate an approved list of suppliers and set out specific entry requirements that must be met before a consultant will be considered for work. For example, the use of a recognised quality management system is likely to be one of many conditions.

- **Existing consultants.** Performance needs to be demonstrated, that is measured and analysed. Consultants will be evaluated on their ability to provide value for money, the way in which they resolved problems during the project, their level of creativity and willingness to innovate, and general enthusiasm for the work.

- **Potential consultants.** New consultants regularly face two hurdles; not only do they have to prove their credentials to the client but they often have to dislodge an existing supplier of services. Thus clients will want to see what the new consultants can offer that is better or uniquely different to that already provided. Previous performance can be checked through references and benchmarking information.

### The architect’s perspective

In addition to trying to look at the business from the perspective of clients, it is important to ask a few questions about the client portfolio, both the existing client base and those that the organisation wishes to attract. A balanced portfolio of clients can help to spread the risk of a sudden downturn in a particular sector, helping to spread the financial risk to the business. This means that marketing activities need to be targeted at different niche markets and/or client types, which means that effort needs to be expended to attract new clients operating in unfamiliar market niches. Marrying service provision with client wants is fundamental to the development and retention of a profitable business. There are two distinct client groups to consider: existing clients and those the firm would like to attract – their potential clients. The issue of client profitability (discussed in Chapter 14) will need to be assessed before marketing is directed at specific interest groups. If the client is unlikely to be profitable it is clearly a waste of resources trying to communicate with them.
• *Existing clients.* Marketing to existing clients is often taken for granted by professional firms, yet these represent the most probable source of new business. Existing clients need to be nurtured and much of the effort of developing the business around existing clients will be of an interpersonal nature, supported with targeted promotional material. Of course, this works both ways; many clients do not want to go through the time-consuming process of selecting new consultants every time they wish to build, and so they too will be keen to retain relationships in readiness for new projects. This is especially true where the design office seeks to make the client a cohesive element of the firm’s culture, requiring input from the client as well as the firm. Similarly, the close involvement of the client is an essential requirement of long-term relationships based on mutual trust, such as strategic partnering and alliances.

• *New clients.* Attracting new clients takes a different form of effort and is more demanding of resources. Some studies have suggested that attracting new clients consumes as much as ten times the resources needed for existing clients, although this is very difficult to quantify with any accuracy. Many potentially profitable clients may already have an established network of contacts, so the firm must recognise that it will be trying to dislodge a competitor. For professional firms such as architects, care is required not to compromise the Code of Conduct, which clearly states that architects must not attempt to take work from other architects; other professionals are of course fair game.

New clients are an unknown entity. There will be some uncertainty about what information they require and how they will interact with the office. As a rule of thumb, the new clients will require at least twice the effort to develop a working relationship with after initial contact, compared with existing clients. Clients will expect the professional firm to deliver what it promises, so the promotional campaign must match the service delivered. To deliver less than an excellent service every time can cause a lot of damage, regardless of the effectiveness of the promotional activities. Retaining and enhancing reputation is critical to the success of a professional service firm and is at the heart of the promotional effort.
Communicating with clients

Architects, along with many other professional service firms, have experienced a considerable amount of criticism for their complacency when it comes to marketing. It is an area too often taken for granted, yet the consistent communication of a corporate (brand) image is one way of distinguishing the firm from others offering similar services, and in recent years the subject has been given much more priority. The organisation must ‘know its business’ before any marketing strategy can be designed and implemented. More specifically, the firm’s culture must have been designed and its aims, both short term and long term, agreed before a strategy can be put in place. Every firm has its own culture, which has evolved through a mixture of deliberate policies (by design) and circumstance (by accident). This is reflected in the communication of the organisation’s corporate image or identity.

Corporate identity is concerned with how the firm is perceived by its clients (both existing and prospective), its employees and service providers, competing firms (architects and other professional service firms), project stakeholders, the architectural profession and the public. Perception will be based on the experience of the service provided, the appearance of the buildings it designs, the firm’s culture and the manner in which it presents itself through marketing activities; it goes much deeper than the firm’s logo and web-based homepage. The face needs putting to the name constantly and consistently.

Graphic communication is the trademark of the architectural firm and often forms part of its brand image. Its culture and corporate image are reflected in letters, reports, presentation drawings, detail drawings and contract documentation as well as in specifically designed marketing material. As part of the corporate image the standard of graphic communication should be high, but more importantly consistent. Many firms are aware of the importance of corporate identity through their graphics and operate a house style. Other firms are less precious and have an inconsistent (one might argue amateur) approach to the material that they produce, that is they are putting out a potentially confusing message that may be perceived by clients as representative of a poorly managed firm. Building designers spend an enormous amount of time producing information from which others construct the physical artefact. Yet it is the
completed building that usually figures prominently in the graphics used to promote the design organisation’s services to existing and potential clients, not the drawings and specifications.

Corporate identity should link all of a firm’s activities into one easily identifiable and memorable image. Establishment of a corporate identity takes time and inevitably will change as the firm itself responds to changes in the market and interaction with its clients and project partners. Once a corporate image has been designed and agreed, a variety of promotional tools can be employed to raise awareness and communicate beliefs and values to existing and potential clients. Public relations, marketing and advertising efforts are complementary and interdependent forms of external communication.

**Public relations**

Public relations are concerned with the management of external communication channels, of which marketing and advertising are key elements. Public relations should be seen as the management of communications between a firm and its clients, which is a complex and demanding activity. To be effective, public relations information must be carefully considered, well designed, planned and well implemented. Public relations are most commonly associated with press relations in the form of press releases and feature articles. Press releases are essentially news items, such as an announcement about a new commission or completion of a project, and are usually directed at local audiences and specialist interest groups. These pieces of news must have some degree of interest for the readers of the newspaper or journal for which they are intended; otherwise they will be rejected and effort wasted. Feature articles are longer than press releases and can cover a topic in greater detail, usually in the specialist press. Articles may be submitted on a speculative basis, although sometimes they will be commissioned by the journal. Another form of public relations covers the sponsorship of events or causes associated with any specialist areas of the firm’s activities. These events are usually local to the physical base of the architectural practice or associated with a specific market niche. Sponsorship of events and causes may help to raise the profile of the firm through the associated marketing activities; they also provide a forum in which to interact with people on a face-to-face basis, and this may lead to new commissions.
Marketing

The main purpose of marketing is to bring the design firm’s services to the attention of clients. In architectural circles this activity is usually described as ‘attracting’ or ‘getting work’; other sectors are more familiar and comfortable with the terms ‘promotion’ and ‘marketing’. Marketing comprises strategies for identifying and developing services to match (or create) market demand. It is a business philosophy based on the orientation of the firm to the wants and needs of its clients. The aim is to achieve client satisfaction and to make a profit. This includes the use of market research to help target new markets, identify new services and identify competitors, and hence adapt to changing market conditions. In professional service firms marketing is influenced by the market awareness of the practice managers, the partners and directors.

Advertising

The implementation of creative communication strategies, often in media communication campaigns, to bring services to the attention of clients is known as advertising. Advertising is primarily concerned with raising awareness, from which clients may or may not decide to contact the office. Advertising campaigns should be designed to reflect the general marketing strategies and be consistent with the firm’s image. Advertising can be used to establish and maintain the firm’s image by raising its profile and separating it from its competitors. Until 1986 the architectural profession was restricted by its own Code of Conduct, and even now many within the profession feel that advertising is not something professionals do. Such caution is understandable, but, carried out with the same professionalism that is reserved for other activities, advertising is an essential part of a professional service firm’s competitive strategy and survival in a highly competitive market. Advertising campaigns can be expensive and there is some debate as to their effectiveness.

Selective exposure

Only certain messages will get through to their intended audience because individuals exercise ‘selective exposure’ to help cope with information
overload. If a potential client is not looking to procure a building in the near future it is highly likely that he or she will not be open to promotional material from architects, Therefore there is a certain element of luck in marketing, that is awareness coinciding with a need. It is essential to maintain a constant presence so that the day the client decides to build the messages are there.

Promotional tools

Promotional tools help to bring the attention of the firm to potential clients and also to reinforce its image with existing clients. Bringing about and raising awareness is particularly important, since if a client is unaware of the firm or the firm’s range of service provision, it will not be considered. A number of tried and tested marketing tools are available, ranging from the corporate brochure to newsletters and direct mail campaigns. Web-based homepages are a popular way of communicating information about the practice, although these rely on clients actively seeking out the homepage and taking time to read the information posted on it.

Paper literature costs money to produce, although with advances in printing technology a modest-sized brochure or newsletter need not take up a significant part of the marketing budget. Electronic newsletters and homepages provide another outlet for promoting the firm, although similar rules apply in terms of their accessibility and relevance. The strategies listed below rely on the prospective client becoming aware of the literature, taking note of it and deciding to make contact with the architectural firm; that is they rely on a certain amount of luck (e.g. landing on the client’s desk at the right moment or being easily found by search engines when surfing the World Wide Web). Whatever strategies are used the corporate image must be consistent. The firm’s name and any corporate logos should be included on both the front and the back of any literature, along with the firm’s address and telephone number (and where appropriate a contact name). The quality of the literature sent out and posted on the homepage will influence whether or not it is read, and will also influence the reader’s perception of the firm. Literature is a part of the firm’s ongoing communication effort and needs careful consideration since it is widely accepted that it has less than ten seconds to convey a
message. This literature should also be sent to the local branch of the RIBA for inclusion in the database of the Client Advisory Service (CAS).

Another important factor is the speed with which the office responds to enquiries from clients. This is usually done by a senior partner (assisted by secretarial staff) and can be very quick when the relevant information is available in electronic files, for example a PDF. This is an important first contact, which will say a lot about the practice to the enquirer. A sluggish response will send the wrong message.

**Homepages**

There are few businesses that exist without a web-based homepage, and clients expect to see one. The design, maintenance and updating of the site is crucial to the message given out to viewers. Similarly, the ability of search engines to find the homepage when people conduct a search on the web is crucial. Clients can tell a lot about the practice from its website. A slick, visually attractive, easy-to-navigate, informative website with up-to-date information is a sign of a well-managed office. Poorly designed, difficult-to-navigate sites with outdated information give out a bad message and do little to attract clients. It may be a useful exercise to check what the competition is saying and how easy their sites are to navigate, before launching or updating the homepage. Good websites need considerable investment in resources and for many offices it is usually prudent to outsource the design of the website to website designers. Although this may appear an expensive option, it does free up staff time to do more productive, fee-generating, work. As with the printed information, the firm is reliant on a potential client or client’s agent searching for information, and therefore it is critical to get the keywords right; the danger is in remaining invisible simply because a search engine cannot find details of the homepage.

Maintenance and regular updating of the site should be assigned to a competent member of the office and resources (especially time) allocated to the task. Old news will need to be updated, project descriptions enhanced with news of completions and forthcoming projects, drawings and photographs added, and achievements/awards and staff competences updated to reflect the continuing evolution of the business.
Practice brochures

The practice brochure is one of the most important promotional tools used by architects and many offices still use the brochure as their first point of contact with potential clients. It is becoming less common to provide printed brochures, although they can be very effective to support interpersonal interaction with the client, especially when customized to appeal to a specific client. The practice brochure is tactile and according to many offices it is a useful tool; however, it is expensive to produce given that the content will be tailored to suit a specific client. An alternative approach is to place the practice brochure on, or incorporate it into, the firm’s homepage (and print it out when necessary). It is essential that the brochure is well designed and carefully targeted at prospective clients. Brochures should include a brief history of the practice, a statement of the firm’s corporate values and mission, details of significant projects and an overview of the services offered. A statement on design philosophy and possibly the firm’s mission statement (sometimes combined) should also be included. Text should be concise and direct. The firm’s competitive advantage to the client should be clearly identified so that the unique approach of the practice is evident and the practice is distinct from the other players.

Newsletters

Direct mail (by post and email) is a promotional tool targeted to a specific audience, examples being sales letters (whose use may be questionable for the professional service firm) and the newsletter. These work best when followed up by telephone calls. Newsletters are cheaper to produce than brochures and are most effective when they are focused and contain engaging content. The common mistake is to try and say too much to too wide an audience. The purpose of the newsletter needs to be established before it is written. Is it to keep existing clients informed of developments within the firm or is it intended to raise awareness among new clients/markets? It is an important question because the content may need to be subtly different for defined audiences. If newsletters are used it is important to maintain the frequency, for example twice annually, so that clients know that the practice is still in existence. Suddenly stopping the
newsletter can have a negative effect on clients; the perception may be that the firm no longer exists.

Directories

Entries in printed and web-based directories may also help raise awareness, although it is usually necessary to pay a small annual fee to be listed in many of these publications. The more space required for text and images, the greater the fee. Architectural practices registered with the RIBA will have an entry in the Directory of Practices. Entries in directories aimed at a niche market may be a worthwhile investment.

Architects’ signboards

Erecting the standard practice signboard on new developments is a cheap and effective way of communicating with those passing the site. The sign will be one of many, but clients thinking of building will be looking at developments in their locality and will be taking notice of the name of the project team as communicated on the various signboards.

Client presentations

Clients may invite a select number of consultants to demonstrate their suitability for a particular project by making a presentation. This is done as a means of narrowing down the short-listed consultants. Clients will be looking for consultants, or more often a point of contact within the firm, that they feel comfortable dealing with. The interpersonal skills of those doing the presentation will be under close scrutiny. Client presentations need to be conducted professionally and should reinforce the corporate image promoted through marketing activities. Emphasis should be on what the firm can do for the client. Presentations should be open and honest representations of the firm based on its collective experience and qualifications. It is common for presentations to be rather formal events, with the architects presenting to a panel of representatives from the client organisation. However, some clients prefer a more informal arrangement
and so it is necessary to check the format before preparing the presentation. As a general rule at least two members of the office should attend to make the presentation and to answer questions.

Architectural competitions

Architectural competitions are usually seen as a good way of raising awareness of the practice. They are best suited to strong design practices and even then the success rate is likely to be low. Putting together a design for an architectural competition will involve the commitment of considerable resources and many practices may simply find it too expensive and/or too time consuming to engage in competitions. Time may be better spent on activities more likely to generate financial income.

Teaching and research

Engaging with universities, colleges and schools can help to raise the profile of the practice. Teaching, either as guest lecturer or as a more regular teaching appointment, can help to raise the profile of the practice and also form a source of income for many small practices. Engaging with academics in universities and collaborating on research projects is another way of promoting the firm, and in some cases a source of additional income.

Community involvement

Despite the increasing globalisation of services many architectural practices concentrate on serving the needs of their local community. Competitive advantage is achieved through knowing the local customs, values and needs of the area, something businesses from outside may find difficult to access quickly and effectively. Building a good reputation for good work takes time and many professional service firms still rely on word of mouth for their business (usually combined with involvement in local activities and sponsorship of events). Giving short talks to local interest groups and business groups about a new project or a topical issue concerning architectural design and the built environment can be an
effective way of raising the profile of the business. Similarly, writing articles for targeted magazines and local newspapers provides another means of raising awareness with the public.

Managing marketing activities

Managing the client relationship is essential in helping to achieve maximum value for the client and also for the design office. Responsibility for client relationships and marketing activities must be delegated to those most suited to doing the job. In small offices this will be the principal architect, but in medium to large offices marketing will be undertaken by a marketing manager and/or outsourced to marketing specialists. This may be in addition to other duties. Activities need to be planned, adequately resourced, monitored, systematically evaluated and maintained. Time must be found to consider, agree and implement suitable activities, set realistic budgets and achievable timescales, and then monitor, evaluate and adjust as required. This can only be carried out once the core values, and hence the purpose of the business, have been clearly defined and understood by all employees.

Outsourcing marketing activities

There are a number of benefits and challenges in using an external consultant to deal with public relations and the design of the firm’s website. Similarly, there are advantages and disadvantages associated with using resources from within the office. For small to medium sized offices it is highly unlikely that the resources or skills will be available in-house to deal with communications. It is more cost effective to outsource marketing and web design activities to experts. In larger offices there may be the resources to employ full-time marketing experts, although many large offices still outsource their web design to attain and maintain a professional image.
Planning

A well-planned and managed marketing strategy will allow time for concentrating on the development of the business and serving clients’ needs. Marketing activity must be adequately resourced and monitored. Different strategies are required for marketing to existing clients than those employed to attract new clients. Marketing activities should take into account:

- Identification of new markets and opportunities
- Identification and awareness of shrinking markets and reduced opportunities
- Retention of existing clients
- Promotion to potential clients and securing new business
- Client profitability.

The firm’s marketing strategy needs to consider the services to be promoted and should identify and promote its competitive advantage to clients. Bringing the services of the firm to the attention of potential clients can be looked at as passive and active strategies:

- **Passive strategies** rely on potential clients approaching the firm after they have received information from a third party, for example a recommendation from an existing client, consultant or the CAS, from information on completed jobs featured in magazines, or from the architect’s signboard erected on a building site.
- **Active strategies** rely on the firm courting and nurturing clients, for example sending company promotional material to carefully selected clients and doing client presentations. The active strategy is more expensive in terms of resources than a passive approach, but is more likely to result in new business.

Resourcing

Adequate resources are required to do the job properly. That means setting a realistic marketing budget and allocating sufficient time to manage the activity. In small firms it is very tempting to cut the number of hours allocated to marketing when additional work pressures increase and to ‘borrow’ from the marketing budget in tough times. Such tendencies must be resisted, since the modern professional service firm is dependent on
effective marketing for continuity of business. A marketing budget is required to cover:

- Design and distribution of publicity material
- Design, maintenance and regular updating of the web-based homepage
- Corporate entertaining, presentations and attendance at events
- Entering design competitions
- Training and education (marketing activities)
- Time to manage the marketing activities.

Depending on the size of the firm, the budget may be concentrated on one of these areas. For example, some small firms may spend the majority of their budget on interpersonal means of promotion, using corporate entertaining and presentations. Others may rely heavily on the distribution of publicity material, through advertising, direct mail and the design and maintenance of active websites. Whatever a firm’s individual strategy, it is important to remember the importance of training and continual updating so that the marketing strategies retain their currency.

**Monitoring, evaluation and maintenance**

Management of the marketing activity is based around monitoring and evaluation. All leads generated from promotional activities should be followed up and monitored as part of a systematic plan. All leads to potential work, whether they lead to a commission or not, should be evaluated to see how they were generated. This provides valuable feedback about the effectiveness of certain promotional strategies and helps with the planning and targeting of future resources. It may be difficult to identify clearly which marketing activities were more successful than others, but unless some attempt is made to monitor and evaluate the marketing activities, it is impossible to make judgements about the effectiveness of marketing activities. Some practices will encourage all staff to try and bring new business into the office, offering a financial bonus for new contacts that lead to work and financial income.

Once a marketing plan has been put in place, it is important to retain the momentum, thus helping to maintain an image in the market. It is of little
use embarking on a promotional campaign and then, for whatever reason, ceasing abruptly. A sudden reduction in marketing activity will usually be perceived negatively by clients, so it is important that initiatives are capable of being maintained over a long period. Emphasis should be on a consistent image and a consistent level of marketing activity.

Managing change

A well-designed and planned promotional campaign will consider the impact of change on the business, for example introducing new service provision and the manner in which it is communicated to clients. As a general rule it is better to keep clients informed of intended changes before they are implemented, so that clients are prepared. For example, the implementation of quality assurance will place additional burdens on the firm initially (until its members are comfortable with the system). Most clients will understand, especially if they know that they should get a better service from the firm in the long term. Therefore, it is important to involve the client and to keep them informed at all times through a suitable communication medium; such a strategy also helps to generate client input and feedback, in line with the philosophy of ownership and partnering.

Crisis management

The firm’s ability to deal with unexpected events quickly and effectively should be part of a comprehensive public relations package. A key function of public relations is to manage a crisis and try and turn negative events into positive opportunities. No matter how well managed the design office, there will be occasions when problems arise, however ordinary the building or familiar the client and consultants. The fact that every site, and hence every project, is unique means that unexpected events may happen, often more frequently than anticipated. It would, however, be unrealistic to expect things to run smoothly all of the time, because clients may change their minds, other consultants may make mistakes and builders may get things wrong. Public relations can be used to avoid (or at least minimise) damage to the firm’s reputation in a crisis, an activity usually known as crisis management. Damage to the firm’s
reputation and loss of confidence in the organisation on the part of its clients may harm the long-term viability of the business. Furthermore, time spent on litigation would be better spent on more creative and rewarding endeavours. Timely, careful and sensitive public relations efforts should be used to respond to crisis situations. Just as it is essential to keep the client informed of progress, it is also important to keep the client informed of any unexpected events. A well-designed and implemented quality management system provides the framework in which to do this.

The office-to-project interface

In a multiproject environment all clients will expect their project to take priority within the office. This demand can pose problems for the design manager if clients and projects are not dealt with fairly and equally. Clients need to understand how the office functions and the effect that prioritising can have on the other projects in the office. Tension between available resources and client requirements will always be present, although this can be mitigated through good communication with the client and sensitive programming of work.

Interaction between clients and the design office will determine the success of individual projects and hence the profitability of the architectural business. Regular interpersonal contact with clients and other stakeholders at regular progress meetings and design reviews may provide an opportunity for informally updating clients of developments and for strengthening interpersonal relationships. Feedback visits (post-occupancy evaluation) offer another opportunity for interaction and rekindling of social networks if managed well. Regular visits provide feedback on how the building is being used and how it is weathering, but they will also help to demonstrate the architects’ passion and commitment to their client and the building.

During the project lifeline, the architectural office will also come into contact with a variety of actors and organisations, ranging from planning
consultants and landscape architects through to specialist subcontractors and craftspeople. Although it may not be obvious at the time, other contributors, keen to put together an effective team for a new project, may be assessing the performance of the office. Thus the way in which key members of the office interact with other actors can make the difference between getting and losing new work. Similarly, interaction with project stakeholders forms an ideal opportunity for the architects to assess the performance of other actors, especially those they find themselves working with for the first time.

The increasing commercialism of clients in all sectors and their willingness to consider a wide range of procurement routes emphasises the need for professional marketing activities. Similarly, the changing face of architectural practice has to be communicated to clients so that the value to be delivered through design is foremost in early decisions.
Further Reading

As a guide to further reading I have included books that I have found to be informative, rather than attempt an exhaustive list of publications in the field. I hope these provide some additional sustenance to readers ranging from student and researcher to practitioner.

Architectural Management

The first book that addressed the synergy between the architectural office and projects was *Management Applied to Architectural Practice* by J. Brunton *et al.* (1964). The development of architectural management and an argument for architects to adopt management practices can be found in *Architectural Management in Practice* by S. Emmitt (1999). Further information on research in the architectural management field and case studies can be found in *Architectural Management: International Research and Practice*, edited by S. Emmitt *et al.* (2009).


Design Management

Books in this field cover design management from many perspectives, including industrial design and the creative arts. For information on design management, mainly from a contractor’s perspective, see Collaborative Design Management by S. Emmitt and K. Ruikar (2013) and The Design Manager’s Handbook by J. Eynon (2013).


Practice Management

Very few management books are aimed at the professional service firm. One notable exception is the highly regarded and inspirational book by D.H. Maister (1993), *Managing the Professional Service Firm*. Although not specific to architects, the book contains many ideas and suggestions that may be applicable to the majority of architectural businesses. For architectural students about to go into practice it would be useful to read D. Chappell and A. Willis (2010), *The Architect in Practice*, 10th Edition, and D. Littlefield’s book, *An Architect’s Guide to Running a Practice* (2005), provides some sound, practical advice on the business side of architectural practice, supported with case studies. The thrust is firmly on making architecture a profitable occupation.


Project Management

The project management field is well served by books. Some of those of specific interest to design managers are provided here.


Index

acceleration, of work
action learning
action research
advertising
Alternative Method of Management (AMM)
approvals and compliance
approved lists
architect perceptions
Architects Registration Board (ARB)
architects’ signboards
architectural competitions
architectural practice
architecture as a business
assembly of the team
asynchronous communication
attracting clients
balanced team
benchmarking
brand image, promotion of
brief
briefing
data analysis
data collection

brief-taker characteristics

brochure (practice)

buffer management

building information modeling (BIM)

building regulation approvals

burnout

business development (growth)

business management

business plan

capital, types of

career development

cash flow

client

complaints

empowerment

perceptions

presentations

profitability

relationship, management of
types

understanding of

value

client design adviser (CDA)

closing out projects

collaborative design

communicating
communicating, with clients

communication
  within the office
  with others
  strategies

community involvement

conditional fees

conflict

conflict, types

construction
  dependency on
design manager, working with
involvement with
progress meetings

continual professional development (CPD)

control of information

conversations, about design

coordinating design work

cost control

creative firms

creative people, management of

crisis management

crisis recovery plans

culture of the office

debt recovery

delegation of work

design
changes
changes, tracking of
charettes
control
critiques
effort, management of
ersors, avoidance of
fixity
and manage
management
management models
management protocol
programming
proposals, presentation of
reviews
studio, management of
value
design manager
   employment of
   role
   value of
design quality indicator (DQI)
detailing the design
digital technologies
directories of practices
early decisions
early involvement
eliminating inefficiencies
enabling and encouraging
environmental compliance
estimating design effort
estimating workload capacity
evaluation
evidence-based learning
expenditure, control of
external analysis
external meetings
facilitator
facilities management
fee invoicing
fee tendering
financial management
financial monitoring and evaluation
flow
Gantt (bar) charts
gateways
health, of staff
homepages
identifying good habits
income, sources of
information flow (management of)
information management
information overload
information preparation
information (value of)
informed decision-making
insurances
IT requirements
IT strategy, implementation of
integrated working
integration
interaction
interaction at construction phase
interfaces
internal analysis
internal meetings
joint ventures
knowledge-exchange meetings
knowledge management (strategic)
knowledge retention and sharing
knowledge sharing
language
leadership (and control)
lean design management
lean thinking
learning
  by looking and listening
  opportunities
  from peers
  from products
  from projects
lifelong learning
line of balance (elemental trend analysis)
lump sum fees
managing change
management, application of
management, why?
market analysis
market for services
marketing
marketing activities, management of
marketing, evaluation of
marketing plans
meetings
misunderstanding
multiple projects, management of
network analysis
newsletters
novation
office communications
office environment
organisational configurations
organisational resourcing
organisational types
outsourcing, information production
outsourcing, marketing activities
overheads
percentage fees
performance criteria
performance measurement
performance review (of staff)
post-occupancy evaluation (POE)
post-project reviews
pre-contract issues
pre-contract start-up meeting
procurement
professional firms
professional service firms, characteristics
profit and loss account
profitability
programming design work
programming projects
project brief
project deliverables
project frameworks
project portfolio management
project resourcing
projects, business of
projects, understanding of
project team assembly
promotional tools
psychological wellbeing
public relations
quality
quality assurance
quality control
quality framework
question of fit
recycling project information
reflective diary
reflective practice
relationship building
requests for information (RFIs)
research
resourcing marketing activities
responsibilities and reporting
retaining clients
rework, control of
RIBA Plan of Work
risk
  management
  and reward
selection criteria (project team)
selection, of managers
selective exposure (to marketing)

service provision

sequential design management model

skills development

space, cost of

staff
  appraisal see performance review
  balance
  competences
  deployment
  distractions
  flexibility
  integration
  profitability
  recruitment and retention
  turnover
  utilisation

standard briefs

statement of need (briefing)

storytelling

strategic alliances

strategic brief

stress

synchronous communication

system architecture

teaching

through-project reviews

time control
time charge fees (hourly rate)
timesheets
total quality management (TQM)
town planning approvals
traditional design management model
trust
value(s)
  engineering
  management
  parameters
  prioritising
whole life costs
why design management?
why management?
work breakdown structure
workshops
written brief