

Project Management in Construction

Dennis Lock



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PROJECT MANAGEMENT IN CONSTRUCTION

Dennis Lock



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Project Management in Construction

Innovations in production and project management over the last 100 years were driven first by the manufacturing companies and, later, by the aerospace and defence industries. The construction industry has a long record of project management practice and is well recognized for using or adapting appropriate project management methods and software to good effect. Even in the early 1970s I knew of construction companies that were planning their projects in novel and imaginative ways that today might still be considered advanced. It's always good to be writing for an appreciative audience, so when I was invited to work on this book in collaboration with the Construction Industry Training Board I jumped at the chance. I have not been disappointed, and this has proved to be one of my most enjoyable writing engagements.

Project management spans many management disciplines and relies on a wide range of diverse technical and managerial skills. The average construction project manager must be able to communicate and work with the client, the company accountant, the bank, the purchasing manager, the architect, the design engineer, specialists and contractors in specialist trades, site supervisors, the human resources manager, lawyers, insurers, various professional bodies, and with local authority officers and other statutory bodies. The construction industry, like many others, is awash with regulations, some of which carry severe penalties if they are flouted. So project management can be a very broad subject, impossible to cover fully in a single introductory textbook.

However, if we pare away all the ancillary topics, a small group of essential core project management skills remains. These are the methods by which a project is organized, planned and controlled. These are the essential processes needed to ensure that the project meets the three primary objectives of cost, time and performance or, in other words, that the project is finished to the mutual satisfaction of the client and the contractor. But confining the discussion to these core elements still leaves a wide range of possible topics because the project management methods chosen will depend to a large extent on the size and nature of the project. Even the objectives themselves are not always clear-cut, and there will always be other 'stakeholders', apart from the client and the contractor, whose wishes must be taken into account.

So, writing about project management could be seen as a daunting task. What should I have included and what should have been left out? However, my work was made considerably easier by the knowledge that this book has companion volumes that deal specifically with other important related topics. That left me free to concentrate on the core issues, so that is what I have done.

A few large projects need very sophisticated techniques but most projects are relatively small and can be managed with a mix of common sense and fairly straightforward methods. Every successful modern construction company of significant size has at least one project support office or planning group. Thus the large construction groups are not short of experts when it comes to dealing with very large projects. So this book is intended as an introduction for those who are new to the subject, starting with projects at the smaller end of the scale.

I start by describing topics that are best suited to very small projects. Later chapters are organized to some extent so that they gradually become more relevant to larger and more complex projects. So the reader who has a small family business will probably need to read only

the first few chapters. But, as that family business expands and the projects (and, we hope, the profits) become larger, he or she can revisit this book and delve into the later chapters. There is a short list of titles at the end for those who would like to read further into the subject of this rewarding profession.

I cannot end this Preface without acknowledging the support that I have received from senior members of the Construction Industry Training Board. I must also thank Robert Pow, whose wide experience of the insurance industry was invaluable for Chapter 8. Finally, I am indebted to Dr David J. Cooper of the University of Salford, consulting editor for this series, for his advice and constructive criticism, both of an early draft and of the final manuscript.

Dennis Lock
St Albans
2004

Suggested Reading Guide

This book starts with chapters for those new to project management – people who are carrying out simple construction projects in small (perhaps family-run) businesses. Some of the later chapters will be of more interest to those who already have some experience of project management and explain methods that are more applicable to larger companies and more complex projects. Thus some readers will not need to read all the chapters, at least on their first visit to this book. Here, therefore, is a suggested initial reading plan.

For all readers, irrespective of company size:

Chapters 1, 2, 3, 9, 10, 11 and the last section of Chapter 12.

For readers working in medium- to large-sized companies, especially those handling larger projects:

Chapters 4, 5, 6, 7, 8 and all of Chapter 12.

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Chapter 1

Introducing Project Management

You are a master builder and you are good at your job. You know a brick from a breeze block. Give you a new site, put plans in your hands, and you will know how to build that extension, put up a new house – or even two houses. Clear the site. Put up a fence to keep out kids, vandals and thieves. Measure and mark out. Don't hold the plans upside down. Hire the plant. Dig the footings, and start building. You've done it all before. You expect to do it again somewhere else. You would never do anything silly, like starting on the electrics before the roof is on. You know when to call in your special trades. You get all the materials on site at the right time. You cope with bad weather. You might not realize it, but you are managing a project. It's all just plain logic and common sense, and you don't need some smartarse in pinstripes to tell you how to do it.



*Project management:
simply common sense.*

A project means doing something new, possibly even something risky or adventurous. In the business world this usually means creating something that someone else wants and is prepared to pay for. Most projects have targets, which means they have to be built right, within a cost budget, and finished by a certain date. Project management is simply making sure that all these targets are met.

Common-sense principles of project management

However big or small your project, there are a few things that must be done if you are to get it right. These are listed below, and some are explained more fully in later chapters.

- 1 Know your project. Define it. Find out exactly what you have to do. Which jobs will you be paid for and which jobs are someone else's responsibility? Are there any special conditions? Checklists are useful to make sure that you don't forget anything at this stage.
- 2 Estimate the costs as accurately as you can. Construction managers are fortunate in this respect because they can use standard tables, such as those in the price books published by Spon (<http://www.sponpress.com>).
- 3 Make sure that your estimates allow for contingencies, provisional items and (for projects lasting several years) for cost escalation. These are often called the below-the-line costs (explained in Chapter 2).
- 4 Know your customer or customers. Can they afford to pay you? Have they given others trouble in the past? You might need to make some discreet enquiries. For company investigations, agencies such as Dunn and Bradstreet can be useful (<http://www.dnb.com>).

Two key project factors:
 1 Logic
 2 Checklists

- 5 Is the contract understood and agreed by all parties? In construction, standard forms are often used, which help to remove possible misunderstandings and save time in lawyers' fees. There are standard forms for main contracts and for some special subcontracts (installing lifts, for example).
- 6 Will your cash flow be up to the job? You might have to pay workers and suppliers before the customer's cheque reaches your bank. Your contract should allow for an initial deposit and stage payments from the customer to help cover your work-in-progress costs. Stay on friendly terms with your bank!
- 7 Have a plan. The method used will depend on the size and scope of the project. For a tiny project it might be in your head. But most projects need something a little more sophisticated, put down on paper. The last 50 years have seen big advances in planning methods.
- 8 Know how to measure work done against your plan and be prepared to take action as soon as you notice things starting to go wrong. Work measurement, certified by a quantity surveyor, is important if you are going to make stage claims for payment from your customer.
- 9 Control changes. Make sure that every change requested by the customer is covered by a contract variation order with adequate price cover.
- 10 Take steps to keep inconvenience to the public at a minimum. You might need to take special steps to keep the public informed to avoid adverse reactions or even disruptive interference.
- 11 Pay regard to health and safety. Know and obey the regulations, have a health and safety policy and carry sufficient insurance.
- 12 Think about site security. Nothing is safe from thieves, from the smallest hand-tools to bulk materials and the biggest hire plant. Fence the site to keep valuables in and vandals out.
- 13 Don't be afraid to get professional help from the architect, surveyor, lawyer, accountant, tax expert and so on, so that potential problems get nipped in the bud. You might save yourself from tripping over some of the red tape that seems to be everywhere these days.