

NINTH EDITION

Ferry and Brandon's **Cost Planning of Buildings**

Richard Kirkham



WILEY Blackwell



Table of Contents

[Cover](#)

[Title Page](#)

[Copyright](#)

[About the Authors](#)

[Contributors to the Ninth Edition](#)

[Preface to the First Edition](#)

[Preface to the Ninth Edition](#)

[Acknowledgements](#)

[Nomenclature and Acronyms](#)

[About the companion website](#)

[Introduction](#)

[Chapter 1: An Overview of Cost Planning](#)

[1.1 Introduction](#)

[1.2 The 'art' of cost planning](#)

[1.3 The cost planning process](#)

[1.4 The profession of quantity surveying](#)

[1.5 Public sector building procurement](#)

[1.6 International dimensions](#)

[1.7 The future of cost planning](#)

[Further Reading](#)

[Endnotes](#)

[Chapter 2: Building Information Modelling](#)

[2.1 Introduction](#)

[2.2 A brief history of BIM](#)

[2.3 Definition and concepts](#)

[2.4 Industry Foundation Class \(IFC\)](#)

[2.5 BIM and the project life cycle](#)

[2.6 The effect of BIM on the project life cycle](#)

[2.7 The effect of BIM on the role of cost planner](#)

[2.8 Issues surrounding the implementation of BIM](#)

[2.9 International perspectives on the development of BIM](#)

[2.10 Commonly used BIM software tools and vendors](#)

[2.11 Case study: HM Young Offender Institution Cookham Wood](#)

[2.12 Key points](#)

[References](#)

[Endnotes](#)

[Chapter 3: A Three-Stage Cost Planning Strategy](#)

[3.1 Introduction](#)

[3.2 Stage 1: The outline client brief, procurement strategy and the budget](#)

[3.3 Stage 2: The cost planning and control of the design process](#)

[3.4 Stage 3: Cost control of the procurement and construction stages](#)

[3.5 The role of the cost planner](#)

[3.6 Cost planning practice](#)

[3.7 Key points](#)

[Further reading](#)

[Endnotes](#)

[Phase I: Cost Planning at the Briefing Stage](#)

[Chapter 4: Developers' Motivations and Needs](#)

[4.1 Developers and development](#)

4.2 Profit development, social development and user development

4.3 Cost targets for profit development

4.4 Cost targets for social or public sector user development

4.5 Cost targets for private user development

4.6 Cost targets for mixed development

4.7 Cost-benefit analysis (CBA).

4.8 The client's needs

4.9 Key points

Endnote

Chapter 5: Client Identification and the Briefing Process: Aligning the Client Need with the Brief and the Budget

5.1 Introduction

5.2 The client

5.3 Type and level of management service required by client

5.4 Types of clients: 'user clients' and 'paying clients'

5.5 The brief and the process of briefing

5.6 Format and content of the brief

5.7 The clients budget

5.8 Calculating building costs

5.9 Some budgetary examples

5.10 Key points

Endnotes

Chapter 6: The Economics of Cost Planning: The Time Value of Money and Cash Flow

6.1 The time value of money

[6.2 Interest: the cost of finance](#)

[6.3 Do we always take interest into account?](#)

[6.4 The importance of understanding the cost/time relationship](#)

[6.5 The application of simple development economics in cost planning: terminology and nomenclature](#)

[6.6 Project cash flow](#)

[6.7 Discounted cash flow techniques](#)

[6.8 Key points](#)

[Endnotes](#)

[Further reading](#)

[References](#)

[Chapter 7: Whole Life Planning: The Methodology of Whole Life Cycle Costing and Design for Sustainability](#)

[7.1 Introduction](#)

[7.2 History of WLCC](#)

[7.3 Definitions and disambiguation](#)

[7.4 Applications of WLCC: the public sector perspective](#)

[7.5 WLCC beyond construction](#)

[7.6 Private sector procurement](#)

[7.7 Theory and methodology](#)

[7.8 Disadvantages of whole life costs assessment](#)

[7.9 Software tools for whole life cycle costing](#)

[7.10 Key points](#)

[References](#)

[Endnotes](#)

Chapter 8: Construction Procurement and the Relationship with Project Costs

8.1 Introduction

8.2 The traditional procurement system and cost planning

8.3 Standard forms of building contract

8.4 Basic forms of building contract in the traditional method of procurement

8.5 JCT contracts in detail for traditional procurement

8.6 Design and build procurement

8.7 Partnering

8.8 Public sector construction procurement and the private finance initiative

8.9 Key points

Further reading

Endnotes

Phase II: Cost Planning at the Design Stage

Chapter 9: The Design Process and the Project Life Cycle

9.1 Introduction

9.2 The building design process

9.3 The design team

9.4 The RIBA Plan of Work

9.5 Comparison of design method and scientific method

9.6 A conceptual design model

9.7 Design techniques

9.8 Generally

[9.9 Recognition of design methods in cost information systems](#)

[9.10 An evaluative system](#)

[9.11 A strategic cost information system](#)

[9.12 Key points](#)

[Further reading](#)

[Endnote](#)

[Chapter 10: Standard Methods of Cost Modelling in Design](#)

[10.1 Prototypes](#)

[10.2 Other types of model](#)

[10.3 Objectives of modelling](#)

[10.4 Traditional cost models](#)

[10.5 Horses for courses](#)

[10.6 The pyramid](#)

[10.7 Single price rate methods](#)

[10.8 Elements](#)

[10.9 Features](#)

[10.10 Standard Method of Measurement \(SMM7\) – the bill of quantities as a cost model](#)

[10.11 Operations and resources](#)

[10.12 Spatial costing](#)

[10.13 Synthesis](#)

[10.14 Design-based building cost models](#)

[10.15 The bill of quantities](#)

[10.16 Elemental cost analysis](#)

[10.17 The BCIS Standard Form of Cost Analysis](#)

[10.18 Design cost parameters](#)

[10.19 Building shape](#)

[10.20 Height](#)

[10.21 Optimum envelope area](#)

[10.22 Further cost modelling techniques](#)

[10.23 Classification of models](#)

[10.24 Key points](#)

[Further reading](#)

[Endnote](#)

[Chapter 11: Cost and Performance Data: Sourcing and Application to the Cost Plan](#)

[11.1 Introduction](#)

[11.2 The ambiguous problem of software](#)

[11.3 Types and origins of cost data](#)

[11.4 The reliability of cost data](#)

[11.5 Occupation costs](#)

[11.6 Problems with site feedback](#)

[11.7 Problems with the analysis of BQs](#)

[11.8 Variation in pricing methods](#)

[11.9 Variation in BQ rates for different jobs](#)

[11.10 Research into variability](#)

[11.11 The contractor's bid](#)

[11.12 The structuring of cost data](#)

[11.13 An integrated system of groupings?](#)

[11.14 Sources of data](#)

[11.15 Published cost data](#)

[11.16 Future development](#)

[11.17 Key points](#)

[Endnote](#)

[Chapter 12: Construction Cost Indices](#)

[12.1 The cost index](#)

[12.2 Use of index numbers](#)

[12.3 Approaches to constructing an index](#)

[12.4 The factor cost index](#)

[12.5 The tender-based index](#)

[12.6 Published forms](#)

[12.7 Problems in constructing and using cost indices](#)

[12.8 Which type of index to use](#)

[12.9 Key points](#)

[Endnote](#)

[Chapter 13: Cost Planning the Brief](#)

[13.1 The brief](#)

[13.2 An iterative process](#)

[13.3 Preliminary estimate based on floor area](#)

[13.4 An example of a preliminary estimate](#)

[13.5 An example using BCIS data](#)

[13.6 Cost reductions](#)

[13.7 Data sources](#)

[13.8 Mode of working](#)

[13.9 Key points](#)

[Chapter 14: Cost Planning at the Scheme Design Stage](#)

[14.1 Elemental estimates](#)

[14.2 A typical elemental rate calculation](#)

[14.3 Examination of alternatives](#)

[14.4 Need for care](#)

[14.5 The cost plan](#)

[14.6 Specification information in the cost plan](#)

[14.7 Elemental cost studies](#)

[14.8 Foundations](#)

[14.9 Frame](#)

[14.10 Staircases](#)

[14.11 Upper floors](#)

[14.12 Roofs](#)

[14.13 Rooflights](#)

[14.14 External walls](#)

[14.15 Internal walls and partitions](#)

[14.16 Windows](#)

[14.17 Doors](#)

[14.18 Floor, wall and ceiling finishes and decorations](#)

[14.19 Engineering services](#)

[14.20 Joinery fittings](#)

[14.21 Cost studies generally](#)

[14.22 Preparation of the cost plan](#)

[14.23 Method of relating elemental costs in a proposed project to analysed example](#)

[14.24 Presentation of the cost plan](#)

[14.25 Key points](#)

[Phase III: Cost Planning and Control at Production and Operational Stages](#)

[Chapter 15: Planning and Managing Project Resources and Costs](#)

[15.1 Introduction](#)

[15.2 Nature of the construction industry](#)

[15.3 Problems of changes in demand](#)

[15.4 Costs and prices](#)

[15.5 The contractor's own costs](#)

[15.6 Two typical examples](#)

[15.7 Cash flow and the building contractor](#)

[15.8 Allocation of resource costs to building work](#)

[15.9 System building, modular assembly, prefabrication and cost](#)

[Further reading](#)

[Chapter 16: Resource-Based Cost Models](#)

[16.1 Effect of job organisation on costs](#)

[16.2 A well-managed construction project](#)

[16.3 Traditional versus resource-based methods of cost planning](#)

[16.4 Value added tax \(VAT\)](#)

[16.5 Resource-based cost models](#)

[16.6 Resource programming techniques](#)

[16.7 The Gantt chart](#)

[16.8 The critical path diagram \(or the network diagram\)](#)

[16.9 Resource levelling \(or smoothing\)](#)

[16.10 Resource-based techniques in relation to design cost planning](#)

[16.11 Obtaining resource cost data for building work](#)

[16.12 Identification of differing variable costs](#)

[16.13 Costing by 'operations'](#)

[16.14 Use of resource-based cost information for design cost planning](#)

[16.15 Key points](#)

[Further reading](#)

[Endnote](#)

Chapter 17: Cost Control (1): Final Design and Production Drawing Stage

17.1 Cost checks on working drawings

17.2 Carrying out the cost check

17.3 Use of an integrated computer package at production drawing stage

17.4 Use of resource-based techniques at production drawing stage

17.5 Cost reconciliation

17.6 Completion of working drawings and contract documentation

17.7 A critical assessment of elemental cost planning procedures

17.8 Key points

Further reading

Chapter 18: Cost Control (2): Real Time

18.1 Why real-time cost control?

18.2 The problem of information

18.3 Real-time cost control of lump sum contracts based on BQs

18.4 Real-time cost control of negotiated contracts

18.5 Real-time cost control of cost reimbursement contracts

18.6 Real-time cost control of management contracts

18.7 Key points

Chapter 19: Cost Planning and Control of Refurbishment, Life Cycle Renewal and Repair Work

19.1 Introduction

[19.2 The appropriateness of lump sum competitive tenders](#)

[19.3 Elemental cost planning inappropriate](#)

[19.4 Conflict of objectives](#)

[19.5 Risk and uncertainty](#)

[19.6 Safety](#)

[19.7 Occupation and/or relocation costs](#)

[19.8 The need for effective liaison and oversight](#)

[19.9 Costs excluding occupation](#)

[19.10 Summing up](#)

[Further Reading](#)

[Endnotes](#)

[Appendix A](#)

[A.1 Discounting and interest formulae and tables](#)

[Index](#)

[Advertisement](#)

[End User License Agreement](#)

List of Illustrations

[Figure 1.1](#)

[Figure 1.2](#)

[Figure 5.1](#)

[Figure 5.2](#)

[Figure 5.3](#)

[Figure 7.1](#)

[Figure 7.2](#)

[Figure 9.1](#)

[Figure 9.2](#)

[Figure 9.3](#)

[Figure 9.4](#)

[Figure 9.5](#)

[Figure 10.1](#)

[Figure 10.2](#)

[Figure 11.1](#)

[Figure 13.1](#)

[Figure 13.2](#)

[Figure 14.1](#)

[Figure 14.2](#)

[Figure 14.3](#)

[Figure 14.4](#)

[Figure 14.5](#)

[Figure 14.6](#)

[Figure 14.7](#)

[Figure 15.1](#)

[Figure 15.2](#)

[Figure 15.3](#)

[Figure 15.4](#)

[Figure 15.5](#)

[Figure 15.6](#)

[Figure 15.7](#)

[Figure 15.8](#)

[Figure 16.1](#)

[Figure 16.2](#)

[Figure 16.3](#)

[Figure 17.1](#)

[Figure 17.2a](#)

[Figure 17.2b](#)

[Figure 17.2d](#)

[Figure 17.2c](#)

[Figure 18.1](#)

[Figure 18.2](#)

[Figure 18.3](#)

List of Tables

[Table 6.1](#)

[Table 7.1](#)

[Table 15.1](#)

[Table 15.2](#)

[Table 15.3](#)

[Table 15.4](#)

[Table 15.5](#)

[Table A.1](#)

[Table A.2](#)

[Table A.3](#)

[Table A.4](#)

The logo for 'Good Night's Sleep Appeal' is rendered in a pink, hand-drawn style. The word 'Good' is at the top, with two smiling faces as the 'oo'. To the left of 'Good' are four 'Z's of varying sizes, suggesting sleep. Below 'Good' is 'Night's' and 'Sleep' in a large, cursive script. At the bottom, the word 'APPEAL' is written in a simple, uppercase, sans-serif font.

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Ferry and Brandon's **Cost Planning of Buildings**

Ninth edition

Richard Kirkham

Lecturer in Engineering Project Management
The University of Manchester

with contributions from

**Anas Bataw, Brian Greenhalgh and Anthony
Waterman**

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About the Authors

Douglas J. Ferry, PhD, FRICS, was formerly Dean of Architecture and Building, New South Wales Institute of Technology, and then as a Research Manager with Construction Industry Research and Information Association (CIRIA). He authored the very first edition of this text in 1964 while based at the College of Technology, Belfast, where he lectured in quantities and building construction. In that same year, he also published *Rationalisation of Measurement* with the Royal Institution of Chartered Surveyors.

Peter S. Brandon, MSc, DSc, FRICS, is Pro-Vice Chancellor (Research and Graduate School) at the University of Salford. Prior to this, he was Professor of Quantity and Building Surveying. He was the inaugurator of several high-profile initiatives including Construct IT, the national network for Information Technology in Construction which received the Queen's Anniversary Prize in 2000; SURF, the Centre for Sustainable Urban and Regional Future; CCI, the Centre for Construction Innovation and the BEQUEST international network.

Richard J. Kirkham, BA (Hons), PhD (Liverpool), is a lecturer in Engineering Project Management at The University of Manchester. His research interests are in whole life cycle costing, quantitative risk analysis, stochastic modelling techniques and performance measurement for public sector facilities. Prior to this, he worked as a senior lecturer in Construction Management and Quantity Surveying at Liverpool John Moores University and as a Research Officer in School of Industrial and Manufacturing Systems at Cranfield University. He has published widely in the field of whole life cycle cost

modelling and is the co-author of *Whole Life Cycle Costing: Risk and Risk Responses*. He is a series advisor to the RICS Research/Wiley Construction Series and formerly Scientific Secretary of CIB-TG62 Complexity and the Built Environment. Richard is a Fellow of the Royal Statistical Society, an Incorporated Member of the Chartered Institution of Building (Vice Chair Liverpool Centre 2006/2007 and Chair 2007/2008) and was elected a member of the Association of Cost Engineers in 2004.

Contributors to the Ninth Edition

Anas Bataw, BSc (Hons), MRICS, is a PhD student in the School of Mechanical, Aerospace and Civil Engineering. His research focuses on the role of Building Information Modelling (BIM) in modern construction projects, particularly from a small and medium enterprises (SME) perspective. As a Chartered Quantity Surveyor (CQS), he worked on a range of buildings and infrastructure projects before joining the university to undertake his research. Anas is a member of the Higher Education Academy BIM working committee and leads BIM4Manchester, a group designed to support construction professionals working within BIM.

Brian Greenhalgh, BSc, MBA, FRICS, FCIQB, is a Contracts Manager at Petroleum Development Oman (PDO) – Oman. Prior to this, he has held several appointments in the Gulf Region leading contracts management on complex infrastructure scheme. Prior to his return to professional practice, Brian was Head of External Affairs in the School of the Built Environment at Liverpool John Moores University where he specialised in the procurement and management of construction projects. As a Chartered Quantity Surveyor, he has served on Royal Institution of Chartered Surveyors (RICS) committees both locally and nationally and has lectured widely on aspects of construction management and contract administration.

Anthony Waterman, BA (Hons), MSc (University College London), is a Director of ADW Developments, a specialist Built Environment consultancy focusing on whole life costing. Prior to this, he was Research Manager at SENSE Cost Consultancy (division of MACE) and a Principal Consultant at the Building Research

Establishment, his first appointment after completing his Masters degree in Construction Economics at University College London (UCL). During his career at the BRE, he worked on various aspects of whole life cycle costing and performance modelling including the development of public sector comparator (PSC) models for Private Finance Initiative (PFI) schemes and the National Audit Office (NAO) reports on *PFI for schools*.

Preface to the First Edition

This book is intended as an introduction to Cost Planning for practicing quantity surveyors and as a textbook for students taking the Final Examination (Quantities Part II) of the Royal Institution of Chartered Surveyors, or the Third Examination of the Institute of Quantity Surveyors. I have therefore assumed that the reader is already familiar with the ordinary processes of Quantity Surveying, particularly the preparation of bills of quantities, and this is taken for granted in the text; nevertheless I hope that the book may be read with advantage by members of allied professions.

I have tried to present the subject in a way that will be helpful to the surveyor coming to grips with it for the first time, and have concentrated on explaining the basic principles, basic methods and some of the main pitfalls. I have not tried to reprint the masses of tables, charts and detailed examples which have appeared in the technical press, as once the principles have been understood the reader will find the lack of time rather than lack of material which will limit his further studies. A list of some of this material is included as an appendix to the book.

I have received a good deal of assistance in the compilation of this work from the various organisations that are mentioned therein, but I would particularly like to mention the help given by the officers of Hertfordshire County Council Architects Department and the Building Cost Advisory Service of the Royal Institution of Chartered Surveyors.

Douglas J. Ferry
Belfast June 1964

Preface to the Ninth Edition

'Are you doing BIM?' is a question many quantity surveyors are asked; in fact the same could be said of most of the multi-disciplinary team. I must confess that my knowledge of Building Information Modelling (BIM) is somewhat 'elementary'; so it was with a degree of trepidation that I agreed, 2 years ago now, to undertake the supervision of a PhD student (who quickly became a good friend!) whom quite fancied doing a bit of research into BIM from a Contractors Quantity Surveyor (CQS) perspective. It has been an interesting experience getting to grips with BIM and the potential benefits it can realise in the cost planning process. The first UK government pilot projects are emerging as positive demonstrators of BIM (see Chapter 2 of this book), but speaking to surveyors on the ground, it seems that no one really truly knows what BIM is and how it will change their way of working. Recent studies undertaken by us at Manchester following the Royal Institution of Chartered Surveyors (RICS) BIM conference highlighted that this was particularly acute in the SME sector, which accounts for a significant proportion of the overall construction supply chain. The technologies underpinning BIM are emerging apace, the issue is perhaps a cultural one and the notion of enhanced collaborative working requires an awareness of procurement systems, client relationships and the wider project environment, topics addressed (in some part) within the text.

You will also notice in this ninth edition that we have updated the procurement and contracts content, mainly to reflect the success of NEC3 in the delivery of important infrastructure schemes like London 2012 and Crossrail.

The remainder of the text has been freshened up to reflect other changes such as the new RIBA Plan of Work 2013 and the RICS New Rules of Measurement, which emerged just after publication of the eighth edition of this text.

There are some basic concepts of cost planning that will remain constant (even in the advent of BIM), so familiar readers will be pleased to note that the core principles of Ferry and Brandon remain throughout.

Richard Kirkham
University of Manchester, June 2014

Acknowledgements

It was somewhat a relief when a young man by the name of Anas talked me into supervising his PhD, not only did I have the chance to work with a bright and enthusiastic young student, but one that knew a thing or two about quantity surveying. Anas has been a great help, leading the project to revise and update this book and his knowledge of Building Information Modelling (BIM) will have a material impact on the major changes that will shape the text over the coming decades.

I would also like to extend my thanks to colleagues at Manchester and, in particular, Ms Jenny O'Mara, she has to put up with a good deal from me but I count her among my closest of friends. Dr Paul Blackwell, ditto.

As is always appropriate, I must thank my wife Joanne and our three lovely boys Samuel Matthew, James Richard and George William.

And, finally, to Mr John Hardy (the in-law!) who provided me with the picture of The Shard, used in this new edition.

Nomenclature and Acronyms

Σ	the sum of (sigma notation)
P	the principal (in investment terms)
i	the rate of interest
n	time (ordinarily number of years)
r	discount rate or real discount rate (in social time preference rate (STPR) calculations)
ρ	catastrophe risk and pure time preference (in STPR calculations)
μ	elasticity of the marginal utility of consumption (in STPR calculations)
g	output growth
t	time
\approx	is approximately equal to
π	pi (3.142 to 3 d.p.)
σ	standard deviation
ACostE	Association of Cost Engineers
ASCII	American Standard Code for Information Interchange
BAA	British Airports Authority
BCIS	Building Cost Information Service
BIM	Building Information Modelling
BMI	Building Maintenance Information Service
BQ	Bills of Quantities
BSI	British Standards Institute
CATO	Computer Aided Taking Off System
CIOB	Chartered Institute of Building

CITE	Construction Industry Trading Electronically
CM	Construction Manager or Construction Management (in procurement)
COBIE	Construction Operations Building Information Exchange
CQS	Contractors Quantity Surveyor
D&B	Design and Build
DCF	discounted cash flow
DPM	damp proof membrane
EST	Energy Saving Trust
GFA	gross floor area
HMRC	Her Majesty's Revenue and Customs
ICE	Institution of Civil Engineers
ISO	International Standards Organisation
IT	Information technology
JCT	Joint Contracts Tribunal for the Standard Forms of Building Contracts
KM	knowledge management
MC	Management Contracting
MoD	Ministry of Defence
M&E	Mechanical and Electrical (services)
NAO	National Audit Office
NEC3	New Engineering Contract (third edition)
NPS	National Procurement Strategy
NPV	net present value
NR	Network Rail
NRM	RICS New Rules of Measurement
Nr.	Number (of)
OGC	Office for Government Commerce (now part of The

	Cabinet Office)
PFI	private finance initiative
PoW	plan of work
PPP	public-private partnership
PQS	Private Practice Quantity Surveyor
PV	present value
QS	Quantity Surveyor
RC	reinforced concrete
RIBA	Royal Institute of British Architects
RICS	Royal Institution of Chartered Surveyors
SMM7	Standard Method of Measurement of Building Works, seventh edition
TPI	tender price index
VAT	value-added tax (20% in the United Kingdom at the date of publication)
WLCC	whole life cycle costing