

BUILDING MAINTENANCE MANAGEMENT

Second Edition

Barrie Chanter

BSc(Hons) MSc MCIOB

and

Peter Swallow

Dip. Surv. Dip. Arch. Cons. FRICS FBEEng. FRSA

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Preface to the Second Edition

The initial impetus for the second edition of this text was to carry out a general review and update, along with the introduction of a new chapter to address facilities management. At the time of writing the first edition, facilities management was an emerging issue clearly impinging on the practice of maintenance management. Since that time its growth has been rapid.

So too, however, has been the rate of change of other important contextual issues. This persuaded us to broaden the scope of the second edition, and the new Chapter 1 goes beyond the original intentions, so as to more comprehensively embrace this changing context.

As the reader will appreciate, there are difficulties in this as the context continues to change. We have attempted to address the major contemporary developments in Chapter 1 initially, with consequential revisions of later chapters, notably in relation to maintenance organisations and execution of maintenance.

Other chapters have, we hope, been suitably refreshed and updated in line with current legislation, contractual forms, statistical data and government policy/guidelines.

As we comment in the footnote in Chapter 1, a major problem in compiling the text has been an environment of change that directly affects not only maintenance work but also sources of guidance and data. In particular, governmental re-shuffles of departments and personnel are troublesome when quoting sources. In general we have made the decision to retain the original references as at the time of their sourcing. We apologise for any confusion this may cause the reader, but felt it was the neatest option.

Barrie Chanter
Peter Swallow
January 2007

Preface to the First Edition

The growth in the significance of building maintenance as a proportion of the output of the construction industry has taken place against a backdrop of mounting pressure on new-build activity, and a growing awareness of the need to manage the condition of the nation's building stock more effectively. Paralleling these developments has been the increased application of new technology, permitting the more efficient use of data. Notwithstanding this, it is still the case that much maintenance activity takes place in a context that does not create a fully integrated approach to managing building performance and, thus, the full potential of many buildings is never wholly realised.

There is a wealth of information and informed comment available concerning the poor condition of much of the UK's building stock and this formed a natural starting point for Chapter 1. This reviews some of the currently available information, supplemented by an overview of the nature and significance of the repair and maintenance sector, within the context both of the construction economy and the national economy as a whole. The position of the maintenance department within the structure of the parent organisation is considered in Chapter 2 and this confirms the existence of a major weakness concerning clients' perceptions of the importance of maintaining the building fabric. We are indebted here to several individuals and organisations for providing valuable insights, from the perspective of the professional maintenance practitioner, which enabled us to analyse a range of typical organisational structures, both as exemplars and as an indication of the diversity of the thinking that exists. Our grateful thanks go to Stafford Taylor and his colleagues at Building Surveying Associates, together with all those others who, for reasons of confidentiality, it would not be appropriate to name here.

That poor detailed design affects building performance, and hence maintenance, is well known. Chapter 3 explores the design/maintenance relationship against the broader backdrop of the building procurement process. Many of the problems encountered in buildings stem from the brief development phase, where a failure to establish user requirements in sufficient detail results in the poor performance of the completed building. At the hand-over stage also there may be serious shortcomings, and more careful consideration must be given to providing the client with a proper building model to facilitate the effective management of the property. None of these crucial

developments can take place without a major shift in client attitudes, and professions working with the built environment must shoulder some responsibility for this in their failure to educate clients sufficiently. For too long they have evaded responsibility for adequately preparing uninformed clients, and the increasingly competitive pressures of competitive fee tendering are a serious obstacle in this respect.

The nature of maintenance work is examined in some detail in Chapter 4 because a full understanding of the types of maintenance work is necessary in order to appreciate the manner in which the maintenance workload is generated. However, this has to be tempered with a degree of realism and a recognition of the context within which it occurs.

A large quantity of data is generated by maintenance operations, and its management is a complex matter. Chapter 5, therefore, focuses specifically on information management and develops the notion of a building condition model. The technology to produce and maintain an electronic performance model now exists at a variety of levels of sophistication. A number of software packages are described to provide a flavour of current practice. We would like to thank many people for their help in this area. Steve Wilson of Minster General Housing Association; the staff of Building Surveying Associates; colleagues at De Montfort University, notably Donna Wilson, Tracey Burt and Tony Gibbs in Property Services, Stuart Planner in Landstaff, Chris Watts of the Building Surveying Department, who provided invaluable guidance throughout the preparation of this chapter, and Rob Ashton of the CAD Centre who acted as an excellent specialist IT advisor. In developing the chapter on information management we were aware of two major factors. Firstly, the pace of software development is now so rapid that it is almost impossible to keep abreast of it, and thus it is only possible to provide a limited overview. Secondly, it was also apparent that in separating out maintenance planning in Chapter 6, there was some risk of duplication. However, it was felt that maintenance planning warranted separate consideration in order to clearly define good principles. Chapter 5 and 6 therefore should be read together.

Chapter 7, which deals with maintenance contracts, logically precedes the consideration of maintenance execution, the subject of Chapter 8. Inevitably there is some overlap from our consideration of detailed execution into a number of other areas, which we recognise but justify on the grounds that it is the context that is important.

Overlying the whole subject of maintenance management is the issue of facilities management. Throughout the text we have made reference to this rapidly developing discipline, particularly with respect to information management and the construction of buildings, whether they are viewed as an investment, asset or facility in the widest sense. Perhaps the biggest service provided by the growth of facilities management has been to focus attention more sharply on, and to promote the profile and image of, the people who manage buildings.

It is hoped that this book will both act as an update for practitioners and provide an introduction for final year students, graduates and others encountering building maintenance for the first time.

In presenting this introduction we have thanked a number of people who have provided material or acted as sounding boards for some of our ideas, but the biggest thank you of all must go to our respective wives, Lesley and Lynne, to whom we dedicate this book.

Barrie Chanter
Peter Swallow

About the Authors

Barrie Chanter is a chartered builder with a background in civil engineering and project management. He joined the School of Architecture at De Montfort University, Leicester, in September 1984 and moved to the Department of Building Surveying in 1988, where he led the undergraduate course in Building Surveying for ten years. With the formation of the Faculty of Art and Design, he continued to teach Professional Practice to architectural students but in 2002 was appointed to a Faculty management role to co-ordinate all collaborative projects at home and overseas. He retired from the university in July 2006 but continues to act as an advisor for a number of educational institutions with particular reference to the development of foundation degrees and other collaborative projects between the HE and FE sectors.

Professor Peter Swallow is a chartered building surveyor who joined the full-time staff at De Montfort University, Leicester, in 1974, following a varied career in both public and private sectors. He ran the Department of Building Surveying until the reorganisation of the University which led to the formation of the Faculty of Art and Design, when he became a member of the Leicester School of Architecture. He co-ordinates the teaching of professional practice throughout the school, up to RIBA final part three. He has lectured widely to professional audiences on building defects, repair and conservation issues. He is the author of *Measurement and Recording of Historic Buildings* (second edition, with Sophie Jackson, Jonathan Godfrey and Ross W.A. Dallas, 2004).

Acknowledgements

In producing the second edition of this text we have been grateful for help from a number of key sources. We would in particular like to thank Intelligent Systems Ltd and FMx Ltd for information on their software, allowing us to refresh Chapter 6.

We also owe a debt for the input of a number of part-time Building Surveying students, who over the years have given us invaluable input from the practitioners' perspective. In particular we would like to single out Phil Derbyshire, Dave Massingham and John Pallett for the intelligence they provided on key areas in the local government and health sectors.

As before, we would like to thank our wives Lynne and Lesley for their forbearance and, as with the first edition, dedicate the text to them.

Abbreviations

ACE	Association of Consulting Engineers
ACOP	Approved Codes of Practice
ADB	Activity DataBase
ADC	Association of District Councils
ALMO	Arm's Length Management Organisation
AMP	Asset Management Plan
BEC	Building Employers Confederation
BIFM	British Institute of Facilities Management
BMCIS	Building Maintenance Cost Information Service
BMI	Building Maintenance Information Ltd
BVPP	Best Value Performance Plan
BVPI	Best Value Performance Indicators
CA	contract administrator
CAD	computer-aided draughting
CCPI	Co-ordinating Committee for Project Information
CCT	Compulsory Competitive Tendering
CDM	Construction (Design & Management) Regulation
CIC	Construction Industry Council
CIOB	Chartered Institute of Building
CITB	Construction Industry Training Board
CLASP	Consortium of Local Authorities Special Programme
CPA	Comprehensive Performance Assessment
CPIC	Construction Project Management Information Committee
DBFO	Design Build Finance Operate
DES	Department for Education and Science
DFEE	Department for Education and Employment
DfES	Department for Education and Skills
DLO	Direct Labour Organisation
DoE	Department of the Environment
DIY	do-it-yourself
DQI	Design Quality Indicator
DTI	Department of Trade and Industry

EHCS	English House Condition Survey
ERIC	Estate Return Information Collection
FM	facilities management
GDP	gross domestic product
GNP	gross national product
HASWA	Health and Safety at Work etc. Act
HEC	Higher Education Corporation
HRA	Housing Revenue Account
HSC	Health and Safety Commission
HSE	Health and Safety Executive
IC	Intermediate Building Contract
IT	information technology
JCT	Joint Contracts Tribunal
KPI	key performance indicator
LCC	life cycle cost
LEA	local education authority
LMS	Local Management of Schools
MHSWR	Management of Health & Safety at Work Regulations
MRA	Major Repairs Allowance
MTC	Measured Term Contract
MW	Minor Works Building Contract
NBS	National Building Specification
NDS	New Deal for Schools
NEDO	National Economic Development Office
NFHA	National Federation of Housing Associations
NHS	National Health Service
NPV	net present value
ODPM	Office of the Deputy Prime Minister
OMR	optical mark reader
PC	prime cost
PFI	Private Finance Initiative
POE	Post-Occupancy Evaluation
PPE	personal protective equipment
PPP	Public Private Partnership
PSA	Property Services Agency
PUWER	Provision and Use of Work Equipment Regulations
RIBA	Royal Institute of British Architects
RICS	Royal Institution of Chartered Surveyors
RPI	retail price index
RRFSO	Regulatory Reform (Fire Safety) Order
RSL	Registered Social Landlord
SBC	Standard Building Contract
SCALA	Society of Chief Architects in Local Authorities
SO	supervising officer