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Engineering 2011

Welcome to the new Palgrave Macmillan electronic Engineering 2011 Catalogue

This catalogue features some of our newest books, introducing you to the broad selection of titles we have available. Highlights of our textbook publishing for 2011 include *Fundamental Maths* by Mark Breach. With clear explanations and examples, this book makes maths manageable and accessible for all. Also look out for the new editions of quality texts including the second edition of *Property Investment* by David Isaac and John O'Leary – reflecting changes in government policy, the impact of globalization and the growth and decline of the buy-to-let market; *Construction Contract Claims* by Reg Thomas and Mark Wright – now completely up-to-date with law and practice including the latest amendments to the Construction Act; and *Engineering Mathematics Through Applications* by Kuldeep Singh – including new exam questions and extra online material it remains a comprehensive, student-friendly text.

Helen Bugler – Publisher
Neha Sharma – Assistant Editor
Rachel Fenwick – Marketing Co-ordinator

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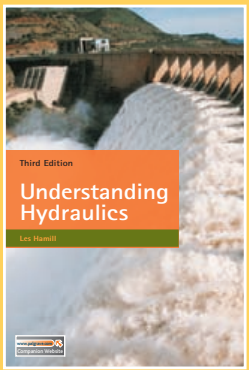
Key Highlights



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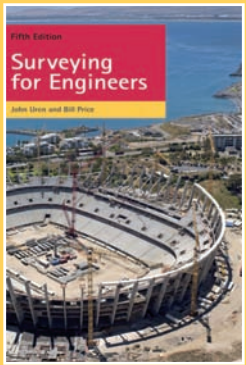

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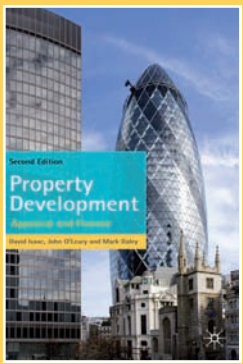

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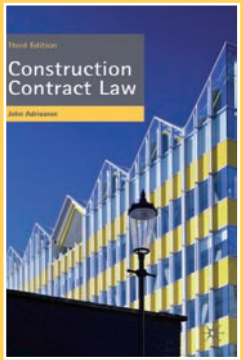

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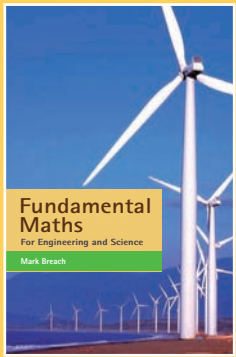

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= Inspection copy available

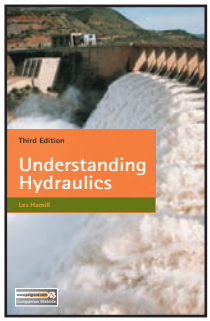
= companion website available

CIVIL ENGINEERING

Understanding Hydraulics

2011

3rd edition



Les Hamill, *Senior Lecturer in Civil Engineering, School of Marine Science and Engineering, University of Plymouth, UK*

Suitable for students from pre-degree through to all undergraduate level courses, this text can be used for classroom teaching or self-study. Its interactive features including numerous worked examples, self-test and revision questions help students solve problems and avoid mistakes. Also useful as a reference tool for industry.

Contents: Preface / Introduction / Hydrostatics / Pressure Measurement / Stability of a Floating Body / Fluids in Motion / Flow Measurement / Flow through Pipelines / Flow under a Varying Head: Time Required to Empty a Reservoir / Flow in Open Channels / Hydraulic Structures / Dimensional Analysis and Hydraulic Models / Turbines and Pumps / Introduction to Engineering Hydrology / Applications of Engineering Hydrology / Bibliography / Appendix 1: Derivations of Equations / Appendix 2: Solutions to Self Test Questions / Appendix 3: Graph Paper / Index

March 2011	656 pp	246x189mm
Paperback	£36.99	978-0-230-24275-3

Soil Mechanics

NEW

Principles and Practice

3rd edition

Graham Barnes, Independent Consultant, *formerly Senior Lecturer in Civil Engineering, Bolton Institute, UK*

'This is an excellent textbook. One of the best textbooks on Soil Mechanics. Clear and concise explanations of theory. Good drawings and diagrams to illustrate theory. Excellent worked examples and exercises for the student to practice.' - J.W. Glenn, Belfast Institute of Further and Higher Education, UK

Soil Mechanics provides civil engineering students with a clear understanding of the nature of soil and its behaviour, offering an insight into the application of principles to engineering solutions. In keeping with industry changes, this updated 3rd edition now incorporates Eurocodes with worked examples to demonstrate the theory in use.

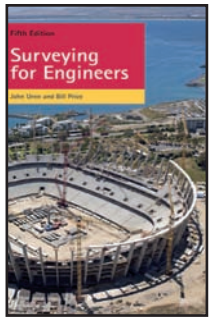
Contents: Soil Formation and Nature / Soil Description and Classification / Permeability and Seepage / Effective Stress and Pore Pressure / Contact Pressure and Stress Distribution / Compressibility and Consolidation / Shear Strength / Shallow Foundations: Stability / Shallow Foundations: Settlements / Pile Foundations / Lateral Earth Pressures and Retaining Structures / Slope Stability / Earthworks and Soil Compaction / Site Investigation

September 2010	544 pp	246x189mm
Paperback	£39.99	978-0-230-57980-4

Surveying for Engineers

NEW

5th edition



John Uren, *Senior Lecturer in Surveying, University of Leeds, UK and* **Bill Price**, *formerly Principal Lecturer in Surveying, University of Brighton, UK*

This classic text takes the reader through everything they need to know, from traditional methods through to the very latest technological developments. Ideal whether students are studying surveying as a separate discipline or as part of a civil engineering, building or construction course: accessible, well illustrated and comprehensive.

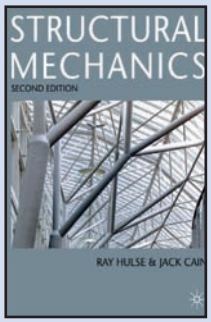
Contents: Preface / Acknowledgements / Introduction / Levelling / Angle Measurement / Distance Measurement: Taping / Total Stations / Traversing and Coordinate Calculations / Global Positioning System / GPS Coordinates and Transformations / Measurements, Errors and Specifications / Detail Surveying and Plotting / Setting Out / Circular Curves / Transition Curves / Vertical Curves / Earthwork Quantities / Appendix / Solutions / Index

March 2010	816 pp	246x189mm
Paperback	£40.99	978-0-230-22157-4

STRUCTURES

Structural Mechanics

2nd edition



Ray Hulse, *formerly Associate Dean, School of the Built Environment and* **Jack Cain**, *formerly Senior Course Tutor in Civil Engineering, both at Coventry University, UK*

Structural Mechanics has become, in the last ten years, an extremely successful, and widely adopted text for first year students of Engineering and Building.

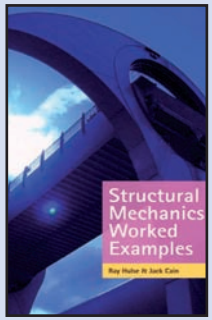
This second edition has been extended to cover the major part of the Structural Mechanics/Analysis syllabuses of most Civil Engineering courses up to the end of second year level. Five programmes have been added, and other sections modified, to make this the premier text in its field. Using a distinctive programmed learning format, it allows the student to work at their own pace, and assess their progress through the use of carefully constructed questions and graded practical problems.

Contents: Authors' Preface / How to Use this Book / Revision of the Fundamentals of Statics / Simple Structures (Loads and Reactions) / Pin-jointed Frame Structures / Shearing Forces and Bending Moments / Stress Analysis (Direct Stresses) / Bending Stresses / Combined Bending and Direct Stresses / Shear Stresses / Torsional Stresses / Stress Transformations and Mohr's Circle of Stress / Composite Sections / Beam Deflections and Rotations / Strain Energy / Virtual Work / Moment Distribution and Statically Indeterminate Structures / The Slope Deflection Method / Influence Lines / Elastic Buckling of Axially Loaded Compression Members / Plastic Analysis / Appendix

October 2000	592 pp	246x189mm
Paperback	£36.99	978-0-333-80457-5

Structural Mechanics: Worked Examples

Reissued edition



Ray Hulse, *Formerly Associate Dean, School of the Built Environment and* **Jack Cain**, *formerly Senior Course Tutor in Civil Engineering, both at Coventry University, UK*

This text provides students with brief summaries of key facts topic-by-topic and then a series of carefully paced and sequenced worked examples using real exam questions, with additional explanatory notes. The text will reinforce knowledge learnt in lectures and through companion textbooks, complete understanding, and help in preparing for exams.

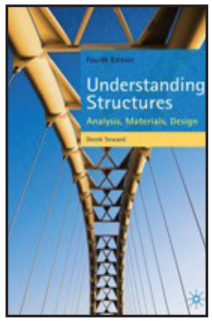
Contents: Equilibrium of Rigid Structures / Pin-jointed Frame Structures / Shearing Forces and Bending Moments / Direct Stress / Bending Stress / Combined Bending and Direct Stress / Shear Stress / Torsional Stress / Mohr's Circles of Stress and Strain / Composite Sections / Beam Deflections and Rotations / Strain Energy and Virtual Work

April 2009	304 pp	246x189mm
Paperback	£19.99	978-0-230-57981-1

Understanding Structures

Analysis, Materials, Design

4th edition



Derek Seward, *Professor of Engineering Design, Department of Engineering, Lancaster University, UK*

A highly illustrated text explaining the fundamentals of structural analysis, materials and design in one integrated volume. It focuses on the process of design using real data and avoiding a mathematical approach to encourage a feel and awareness for the physical behaviour of structures. Updated for the Eurocode.

Contents: Design / Basics / Materials / Loads / Pin-jointed Trusses / Tension / Beams / Compression / Combined Axial and Bending Stresses / Torsion / Connections / Arches and Portal Frames / Foundations and Retaining Walls / Deflection / Indeterminate Structures and Components / Further Reading

April 2009	376 pp	246x189mm
Paperback	£36.99	978-0-230-21263-3

Structures

Theory and Analysis

Martin Williams, *Lecturer in Engineering Science and* **Joseph Todd**, *formerly Lecturer in Engineering Science, both at University of Oxford, UK*

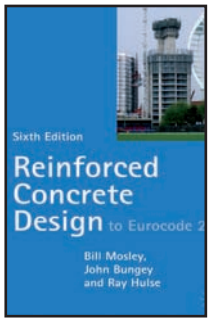
A comprehensive textbook that encompasses the full range of material covered in undergraduate courses in Structures in departments of Civil and Mechanical Engineering. The approach taken aims to integrate a qualitative approach - looking at the physical reality of phenomena - with a quantitative approach - one that models the physical reality mathematically.

October 1999	448 pp	246x189mm
Paperback	£39.99	978-0-333-67760-5

Reinforced Concrete Design

To Eurocode 2

6th edition



Bill Mosley, *formerly Senior Teaching Fellow, Nanyang Technological Institute, Singapore,* **John Bungey**, *Emeritus Professor of Civil Engineering, University of Liverpool, UK and* **Ray Hulse**, *Formerly Associate Dean, School of Science and the Environment, Coventry University, UK*

'Reinforced Concrete Design is a well-written update to a popular text book. It is comprehensive and will be a useful resource for students and practitioners alike.' ***Civil Engineering***

The sixth edition provides a straightforward and practical introduction to the principles and methods used in the design of reinforced and prestressed concrete structures. The book contains many worked examples to illustrate the various aspects of design involved. Fully revised and updated to conform to the final Eurocode 2.

Contents: Preface / Notation / Properties of Reinforced Concrete / Limit State Design / Analysis of the Structure / Analysis of the Section / Shear, Bond and Torsion / Serviceability, Durability and Stability Requirements / Design of Reinforced Concrete Beams / Design of Reinforced Concrete Slabs / Column Design / Foundations and Retaining Walls / Prestressed Concrete / Composite Construction

June 2007	424 pp	246x189mm
Paperback	£39.99	978-0-230-50071-6

Design of Structural Timber

To Eurocode 5

2nd edition

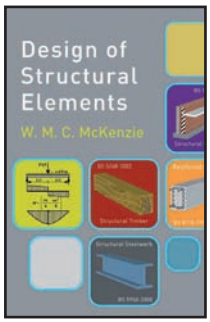
W.M.C. McKenzie, *Lecturer and* **Binsheng Zhang**, *Lecturer, both at School of Engineering and the Built Environment, Napier University, UK*

A source of information on the nature and inherent characteristics of timber and practical design in relation to the requirements of Eurocode EC5. In addition, it also has extensive explanations and worked examples relating to the loading codes for dead, imposed, snow and wind actions, i.e. EC and EC1.

Contents: Structural Timber / Design Philosophies and Eurocodes / Design Loading / Structural Analysis Techniques / Flexural Members / Axially Loaded Members / Members Subject to Combined Axial and Flexural Loads / Roof Trusses / Mechanical Fasteners / Overall Structural Stability

September 2007	520 pp	246x189mm
Paperback	£39.99	978-0-230-00777-2

Design of Structural Elements



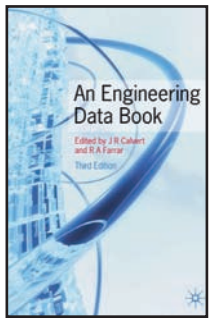
W.M.C. McKenzie, *Lecturer in Structural Engineering, School of the Built Environment, Napier University, UK*

Provides a detailed study of the process of design for structural elements, to the current British standards, in all four building materials: timber, masonry, concrete and steel. The scope of this text is wider than any existing text of this type and its numerous examples and diagrams make it an ideal course text.

October 2003	656 pp	246x189mm
Paperback	£33.99	978-1-4039-1224-4

An Engineering Data Book

3rd edition



J.R. Calvert, *Senior Lecturer, School of Engineering Sciences and* **R.A. Farrar**, *formerly Head of the Department of Mechanical Engineering both at University of Southampton, UK*

'Clear, logical, comprehensive and well indexed.' - Matthew Harrington, ***Times Higher Education Supplement***

'It is about time someone put this altogether in one resource book. Well done!' - Stephen Prior, Middlesex University, UK

This indispensable companion is a ready reference for commonly required formulae and data, for use in coursework and examinations and in professional practice. There is a new section for this edition - 'Earth and the Environment'. Units used are SI or multiples.

Contents: Symbols and Units / Physical Constants / Analysis / Analysis of Experimental Data / Mechanics / Properties and Mechanics of Solids / Properties of Materials / Earth and the Environment / Thermodynamics and Fluid Mechanics / Automatic Control / Electricity and Magnetism / Soil Mechanics / Structures / Symbols Index / Keyword Index

July 2008	112 pp	234x156mm
Paperback	£13.99	978-0-230-22033-1

BUILDING AND SURVEYING

Property Investment

2011

2nd edition

David Isaac, *Professor of Real Estate Management and* **John O'Leary**, *Senior Lecturer, both at School of Architecture and Construction, University of Greenwich, UK*

The book brings together three important aspects of property investment - strategies for investment, markets and appraisal. This new edition reflects changes in government policy on sustainability, the growth and decline of the buy-to-let market, and the impact of globalization.

Contents: Introducing Property Investment / Property Investment Markets / Property Investors / Types of Property Investment / The Principles of Property Investment Appraisal Techniques / The Application of Property Investment Appraisal Techniques / Refinements in the Use of Appraisal Techniques / Investment Performance and Portfolio Strategy / Portfolio Theory / Liquidation, Securitisation and REITs / Conclusion

Building and Surveying Series
Series Editor: Ivor H. Seeley

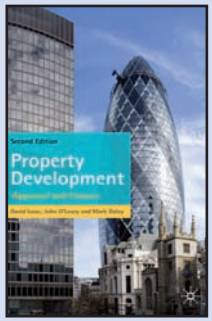
May 2011	352 pp	234x156mm
Paperback	£37.99	978-0-230-29024-2

Property Development

NEW

Appraisal and Finance

2nd edition



David Isaac, *Professor of Real Estate Management,* **John O'Leary**, *Senior Lecturer and* **Mark Daley**, Senior Lecturer, all at *University of Greenwich, UK*

Provides an overview to the context of property development so that students and professionals can examine the stages of development in the process - from initial consideration, to site finding, general appraisal, valuation, funding, construction and marketing, with a focus on two key areas of the process: appraisal and finance.

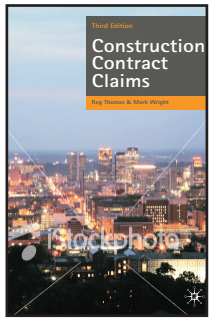
Contents: Preface / The Property Development Process / Development Appraisal / The Residual Valuation / Ground Rents and Partnership Schemes / Cash Flow Methods / Financing Property Development / The Classification of Development Finance / Structure of Property Finance / Design and Construction / Marketing Research, Marketing and Disposal / Bibliography / Index

July 2010	280 pp	234x156mm
Paperback	£35.99	978-0-230-20178-1

Building and Surveying Series
Series Editor: Ivor H. Seeley

Construction Contract Claims

3rd edition



Reg Thomas, formerly Executive *Director of James R Knowles and* **Mark Wright**, Barrister

Confronts the difficult problems that arise in claim situations. There is extensive reference to UK and international case law, and a systematic approach to various types of claims assisted by helpful, explanatory diagrams. Suitable for construction professionals and contractors, and postgraduate students.

Contents: Brief History of Construction Contracts and Case Law / Choice of Contracts / Tender and Acceptance / Monitoring Delay and Disruption Claims: Prevention / Formulation and Presentation of Claims / Sub-contractors / Response to Claims: Counter-claims / Avoidance, Resolution and Settlement of Disputes

Building and Surveying Series
Series Editor: Ivor H. Seeley

April 2011	336 pp	234x156mm
Hardback	£50.00	978-0-230-24285-2

Environmental Science in Building

6th edition

Randall McMullan, *Construction Physicist, Government advisor and Writer*

'...a very useful book for readers at many levels.'
- A.F.C. Sherratt, *International Journal of Ambient Energy*

This clear text studies the science, technology and services that relate to the comfort of humans and the environmental performance of buildings. Topics are arranged for easy reading, and assume a minimum experience of science and mathematics. This edition has been revised in line with new regulations, up-to-date practice and world-wide trends.

Building and Surveying Series
Series Editor: Ivor H. Seeley

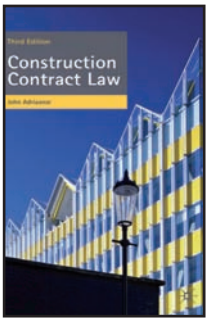
May 2007	400 pp	246x189mm
Paperback	£36.99	978-0-230-52536-8

Construction Contract Law

NEW

The Essentials

3rd edition



John Adriaanse, *Senior Lecturer in Construction Law, Centre for Surveying, South Bank University, UK*

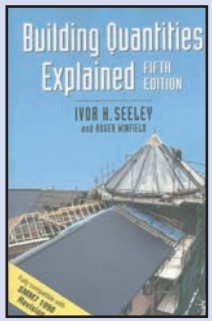
Covering the essentials of the subject, including how the law has developed, the reasoning behind key contract clauses and how contract law is applied in practice, this is an invaluable guide for students at undergraduate and postgraduate level. Thoroughly updated, it now includes amendments to the Housing Grants, Construction and Regeneration Act.

Contents: Table of Cases / Table of Statutes and Regulations / List of Abbreviations / Preface / The Nature of Construction Contracts / Outline of the Law of Obligations / The Formation of Construction Contracts / Consideration / The Role of the Architect and the Engineer / The Main Obligations of the Contractor / The Main Obligations of the Employer / Time and Provisions for Delay / Variations and the Right to Payment / Payment and Certification / Sub-Contracting / Supply Contracts / Design Liability of Professionals and Contractors / Liabilities Post-completion / Determination and Damages / Methods of Dispute Resolution / Index

July 2010	440 pp	234x156mm
Paperback	£31.99	978-0-230-23044-6

Building Quantities Explained

5th edition



Ivor H. Seeley, *formerly Emeritus Professor and* **Roger Winfield**, *formerly Faculty of Construction and The Environment, both at Nottingham Trent University, UK*

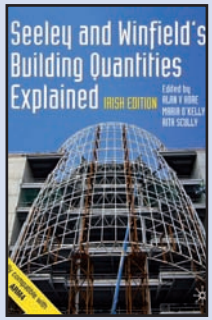
A long established text that aims to meet the needs of students studying building measurement in the early years of quantity surveying and building degree courses. It contains a careful selection of 28 worked examples embracing all the principal building elements and including alternative constructional methods to illustrate a range of approaches.

Contents: Preface / General Introduction / Measurement Procedures / Mensuration Applications / Groundwork and Foundations / Brick and Block Walling / Fires, Flues, Vents and Stone Walling / Floors and Partitions / Pitched and Flat Roofs / Internal Finishes / Windows / Doors / Staircases and Fittings / Water, Heating and Waste Service / Electrical Services / Drainage Work / External Works / Bill Preparation and Production / Appendix 1 Abbreviations / Appendix 2 Mensuration Formulae / Appendix 3 Metric Conversion Table / Appendix 4 Specification for Internal Finishes / Bibliography / Index

Building and Surveying Series
Series Editor: Ivor H. Seeley

December 1998	432 pp	234x156mm
Paperback	£34.99	978-0-333-71972-5

Seeley and Winfield's Building Quantities Explained: Irish Edition



Ivor H. Seeley, *formerly Emeritus Professor,* **Roger Winfield**, *formerly Principal Lecturer in Quantity Surveying and Director of Studies, Department of Surveying both at Nottingham Trent University, UK,* **Alan V Hore**, *Lecturer, Dublin Institute of Technology, Republic of Ireland,* **Maria O'Kelly**, *Lecturer and* **Rita Scully**, *Lecturer, both at Limerick Institute of Technology, Republic of Ireland*

This classic text now available for the first time in line with Irish codes is aimed at students studying building measurement in the early years of quantity surveying and building degree courses. It contains a careful selection of worked examples embracing all the principal building elements and including a range of approaches.

Contents: Preface / General Introduction / Measurement Procedures / Mensuration Applications / Substructure / Brick, Block and Stone Walling / Fires, Flues and Vents / Floors and Partitions / Pitched and Flat Roofs / Internal Finishes / Windows / Doors / Staircases and Fittings / Water, Heating and Waste Services / Electrical Services / Drainage / External Works / Bill Preparation and Production / Appendix I Abbreviations / Appendix II Mensuration Formulae / Appendix III Metric Conversion Table / Appendix IV Specifications for Internal Finishes / Bibliography / Index

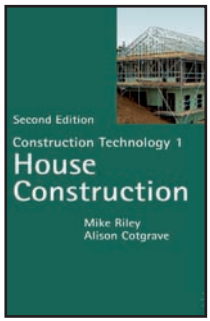
Building and Surveying Series
Series Editor: Ivor H. Seeley

November 2009	424 pp	246x189mm
Paperback	£39.99	978-0-230-58014-5

CONSTRUCTION TECHNOLOGY

Construction Technology 1: House Construction

2nd edition



Mike Riley, *Director, School of the Built Environment and* **Alison Cotgrave**, *Deputy Director, Department of the Built Environment, both at Liverpool John Moores University, UK*

'The topics are logically organized and presented in a manner that is easy to follow, and just about every relevant subject, from planning to completion, is included... It would be a useful addition to the library of anyone involved in house construction and would be relevant on a wide range of courses, from basic technician level to architectural degrees.' - Matthew Harrington, *Times Higher Education*

The second edition of this popular Construction Technology textbook on House Construction includes new material on sustainable and carbon neutral construction, on modern construction methods including prefabrication, on steel framed housing, and an update on building regulations.

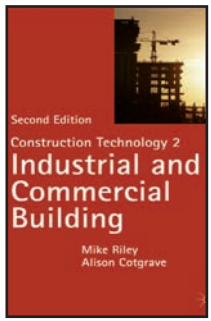
Contents: PART 1: INTRODUCTION TO HOUSE CONSTRUCTION / Introduction to House Construction / Preparing to Build / The Building Process / PART 2: BUILDING SUBSTRUCTURE / Foundations / Walls Below Ground / Ground Floors / PART 3: BUILDING SUPERSTRUCTURE / External Walls / Upper Floors & Stairs / Internal Division of Space: Walls & Partitions / Roofs: Structures and Coverings / Windows and Doors / Internal Finishes

Building and Surveying Series
Series Editor: Ivor H. Seeley

May 2008	352 pp	246x189mm
Paperback	£34.99	978-0-230-20362-4

Construction Technology 2: Industrial and Commercial Building

2nd edition



Mike Riley, *Director, School of the Built Environment and* **Alison Cotgrave**, *Deputy Director, Department of the Built Environment, both at Liverpool John Moores University, UK*

Both a great reference and a lively and genuine learning resource complete with case studies, review tasks and comparative studies. This edition is revised throughout including material on green buildings, greater emphasis on modern methods of construction, and an update on building regulations.

Contents: Preface / PART I: PREPARING TO BUILD / Functions and Requirements of Industrial and Commercial Buildings / The Building Process / Preparing to Build / PART II: BUILDING SUBSTRUCTURE / Foundations / Walls Below Ground and Basement Construction / Ground Floors / PART III: BUILDING SUPERSTRUCTURE / High-rise Buildings / Long-span Buildings / Fire Engineering Design / External Walls and Claddings for Multi-storey and Large-span Commercial Buildings / Upper Floors and Internal Access / Roof Construction / Internal Division of Space and Integration of Services / PART IV: SUSTAINABLE CONSTRUCTION AND DESIGN / Green Buildings / Index

June 2009	440 pp	246x189mm
Paperback	£34.99	978-0-230-57571-4

Construction Technology 3

The Technology of Refurbishment and Maintenance

Look out for the new edition in spring 2011 – revised and updated to include new material and reflect current issues including flood damage

Mike Riley, *Director, School of the Built Environment and* **Alison Cotgrave**, *Deputy Director, Department of the Built Environment, both at Liverpool John Moores University, UK*

Designed in a structured, directed format to help develop understanding, rather than providing a simple source of information. Uniquely it covers the technology of refurbishment in both housing and large-span multi-storey commercial and industrial buildings, focussing on the environmental impact of refurbishment rather than new build.

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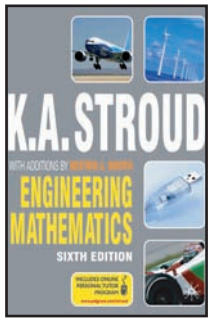

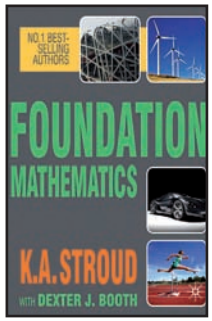

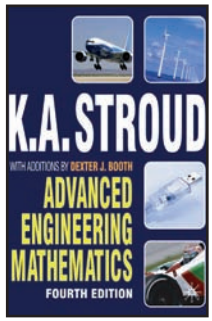

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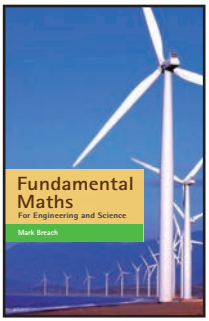

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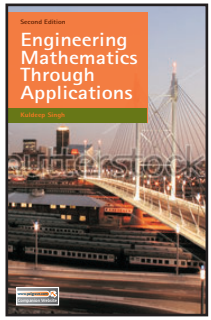

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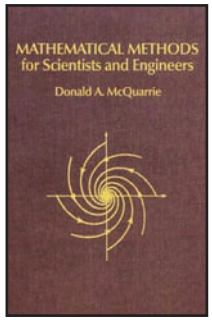

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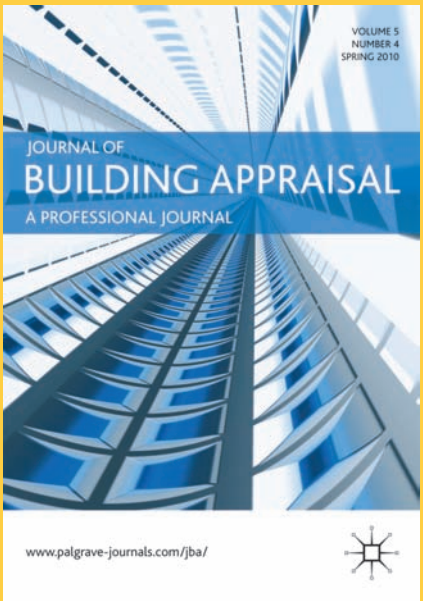

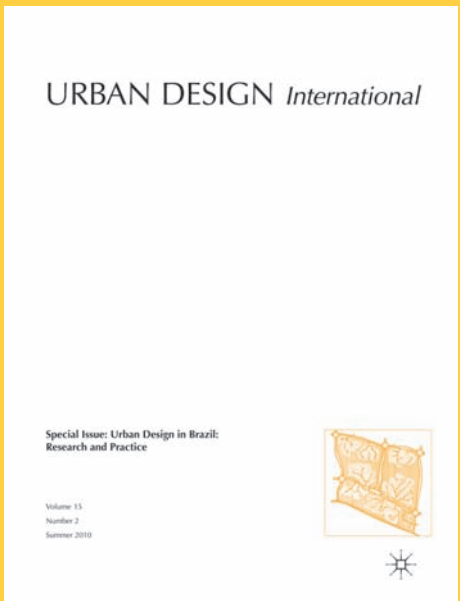

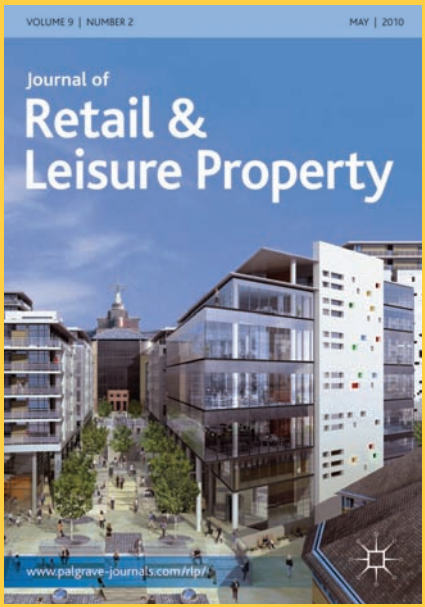

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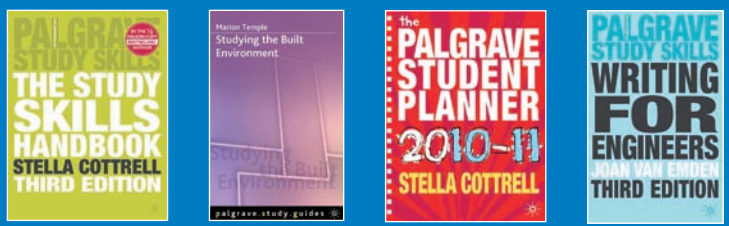

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