Book review

Civil Engineering Procedure, 7th Edition

ICE Publishing, London, UK, 2016, ISBN 9780727760692, £25-00, 174 pp.

The seventh edition of *Civil Engineering Procedure* provides a timely update of this important textbook, which provides an introduction to project development. This book continues to be a very valuable reference for students and candidates undertaking their Institution of Civil Engineers (ICE) professional review, just as it has been for many generations of candidates since the first edition published in 1963.

There are 11 chapters with clear titles and these discuss every aspect of the project cycle: the concept, feasibility, design, construction and commissioning, operations and maintenance, as well as the financial, managerial and legal aspects. A new feature is a number of case studies provided to illustrate pertinent issues in the different chapters. There are also many good illustrations and photographs, and each chapter includes an updated bibliography.

The term 'special purpose company' replaces the term 'special purpose vehicle', while the term 'project manager' has been used in place of 'promoter's manager', a more commonly used word; the new terminology provide clarity and consistency with other construction industry related publications.

Chapter 4 covers project strategy, includes a section on procurement and further elaborates on the role of the project manager. A section on 'risk feedback' has been added and this gives a reflection on the impact of decision-making. The section on 'health and safety' has been expanded to include 'welfare' to show how these are interconnected. The chapter also includes regulations that provide the legal basis for the design, construction, maintenance and decommissioning of civil infrastructure projects. Under the section on contracts, public-private partnerships (PPPs) have been expanded and replace the term 'private finance initiative' (PFI). Furthermore, the Local Government Act 1999 issue that requires local authorities to procure projects and services through the best value regime has been explained and brought into context.

Chapter 5 is about design and includes the attributes of a competent engineer in relation to the Joint Board of Moderators, which regulates universities in the UK, and emphasises that this is a creative process involving both technical and social skills. More recently, with the advent of the Construction Design and Management (CDM) Regulations 2015, the term 'principal designer' replaces the term 'CDM coordinator'. New sections on sustainability, waste reduction and low carbon design, emphasis on (the sustainability assessment, rating and awards scheme); CEEQUAL methodology, whole-life cost, building information modelling and ethical conduct have also been added.

Chapter 6 deals with construction contracts and has a well-explained section on the New Engineering Contract Third Edition (NEC3) 'suite of contracts' (that have been endorsed by the ICE since 2011), the joint contracts tribunal together with the International Federation of Consulting Engineers, the Institution of Chemical Engineers, the Institution of Mechanical Engineers and the Institution of Engineering and Technology forms of contract, as well as the standard form of contract for PFI and PPP projects. This section gives a good summation of the forms of contract.

Planning and control of construction is highlighted in chapter 7; it explains why the programme of construction is essential given the NEC3 conditions and includes detailed information on this. Chapter 8 on construction management organisation also follows the NEC suite of contracts and deals with the roles of the key staff.

Chapter 9 deals with inspection, testing, commissioning and handover, and provides a very good case study of the Manchester Metro link upgrade.

Chapter 10 on operations and maintenance has an important addition – asset management.

Finally, the last chapter on building information modelling that details the managed approach to the collection and exploitation of information, across the life cycle of a built environment asset, is new and is a timely worthy addition to the contents of the latest edition of this book.

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