Initial Professional Development for Civil Engineers

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Second edition

Patrick Waterhouse, Bowdon Consulting Ltd, UK
with **H. Macdonald Steels**

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Preface

The Institution of Civil Engineers' (ICE's) requirements for professional qualification are set out in its document *Professional Review Guidance*.

As a licensee of the Engineering Council, ICE is required to follow the *UK Standard for Professional Engineering Competence*, 3rd edition (*UK-SPEC*). The attributes sought by ICE at the conclusion of a trainee's initial professional development reflect the standards demanded by the Engineering Council.

This book is written to assist trainees and those responsible for their development in reaching the attributes demanded by ICE.

This book is based on the requirements of *UK-SPEC* and *Professional Review Guidance*, as set out in the editions of those documents available for download from their respective publishers' websites on 15 August 2017.

Acknowledgements

I have been fortunate to draw on the help, support and challenge of many people in the industry. This support has been necessary to ensure that this book reflects the broad church in the profession.

I am indebted to the people that formed my panel of consultees, Sergio Alarcon, Simon Crisp, Amanda Frizzel, John Hodgkins, Philippa Jefferis, Sarah Loughrey, Shiona MacDonald, Emma McNab, Brenda O'Loan, Andy Thompson, Alison Waterworth and Lawrence Webb.

Three members of the Institution's staff have assisted me. I gratefully acknowledge the assistance of Roger Chantrelle and Gillian Elvy, who have generously allowed me to learn from their frequent contacts with trainees.

Another Institution employee, Malcolm Peake, has provided heavyweight input to the technical aspects of the book. I have relied heavily on Malcolm's energy, enthusiasm and input, particularly with respect to the two chapters on engineering knowledge and engineering application. Malcolm's knowledgeable approach to these two attributes in particular has helped bring those two chapters fully up to date with current engineering practice. He has also explained ICE's specific requirements for trainees in Chapter 4.

Last, but certainly not least, I have to pay tribute to Mac Steels, the author of the first edition of this book. Mac's reputation precedes him among trainees and their employers of a certain age. Mac was responsible for the Institution's activities in the north west of England for over a decade but his presence was felt much farther afield with his lectures, writing and publishing. His professionalism and passion for training were combined with the tact and diplomacy for which we Yorkshire folk are renowned. Mac's ideas, developed from his career in highway construction and local government from the 1960s through to the 2000s, still often stand the test of time and many have survived into this edition. His support, challenge and criticism of my work in this book have been given generously and I would have faced a very different challenge without his input.

I have contributed to the Institution's professional reviews for nearly twenty years. I have learnt, and continue to learn, from the candidates in front of me and my colleagues. I am repeatedly impressed by the calibre of

those seeking qualifications; their professionalism bodes well for the future of our profession.

Notwithstanding the cast of people mentioned here, I take full responsibility for the contents of this book and any mistakes herein are, of course, mine.

Patrick Waterhouse
January 2018

List of abbreviations

BAME	Black, Asian and minority ethnic
BIM	Building information modelling
CDM	Construction Design & Management Regulations 2015
CPD	Continuing professional development
CQI	Chartered Quality Institute
CTV building	A building in Christchurch, New Zealand (Canterbury Television headquarters)
ICE	Institution of Civil Engineers
IPD	Initial professional development
LGBT	lesbian, gay, bisexual, transsexual
MICE	Member of ICE (postnominal)
PPE	Personal protective equipment
RAEng	Royal Academy of Engineering
SCE	Supervising civil engineer
VAK	visual, auditory, kinaesthetic