Cite this article

Smith SD and Beckett C (2019)

Book review.

Proceedings of the Institution of Civil Engineers – Management, Procurement and Law **172**(1): 38–39, <https://doi.org/10.1680/jmapl.18.00054>

Book Review

Paper 1800054

Received 07/12/2018; Accepted 10/12/2018

Published online 09/01/2019

ICE Publishing: All rights reserved

Book review

Initial Professional Development for Civil Engineers, 2nd edn

Patrick Waterhouse. ICE Publishing, London, UK, 2016, ISBN 978-0-7277-6098-2, \$42.00, 115 pp.

Simon D. Smith and Chris Beckett are both lecturers within the School of Engineering at the University of Edinburgh. Smith has nearly 30 years of industry and academic experience and gained chartership in 1995; Beckett has 10 years of academic experience and is currently undertaking initial professional development (IPD) towards chartered engineer status. This book review is the perspective of two people involved in IPD – the mentor and the mentee.

Simon D. Smith, ICE mentor

Patrick Waterhouse starts this book by highlighting that IPD, from the perspective of the Institution of Civil Engineers (ICE) at least, is essentially the gap between education and professional qualification. This ‘gap’ – the space that needs to be filled by a graduate engineer in order to turn into a professional engineer – is tremendously daunting for the vast majority of graduates embarking on the process. Yet they are fortunate to have a very well-established network of resources and mentors to guide them along this journey, and Waterhouse’s book can be considered a key staple of this. If ICE’s requirements for IPD are the plans for the bridge across that gap, then the book is how those plans are interpreted and, in the opinion of these reviewers, is almost essential reading for not only trainees, but also their supervising civil engineers, their mentors and their delegated engineers. It is the second edition (the author making clear in his acknowledgements that it is built on the earlier first edition authored by H. MacDonald Steels) and has been prepared to take into account the changes and revisions in the IPD process since 2011.

It is not a lengthy book (115 pages) and is very pragmatically written in a style that could be thought of as a friendly uncle putting his arm around the daunted trainee and gently showing them what lies ahead and how to interpret the requirements. IPD is firmly centred on the achievement of the attributes, and, thus, the book is structured firmly along those lines. The opening chapters provide a very insightful unpacking of what a professional civil engineer is, which skills they will need, the mindsets to adopt and the external factors that may affect their ability to act professionally. Chapter 3 focuses on the nature of learning that needs to be adopted, being aware that in the workplace – where IPD takes place – learning is a concept subtly different from that which graduates will have experienced at university. In this reviewer’s opinion, this is a vital chapter – it tells the trainee that they must appreciate where their learning is to come from and that finding this learning is very much a responsibility that they take for themselves, being of course quite different from the highly structured and curriculum-centred learning that trainees will have experienced at university. Chapter 4 outlines what ICE wants from its trainees and what the IPD process looks like. The final very short (one-page) chapter ponders the question of when a trainee should take the Professional Review – how, in other words, does the trainee know when the IPD is complete? The reviewer is not convinced that this chapter is providing much – it acts as a kind of closing summary of the book itself, and, in reality, the trainee will receive much guidance and advice from their mentors on when the IPD is complete. The trainee, after all, will have had their attributes ‘signed off’, a state of training that is not really alluded to in the chapter and only briefly mentioned in chapter 4.

The remainder of the book, chapters 5 to 13, cover each of the attributes in turn, providing suggestions and guidance on how the trainee may gain the various levels of achievement for each attribute. It is these chapters that will provide perhaps the greatest value to the trainee, allowing them to understand that the attributes are all quite comfortably achievable in the day-to-day activities of anyone working in a professional engineering environment. There are examples and references to the type of activities that may contribute to the attribute achievement, although the text never attempts to define prescriptively what exactly must be done. These examples are all phrased in familiar terms to any graduate engineer – ‘design codes’, ‘temporary works’, ‘quality’, ‘tendering’, ‘contracts’ and so on – making the work accessible to those engineers. However, it is here that the reviewer must comment on what from his perspective is the only real weakness of this book. As an academic who gained his IPD through research and who now mentors other academics in achieving chartered or incorporated status, it is clear the book is written from the perspective of a practising, industry-based engineer. To those engineers, who of course make up the vast majority of trainees, the book could be considered an essential part of their training. The academic engineer, on the other hand, may need additional help and thinking in order to understand how they are able to demonstrate the attributes. The book makes not a single reference to research or academia, thus ignoring a not insignificant portion of the ICE community. Thus, it is useful to understand the view of just such a trainee, an academic colleague of the reviewer who is embarking on his own journey to filling the gap that is IPD.

Christopher Beckett, ICE CEng trainee

Although the reviewer could no longer consider himself a ‘graduate’, he has just embarked on a journey towards Member of ICE (MICE) chartership and so once again finds himself in those shoes. The reviewer’s career as an academic has taught him to think and approach problems in a certain way. Specifically, the reviewer focuses more on the outcome of an activity than the processes that he undertook or developed to achieve it. Superficially, this may seem a useful frame of mind in which to approach demonstrating the MICE attributes. For example, a trainee might attempt to demonstrate an understanding of, say, management and leadership by listing committee memberships or positions of responsibility. Indeed, this was the reviewer’s initial approach to attempting to document his professional development. In that light, Waterhouse provides an excellent introduction to the mindset needed when looking to charter; the MICE attributes challenge trainees to interrogate their own experiences and character to demonstrate how they developed the required qualities, rather than simply to list achievements. In other words, the processes that the trainees follow, and how they shape their understanding, are as important as the outcomes themselves.

While the reviewer’s colleague Simon D. Smith notes that it is clear that this work has been written from the perspective of industry practitioners and that there is no explicit advice within the work for the academic trainee, Waterhouse does start by identifying the critical change in thinking between university and professional study, being the transition from guided teaching to self-driven learning. The latter should not be a foreign concept to graduates who have completed research projects, but this will likely be the first time that their skills have been tested in the ‘real world’. Nevertheless, it would be useful to understand a little more on how the academic or research trainee might interpret the ICE attributes.

Waterhouse highlights that different situations call for different learning styles. For example, although facts can be learnt from textbooks, an understanding of how trainees function in different environments, and indeed learning how to learn, is also an essential component when addressing the desired attributes. Waterhouse's message that everyone learns and processes information differently frames the rest of his commentary. In this way, the book is much more useful than a simple breakdown of what each attribute demonstrates. He does his duty by going through each attribute in turn and discussing what

relevant experience might look like, but in the spirit of acknowledging that everyone thinks and learns differently, and the book's overall aim is to teach trainees to question their development; whether they agree with the author's interpretations is left up to them.

Simon D. Smith
Christopher Beckett