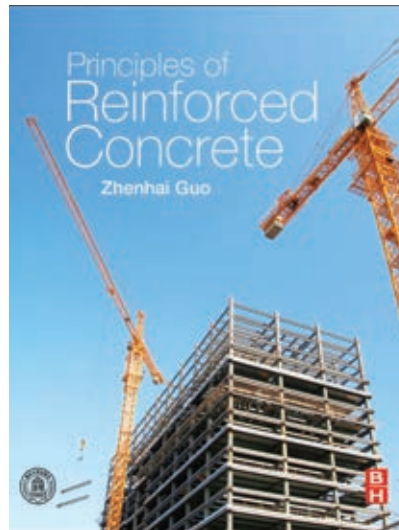


Review



Adrian Long finds this to be a well-written and useful book, which will be of value to structural engineers involved in reinforced concrete design and, particularly, to lecturers thanks to its extensive list of references to research papers.

Principles of Reinforced Concrete



Author: Zhenhai Guo

Publisher: Butterworth-Heinemann

Price: £95

ISBN: 978-0-12-800859-1

The author, **Professor Zhenhai Guo**, is to be congratulated on attempting to give a comprehensive overview of reinforced concrete in a single volume. Here it should be noted that the book is based on the lecture notes used by Guo in various undergraduate and postgraduate courses at Tsinghua University, Beijing. Earlier versions, in Chinese, are used in many universities in China and this encouraged Guo to produce an English edition.

This comprehensive 589-page book is made up of four parts and includes 20 chapters. Part 1 focuses on the mechanics of concrete as a material and includes information on multi-axial strength and various constituent relationships. Part 2 covers the interaction

of concrete and reinforcement, including bond, the effects of confinement, shrinkage and creep. Part 3 considers the strength and deformation characteristics of different structural members and includes topics such as flexural stiffness and deformation, strength under shear forces and torsion. Part 4 gives a relatively concise overview of the resistance of reinforced concrete to seismic loading, fatigue, explosions and fire. There is also a short section on durability.

Earlier in this reviewer's career, while lecturing in Canada, I found that the single text on *Reinforced Concrete Fundamentals* by Phil Ferguson¹ was an excellent source of background material. This book may not have the same impact as Ferguson's had in North America. However, it will be a useful source of information for lecturers who will find the list of over 400 references, mostly to relevant research papers, to be invaluable. Also, it could be a first port of call for structural engineers involved in reinforced concrete design, even in parts of the world where American or Chinese codes of practice are not utilised. In summary, while it is not a design manual, it is nevertheless a useful text, which is well written and illustrated.

Reference

- 1) Ferguson P. M., Breen J. E. and Jirsa J. O. (1988) *Reinforced Concrete Fundamentals* (5th ed.), Chichester, UK: Wiley

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Adrian Long is Emeritus Professor of Civil Engineering at Queen's University Belfast and the author of over 350 technical papers, mainly on reinforced concrete, prestressed concrete and durability of materials. Before retirement in 2006, Adrian was Head of the Department of Civil Engineering and Dean of the Faculty of Engineering. Since retirement, he has been involved in research and development with Macrete on the 'FlexiArch' system which he patented in 2004.

"IT COULD BE A FIRST PORT OF CALL FOR STRUCTURAL ENGINEERS INVOLVED IN REINFORCED CONCRETE DESIGN"

