

Book reviews

Vorlesungen über Massivbau Teil 1: Grundlagen über Massivbau

Lectures on civil engineering
Part 1: Basic principles in the design of reinforced concrete

F. Leonhardt and E. Mönnig

Published by Springer-Verlag, Berlin, Heidelberg, New York. 1973. A4, limp covers. pp. 303. Price: DM 29.

This book consists of lecture notes used by the authors at the Civil Engineering Institute at the University of Stuttgart. They have been developed and improved since being first used in 1957. The reason for publication is that they have been widely copied and used by students at other German institutions and also by practising engineers—these last presumably wishing to bring themselves up to date with current practice.

The book is 303 pages long, including 270 diagrams, and the first 60 pages cover basic properties of materials, including an authoritative section on bond. It is astonishing that it has taken until now to establish a sound understanding of bond, since without bond reinforced concrete would be impossible. The next 40 pages illustrate actual behaviour of reinforced concrete elements and discuss principles of safety.

The remaining 200 pages are concerned with establishing design methods and rules for ensuring adequate strength in bending, bending and compression, shear and torsion, with a final section discussing the problem of buckling in detail. Through the many diagrams the systems of internal forces that develop and the modes of deformation are clearly illustrated.

The volume makes no attempt to treat the problems of deflection and cracking, apart from stating that limits for these should be agreed between engineer and

client—this is surprising in view of the specific recommendations in the German Code on these matters. In fairness, the foreword does make it clear that the book is restricted to considerations of strength, but this should have been made clear in the title as well. It would also be helpful to know the intended content for future volumes.

The scope and detail of the notes is impressive and will undoubtedly be of service to students and practising engineers. One must question, however, whether all of it can be properly included under the definition of basic principles.

Going further on this point, your reviewer cannot see that students could possibly study and absorb all the material without spending a great deal of time on it. It must be inferred that the University of Stuttgart course specializes in concrete, since much of the treatment of buckling in the notes is of a general nature and would apply equally well to timber or steel construction. But, even if this is so, the reviewer would reckon the weight of material too great.

One would conclude that these notes are probably unsuitable for direct use in British- or American-style courses. The technical information and the methods of presentation are, however, well worth study by lecturers in any country.

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