

of reinforced concrete slabs of many different kinds from the extensive literature on the subject.

Section III reports the results of tests for determining the ultimate strength of reinforced concrete slabs. These tests were carried out at the Technological University of Berlin in 1960 and 1961. The results are found to be in good agreement with the values calculated on the basis of the yield-line theory.

The book contains a large number of references. It also has a very detailed table of contents, and for this reason no alphabetical index has been provided.

From the structural engineering designer's point of view the chief merit of the book lies in its comprehensive and well presented treatment of the yield-line theory. A wide variety of slab shapes, restraint conditions and types of loading are examined. This section of the book runs to over two hundred pages and is evidently the result of the assiduous sifting of large quantities of information published elsewhere. The appreciative reader cannot but feel a sense of gratitude to the authors for placing so much information, some of it of considerable practical value, within his grasp—to be had for the asking, as it were.

Concrete Practice : Volume I

by R. H. Elvery

Published by C.R. Books Ltd, London. 2nd edition (revised). 1963. pp. x, 216. Price 35s.

Concrete Practice : Volume II

by R. H. Elvery

Published by C.R. Books Ltd, London. 1st edition. 1963. pp. 331. Price 45s.

These two books, designated "For the Student" and "For the Engineer" respectively, are not as inseparable and inter-dependent as many two-volume works, and the Preface to the second volume points out that enough overlapping material has been included to enable it to be complete in itself for those who have already received an elementary training in civil or structural engineering.

Volume I has changed little since it first appeared in 1958 and most of the criticisms made in our review then (see *Magazine of Concrete Research*. Vol. 11, No. 31. March 1959. p. 45) unfortunately still apply. The second and larger volume deals with the subject in greater detail and attempts to combine the three main aspects—namely the basic principles of concrete composition and behaviour, the theory of structural concrete design and the practical methods of construction for this design—so that civil engineering students

and professional engineers can become acquainted with current practice. The author has realized the difficulty of giving an exhaustive account of such a wide subject and has confined himself to the fundamentals only. However, the reader can easily pursue a topic further by means of the references to relevant specialist literature; these references, which are listed at the end of each chapter, total almost two hundred. That oft-neglected subject, mix design and quality control, receives the most detailed attention of any of the fourteen chapters and the principles underlying the choice of "minimum" strengths for various degrees of supervision are carefully explained.

The over-all impression left by the book is one of a careful and well-informed presentation of the essentials of what can be a most complicated subject.

Hanging roofs

edited by N. Esquillan and Y. Saillard

Proceedings of the I.A.S.S. Colloquium on hanging roofs, continuous metallic shell roofs and superficial lattice shell roofs, Paris 9-11 July 1962

Published by North-Holland Publishing Company, Amsterdam, 1963. pp. xi, 335. Price 50 guilders.

Few engineering forms combine the imaginative design of the architect and the structural skill of the engineer so well as the hanging roof, where beauty and strength blend as one. Regrettably, however, few engineers or architects ever have the opportunity of being associated with such structures. Of the remainder, those who are enthusiastic enough have to be satisfied with gathering information second-hand and piecemeal from magazines and journals. For them the publication of this book which contains 39 papers (21 of them in English) and discussion by many engineers of international repute is long overdue.

The papers deal with roofs in three main categories: hanging or suspended roofs, metallic shells and metallic space lattice roofs. The majority of the papers give examples of completed structures some of which are masterpieces of engineering creation. A lot of the space is devoted to structural form, methods of calculation and constructional details but the proportion of each is nicely balanced so that the interest is continually stimulated. In addition there are papers on aerodynamic effects, model testing and the physical properties of the materials used. Unfortunately, as is frequently the case, the question of economics is rarely mentioned.

The volume as a whole is well set out and the text, figures, and illustrations are of a high standard. It is highly recommended to both engineers and architects.