

**REINFORCED  
CONCRETE DESIGN.  
VOL. II. PRACTICE**

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Reinforced Concrete Design. Vol. II. Practice by Oscar Faber

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**OSCAR FABER**

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VOL. II. PRACTICE

BY

OSCAR FABER

O.B.E., D.Sc., A.M.Inst.C.E., A.C.G.I., ETC.

CONSULTING ENGINEER

CHIEF ENGINEER TO TROLLOPE AND COLLS, LONDON

CONSULTING ENGINEER TO H.M. OFFICE OF WORKS

CIVIL ENGINEER TO THE CALICO PRINTERS ASSOCIATION

HEAD OF ENGINEERING SIDE OF ARCHITECTURAL  
ASSOCIATION SCHOOL

COUNCIL MEMBER CONCRETE INSTITUTE

UNIVERSITY OF CALIFORNIA

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1920

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## PREFACE

THE reception of Volume I of *Reinforced Concrete Design* has been very gratifying, particularly as appreciation seems to increase rather as the years roll on, possibly as the subject matter is more universally known and used.

Parts of Volume I the author does not feel he can add to with great advantage, particularly the portion dealing with the resistance of beams, slabs, and columns to bending, compression and tension, and combinations of these actions.

When it comes to the determination of bending moments in beams and columns, the mathematical treatment and resultant formulae are given in Volume I, but the author has found that few designers have the time and ability to apply these formulae as presented. He has also found that while designers have little difficulty in calculating resistances of members to known straining actions, using the treatment of Volume I, and will therefore be meticulously accurate not to exceed safe stresses by a few per cent., yet their inaccuracies in estimating the moments and other straining actions, where errors of fifty and even a hundred per cent. are not uncommon, throw this accuracy to the winds, and make it quite misleading and fictitious.

These considerations made it clear to the author that in his second volume he must deal more fully and principally with the ready determination of correct moments in beams and columns, and he has no apology to offer for the fact that this second volume so largely concerns itself with these matters.

It has, however, been his aim, not only to secure much greater accuracy in this important matter, but also to effect for the designer an *important saving of time* in his everyday practice. It is for this reason that Volume II has been named *practice* and Volume I

*theory*, in that, while much of the basis of Volume II either exists or can be derived from Volume I, it is in Volume II given in a form convenient for ready reference.

To this end, actual bending moment diagrams for beams are given for any number of spans, any ratios of live load to dead, any conditions of loading, any fixity with monolithic columns of different relative stiffnesses, and in any practical case, the designer will find the appropriate curve, from which he has simply to read off the maximum positive and negative moment to provide against at any distance along the span.

No apology is needed for the very simple curves from which the moments in columns can be derived by simple inspection. At last the importance of these moments is coming to be recognized and people who ignore them to-day are guilty of criminal negligence.

With the object of still further reducing arithmetical and mathematical labour to a minimum, useful series of standard beams and columns are given with all their properties fully evaluated. From these, the calculation of the important quantity  $\frac{KC}{B}$  is very readily obtained, and on this so much depends. The use of standard beams and columns also has many obvious practical advantages.

The author, since the publication of Volume I, has made many researches on the question of shearing resistance of concrete beams, which have resulted in an understanding of this subject so much more complete that a chapter is devoted to a résumé of the results, and the fuller treatment can be referred to if desired.

The moment curves given in Appendix II of continuous beams, with the stiffness of columns taken into account, are considered by the author to make this important subject within the scope of practical usefulness for the first time, and to enable a very important element of strength and economy to be given its proper value by inspection.

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The treatment of unequal spans is also quite original, and, it is hoped, enables these quite common cases to be dealt with almost by inspection, whereas hitherto very grievous errors have been incurred through the complete inadequacy of any known treatment not too onerous for practical use.

OSCAR FABER.

VALHALLA,  
FARTHING DOWN,  
COULSDON, SURREY.

*August, 1920.*





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