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BOOK REVIEWS.

The Elements of Specification Writing.—By Richard Shelton Kirby, C.E., Professor of Civil Engineering, Pennsylvania College. New York: John Wiley & Sons, Inc. London: Chapman & Hall, Limited. Publishers' agents for Canada, Renouf Publishing Company, Montreal. Cloth, 6 x 9 ins.; pp. vii. + 125. Price, \$1.25 net.

Reviewed by C. R. Young, B.A.Sc.

Although a number of excellent works on the subject of engineering contracts and specifications have been issued within the past few years, Professor Kirby's book easily surpasses any of them as a text for students or beginners in the art of specification writing. The ground covered in it is only such as should receive attention in an engineering college, and the manner of presentation leaves little to be desired. This excellence of treatment is no doubt largely due to the fact that the work is the outcome of a series of lectures delivered by the author annually for the past six years.

An outline of the matters treated will indicate the comprehensive character of this compact little treatise. As an introduction to the subject, construction work is classified according to the character of the financial arrangement between the Owner and the Contractor, and the documents incident to a contract are enumerated and described in brief. The author then proceeds to discuss the legal essentials and the composition of a contract, the surety bond, the notice to contractors, information for bidders, and the proposal. Since the specifications are, to the engineer, the most important part of the contract, the author very properly devotes the major portion of his book to the consideration of their composition and subject-matter. General clauses are treated fully, a proceeding rendered possible by the fact that their character has been the cause of a strong movement towards uniformity during recent years. Specific clauses cannot be treated in anything but a general manner in a short text, and for this reason the author has contented himself with a few pages of general directions and the outlines

of specific clauses required in specifications for sewers, roads and pavements, pipe lines, bridges and similar typical undertakings. The work is concluded by a useful list of references in periodical literature to the subject of contracts and specifications.

The value of Professor Kirby's book lies chiefly in its being a concise, well-ordered presentation of the principles underlying the preparation of specifications. It is not a collection of specifications, nor a legal treatise, but such a book as might be placed in the hands of an engineering student to give him an idea of what is really meant by specification writing. Sufficient examples are given to illustrate the principles and to serve as models, except in the case of the specific clauses, where, for considerations of space, this is not done. Reference to the pages of high-class technical journals, for these in reality introduce another educative factor commensurate with the knowledge of the particular subject obtained. The manifest fitness of this little book as a text for engineering colleges will no doubt result in its extensive adoption for that purpose.

Simplified Formulas and Tables for Floors, Joists and Beams; Roofs, Rafters and Purlins.—By N. Clifford Ricker, Professor of Architecture, University of Illinois. Publishers—New York: John Wiley & Sons, Inc. London: Chapman & Hall, Limited. Publishers' agents for Canada, Renouf Publishing Company, Montreal. Cloth; 6 x 9 ins.; pp. vi. + 77. Price, \$1.50 net.

Reviewed by C. R. Young, B.A.Sc.

Like his larger work on roofs, this book of formulas and tables was evidently intended by the author for the use of architectural students and beginners in structural design. The structural engineer will find in it little which he has not already in one form or another. In some instances the methods of computation are much less expeditious than those in common use by structural designers.

The work which the author undertakes is to present simplified formulas for the computation of the section moduli, moments of inertia, total safe loads and limiting spans of beams in various materials and subject to various end conditions. Simplification is brought about by expressing lengths and distances in feet, loads in tons, constants for the material in tons per square foot and bending moments in foot-tons. The numerical coefficients are thus reduced to comparatively small quantities, rendering slide-rule computations easy and short. The resulting formulas are then arranged in tables extending across both pages, and covering the use of steel, cast-iron, Washington fir, hemlock, white oak, long-leaf pine, short-leaf pine, white pine and spruce. Preceding these tables are thirty pages of explanatory matter, and following them are tables or properties of cast-iron lintels and a table of four-place logarithms for those who do not use the slide rule. The application of the formulas to the design of floor joists, flooring, sheathing, rafters, purlins and lintels is made plain by examples.

Although the subject-matter is well presented in the main, certain indications of lack of care in preparation exist. On page 1, l is defined as the *clear* span in inches of the beam, while on page 4, L , which is obviously $l \div 12$, becomes