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EIGHTH EDITION, REVISED
TOTAL ISSUE, FIFTH THOUSAND.

NEW YORK :
JOHN WILEY & SONS.
LONDON: CHAPMAN & HALL, LIMITED.
1907.

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ROBERT DRUMMOND, PRINTER, NEW YORK.

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PREFACE.

The "Elements of the Method of Least Squares," published in 1877, was written with two objects in view : first, to present the fundamental principles and processes of the subject in so plain a manner, and to illustrate their application by such simple and practical examples, as to render it accessible to civil engineers who have not had the benefit of extended mathematical training; and, secondly, to give an elementary exposition of the theory which would be adapted to the needs of a large and constantly increasing class of students.

In preparing the following pages the author has likewise kept these two objects continually in mind. While the former work has been used as a basis, the alterations and additions have been so numerous and radical as to render this a new and distinct book rather than a second edition. The arrangement of the theoretical and practical parts is entirely different. In Chapters I to IV is presented the mathematical development of the principles, methods, and formulas; while in Chapters V to IX the application of these