

**FOUNDATIONS AND FOUNDATION  
WALLS, FOR ALL CLASSES OF BUILDINGS,  
PILE DRIVING, BUILDING STONES &  
BRICKS, PIER AND WALL CONSTRUCTION,  
MORTARS, LIMES, CEMENTS, CONCRETES,  
STUCCOS, ETC. 64 ILLUSTRATIONS**

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Foundations and Foundation Walls, for All Classes of Buildings, Pile Driving, Building Stones & Bricks, Pier and Wall Construction, Mortars, Limes, Cements, Concretes, Stuccos, Etc. 64 Illustrations by George T. Powell & Frederick Baumann

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**GEORGE T. POWELL & FREDERICK BAUMANN**

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CRETES, STUCCOS, ETC.

64 ILLUSTRATIONS.

PRACTICAL EXPLANATIONS OF THE VARIOUS METHODS OF BUILDING FOUNDATION  
WALLS FOR ALL KINDS OF BUILDINGS. TABLES OF THE WEIGHT OF MAT-  
RIALS, ETC. THE KIND OF MATERIALS USED, THE LOADS SUB-  
TAINED, AND THE SIZES OF WALL PIERS, ETC. USE OF  
PIERS IN FOUNDATIONS, WITH TERMS, ETC.  
PLASTERING, MORTARS, LIMES & CEM-  
ENTS. EXTRACT FROM NEW  
YORK BUILDING LAWS,  
WITH NOTES.

By GEORGE T. POWELL,

*Architect and Civil Engineer, New York.*

TO WHICH IS ADDED A TREATISE ON FOUNDATIONS, WITH PRACTICAL ILLUSTRATIONS  
OF THE METHOD OF ISOLATED PIERS, AS FOLLOWED IN CHICAGO,

By FREDERICK BAUMAN, ARCHITECT.

Revised and Enlarged by the Addition of much new matter, by  
G. T. Powell.

FOURTH EDITION.

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1889.

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## PUBLISHER'S PREFACE.

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The subject of Foundations although treated of in various works on construction has not heretofore, with the exception of one or two small manuals, been made the subject of a special book. The importance of the subject and the liberal patronage afforded the first edition of this work had led the publisher to believe a second edition thoroughly revised and brought down to the present date would prove valuable to those engaged in designing and constructing large and important structures. After consultation with the author it was decided to recast the whole thing and make it practically a new work. With this in view it has been almost entirely rewritten and all new information bearing on the subject gathered into it.

We regret to say that the author after completion of his manuscript was stricken with paralysis and in consequence unable to give his attention to the revision of proofs. This matter, however, has been very carefully attended to, and we think will be found free from such inaccuracies, ambiguities and misprints as had crept into the first edition. Since the first edition was brought out there have been many important structures in process of construction where the subject of securing foundations was a serious study, among which might be named, the Brooklyn Bridge. The tests made for these structures and other knowledge gained regarding use of cements etc., have been carefully garnered and will be found under their proper headings in the following pages.

On the preservation of timber the author is largely indebted to the researches of Maj. Gen. Cram of the U. S. A., and has quoted largely from his lecture before the Franklin Institute in Philadelphia.

In order to cover the subject more fully than has been done heretofore the author has found it necessary to increase the number of illustrations and very much increase the amount of letter press.

The practical experience of the author and his careful collection of the materials of information on this subject leads us to feel that this book will prove to be a valuable aid to Architects, Builders and Engineers in solving the many difficult problems arising where important structures have to be erected on treacherous soils. Trusting that the same generous patronage will be accorded to it as heretofore we now offer it to the building and engineering fraternities.

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BY

FREDERICK BAUMAN, (ARCHITECT.)

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