

PLUMBING ESTIMATES AND CONTRACTS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649088683

Plumbing estimates and contracts by J. J. Cosgrove

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

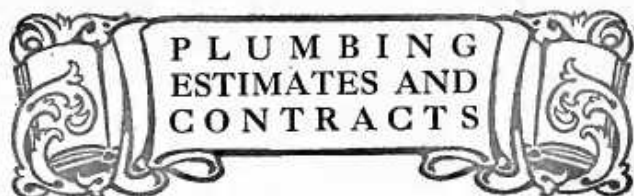
Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

J. J. COSGROVE

**PLUMBING
ESTIMATES
AND CONTRACTS**



**P L U M B I N G
E S T I M A T E S A N D
C O N T R A C T S**

By

J. J. COSGROVE



Author of

"PRINCIPLES AND PRACTICE OF PLUMBING"

"SEWAGE PURIFICATION AND DISPOSAL"

"HISTORY OF SANITATION"

"WROUGHT PIPE DRAINAGE SYSTEMS"

"PLUMBING PLANS AND SPECIFICATIONS"

"DESIGN OF TURKISH BATHS"



Published by

Standard Sanitary Mfg. Co.

Pittsburgh, U. S. A.

COPYRIGHT 1910, STANDARD SANITARY MFG. CO., PITTSBURGH, PA.

UNIV. OF
CALIFORNIA

TH 6235
C7

P R E F A C E



I N PRESENTING this volume to the public the author completes a set of books devoted exclusively to plumbing which covers the calling from practice to contracting. The several books included in the set are: "Principles and Practice of Plumbing," "Wrought Pipe Drainage Systems," "Sewage Purification and Disposal," "Plumbing Plans and Specifications," "Plumbing Estimates and Contracts" and "History of Sanitation."

These books are not disjointed fragments turned out from time to time, without reference to one another, but all are parts of one comprehensive whole, the result of a systematic division of subjects planned before any of the books were written. The object was to present to one volume the principles that underlie the practice of plumbing, and how those principles are applied to practice. In another, a thorough explanation of the wrought pipe systems of drainage together with an exhaustive description of how to handle and manipulate iron, brass and nickel-plated pipe. A third volume was to explain the art of preparing plumbing plans and writing specifications, and a fourth the principles of estimating, contracting and conducting a business.

Closely related to plumbing is Sewage Disposal and General Sanitation, so a fifth volume was devoted to the Purification of Sewage, then, that the plumber might have a proper and profound respect for his calling, a history of sanitation was written to show the antiquity of the craft, its struggles, its failures and its triumphs.

These books, the author believes cover very fully the various subjects, and contain such technical data as has long been needed by those interested in Plumbing and Sanitation.

J. J. COSGROVE

Philadelphia, Pa.,
June 15, 1910.

TO THE
UNIVERSITY
OF PENNSYLVANIA

PUBLISHER'S NOTE



IN THE publisher's note, printed in the various books which preceded this one, we endeavored to make clear our connection with the publication of technical works on plumbing and sanitation, and for the benefit of the readers of this volume, we herewith repeat the story of our relation as Publisher's and Manufacturer's.

The primary object of our organization is, as universally known, to manufacture and market "Standard" Plumbing Fixtures, Brass Goods, and other products made in our factories. In the development of an organization to accomplish this result, there has been established an Advertising and Publishing Department of no small proportions, and "Plumbing Estimates and Contracts" is a part of the work of this department.

One of the most widely known productions of the Publishing Department is the monthly magazine, "Modern Sanitation," which was established in June, 1904. From this came the publication, first in serial form and later as books, of "Principles and Practice of Plumbing," "Sewage Purification and Disposal," "History of Sanitation," "Wrought Pipe Drainage Systems," "Plumbing Plans and Specifications" and "Plumbing Estimates and Contracts." These books are all the work of the same author, Mr. J. J. Cosgrove, who is recognized as one of the leading authorities on the questions upon which he writes.

Mr. Cosgrove's first work was "Principles and Practice of Plumbing." This book has been phenomenally successful and has been adopted as a text book in more than 30 of the largest universities and colleges in the United States.

Several of his other works are similarly used either in the form of text books or as books which students in plumbing and architecture are advised to read.

In "Principles and Practice of Plumbing," Sewage Purification and Disposal," "History of Sanitation," "Wrought Pipe Drainage Systems," "Plumbing Plans and Specifications" and "Plumbing Estimates and Contracts," we feel that the literature of the craft has been enriched in an enduring manner and that we have fully justified our appearance in the field of publishers as amply as we have our standing as manufacturers of a world wide known and used product.

Standard Sanitary Mfg. Co.

Pittsburgh, U. S. A.

Publishing Department.

TABLE OF CONTENTS



PART I

Estimates.....	1
Taking off Quantities.....	1
Originality in Estimating.....	45
Estimating from Incomplete Plans.....	85
Making up the Estimate.....	89
Calculating the Cost.....	97

PART II

Business of Contracts.....	117
Office Methods.....	163
The Execution of Contracts.....	169

PART III

Business Law.....	175
-------------------	-----

LIST OF TABLES



TABLE	PAGE
I. Cost of Handling Water in Trenches.....	15
II. Weights and Dimensions of Standard Sewer Pipe.....	17
III. Weights and Dimensions of Double Strength Sewer Pipe.....	17
IV. Cement and Sand Required for Earthenware Pipe.....	18
V. Sizes and Weights of Cast Iron Soil Pipe.....	24
VI. Classification of Malleable Iron Fittings.....	26
VII. List Price on Black Malleable Fittings.....	27
VIII. List Price on Galvanized Malleable Fittings....	29
IX. Dimensions and Weights of Standard Wrought Pipe.....	30
X. Dimensions and Weights of Extra Strong Wrought Pipe.....	31
XI. Dimensions and Weights of Double Extra Strong Wrought Pipe.....	33
XII. Seamless Drawn Brass and Copper Tubes, Iron-Pipe Sizes.....	34
XIII. Seamless Drawn Brass and Copper Tubes, Extra Heavy Iron-Pipe Sizes.....	35
XIV. Brass Plumbing Tubes, Standard Sizes.....	36
XV. Size and Weight of Lead Pipes.....	41
XVI. Weights and Maximum Sizes of Sheet Lead...	44
XVII. Lengths of Long Y, TY and T-Fittings.....	52
XVIII. Size and Lengths of Long Quarter Bends.....	52
XIX. Size of Double Y Fittings, with Side Outlets...	52
XX. Size of Double Angle Y's.....	52
XXI. Dimensions of Extension Lead Bends.....	54
XXII. Equivalent Discounts of Much-Used Series.....	101
XXIII. Amount of Wages per Day.....	111
XXIV. Amount of Wages per Week.....	113



PLUMBING
ESTIMATES AND
CONTRACTS

PART I
ESTIMATES



CHAPTER I

ESTIMATING FROM COMPLETE
PLANS AND SPECIFICATIONS



TAKING OFF QUANTITIES



SCOPE of an Estimate.—To intelligently and successfully estimate the cost of plumbing work requires more than a mere knowledge of the construction of buildings, the ability to read plans and the skill to take off quantities from the drawings submitted. The real estimator's work does not stop when he has made up a list of materials which the plans show will be required to complete the work, but he supplements his efforts by determining the best means of assembling the goods, how to ship them, and where and in what condition to buy the goods at the least cost for the quality specified. There is a world of originality and ingenuity required to do this successfully, and, perhaps, this cannot be