

**HOUSE DRAINAGE, A
HANDBOOK FOR
ARCHITECTS AND
BUILDING INSPECTORS**

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House Drainage, a Handbook for Architects and Building Inspectors by G. A. T. Middleton

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G. A. T. MIDDLETON

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HOUSE DRAINAGE.

VIEW

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PREFACE.

IN placing this little handbook before my professional brethren, I am actuated by a desire to enunciate in a concise and simple form the now well-recognised principles of a science which, though simple, has only of recent years been fully understood. Owing to the large amount of help which I have received from friends, and especially from Mr. C. E. Gritton, A.M. Inst. C.E., and to the courteous assistance given me by manufacturers, I am enabled to illustrate and describe most of the really good modern appliances and methods.

Those who look for the cheapest possible way of doing drainage work that may comply with the requirements of legal enactments will not find it within. I have aimed at describing only what is absolutely sound, and though a cheaper and a dearer method are in some instances both described,

it is only when both are good, and then the advantage of convenience and accessibility is usually upon the side of the more expensive system.

G. A. T. MIDDLETON.

March 1892.

PREFACE TO THE SECOND EDITION.

IN preparing the Second Edition of 'House Drainage,' the opportunity has been taken to correct various inaccuracies which crept into the first, and to add descriptions and illustrations of a few more appliances. My thanks are due to the reviewers of the First Edition, both for the kindly way in which they reviewed it and for the exhaustive and valuable criticism which they bestowed upon it.

G. A. T. M.

December 1894.

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HOUSE DRAINAGE.

CHAPTER I.

THE MAIN PRINCIPLES.

THE development of sanitary science has at the present time reached a point at which it may be said that the true principles of house drainage have become well established. They can now be definitely laid down with the conviction that if they be departed from the result will not be satisfactory. The details may from time to time, and probably will, be improved upon, but the main principles laid down in this chapter may be said to be agreed upon by all competent sanitary engineers, and to admit of but little variation so long as the present all but universal system of the carriage of sewage by water obtains.

The first essential, and the one which has been generally admitted for the greatest period of time, though it has only been of comparatively recent years carried out efficiently, is that the house drain should be disconnected from the sewer by means of a self-cleansing intercepting trap, placed as near to the sewer, in the line of the house drain as

circumstances will permit. It is best to place this trap so that access can be had to it from a manhole (or disconnecting chamber, as this particular manhole is called), but this is not essential under all circumstances.

It is essential, however, that an inlet for fresh air should be arranged into the house drainage system upon the house side of the intercepting trap, and as near to it as possible, and that provision be made against its acting as an outlet instead of an inlet ventilator unless its mouth be so placed that this be immaterial—and this is rare.

The drain pipes must be laid on a solid foundation of sound material, and with perfectly water-tight joints, and they must be in perfectly straight lines from point to point with an uniform fall. In all first-rate work there should be small manholes (called access or inspection chambers), with air-tight covers, wherever curves are necessary or important junctions are formed, but in places where economy is of high importance ordinary bends and curved Y-junctions may be used: but it must always be remembered that it is at such places that stoppages occur, if at all, and that the provision of an inspection or access chamber may save much subsequent trouble and expense in opening up ground, while if the pipes be straight from chamber to chamber, even these pipes, and so the whole system, can readily be cleared of obstructions, if necessary, by means of rods. Drain pipes may only pass under a house or outbuilding when