

NEW TORONTO INCINERATOR

A Design Suitable for Small Towns

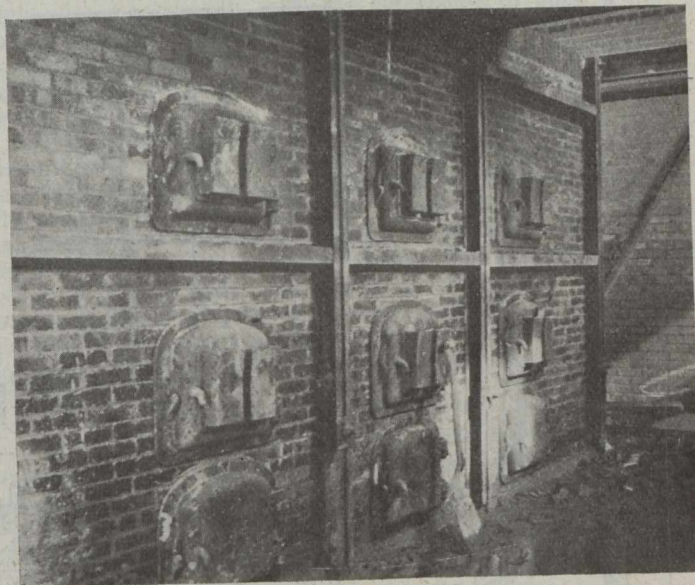
By E. A. JAMES*

THE collection and disposal of refuse is one of the urgent problems confronting growing towns. Most large cities are forced to provide adequate disposal of refuse, but from a hygienic standpoint this provision is equally necessary on the part of smaller municipalities. The presence of certain industries, which accumulate objectionable trade wastes, considerably intensifies this problem in certain localities.

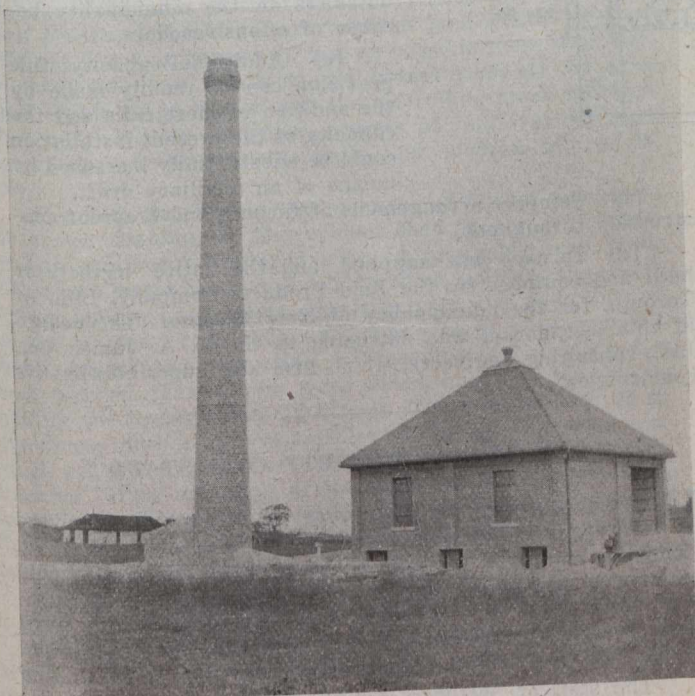
There are two general methods in use for the disposal of refuse; namely, reduction and incineration. In the reduction method the grease is extracted leaving an inoffensive pulp, but to accomplish this, the materials composing the refuse must be carefully differentiated with the result that the process is only economical for comparatively large cities. Incineration is, therefore, the most practical method which a small municipality can employ for the effective disposal of its refuse. While the same degree of separation of materials is unnecessary, when incineration is employed, it will be in the interests of efficiency to provide a separate collection of ashes and rubbish; thus leaving the incinerator to deal with the kitchen and trade wastes, commonly spoken of as garbage, the destruction of which is so necessary for hygienic reasons.

Some idea of the classification of refuse and relative quantities of the different components of which it is com-

A municipal incinerator of particularly interesting design was erected by the municipality of New Toronto in 1916 to serve a growing population of five thousand (5,000) people. Since this plant was put in operation in 1917, it has given such satisfactory results that a description of its chief features may prove of interest. Adjoining the municipality of New Toronto is the town of Mimico, and the incinerator is located on the boundary between the two towns, being of sufficient capacity to treat the garbage of both. The location



FRONT OF FURNACE



GENERAL VIEW OF INCINERATOR BUILDINGS

posed can be obtained from the following table; the results of which were compiled from data taken at different American cities:—

	Pounds.	Yards.	By Weight.	By Volume.
Garbage	0.5	0.0005	15.3	12.1
Street sweepings..	0.5	0.0006	14.4	15.5
Ashes	2.3	0.0017	64.3	44.7
Rubbish	0.2	0.0010	6.1	27.7
	3.5	0.0038	100.00	100.0

According to this authority, the individual refuse per day amounts to 3.5 pounds, which includes a garbage item of 0.5 pounds per individual per day.

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is so favorable with respect to both towns that all the garbage can be collected within a radius of $1\frac{1}{2}$ miles. In the winter months a separate collection is provided, and in this way the garbage is delivered at the incinerator free from ashes and rubbish. The furnaces installed have a rated capacity of 12 tons per 24 hours, and since the area served yields on an average of 15 tons per week it is only necessary to operate the incinerator one or two days per week, unless the weather conditions demand more rapid destruction.

The general layout of the plant is simple and convenient. The building itself, of red brick, with metal roof, is neat and attractive in appearance. Approaches are provided from either end to the dumping floor at grades of 5% and 7%. In the lower story of the building the furnace is compactly built and conveniently situated to receive the charge from the dumping floor. The furnace is equipped with a dust chamber from which the smoke and gases are carried to a brick chimney some 35 ft. north of the building by means of a tunnel. Directly behind the chimney an ash storage bin is provided in order that the ashes may be kept dry by the heat from the chimney. A runway for conveying the ashes leads from the basement to the ash bin.

The incinerator building is of fireproof construction 30' x 28' inside dimensions. The basement has a clear height of 8' 6", and the dumping room 12' 3". The charging room is adequately ventilated by means of windows on either side and a skylight ventilator in the roof. A clause in the specifications respecting the building reads as follows: "The building shall be of reinforced concrete floor, reinforced concrete unloading floor, slabs and beam construction with reinforced concrete column, reinforced concrete runways, metal sash red brick for housing required above the unloading floor. The up runway to have a grade not greater than 5%, and the down runway a grade not greater than 7%. The building shall include a lavatory equipped with wash basin, etc., for the convenience of the operator."

The furnace itself is of fire brick construction, horizontal type consisting of 6 cells charged from the top through corresponding holes in the dumping platform. The incinerator is designed to consume the garbage without the use of auxiliary draft although the same may be added at any time