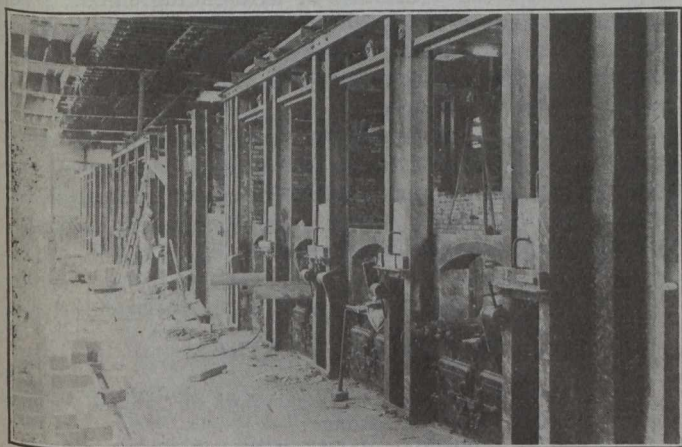


structed of brick of the same quality and laid in a manner similar to that used in the main building. The radial portion of the chimney is built upon the base, and towers to a height of 150 feet, thus giving an over-all height above the foundation of 175 feet. The outside diameter of the radial portion at the base is 16 feet 9 inches, and from that point to the top it tapers to an outside diameter of approximately 10 feet 2 inches. The firebrick lining, which is 7 feet 6 inches inside diameter, is constructed in four sections, varying from 13½ inches to 4½ inches in thickness. It is self-supporting, and is constructed with four pilasters and extends from the foundation to the top of chimney. At the base of the chimney a large damper is provided. Each furnace is also provided with individual dampers, which may be closed when desired.

The estimated cost of the plant complete is approximately \$200,000.

The furnaces and appurtenances and the radial brick chimney and foundation for same are guaranteed for one



Front View of Furnaces.

and five years respectively. In each case percentages of the contract prices are retained for the period of one year, and bonds satisfactory to the city treasurer have been furnished to cover the above-mentioned periods.

The services of two foremen and twenty-eight men are the estimated labor requirements necessary to operate the plant on the basis as previously stated.

Despite the fact that the ownership of the site of this plant has been vested in the city for a period exceeding 30 years, during which it remained an unkempt weed-bestrewn waste, affording a dump for all sorts of refuse material, violent objection was encountered by the department in securing it for the legitimate municipal purposes for which it is so naturally adapted.

The department's contention that the plant would in no way detrimentally affect the neighborhood, but would, on the contrary, improve the locality, has been amply demonstrated.

The once veritable waste, with its rugged refuse-bearing banks of slimy mud, has already given place to symmetrical slopes and terraces on its southern aspect and similar treatment will be accorded the lands to the north of the building as soon as weather conditions permit of the work proceeding.

The building itself, from an architectural standpoint, is unsurpassed, if not unequalled, by any industrial structure in the city, and reflects credit on the city architect and those of his department more immediately concerned in its erection.

An effective surface drainage system has been laid around the building for the purpose of disposing of the vast amount of surface water that is shed from the surrounding banks and yard area.

From the ideal location and the many points of access to the plant, the traffic on any individual street leading thereto will be reduced to a minimum; the approach bridges and tipping floors are to be paved with wooden blocks, thus the noise of wagons entering and leaving the plant will be greatly reduced.

### CANADIAN SOCIETY OF CIVIL ENGINEERS, TORONTO BRANCH.

At a meeting of the Toronto Branch, held in Engineers' Club, Friday evening, March 9th, 1917, Capt. Mathieson, of the Canadian Engineers, gave what proved to be an exceptionally interesting address on "The Work of the Canadian Engineers in France." Capt. Mathieson left Canada with the first Canadian forces as a subaltern in the 2nd Field Company, and is now in Canada on sick furlough. He was at the front for over seventeen months, and won the Military Cross for his good work in a number of the engagements in which the Canadians took a prominent part.

Capt. Mathieson told in a very graphic way of the importance of the engineer's work in this war. In the first few months the Royal Engineers in the British Expeditionary Forces carried on the prescribed work of the engineer in battle, i.e., the construction and demolition of bridges, etc., helping the infantry in preparation of field works, etc., but it was not until the settling down to trench warfare that the real importance and value of the engineer became apparent, and when the first contingent of the C.E.F. landed in France, the Royal Engineers were beginning to receive adequate status in the British army. This did not extend to the Canadian divisions at first; but because of the excellent work done by the Canadian engineers from the start, they soon established for themselves a very enviable status in the C.E.F., so that at the present time not a stick of material can be secured by the Canadian army in France without the O.K. of an engineer officer; and the sapper (private in engineers) is a foreman of "working parties," each party consisting of from 50 to 150 men.

Capt. Mathieson described the make-up of the line of trenches stretching from Belgium to Switzerland, and pointed out that the system of trenches practically constituted a city, and eliminating luxuries, all the engineering work handled by a works department of a city was duplicated in some way at the front, the work having to be done under very adverse circumstances, as well, of course, was the work necessitated by the activity of the enemy. For instance, the water supply for troops was one of the big engineering problems. The speaker told of one of his personal experiences in estimating the water supply in a certain section. He went round with an interpreter trying to determine the water consumption in dry season; and one French woman said that there would be plenty of water for the troops if those Englishmen didn't wash so much.

The organization of the Canadian Army Corps was outlined, and also the Canadian Engineer organization. The following outline of the Engineer organization gives a good idea of how engineering work is taken care of:—

The chief engineer, Canadian Corps, is a Brigadier-General. He has under him the four Colonels in com-