NEW ASPHALT PLANT AT MONTREAL.

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THE need of the proper kind of a modern asphalt plant in many Canadian cities has been made very evident to the writer in his visits to the eastern part of the Dominion during the past few years. The newest municipal asphalt plant recently put in use in Montreal is therefore of interest, and admits of the following description:

Tenders were submitted to the city upon plans and a general arrangement specifying size and capacity, together with a set of specifications showing the quality of materials, etc., gotten up by the chief engineer of Road Department of Montreal. The contractors had to design the building and plant, also provide a set of specifications for the building and machinery, all of which were to be approved by the city. The successful bidders for the job were Warren Bros. Company, of Boston, Mass.

The Building.—The plant is located in the Road Dept. yard in the north end of the city. The building, as shown in Fig. 1, is built of structural steel with corrugated sides and roof. The main part of the structure is of two stories with a tower on each end of an additional story for the hot storage bins for sand and stone. In the rear, in a 1-story addition, is the boiler and engine room. The windows in this room are ordinary in type, while in the rest of the building they are of corrugated steel, each opening as a shutter.

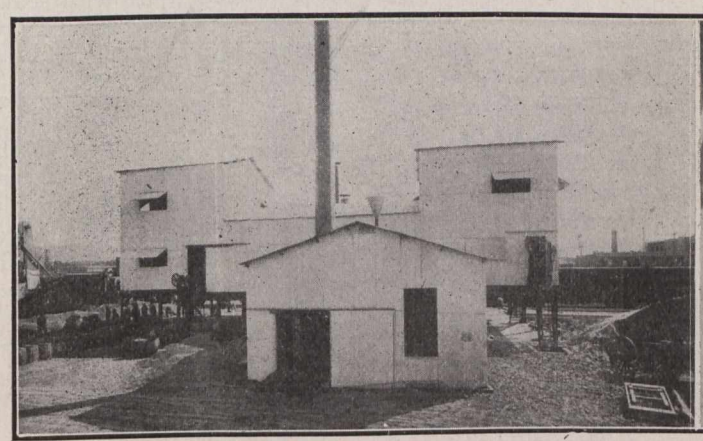

Fig. 1.—Exterior of New Municipal Asphalt Plant of Montreal.

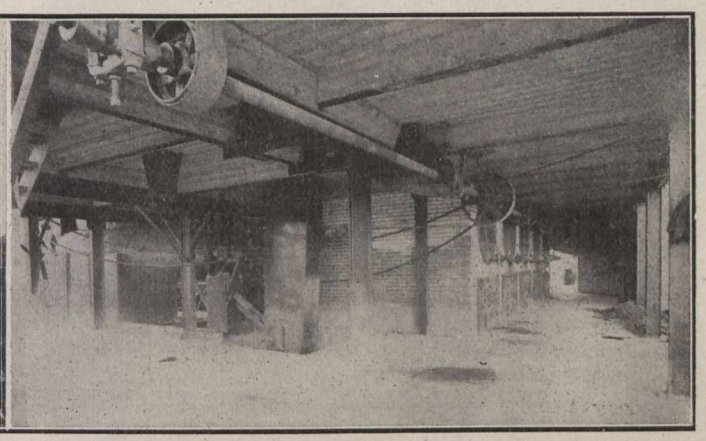

Fig. 2.—View of Ground Floor.

The lower floor has a concrete pavement in it. The second story has a reinforced concrete floor designed to carry a dead load of 400 lbs. per sq. ft. with a factor of safety of 4. This floor is intended for storage of limestone dust and asphalt. The third floor is of similar construction, but the dead load figured for it with the same factor of safety is 200 lbs. per sq. ft. The roof is designed to carry a snow load of 40 lbs. per sq. ft., with a safety factor of 4. The corrugated iron used on the sides of the building is No. 24 gauge and on the roof No. 22. The entire lower story is open, allowing easy transit for men and teams.

Arrangement of Ground Floor.—In the centre of the first story is located 5 asphalt melting tanks or kettles, provided with air agitation, each of a working capacity of 2,000 Imp. gal. Two of these tanks are of the enclosed pressure type and three are open, all being connected at the bottom with a 3-inch pipe line, by means of which the contents of any of the open tanks may be drawn by suction into either of the pressure tanks, with suitable connections in the air compressor so that it may be operated as a vacuum pump to accomplish this purpose. On the second floor a 3-inch pipe runs from the pressure tanks to the asphalt weighing buckets at both mixers, thus feeding the asphalt by air.

The melting tanks are encased in brick and each has an independent fire-box for heating purposes, the bottom of the tanks being protected from burning by fire brick. The fire-boxes are constructed for coal consumption. There is an independent smoke stack for these tanks.

Fig. 2 is a view of the lower floor and shows these melting kettles. In the foreground is the driveway under the binder mixer and at the other end of the building is a similar driveway under the topping course mixer. These two driveways can be seen better in Fig. 1. To the rear of the melting tanks are located the drying units, consisting of 2 Warren standard 40-inch sand dryers and a single binder dryer. Each sand dryer has independent settings, but are coupled together with the same driving gear. Each dryer is fed by an independent bucket elevator. The stone and sand are brought to the plant in cars or wagons and dumped near the building, where it is picked up by the elevators and fed directly into the drying units. The revolving cylinders are 19 ft. 8 in. long and the dryers are so constructed that the material passes through them by gravity instead of being forced through by spirals. These dryers are so arranged with induced draft, so that the flames and hot gases pass the full length of the dryer on the outside of the revolving cylinder and return through the inside before being taken out by the fan. In the cylinders longitudinal vanes are provided that lift the materials being dried to the top of the cylinder, dropping it as the latter revolves, through the hot gases being drawn through it by the exhaust fan.

This induced draft is supplied by a 50-inch steel plate exhauster, provided with a Cyclone dust collector to separate from the exhaust the fine particles of sand, thus preventing the sand from being discharged into the air. Each dryer has a fire-box 3 ft. 8 in. wide and 10 ft. 6 in. long, giving an extremely large grate surface, providing a low rate of combustion of fuel and obtaining the full capacity of the dryers, without unduly forcing the fires.

The revolving cylinders are supported at either end by heavy 6-in. x 12-in. Universal bearings, the rear bearings being fitted with thrust collars to take care of the expansion and contraction of the cylinders.