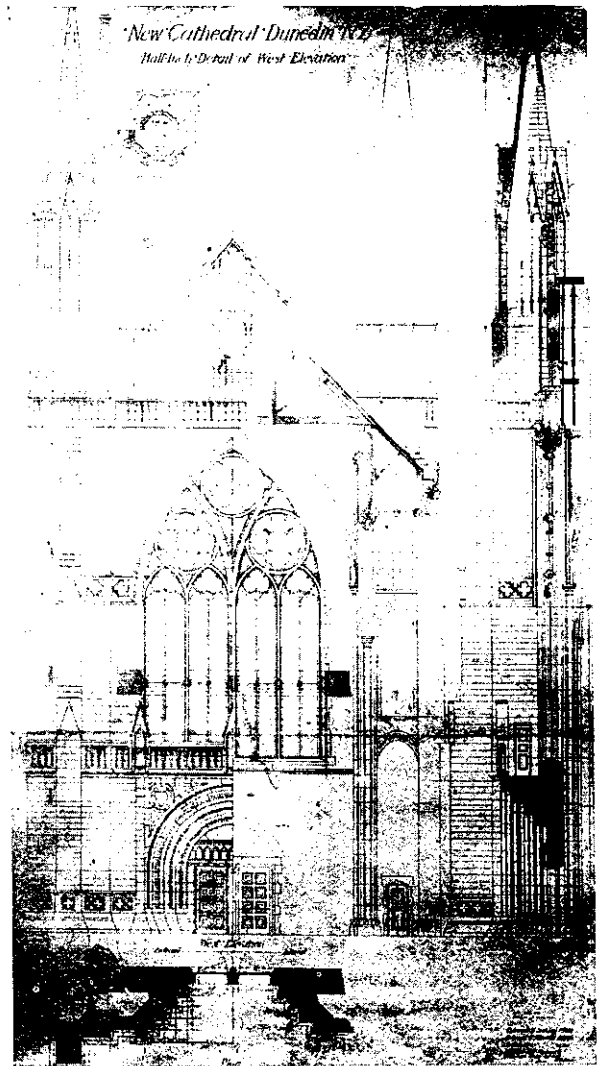


are lavatories, coals, heating chamber and a large meeting room. Most of the rooms are lined with white lime and sand bricks, which make a strong permanent job, provided that cement mortar is used exclusively. Lime mortar seems useless with these bricks, as there is practically no adhesion between the bricks and the lime mortar, for some reason or another, in fact it seems to lose all strength when combined with these bricks. The concrete bases of the piers from ground to nave floor are 4-ft. x 3-ft. 6-in., reinforced with  $\frac{3}{4}$ -in. vertical rods, bound with wire, the concrete being 5 to 1.

A few words as to the foundations may be of interest though I presume they should have come first in the description. It was decided that this work should be done by day labour, as it was thought that by this means greater certainty of the best results would be obtained. The contractor in charge was to receive  $7\frac{1}{2}\%$  on his estimate, 5% on any excess, and 10% on any amount under his estimate. By this sliding scale it was anticipated that the contractor would be induced to hasten the job, without receiving any benefit from seamping. As a matter of fact, the result was a good bit over the estimate, but even then it was a cheap job. The contractor was bound to provide tools, scaffolding etc. and a concrete mixing machine, which in this case was of the "continuous" type. Judging from this experiment my opinion is that the "continuous" concrete mixer is not equal to the "batch" type. With the former, it is not possible to be so sure that the right proportions are going in. The feeding of the constituents into the mixing box is not regular or even, at times the cement sticks, or goes in too fast, and the same is the case with the aggregate. With the "batch" machine on the other hand, you can be certain that the proportions are correct, and it is then only a question of sufficient mixing. The "continuous" is certainly very fast, and admits of no loafing, as the chain of labourers employed found out very soon. The ground was exceptionally good, fortunately, and nothing but hard dense clay was encountered.

For the walls an average depth of 4ft. 6in. was excavated, though at the corner near the Town Hall the depth was about 12-ft., that is, slightly below the level of the right-of-way. From that corner we gradually rose to the 4ft. 6in. average. The reason for going down so deep in this part, even though quite a good distance from the bank, was to prevent any possibility of "squeezing out," when the weight began to tell. The contractor in charge was rather scornful of the idea of wasting (as he put it) so much labour and material, but the size and weight of the building admitted of no risks being taken. The footings of the aisle walls are 6ft. wide, and across the buttresses 6-ft. 9-in. wide. The thickness is 3-ft., except at the deep portion, where it is increased to 3-ft. 6-in. Each pair of twin piers has a footing 8-ft. x 15-ft. x 3-ft. 6-in. thick, reinforced with three 5-in. x 3-in. x 11-lbs. R.S.Js., and the base of the piers is in one mass till ground level is reached. Altogether, abundant precautions have been taken to ensure the stability of the building, as far as the foundations are concerned, and there should be no chance of any settlement or other troubles.

Coming now to general details of construction and materials, a few notes may be of interest. The aisle walls are 2-ft. thick, above the plinth, and the clerestory walls 2-ft. 6-in. thick. The whole of the stonework is to receive two coats of Sizerhney preservative, as long as possible after completion; the reasons for thus leaving it being that it is considered all the natural



DETAIL OF FRONT

This illustration shows the centre portion including the turrets, but omits the West end of aisles.

sap should be allowed to dry out thoroughly before applying the preservative. If applied too soon the pores of the stone would be closed and prevent the natural drying. Dr. Marshall's opinion is, that applying the preservative while "green," is the cause of a great deal of the disintegration of freestone. The amount of sap that the stone contains when new is very evident from the green stain that has covered the face of the work on all surfaces that did not face