

22 feet x 22 feet, the result being most satisfactory and standing out as an excellent example of concrete and tile construction. The weight of the floor is about 60 pounds per square foot, and has a carrying capacity for a live load of 70 to 75 pounds for office work.

It may be of interest to note that although the foundation were put in during freezing weather, they show absolutely no signs of frost destruction in any particular. It became necessary as the building operations progressed to cut two or three holes through the foundations, and the concrete was found to be perfectly set and like a granolithic mass. The aggregates employed were: four of crushed stone, two of sand and one of cement, thoroughly mixed with a machine and poured into the forms. The only precaution taken against freezing was in covering the work over night with straw to a thickness of about two feet.

The station is 72 feet x 112 feet dimensions.

Bedford Indiana stone was used in the lower storey, while the upper storeys are of fire-clay brick and terra cotta, including the immense cornice and parapet. Aside from these materials absolutely nothing but concrete was used, making the building as proof against outside attacks of fire as modern invention will admit.

The ground or station floor is laid with ceramic mosaic tile in patterns, and the walls are lined with Italian marble up to a height of ten feet. The main floor ceiling is 20 feet high with heavily enriched cornices.

All exits have been carefully worked out after the fashion adopted by the larger terminal railroads in the United States with all provisions for the handling of large crowds. The woodwork trimmings of the doors and windows are of quarter cut oak, the floors are maple, the staircases are of iron and marble, and the commodious toilets are lined with enamel brick.

The Dominion Power and Transmission Company will occupy the entire second floor, while the two upper floors will be arranged as office quarters for the other companies connected therewith.

When completed, the structure will have cost approximately \$250,000, and will rank among the finest electric terminal stations on the continent.

The despatch with which the building was reared and its undoubted stability reflects much credit upon Architect Charles Mills, a resident of Hamilton, who designed it and supervised the work of construction. It was likewise Mr. Mills who handled the rebuilding of the fifteen storey Bank of Hamilton building of that city last year, which is accredited with being one of the most difficult pieces of work ever carried to completion in Canada.

It is stated that the Portland & Seattle Railroad is about to utilize reinforced concrete in the construction of a viaduct at Vancouver and a bridge over the Klukit River. It will be a single arch of 160 ft. span.

At a recent convention of painters the following instance of painting a concrete wall was cited: The building had become discolored in places, and the joints were of a different color from the surface of the blocks. Two parts of Portland cement were mixed with one part of marble dust and mixed with water to the consistency of wet paint or a thick whitewash. The wall was well wetted before the application of this paint and kept constantly wet while the material was applied, and then was kept for a day longer, in order to make the cement wash adhere to the surface. The wash was applied with ordinary whitewash or calcimine brushes, and a man was kept busy playing a hose on it while the work was being done. The secret of success lay in keeping the wall constantly wet.—Concrete Engineering.

The fourth annual convention of the National Association of Cement Users will be held at Buffalo, N. Y., January 20 to 25, 1908. The old Sixty-fifth Regiment

Armory has been engaged for the exhibition, and the convention probably will be held in the same building.

In overhauling the big steamer "Queen," the plates, protected by cement, were found (next to the coating) to be just as bright and sound as the day they were put on. For twenty-two years the plates had been thus protected. The outside portions were badly pitted.—Concrete.

The preservative effects of cement on iron, steel and other kinds of metal, when the latter material is encased and excluded from the action of the elements, is well known. Along marine and shipping lines this has been very conclusively shown.

Australia is clamoring for imported cement and is getting it, in spite of the fact that the domestic article is protected by an import duty of 18c. per cwt. Prices having advanced with a rush, to the extent of \$1.50 per ton, the import duty cuts little figure at present. Every consignment of cement for Australian ports is said to be sold at full rates before it can be landed. Australia at present is producing 90,000 tons of cement per annum, of which 70,000 tons are made in New South Wales and 10,000 tons each in Victoria and South Australia.—Concrete.

In the past year many large steam vessels have been repaired at San Francisco. In some instances portions of the hull plating were removed and new plates substituted. Cement linings had, in most cases, been used on the inside of the hulls. When the cement coating was removed the plates on the inward side were invariably found to be in a perfectly sound condition. The cement lining had preserved the metal. This was not the case in all steel vessels where no cement coatings were used. In all such cases the pitting or honeycombing extended clear through the plates.

A composition resembling concrete is known technically as "pise." One of its principal ingredients is the slag of blast furnaces or some volcanic scoria of similar nature. In districts where the volcanic scoria or blast furnace slag are available, it is pulverized and mixed with Portland cement in the proportion of 400 to 500 lbs. of cement to a cubic meter of scoria. The usual method of mixing is combined with that of grinding or pulverizing the slag in a large circular trough around which travel two heavy stone disks driven by steam, water, or horse power. The cement and slag, after having been thoroughly ground and mixed, are withdrawn from the mill, mixed with water to the proper consistency, and used at once for the construction of barns, inclosing walls for fields and gardens, and even for ordinary dwellings in villages or the country.

In building division walls with this material a common method is to use a frame or mold, consisting of two planks set vertically and held together by adjustable iron braces, which are lengthened or shortened by set-screws, the space between the two planks being the thickness of the wall. This frame is set upon the foundation, already prepared, and the mortar (pise) shoveled in and rammed down firmly. The frame is then loosened by the set-screws and raised to receive the next layer of concrete. Walls of this character, especially in buildings, usually receive an outer surface coating of plaster made of finer sand, lime, and hydraulic cement.

Formerly stiff clay mixed with straw or tough wild grass was used in country districts for pige work in the cheapest class of construction, but such walls are available only in dry locations and soon disintegrate under the influence of continued moisture.—Consul-General F. H. Mason, on French Building Materials.