

stone known as the one-quarter-inch size. This was thoroughly mixed quite dry so no mortar would flush to the surface and well rammed in wooden forms made in the usual manner. The result was an evenly grained, finely honeycombed surface, of a pleasing, soft grey color, which grows darker with time and blends admirably with the park landscape. In placing, it was not spaded next the form, it was too dry

GAL SIX to cause any flushing of mortar, so there is no smooth mortar surface, the imprint of joints between the boards hardly noticed and the grain of the wood not seen at all. There is no efflorescence apparent on the surface anywhere; there cannot be on account of the dryness of the mix and the porosity of the surface. The buildings are used as gymnasiums, assembly halls, reading and refreshment rooms, and as a rule the same grey concrete finish is given the interior walls as the exterior. In some cases a little color has been applied on the interior walls and the walls of shower and bathrooms have been waterproofed with plaster. The porosity of the surface makes it well adapted to receive and hold plaster.

This sort of surface is not capable of treatment with acid as a smoothly mortared surface, nor is it desirable. Consequently the only color obtainable is the natural color of the cement covered stone, but which is softer and far more agreeable than the grey of the usual mortar finished surface. It is not suited for the surface of a pavement and is not impervious to water. Although it is evident the water enters the pores to a considerable extent there is no evidence of injury from frost during the two winters some of these walls have stood.

The same finish has been used for retaining walls; arch bridges, fence posts, walls enclosing service yards, etc. In the buildings the thin walls were made entirely of this mixture, while in the heavier structures it has been used only as a fencing. Two reinforced arches of 60 feet span were faced with this mixture, but the steel was imbedded in a wetter, more impervious concrete. This same dry mixture can be used for moulded stones when the mould is open enough to permit tamping, and of course it is eminently suited to block machines.

The dry, rich mix, with finely crushed stone, has been found specially suited to another condition where a sound, smooth surface was particularly difficult to secure, viz., for the under water portion of a sea wall on Lake Michigan. It was mixed very dry and dumped in mass in sunken boxes joined end to end, made fairly water tight, but from which the water was not excluded. With the finely crushed stone a sound, smooth surface was obtained (when the sides of the boxes were removed) where it was manifestly impossible to plaster or grout the surface and where spading a mix of coarser stone simply washed the cement away from the surface stone. On account of the variable water level it was particularly desired to have a sound, smooth surface.

Of the work described, most of the monolithic buildings, the arch bridges and some of the walls and paving, have been done by contract. All of the moulded work, the buildings made of blocks, service yard walls, etc., and all the acid treatment has been done by the park forces. Nearly all the various brands of Portland cement sold in the Chicago market have been used in varying quantities with equally good results.

In both methods described honest work and careful inspection are as necessary for good results as in any other first-class construction. Neither method cheapens concrete work. The acid treatment slightly increases it, while the surfacing with fine crushed stone adds nothing to the cost.

By the acid treatment, together with rubbing and chipping, all irregularities can be corrected. With the fine crushed stone surface all irregularities and

form marks are not prevented, but they are greatly minimized.

In not all the work done by the second method were the results entirely satisfactory. The original specifications called for half-inch stone, which was afterwards changed to quarter-inch. Experience taught the correct quantity of water to use for best results. But altogether both methods are so satisfactory that their use will doubtless be continued in the South Park work until something better is developed.

BRITISH INVESTIGATE CONCRETE.

A joint committee representing the Royal Institute of British Architects, the District Surveyors' Association, the Institute of Builders, the Association of Municipal and County Engineers, and the War Office, has been nominated by the Royal Institute of British Architects to consider and report upon the use of reinforced concrete in buildings and other structures. The committee has issued a statement outlining in part the scope of its investigations, which will first take the form of an inquiry into what has been done already. It will ask the owner, or architects, or engineers of such work for particulars, and how the buildings have stood the test of time. The statement continues as follows: "We shall have a secretary who can apply to railway companies, owners of mills, private owners, architects, engineers and others who will no doubt place the results of their experience at our service. Some of us may visit works; some have actual experience in the new system; and when we have digested this knowledge we can as a body express an opinion as to its usefulness, its safety, its permanence, and other qualities, which opinion we may fairly hope will be of value to our fellow-countrymen."

An important "Special Commission on Concrete Aggregates" has also been formed at the instance of the British Fire Prevention Committee from among its leading members and the representatives of the public bodies who are subscribers to the committee.

The Commission is to report upon and define the aggregates suitable for concrete floors intended to be fire-resisting, having due regard to the question of strength, expansion, and the chemical constituents and changes of the aggregates.

The constitution of the Commission is not yet announced, but it is known that Sir William Preece, K.C.B., F.R.S. (Past President, Int. C.E.), will be the chairman, and that Mr. Matt. Garbutt, F.R.I.B.A., A. M. Inst. C.E., will be the hon. secretary; and, further, that the Commission will be an eminently representative one, particularly strong in civil engineers of great practical eminence and in public officials of high technical standing.

It is to be anticipated that the work undertaken by the Commission will be of that thorough character generally associated with the investigations of the British Fire Prevention Committee, and that its findings will have considerable international bearing on the subject of the fire-resistance of building materials generally, for the influence of the committee reaches far beyond the confines of our Empire.

CONCRETE CONSTRUCTION IN ENGLAND.

A forward step has been taken for the wider use of concrete construction in England, by the decision of H. M. Office of Works to build extensive additions to the new General Postoffice in London on the Hermebique reinforced concrete system. The new building will cover an area of two and a half acres and will have eleven and a half acres of floor surface. The British Admiralty are also employing concrete in the erection of important buildings and other works. It is claimed that the growth of the new method would be much more rapid were it not for the hindrance placed upon its use by out-of-date building regulations.