

OUR ILLUSTRATIONS.

PORTRAIT OF THE LATE MR. KIVAS TULLY, ARCHITECT
TO THE PROVINCE OF ONTARIO.

NO. 17 ELM AVENUE, TORONTO—MESSRS. CHADWICK &
BECKETT, ARCHITECTS.

This house faces north and has its rooms, which seek the sun, and the conservatory and verandah on the inner side of the lot. The front towards the north and the street is, on the other hand, not expansive but decidedly reserved. Although there is a good deal of light the windows are so grouped that there is a considerable breadth of wall. The projection of the oriel from the brick wall, with its solid support of brick, its invisible roof, and the neighbourhood of the plain chimney, is a study in the preservation of breadth. The interpenetration of wall and window surfaces, where the chimney crosses the mullioned windows of the attic, is interesting also. It has a refining effect, analogous to the landscape painter's device of letting a white rabbit run into his mass of shadow, followed by a dog in the sunshine, thus weaving the two masses together and keeping breadth from becoming crudeness.

CONCRETE HOUSE FOR MR. CHARLES A. MATCHAM.

Mr. Matcham, manager of the Lehigh Portland Cement Co., has built for himself a concrete house which has outside dimensions of 58 ft. by 55 ft., including the porch and verandahs. The walls are 15 in. thick for the first foot and 13 in. from that point to the roof. The composition of the concrete was one part cement, four parts sand and seven parts stone. The windows and door frames were set as the concrete work progressed. The hall floors, 16 x 35 and 8 x 15 ft. are of concrete and expanded metal; the floor is 5 in. thick laid on 12 in. by 17 ft. beams, set 8 ft. apart. These concrete floors were finished off with cement and tile bordering. Both roofs and floors of the porches and verandahs are of concrete and expanded metal. The roofs have a span of 12 ft.

The expanded metal was of 2-in. mesh, $\frac{1}{8}$ -in. thick. It was laid on the boards set to hold the concrete. To the expanded metal were fastened some small channels 1 in. deep and 2 ft. apart. The concrete was tamped into the meshes and around the channels and made 4 in. thick.

The walls and arches are reinforced with iron rods, the walls having $\frac{1}{4}$ -in. rods set vertically and horizontally about 18 in. apart; and over the windows and porch openings $\frac{1}{2}$ -in. rods are laid in the concrete.

The columns and urns were cast in concrete in a wood mould and finished off with the house.

The finishing process consisted in giving the rough concrete, as it was left when the framing was removed, a coat for the sake of smoothness and colour. Mr. Matcham, as a result of his experience, recommends a coat composed of one part cement, one part lime, and five or six parts of white or yellow sand. When a reasonably wet concrete is used, Mr. Matcham thinks such a house might be plastered on the solid wall. A dry concrete would be less trustworthy.

As to the cost of construction the following ac-

count is given: "There were 400 cu. yd. of concrete in the walls and floors of the house, and taking into consideration the carpenter work, setting up framing, setting doors and window frames, and joists as the work progressed, the common labor, cement, sand and stone, totaled up to \$2,600, which would make the concrete cost \$6.50 per yard. Ordinary brick houses, with pressed brick face, cost from \$10 to \$12 per cubic yard.

In considering the cubic yards of concrete in this house, the hall and porch floors and roofs are figured in. If these had been figured separately, the main walls of the house would cost less per cubic yard, and, of course, the floors and roofs more, and it must further be taken into consideration no further carpentering was needed for roofing or flooring or slaters or painters, as would be necessary for a brick building. The cost of repairs to such a house are also brought down to a minimum.

The following material was used to a cubic yard of concrete: 320 lb. of cement, 950 lb. of sand, 2,560 lb. of crushed stone, 290 lb. of water; total, 4,120 lb. The proportions were about one part cement, three parts sand and eight parts stone."

SIDE DOOR, VERONA CATHEDRAL.

The thing which at once attracts the eye in this entrance is the combination of brick and marble. Verona marble is slightly red and takes the edge off the contrast with red bricks. Time, however, does this for other marbles. In Italy the combination of brick and marble is usually irregular and seldom complete. It stops suddenly at half height without apparent reason, or it occurs only partially in a building. Here there is intentional irregularity evident in the courses on the right, where the brickwork alternates three and four courses. Sometimes there is a regular number of courses of brick between marble courses of varying height; as if pieces of marble of equal height had been assembled to make a course. Marble can be banded throughout a building without there being too much of it, as is evidenced by the cathedral of Siena, which is finished in the interior throughout with bands of ivory white and dark green marble, and is one of the most impressive interiors in Italy. But the indeterminateness of the colour banding on the exteriors—rather like the uncertain definition of the markings of animals—is always a source of interest. The most striking point, however, in this illustration is the way in which the doorway has been made a feature in scale with the building by the application of a portal by means of which a 9-ft. doorway becomes a 30-ft. entrance.

CHURCH OF ST. PETER AND ST. PAUL, FALL RIVER, MASS.
MESSRS. CRAM, GOODHUE & FERGUSON, ARCHITECTS.

This is an interesting piece of Renaissance detail from a firm usually understood to be devoted to Gothic for church work. The style, founded on that of the spacious times of Queen Elizabeth, is much more congruous with American life than either a mediæval style or a rigid following of the Roman orders. It is a wonder that the architects of the United States have not been attracted by the freedom of the English Renaissance which, in the hands of the present generation of architects, has more