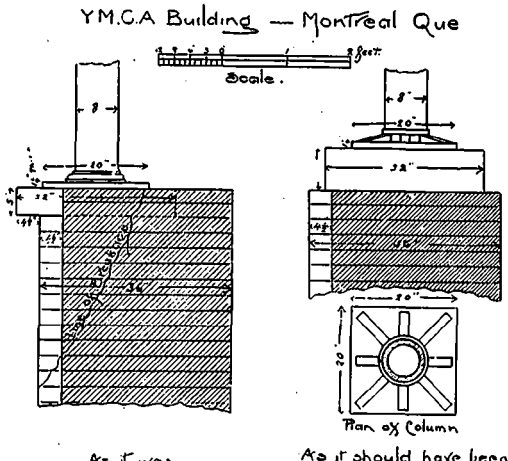
have offered. There are some very valuable ones. I think those latterly given by Mr. Gordon are very good, and we shall take them into consideration, and those also from Mr. Darling and others. I thank you very much for the attention you have given to the paper.

ACCIDENT TO THE Y. M. C. A. BUILDING, MONTREAL.

THE accident to the Y.M.C.A. building at Montreal last week has demonstrated the old proverb that the strength of the chain is only equal to that of its weakest link. The experts appointed by the Building Committee are preparing a report upon the condition of the whole building and as to whether the plans and specifications provide adequately for the safe construction of the building. Doubtless they will be found in the main satisfactory, and it is just possible that the late accident may have resulted from a departure from the plans.

The information which has reached us is somewhat meagre as to details, but judging from the cuts which have appeared in the local papers, the construction of the supports of the column which first gave way exhibits an amount of ignorance of the laws of safe building which should relegate the parties responsible to positions calling for a different order of intelligence. Not only was the column set upon the side of the supporting pier, but the column block 32 inches square was only 5 inches thick, while the iron base plate was about 20 inches square and only 1¼ inches thick. Possibly if the pier had been very solidly built and central with the weight above, nothing serious would have occurred but there would even then have been the risk of both iron plate and column block splitting in the centre, allowing the column to sink into the heart of the pier; in fact it is quite probable that the trouble first began with the breaking of the iron plate and the bearing stone, upon which the column gouged its way through the brick-work of the pier, crushing off the wedge-shaped piece shown in the illustration.



No stone bearing heavy weight should be less in thickness than 1½ times its projection beyond the bearing of the weight above it, and an iron plate of the above thickness should have been stiffened by iron ribs or brackets.

RED EXUDATIONS FROM BRICK.

HAMILTON, Ont., April 6th, 1891.

Editor CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—I see by your weekly CONTRACT RECORD of the 4th inst. that the National Association of Brickmakers of Memphis have been discussing the above question, and a chemist proposes several remedies. From observations of my own for several years I have come to the conclusion that the best remedy for the above is to let it alone. It appears only on new buildings, and only on those which are built in the latter part of the season, or fall of the year. Let any one examine the brick work before or at the time this efflorescence is upon the face of the brick, and he will find, perhaps, finger marks, specks of mortar and other dirt, but on examination a year later it will be found to be without specks or marks, and clean as a new pin.

I regard it, therefore, as a benefit rather than a detriment, and think it must be the result of the action of some substance of the nature of soda.

I have not written the above from a scientific or chemical standpoint, but from actual experience and observation of results in this locality.

Yours truly,

WM. HANCOCK,
Contractor, Brickmaker, &c.

TEST OF FIRE-PROOFING MATERIALS.

AN interesting and instructive series of tests of fire-proofing materials was recently made under the direction of Messrs. Andrews, Jacques and Rantone, architects, of Denver, Colorado, in connection with the erection of the new Equitable building in that city. Three tenders were received for the fireproofing of the building. In the case of the two lowest tenderers the material proposed to be used was fire-clay. The third tenderer proposed to use porous terra cotta, and put in the claim that this material was of superior quality to that offered by his competitors, and consequently that it deserved to be accepted at the extra price. In order to establish the truth of this claim, he requested that a test of the materials be made. This suggestion was acted upon with the consent of the other tenderers.

The tests were conducted under the following heads:

(1) A still load increased until the arch breaks down; (2) Shocks, repeated until the arch breaks down; (3) Fire and water, alternating until the arch breaks down; (4) Continuous fire of high heat until the arch is destroyed.

Following is a summary of the results:

STILL LOAD TEST.—Arch built by the Pioneer Fireproof Co., of dense fire-clay: common method of construction, broke at 5,429 pounds of pig-iron.

Arch built by Thomas A. Lee, of porous terra-cotta and with the end-method of construction. Carried 15,145 pounds of pig-iron for two hours without breaking. Afterwards, broken by three blows from a ram weighing 134 pounds and dropped from a height of ten feet.

Arch built by Wight Fireproofing Company, of dense fire-clay: common method of construction, broke at 8,574 pounds of pig-iron.

DROPPING TEST.—Arch built by Pioneer Company, of dense fire-clay: common method of construction. Broke at the first blow from a ram weighing 134 pounds, dropped from a height of six feet.

Arch built by Thomas A. Lee, of porous terra-cotta: end-method of construction. Same ram dropped on it from a height of six feet four times; same ram dropped on it from a height of eight feet seven times. Arch went down at the eleventh blow.

Arch built by the Wight Fireproofing Company, of dense fire-clay: common method of construction, broke at the first blow from the same ram, dropped from a height of six feet.

FIRE AND WATER TEST.—Arch built by Pioneer Company, of dense fire-clay: common method of construction. Three applications of the water destroyed this arch. When the brick furnace was removed from under it, this arch collapsed.

Arch built by Thomas A. Lee, of porous terra-cotta, on the end-method of construction. This arch was given eleven applications of the water, and at the end of twenty-three hours was practically uninjured, as it required eleven blows from the ram used in the dropping-test to break the arch down after the furnace was removed from under it.

Arch built by the Wight Company, of dense fire-clay: common method of construction. This arch was given fourteen applications of the water, and after twenty-three hours very little of the arch was left, and it collapsed as soon as the brick furnace was removed from under it.

CONTINUOUS TIRE FEST.—Arch built by Pioneer Company, 9" deep, of dense fire-clay: common method of construction. This arch, after having a continuous fire under it for twenty-four hours, was destroyed, as it collapsed as soon as the brick furnace was removed from under it.

Arch built by Thomas A. Lee, of porous terra-cotta: end-method of construction. This arch, after having a continuous fire under it for twenty-four hours, was practically uninjured, as, after its furnace was removed from under it, it supported a weight of bricks of 12,500 pounds on a space three feet wide in the middle of the arch.

Arch built by Wight Company, of dense fire-clay: common method of construction. This arch, after having fire under it for twenty-four hours, was unable to carry its load of 300 pounds per square foot, and collapsed as soon as the brick setting was removed from under it.

In painting ironwork exposed to wind and rain, take, says the *Mechanical World*, red oxide of iron, ground in oil, and mix it with equal parts of boiled linseed oil and turpentine, add 1 ounce patent dryers to the pound. This is said to be a good paint for the purpose.