

resting on columns of 9" diameter in the first storey and diminished one inch on each floor till they were 5" diameter in the fifth storey. The theory that an explosion was the prime cause of the disaster is not held by many to be tenable, as any concussion which was felt at the time was quite incapable of throwing about one hundred feet of wall into the street. It is believed that the accident was caused by overloading and excessive vibration. There is a constant tendency in commercial buildings to increase the weights upon the floors, often unconsciously, and where manufacturing is carried on, new machines are being constantly added as business increases. Sometimes the operation of these machines, when they happen to run in unison, sets up a vibration which becomes cumulative, like the march in step of soldiers over a bridge. The commander wisely orders his men to break step, and it would be the part of wisdom if factory owners would carefully note the tendency towards undue vibration and correct it by altering the setting of the machinery in order to break up the rhythmical motion which may become an irresistible force ending with disastrous results. It is reported that these buildings were erected some twenty years since, and that the upper floors were designed for offices or light business purposes. The load provided for—200 pounds per square foot—was sufficient for such use. But as is so often the case, the character of the tenancy changed as time passed on and the upper floors were occupied by printing and lithographing establishments, increasing the load on the floors to 700 pounds per square foot, and this with years of vibration, so weakened the floors that it needed only the fall of some heavy material to precipitate the catastrophe.

The press reports spoke of dividing walls on the lower or shop floors, and the inference is that above this the whole space was without dividing walls, which would act as ties or buttresses to the long front wall. This wall may have gradually, by reason of constant vibration, been forced away from the wooden girders, and the mutual tie and support being lost, the dropping girders would wedge the wall out into the street. We have frequently thought of this contingency, especially with regard to premises which have been enlarged by taking in adjoining buildings, cutting out the party walls and carrying the whole front walls on slender pillars. In the event of a sudden shock, nothing short of a special providence would prevent a disastrous collapse. It appears to us that a "special providence" in the shape of a proper by-law should be introduced in our cities and towns providing against this contingency. The walls should be constructed in such a manner as to be self-supporting. This could be accomplished in the case of a long frontage devoid of party walls, by internal buttresses at intervals not exceeding 20 or 22 feet. The risk run by firemen when buildings of this class are on fire is also very great, as whatever frail supports which heretofore kept the wall in place may burst or twist away, and a puff of wind or falling timber would be all that would be necessary to send the front with a crash into the street.

CORRECTION.

MONTREAL, Aug. 19th, 1891.

Editor CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—Allow me to correct an error which appeared in the last number of the CANADIAN ARCHITECT AND BUILDER. In referring to the Province of Quebec Association of Architects, you stated that S. A. Findlay and W. B. Hutchison passed the matriculation examination successfully. It should have read "Geo. N. Hutchison," as W. B. Hutchison is a student who goes up only for his final examination.

Hoping that you will correct the error in your next number, I am, yours respectfully,

A. P. Q. A. A. STUDENT.

MONTREAL.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

I AM pleased to notice that the Province of Quebec Association of Architects have framed conditions to govern architectural competitions in future. These conditions were read at the Quebec convention on the 10th inst., and unanimously approved. They will be submitted to the Governor-in-Council, and if sanctioned, copies will be sent to all the members of the Association.

The Council of the Province of Quebec Association of Architects should, in my judgment, take some action which will stop the practice indulged in to a considerable extent by students in the offices of members of the Association: of soliciting work by their own account, and offering to carry it out for less than half the proper commission.

A vast sum was sunk in the temporary plant used in building the Fort Bridge. The engineers estimated that \$500,000 was spent in this direction alone. In scaffolding, flooring, sheding, etc., 1,000,000 cubic feet of timber were used. From first to last, 1,200 tons of more service bolts were needed to hold the material together. Scores of hydraulic jacks, sixty miles of wire rope, and rams innumerable were also among the temporary appliances employed.—*Engineer.*

Liquid slating for coating blackboards can be purchased ready for use, but where it is not easily to be had the following formula for preparing it may be relied upon, as it is the best which is followed by one of the manufacturers of liquid slating: Dissolve one pound of sticline in one gallon spirit wine, ninety-five per cent.; when dissolved, add one-half pound best ivory black, five ounces best flour emery, and one-half pound ultramarine blue. Mix and put in stoppered bottle. Shake well before using. Being very volatile, it will be best to pour out into a cup only enough for immediate use. Use a soft brush, and apply rapidly and evenly. One coat is usually sufficient on old blackboards.—*Zz.*

THE FOURTH GRECIAN ORDER.

Editor CANADIAN ARCHITECT AND BUILDER.



SIR,—Through the medium of your paper I beg to call the attention of my fellow students to the remarkable discovery made by the Council of the Ontario Association of Architects.

Which member's fertile imagination was first to give it birth, probably they will inform us! Mayhap it dawned upon each one simultaneously.

Picture it, my fellow students! This august assembly of examiners in that upper room of the Merchants' Bank—like the disciples of old on the day of Pentecost, waiting for an inspiration—when suddenly the building is subjected to severe strains by reason of the gyrations of these pioneers embracing each other affectionately and crying frantically: "Eureka! Eureka! We've found it! We've found it! THE FOURTH GRECIAN ORDER!"

After this excitement had somewhat abated, and all had resumed their seats, the secretary uprising and in a choking voice, with tears of thankfulness streaming down his face, supporting himself with a "T" square which he used in the form of a crutch, the thumb of his left hand stuck in the arm-hole of his vest, he thus delivered himself: "I looked far back into other years, and lo! in bright array I saw, as in a dream, the forms of ages pass away. I wandered through a land with clime salubrious, and in my journey passed a temple on the summit of a hill—a most perfect sample of the Grecian Ionic; a little to the left and partly hidden by a grove of trees the ruins of a temple of the Grecian Doric Order. Still I journeyed on, and entering a city saw the people flocking to the temple where worship was being held, and going forward with the throng, was soon standing in the midst of this palatial pile; and leisurely I examined it." (I will not weary the reader with the graphic description the Secretary gave of this building, lest it be unwise, suffice to say he classed it under the Grecian Corinthian Order.) He resumed—"Again my restless spirit asserted itself, and on and on I wandered, up hill and down date, till far away in the distance I espied a glorious park, and on entering saw a vast multitude of people assembled listening to the fierce denunciations against good Catholics by an individual standing on a raised dais, and from the people I learned that this defender of the Faith was called 'Jumbo.'" (At this juncture the basin on the table in which the listening board wrung their tear-stained handkerchiefs was full and overflowing; it was Curry-ey and emptied.) Growing weary of the rabble I turned and wandered southward, and 'twas here in this park I discovered the long lost Order—a building which was then not completed. I stood before it enraptured. Words fail me when I attempt to describe the grandeur of its form—its noble and majestic proportions, its studied massing, its delicacy of outline, its refinement of detail, its perfect symmetry. I was so lost in admiration that I did not notice the approach of a person who was now standing beside me, and turning round I recognized the author of this gigantic fizzle, Neo Grec in the flesh. Gentlemen, I shall never forget the brief half hour I spent in the company of this enlightened genius. He gave me the entire history of the building, from its conception up to its present stage. He told me he was a stranger here and an alien from his own country—how they had never recognized his genius there, but here he had been received with outstretched arms, the Lord High Fraser having waited a year for the right person, now felt influenced by the gods to confer upon him the honor of being the progenitor of this abortion (for it was a crime punishable with death according to the laws of the land if such a production had originated with any of their own subjects). At this point of my dream the form of Neo Grec faded away, and I remembered no more till I regained consciousness and found myself in the arms of our worthy President.

As the Secretary resumed his seat the members of the board again took to their feet and pirouetted. Such shouting, leaping and weeping for joy never greeted the ears of a human being at the conclusion of his maiden speech. (Indeed the noise was so loud that it could be heard at the Town's end).

methinks, my dear fellow students, that the true version of the discovery is this: They assembled in that upper room to study Graphic Statics, and fell asleep over the first two problems and dreamed this hideous dream of being left in the Queen's Park within view of our new Parliament Buildings, and thus emanated from their weary brains, "The Fourth Grecian Order," which they have given us as a question to elucidate at our April examinations.

Yours truly, FIRST YEAR STUDENT.

NOTE.—See Ferguson's History of Architecture, Vol. 1, p. 277; Nicholson's Encyclopaedia, Vol. 1, p. 475; Rosengarten's Architectural Styles, p. 64.