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THE QUAKER OATS FIRE.

An important paper by Mr. T. D. Mylrea, of the Toronto City Architect's Department, on the fire at the Quaker Oats plant at Peterboro last was recently read before the Insurance Institute of Toronto. The paper is profusely illustrated with photographs of the ruins of the plant, which show very clearly the character of the damage done, and will be much appreciated, particularly by fire insurance engineers and others interested in the problem of fire resisting construction. Mr. Mylrea's paper is technical in character, not lending itself readily to quotation, but among other points he mentioned that the concrete construction of the plant was that known as the "Flat Slab" type, a type of building that was first recognized in any building code by Chicago only as recently as 1914, on which lines a number of buildings have recently been erected in Toronto and elsewhere. In some general comments upon the effects of the fire, Mr. Mylrea says:—

"The first thing that comes to one's mind with respect to this fire is the question: "Why did this building collapse, while at the conflagration at the Edison Phonograph Works, in 1914, nearly all the buildings were left standing and in such shape as to be easily restored." With the possible exception of the wax preparing building and cylinder and disc finishing building, no building at the Edison plant had to stand higher temperatures than existed at the Quaker Oats Co. fire, for melted cast iron is evidence of about 2,200° F., and bricks vitrified to the viscous state of about 2,300° F., so the heat conditions were about the same. As far as floor loads would have any influence, they were in places somewhat heavier than the design loads, but judging from tests conducted by our department, they were not sufficient to cause excessive stresses. The sixth floor, though but seven inches thick, is of more modern design and probably would have carried more than the lower nine inch floors had they been tested to destruction before the fire.

FLOORS FAILED FIRST.

"In reality it is much easier to explain why the Ouaker Oats warehouse fell than why the Edison buildings stood. As soon as steel becomes heated, the working strength diminishes; and this weakening takes place at the rate of approximately 4 per cent. for each 100° F. increase in temperature. For 2,500° F. increase, therefore, the strength would be very nearly the melting point of steel. If we take the evidence of the brick, which shows that a temperature of over 2,000° F. penetrated two inches into a material of just about the same conductivity as concrete, and, from this, assume that the slab rods reached this temperature, it is evident that their working strength was reduced by about 80 per cent. For a steel with an elastic limit of 45,000 per square inch, this would mean that the available working strength was less than 9,000 per square inch. In the columns this would not be of such grave importance as in the floor slabs, but in the slabs the stresses developed were in excess of this reduced allowable stress. It is, therefore, probable that the floors failed first and carried the columns with them.

"It is possible that the depth of the beams and girders and the short spans of the floor slabs in the Edison buildings offered a more effective resistance to collapse by reason of their shape, even were the working strengths temporarily reduced. We kno showever, that there were no heavy floor loads on the Edison buildings, and we know also, that the fire in each building lasted but an hour or two. In all probability, had the floors been loaded to capacity and had the fire endured for seven hours on all floors at the same time, these buildings would have fared no better than did the Quaker Oats warehouse.

"There is much more evidence that the floor slabs collapsed first in the Quaker Oats warehouse. Even though protected in some cases with a very thin coat of concrete, the reinforcing rods were not oxidized, while other exposed metal was. This might have been inferred from the fact that a thin coat of cement mortar will prevent rust, which is another form of oxidation. If a fire is of sufficient intensity and duration to heat a nine inch floor slab through, it is evident that even four and one-half inches of fireproofing would avail nothing. So it seems that it would be incorrect to call for excessive fireproofing simply because one building collapsed when exposed to unusual fire conditions. The wiser course would be to have just such an amount as by reason of its low heat conductivity would prevent the steel from becoming overheated in an ordinary blaze.'

INSURANCE PAPERS AND NEWSPAPERS.

It is the practice of daily and other newspapers to publish now and then an able editorial intended to convince insurance officials that newspapers are the only mediums for underwriters to use if they would "educate the people." Our esteemed contemporaries are sometimes ready to admit that insurance papers discuss insurance matters with more or less ability and that, as class papers, they may be useful to underwriters, but as they are chiefly read by insurance men, the daily press constitutes the real medium for underwriters to make use of, if they would reach the public.

That view of the case seems plausible enough —until the other side is heard, which is this: It has been observed, in instances without number, that when any newspaper takes upon itself the task of discussing a simple principle or practice of insurance (fire, life, or any other) in a way intended to enlighten the public and benefit the insurance business, the paper knows as good as nothing at all about the principles and practices of insurance and does not think it worth while to ascertain the facts as they are, and so present them.

About all of the misunderstanding and misinformation the public has in regard to insurance matters is caused by the erroneous comments of the lay press. When a daily newspaper chances to treat an insurance subject with intelligence, its temporary common sense is borrowed from an insurance paper, or loaned by an insurance man.

Of course, a great deal of the matter that appears in the columns of insurance journals is of interest specifically to insurance men, but every insurance article of general interest which appears in an insurance paper finds its way through the dailies to the people, and the amount of good stuff that reaches the public in this way would astonish the lukewarm supporter of the insurance press who deludes himself into the belief that insurance journals have no readers outside of a limited circle of insurance officials, agents and brokers.—Insurance Index.

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