

MR. T. G. JACKSON'S LETTER ON THE DANGER OF USING IRON IN BUILDINGS.

To the Editor of the Times:

Sir—The accident which has brought part of Charing Cross Station to ruin and has cost so many lives, and which one fears must be symptomatic of further decay and danger to the rest of the fabric, brings home to an architect's mind very forcibly the suspicion that iron construction is still on its trial, and that we do not know what its ultimate fate will be.

The constitution of iron, robust enough in most respects, is delicate in others. Damp, which will not injure brick or stone, and will only destroy slowly the harder kinds of timber, will bring iron to speedy ruin. The life of an iron structure exposed to the weather depends absolutely and solely on the thin skin of paint we put upon it, which is constantly perishing and must be constantly renewed. Thirty years, one has heard it said, is the lifetime of a girder. There are, however, many parts of ironwork when once it is put together which a paint brush will not reach, but to which water will penetrate, rusting the metal eating into the joints and loosening the rivets. And ironwork is so bound together, and every part depends so much on its attachment to another, the whole structure consisting of a system of ties and braces, mutually straining and strained by one another, that a fracture of one member may upset the whole construction. We are told that it was the breaking of a tie-rod that brought the roof at Charing Cross to ruin, and this is a quite conceivable explanation of the disaster.

Iron construction, it may safely be maintained, is still on its trial, and what has just happened may be—absit omen—the precursor of similar catastrophes. In many respects we are only in the experimental stage. No one can say for certain what the action of cement is on ironwork embedded in it. One used to hear that a coating of cement concrete made steel imperishable. One hears now many rumors to the contrary. Cast

iron, at first adopted for railway bridges, has had to be replaced by wrought iron, because it was found that constant vibration destroyed the tenacity of cast metal. Who can say how long it will be before it will do the same for wrought?

But the danger is not confined to great railway structures. It must be remembered that the house fronts of miles and miles of London streets are entirely carried on iron girders, and that these girders are inaccessible, and can never be repainted, and that the name boards and other facings that conceal them are not designed to be proof against the damps and fogs of London, to the ravages of which the iron girder is as susceptible as the human lung. The mere condensation that takes place on cold metal at changes of temperature in the weather outside is enough to do the mischief, and as the mischief is covered up from sight its progress can not be detected.

When one looks at the huge structures in the Brompton road and elsewhere that seem to the eye to stand on the edge of sheets of plate glass, one not only grieves over the artistic defects of such a system of construction, but can not help feeling considerable apprehension on other grounds.

It is reported that an engineer has prophesied that no one will use iron or steel in his building 30 years hence. I feel sure that no architect who wishes his building to live should do so now. He will do wisely to exclude it from his work, except in such minor matters as ties and bolts and plates to stiffen timbers, or small girders to carry floors. So used, iron is a valuable servant, but it makes a very bad master. Your obedient servant, THOMAS G. JACKSON.

Eagle House, Wimbledon, Dec. 8.

The name of Brooks-Smith Hardware Company, of Toronto, has been changed to the Brooks-Sanford Company. The new company is composed of the three Brooks Bros. and two Sanford Bros., Mr. W. M. Smith having retired.

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