BUILDING METHODS IN TORONTO.

MR. WM. SCOTT, builder, of Galt, Ont., writes to the ARCHITECT AND BUILDER as follows: "I spent three hours in your city recently and visited some of your departmental stores. In Mr. John Eaton's I saw what I considered a very poor piece of building construction for a building of such height. In connection with an addition which was being erected in rear of the main building, the beams were built of 2 inch plank, and bolted. The lower bolts were about one and a half inches from lower edge and upper bolts about same distance from upper edge, where the most strength is required. The beams rested on oak caps on top of oak turned posts—the next row of posts resting on top of beams—the same method being employed on each story.

I am safe in saying that in one year the roof will be down at least three-quarters of an inch for each story in height, due to shrinkage and posts crushing in caps —which, with proper construction, should not occur.

I was also in Robert Simpson's new building, and from what I saw of it, as a fire-proof building, is a great improvement on its predecessor, burned in 1895, and is a credit alike to the architect who designed and superintended its construction and to the city of Toronto.

I was astonished to see a lumber yard on top of the new city and county building, which, it is said, will cost $2,000,000. A splendid place for a fire which could not possibly be got at."

IRON VS. WOOD WALL TIES.

A SUBSCRIBER at Ridgetown, Ont., writes: "(1). Would you kindly give me your opinion on the relative utility and durability of pine lath and ⅛" and 1" hoop iron as a tie for hollow brick walls—say for a school house, the ceilings being 14' high, the wall from foundation to second story joist being 8" outside, then 4" hollow and 4" brick wall; the second story wall being two 4" walls with 4" hollow. The total height of brick wall is 30' from foundation to plate. (2). Is there any legislation providing for the inspection of buildings that are considered unsafe?"

ANSWER.—(1) Pine lath ties connecting an 8" brick wall with an inner 4" brick wall answer the purpose fairly well, but are not nearly so good as hoop iron or round wire ties. The objections to lath ties are:—1st. The ends will swell from damp absorbed from mortar and then shrink when dry and become loose. 2nd. They are apt to be attacked by dry rot and become useless. 3rd. In case of fire the walls will be rendered too weak to support new walls and roof, as fire will destroy the ties. 4th. More wood ties are required to hold the walls together than iron ones, and this in itself is an objection to their use. Iron ties (either hoop iron or wire bent at the ends) better serve the purpose for the following reasons:—1st. They do not shrink. 2nd. Being of less dimensions they bed better in the mortar and thus get a better grip of the walls. 3rd. If properly prepared they will last as long as the brickwork. 4th. In case of fire they will not burn, thereby preventing the walls from falling. They are handier to employ and cost but little. These ties, when made of iron, should be cut off the right length, made hot, and while in that condition plunged into a bath of common coal tar. This will cover them with a black japan and will prevent them from rusting. (2) The only legislation relating to the inspection of buildings is that passed by some of the larger municipalities, such as Toronto, Montreal, etc. The matter is in the hands of the municipalities.

A NOVEL PLAN OF BUILDING.

A GERMAN inventor has built a house of hollow tubes, whose advantages are, he says, a constant temperature and incidentally strength, comfort and beauty. He first put up a frame of water tubing, allowing continuous circulation to a stream of water. Around this frame he put up his house in the ordinary way. The peculiarity is that all floors and ceilings are crossed and recrossed by the water pipes. The water, having passed through horizontal tubes under the floors and ceilings, passes through the vertical tubes until all have been gone through. In the summer, fresh, cool water circulates under pressure through the network of tubes, cools off the walls, and, after having run its course, flows considerably warmer than when it entered. In its course it has absorbed much heat, which it carries away. During the long and severe winter the water entering through the basement is first heated to nearly 100 degrees and then forced through the ceiling. Of course much of the heat is left all over the house, and at the outlet the temperature of the water is about 40 degrees. The speed of the circulation of water can be regulated so as to allow fixing a certain temperature, equal throughout the building.—Stone.

FINISHING HARDWOOD.

SOME carpenters have experienced difficulty in properly cleaning and repairing hardwood for finishing, as considerable care and skill are required to give the wood a proper surface and leave it ready for treating with varnish or other finish. In working it, after the material has come from the machine, it should be carefully gone over with a fine set smoothing plane, which should be worked with the grain, as otherwise holes would be worked out, causing a great deal of trouble to "smooth up again." Use an iron plane, and scrape the surface with a properly shaped and sharpened scraper, which will cut to a shaving. Work carefully with the grain and take out all holes and rough spots, especially near the joints. When scraping across joints bend the scraper with the hands and avoid tearing up the grain on either side of the joint. Do not use sand-paper before every imperfection of finish has been removed, but when all cross-grain spots, plane marks and other imperfections have disappeared rub the surface over with a sandpaper, being careful to follow the direction of the grain. Use a cork rubber, or, what is still better, a piece of solid India rubber, around which wrap the sand-paper. Be careful at joints not to use the sand-paper on the cross joints when the grain of one piece abuts the grain of another at right angles, for no good finish can be shown when hardwood is rubbed across the grain with sand-paper.

A correspondent of the Painters' Magazine asks: "How is the new tin roof of a steeple best treated in order to give it a green color of oxidized copper? How is the color prepared?" We take it for granted that the roof is covered with sheet zinc, in which case you had best prepare a mixture of 1 part of cupric chloride, 1 part of nitrate of copper and one part of sal-ammoniac in 62 parts of water mixed with 1 part of crude hydro-chloric acid. The zinc plate is to be covered with this liquid, which will impart to the same a deep black color. The latter will change into a dark whitish gray after it is dry (in twelve to twenty four hours). Any coating of oil paint will stick to this firmly and lastingly. Take black and ochre for bronze green paint, and after this is dry, glaze the light patina over it. This you can prepare from suitable green with white, but the most lasting would be Bremen green and white lead. The former, as is well known, only becomes green the second day; first it is blue. This is the best way of imitating patina with oil paint.