FIRE RESISTANCE AND ECONOMY IN STUCCO CONSTRUCTION: BY H. B. McMaster

The features of construction offering the greatest fire hazard in dwellings are the combustible roof and the hollow wall made of inflammable materials. The horizontal openings, such as windows and doors, perhaps come next. No matter how well the outer walls of a house will resist fire, if the flames gain an entrance to the building the highly inflammable character of the contents insures speedy devastation—particularly if openings to the outside are also made in other parts of the house so that a fuel-like condition is created. When this condition exists everything is favorable for a "big blaze," especially this so when the outer walls of adjoining buildings are made of materials which we are accustomed to assemble to kindle a fire.

If the outer walls of houses were built of non-burnable stuff, there would never come those periodic, widespread devastations of homes which result in such tragic loss of life and property. Were such walls of concrete, brick, tile or stucco, and the roofs of metal, concrete, tile or other incombustible covering, the possibility of conflagrations would be precluded.

Considerations of cost will prevent some home-builders from choosing the more expensive types of wall referred to. It is possible, however, to have a fire-resisting house with a non-combustible roof, which will not cost more than the house of frame with clapboards.

The home with plastered or stuccoed exterior—the kind that people of Shakespeare's day were wont to live in—is the type of construction that fills this requirement. There is an aesthetic quality, too, about its walls. The gray stucco is always in harmony with Nature's colors, and never loses its charm. It ages gracefully, growing more mellow with the weathering of years. Another point in its favor—a practical one—is that the insulating properties of a stucco wall are good, which means economy in fuel.

Stucco may be applied to brick or tile, but we are trying to decide on a house for the man of moderate means—a house that will resist fire, be low in cost, inexpensive in upkeep, and lasting in beauty.

A form of stucco construction that is absolutely fireproof consists of steel framing, metal lath and cement plaster. And as the public awakens to a proper appreciation of the need of fire prevention, this type of house will become more popular—particularly with the lowering in cost that will come with improved methods of construction. But the most generally used form of stucco construction has been the following: 3/8 sheathing is applied to the studding; over this is laid waterproof paper; then furring strips are fastened, over which the metal lath is stapled, and the cement plaster is applied to the lath.

About ten years ago a New England architect with an experimental turn of mind thought to leave out the sheathing. This resulted in a construction shown by the cross sectional drawing, in which plaster is applied to both sides of the metal lath. The 2 by 4 studding is braced with 2 by 3's. The expanded metal lath is stapled to the outside of the studs, with metal furring between, and the cement plaster is applied with stucco finish. Plaster is then applied to the inside of the metal lath so that it is thoroughly embedded. Metal lath is then used on the inside of the wall, after insulating material has been laid between the studs, and the inside plastering is applied. (Detailed specifications for this type of construction may be had on request.)

This architect had a number of imitators; the idea was carried out in the West, and time has demonstrated that this is the best way to build a stucco house on frame. The cost is so much lower than when sheathing is used that it is comparable with the ordinary clapboarded house. The fire-resisting qualities are greater, the wall is more rigid, more sanitary, there is less wood to rot, and the metal is protected better from the elements because of the back-plastering. It meets the requirements of the man who wants to spend anywhere from $2,500 to $10,000 for a dwelling house that will afford a large measure of protection from fire, to his family and neighbors, at the minimum of expense.