

# Expert Explains Danger of Shoddy Construction

**\$60,000,000 Can Be Saved Annually in This Country Through Use of Good Materials and Workmanship, Authority Declares.**

## THE DANGER OF SHODDY CONSTRUCTION

An address by Lyman Clark of General Electric company, before civic development group of Chamber of Commerce of United States.

(From the Western Contractor.)

As there can be many interpretations given to the subject of "Dangers of Shoddy Construction," it may be best to paraphrase by stating that "dangers" refers to economics; "shoddy" refers to waste due to materials or personnel and "construction" refers to building structures, either commercial, industrial or residential.

Building construction in the United States involves the expenditure annually of an amount probably equal

to \$3,000,000,000. The very smallest economic effect upon this expenditure naturally involves a large sum of money and we may readily afford considerable expense in devising methods for its economic use. As an example, if our annual outlay for building construction can be affected by only such a small amount as 1 per cent for good or for evil, or 1 per cent positive value and 1 per cent negative value, we have the possibility of creating a saving account of 2 per cent, or \$60,000,000 annually which is the interest charge at 6 per cent on a total of \$31.3 per cent of our annual expenditure. With this large saving in mind, is it not worth while to seriously look ahead

and devise every possible means for the reduction and prevention of shoddy in building construction?

### Causes of Shoddy Work.

1. Causes of shoddy construction: A. Ownership. B. Construction. A. Ownership—There are many causes for shoddy construction that are traceable to the ownership of property. We look upon property in the sense of invested capital upon which we must seek a financial return. Our constant thought is to develop the property for one purpose or another, that it may make a return on the invested capital. From the standpoint of building construction the owner is always confronted with the problem of what best can be done with his property from two points of view; he must consider the property in the light of a holding with ever increasing value or he must consider it in the light of something to be traded in as an article of commerce. Where the owner has adopted the latter consideration, there springs up within our urban and suburban centers an enormous amount of building construction. There is a cause for shoddy construction where the owner tries to seek a greater earning increment by attempting to build beyond his means. Without sufficient capital requirements, he often places upon the property a building of the dimensions and contents he desires by utilizing shoddy construction. In other words, he is forced to build beyond his borrowing ability.

Question in Construction. B. Construction—It is questionable whether more shoddy is used by those having to do with the actual construction of buildings than those who are concerned in the ownership of property and buildings. In the construction work, we have to consider the following responsible personnel: (1) Architects and engineers; (2) general and subcontractors, and (3) labor.

(1) There is probably no profession upon which is imposed a greater necessity of knowledge than that of architecture. In the architect's relations to shoddy construction we may truthfully state that ignorance is the only possible avenue for its introduction. Sometimes this ignorance is due to a "closed ear" on the architect's part from his inability to receive or lack of appreciation of advice but it is seldom if ever the question of wilful introduction of shoddy construction by him, a condition which does not always pertain to the owner.

### Must Watch Loans.

#### II. Reduction of Shoddy Construction.

1. Loans. 3. Education. 2. Regulations. 4. Co-operation.

1. Loans—While it may be a delicate question to impose upon him who loans funds for building purposes a further consideration than

the return of interest and principal there, however, seems to be a growing consideration that financiers must be more concerned with this question than they have in the past. The mortgage of property should be concerned not only in the insurance that principal and interest are returned but that the loan had been wisely and judiciously invested. It should be the duty of one loaning money for buildings to know that the character, kind and quality are the best within economic means. The life of building structures has been variously estimated as being for cheap frame tenements of from 10 to 15 years and for the best structural buildings of from 75 to 100 years. A rate for sinking funds would then be 10 to 5 per cent for the cheap frame tenements for a term of nine to 10 years. In the structural buildings the rate of the sinking fund would only need to be 1 per cent and the term only one-half its life. Therefore, we may reduce the introduction of shoddy construction by impressing upon the owner the economical considerations of building well, and further, by making it difficult to obtain loans for shoddy construction. We may be able in this way to reduce shoddy construction by placing a premium upon good construction.

### Few Building Codes.

2. Regulations.—We have comparatively few cities with what are municipally known as building codes and none of these codes absolutely prohibit the use of shoddy construction. In the majority of cases they

are made out for the purpose of creating fire walls but do not go very far into the character or necessities of good construction. We have various rules for fire protection which more or less define the kinds of materials but again these materials are merely to prevent fire hazards rather than to create good construction. While there are inspectors of one sort or another for urban and some suburban properties there does not seem to be such regulation that prohibits or reduces to any marked extent a considerable amount of shoddy construction. Attempts have been made, however, to clarify and unify many regulations imposed upon the building structure. We may, therefore, hope by this means to greatly reduce shoddy construction in future buildings.

### 3. Education.

It is possible to reduce the use of shoddy through many educational facilities. Considerable good work has been done along these lines, not only in the technical press but in popular magazines, newspapers and circulars. That considerable more can be done in our schools and educational institutions, there can be no question. The building public should be advised as to the economic advantages of quality materials. Considerable benefit in the building industry might accrue also from visual instruction through the use of motion pictures distributed by manufacturers and others.

### Benefits of Co-Operation.

4. Co-Operation—Probably no better means for reduction of shoddy is

provided than through co-operative effort stimulated by trade associations in setting up useful and economic standards that have materially reduced the waste in building structures. There is still a great deal of work to be done and it would seem worthy to propose that wherever possible, various trade associations should be notified by the architectural profession, by the engineering societies and by various contractors' associations of anything that will tend to reduce the use of shoddy by its removal from the market.


### We are confronted today in the construction industry with the price of labor sufficient to necessitate the use of only good material and certainly entire elimination of shoddy material. It is impossible to conceive of paying the prevailing rates of labor for the introduction of shoddy. If one will undertake to examine the material in the market, it will be clearly and easily seen that the use of good material does not vitally affect the cost of building structures; that those concerned with building operations do not examine thoroughly the market price of commodities, in planning building structures must be evident. We, for instance, do not find a marked increase in the use of copper at a price in the neighborhood of 131-2 cents over the use of copper at the price of 26 cents; we do not find a marked increase in the use of rubber at 13 cents at over its normal price of 90 cents or during the war at \$3.50.

In residential building, we are confronted with a condition where about

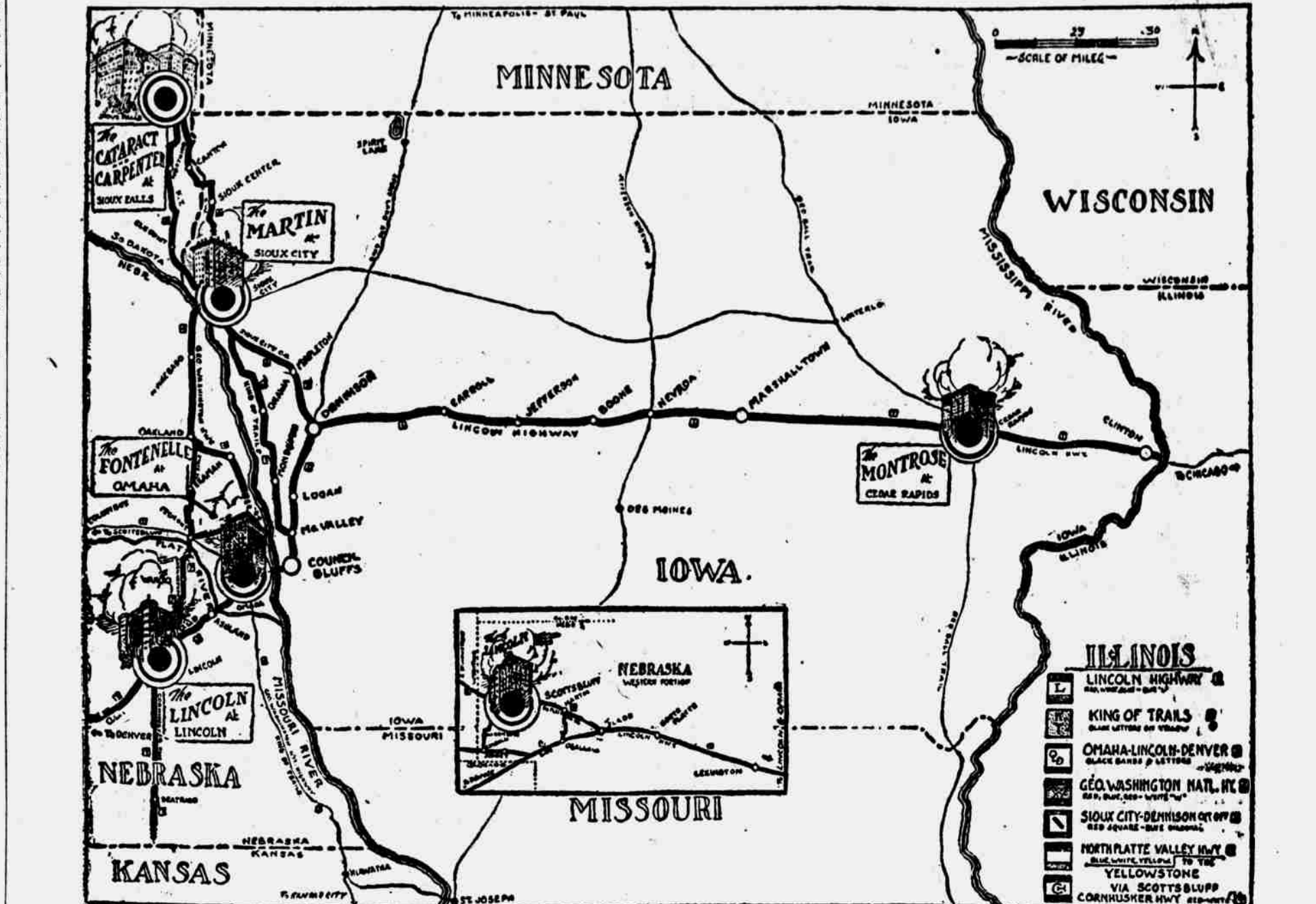
one-half the cost goes to labor and one-half to material. Eliminating certain items of material that are by an average amount equal to 10 per cent, we can figure on obtaining a home in the definition of Webster: "The abiding place of affections." Generally, quality may be obtained at an expense of only 2 1/2 per cent of the total cost. Sometimes through the application of knowledge the same is true without any increase in the investment.

Shoddy as meaning "waste" must be eliminated if we are to approach any economical renovation. Therefore, may I suggest that all concerned in building construction—the banks, insurance companies, merchants, industrial, professions and trades—interest themselves in every means available for the reduction and elimination of shoddy construction.

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