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REINFORCED BRICK CONSTRUCTION
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Winter Construction Offers New Life to Reinforced Masonry

REINFORCED Brick Masonry speeds winter work with safety. The adoption of this new principle in construction may be made a factor, when normal construction activities are resumed, in leveling off the seasonal peaks. There always has been some difficulty, if not actual hazard, in erecting large buildings in the winter season where climatic conditions are severe.

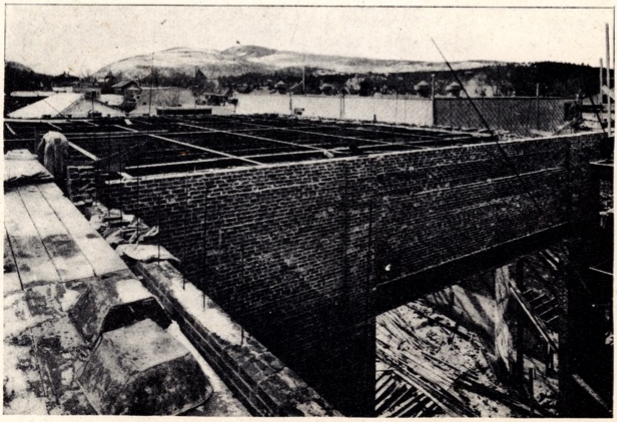
Because of the advantages inherent in brickwork as a winter construction, the introduction of the reinforcing feature promises to solve one of the builders' serious problems. The erection of the Criterion Theatre at Bar Harbor, Maine, using reinforced brick masonry throughout, in the dead of the winter of 1931-1932, demonstrated this conclusion in a most convincing manner.

Weather conditions encountered could hardly have been worse. Winter temperatures in Maine are seldom mild and last winter was no exception. Increasing the handicaps, there were thirty-one snowstorms at Bar Harbor while the building was under construction. Yet with these unusually adverse conditions the building was erected without injury to the construction and at a cost lower than any type of competing construction, according to the builder.

The theatre proper occupies the rear of the lot and is reached by a lobby extending through a one-story store building along the front. The theatre is a thoroughly modern one and, as will be seen by the illustration, has the accustomed high, unbroken walls which inclose the stage and auditorium.

The architects were Bunker and Savage, of Augusta, and the contractor was Peter P. Carey, of Waterville. The brick used were wire-cut, manufactured by the Brooks Brick Company, of Brewer, Maine. In all 278,900 brick were used in the walls and the masons laid an average of 777 per day for the entire job. The mortar used was a 1:3 Brixment mix, an average of 4.7 sacks being necessary per 1,000 brick. Sand used was .53 cubic yards, or .39 tons per 1,000 brick. An interesting cost item was for 33 common labor hours per 1,000 brick for cleaning snow from brickwork and staging.

Steel reinforcing consisted of ⅜-inch round rods in both the 12 and 8-inch walls, spaced two feet on centers both horizontally and vertically. Over the proscenium arch a steel girder was used because it was found that the expense would be no more than would be required for the reinforcing steel in the brickwork above the arch. The reinforcing steel used weighed about 6½ pounds for each 1,000 brick used and was placed by the masons.

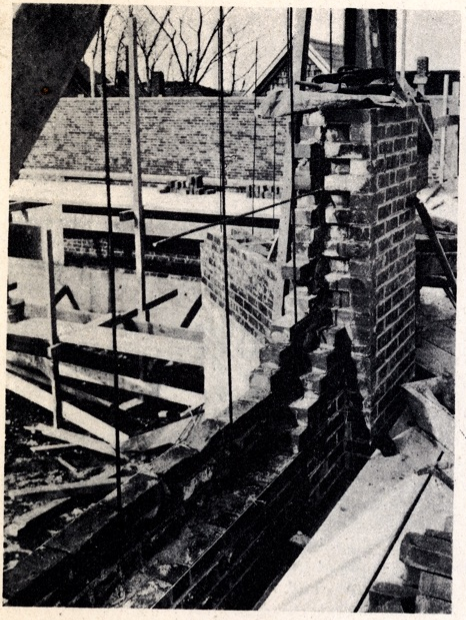


Bunker and Savage, Architects, Augusta *Photos by H. L. Bradley, Bar Harbor*

A steel girder used over the proscenium arch made a temporary break in the reinforcement

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A close-up view of the wall construction showing reinforcing details

The plans were originally designed for concrete, but because of the winter work and to enhance the beauty of the structure, it was finally decided to use brick. Approximately one-half of the brick used went into the 8-inch walls and one-half into the 12-inch walls.

Discussing the probable comparative cost of brick and concrete, Mr. Carey, the contractor, said: "I am not in a position to give the exact cost if the work had been on concrete instead of brick, but my figure on this was $16 per cubic yard from the foundation up. I believe, however, that this is much too low for winter work."

Referring to the brickwork he said: "I figure that for this same work during the summer months the cost would have been 20% less than it cost under the winter conditions we faced."

According to Engineer E. F. Gallagher, Boston: "The concrete would have cost about the same as brickwork at about $32 per 1,000 brick. But this price of $16 per yard is low for winter work, and it includes the foundation which is of course the least expensive of the work," said Mr. Gallagher.

"The cost of brickwork would probably have been 20% less than it cost in the winter, and as the actual cost was $38.40 this would mean a summer cost of about $30.60, much less than the concrete.

"This cost showing was very agreeable to everyone concerned. It was a revelation to Mr. Carey and an astounding surprise to the architects. Being the first example of this type of masonry in that section, it had naturally attracted the keen interest of other architects and contractors who were equally astonished at the ease with which the work proceeded and the ultimate statement of costs. Incidentally it has had a pleasing result in revising their ideas of the comparative cost of this and its competitive types of construction, heretofore rather favored in some sections because of the impression that they were cheaper if not better than brickwork.

"Perhaps even more important from the point of view of the brick manufacturer was the remarkable showing made in the construction work under the severe climatic conditions encountered. Elsewhere it has been frequently and convincingly proved that reinforced masonry has a cost edge over reinforced concrete. It was yet to be proved however what an advantage it had over its chief competitor in winter construction. This is the outstanding lesson from the Bar Harbor theatre job. It is the feature that impressed both architects and contractors, and promises to revolutionize winter construction in the years to come."

BRICK ENGINEERS' DIGEST

The dearth of organized and collated information on brick masonry is becoming increasingly evident. It has too long been considered a subject about which there was little to learn.

The Brick Engineers' Digest will fill this lack in your technical files. Our purpose is to give you indexed reprints of valuable articles on brick construction, with readers' comments and authors' corrections added, thus increasing the value of the articles.

These reprints will bring your files up to date, for quick reference, on the latest data on the subject.

By special arrangement with the publishers, both here and abroad, we can cover most of the technical magazines. However, suggestions of articles that have not come to our attention will be appreciated.

The first few issues will be devoted to the subject of Reinforced Brick Masonry. The series will, however, cover architectural design and construction features, thus catering to the interests of all parts of the construction industry.

Comments giving additional information on the subject treated will be reprinted.

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