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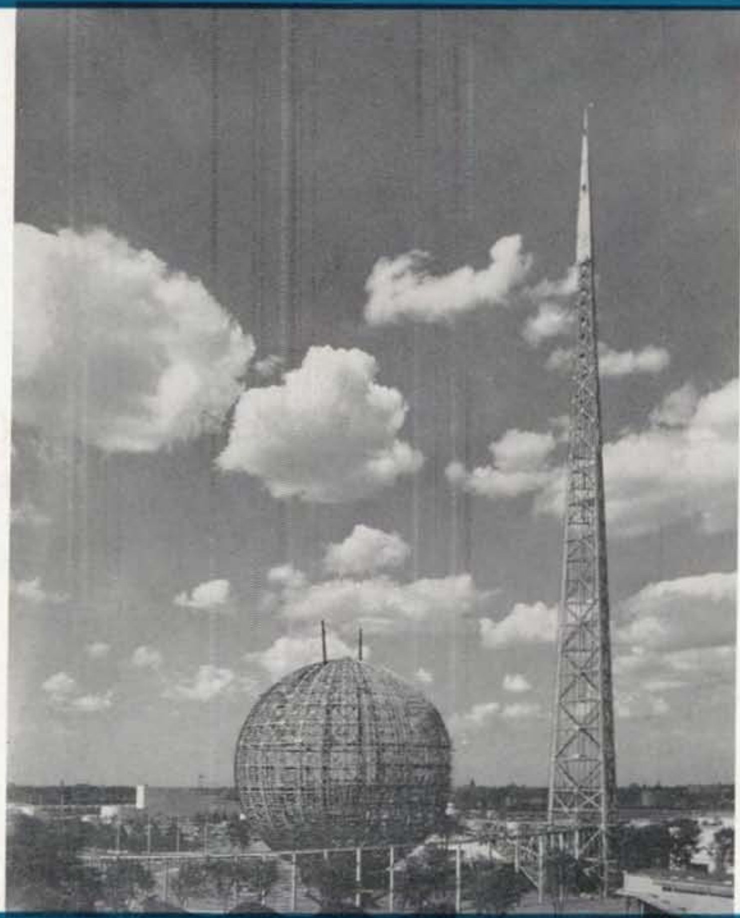

TO GLOBAL WAR

THE STEEL CONSTRUCTOR

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AMERICAN INSTITUTE OF STEEL CONSTRUCTION

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Salvage Values

Not all old steel is scrap. Many old steel structures can be easily rehabilitated and given a new life of usefulness. When new materials become scarce and new construction is restricted or rationed, structures that can be rehabilitated begin to develop a new value.

This ability to rehabilitate, this ability to salvage old steel structures, is a quality that is rarely figured into the original investment and is a quality that is above and beyond the normal economies that are apparent in new steel structures.

These old structures may often be salvaged without the use of additional material. In other instances, a major rehabilitation may be accomplished by reinforcing a few of the members of the frame, by removing some members, or by adding new members. The ease and simplicity with which this can be accomplished is in striking contrast to other types of construction in which no such repairs or revisions are possible without wrecking the whole structure.

Steel recovered from the buildings erected for the New York World's Fair, which closed the year France fell to Germany, is being used to fight the invaders. Some has been incorporated in gun mounts, some in cofferdams for the U. S. Navy, and some in wartime plants and buildings.

Rodney McCay Morgan

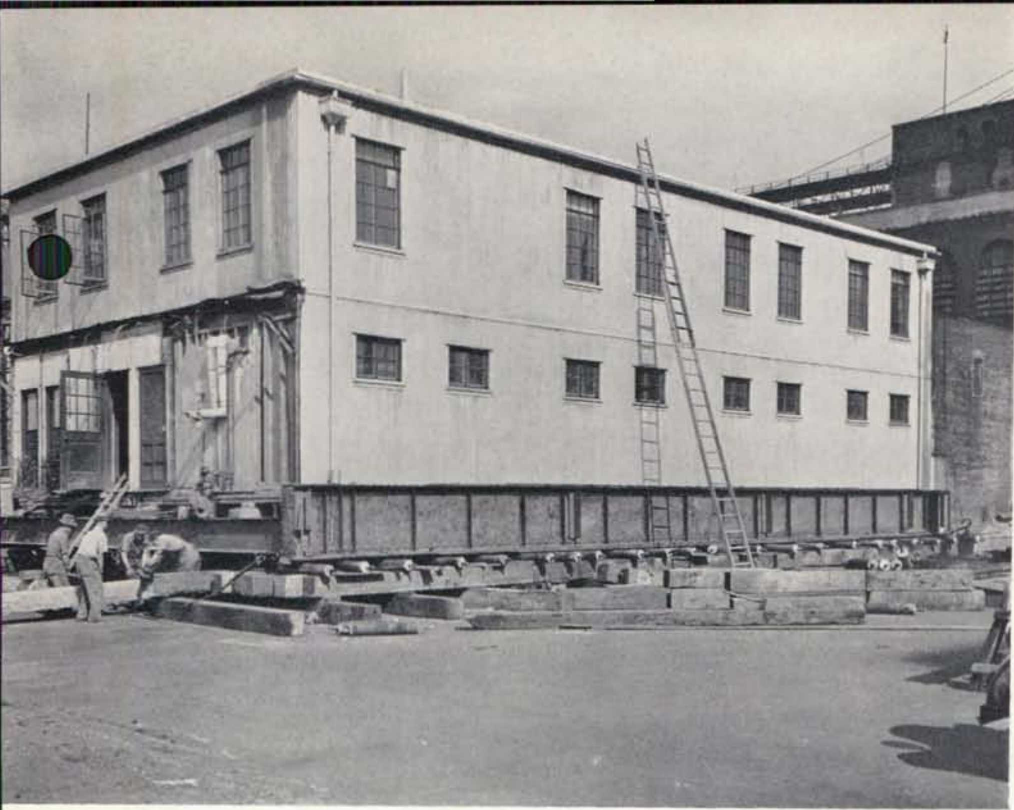
Changes in trends in mass transportation have made a number of elevated railways unprofitable to operate. Instead of tearing down the obsolete elevated railway structure on Third Avenue, Brooklyn, N. Y., it was widened and a floor installed, and turned into an elevated highway for motor vehicles. It now forms a part of the Gowanus elevated highway of New York.

Photo U. S. Bureau of Reclamation

Above: This span of steel of the Great Northern Railway bridge, rendered useless at its original site by rising waters of the reservoir formed by Grand Coulee Dam, on Columbia River in Washington, was floated from its original location at Marcus, Washington. Six other similar spans followed downstream to a power house at the Dam, where 965 tons of steel from the old structure were recovered and utilized in the framework of a large equipment, storage and fabricating plant.

Below: To permit unobstructed flow of water in a dam basin, this steel highway bridge two miles north of Dover, Ohio, was jacked to a height of 17 feet above its original level. Built in 1929.

Photo from Engineering News-Record



The Queens Field Office of the New York City Tunnel Authority, used in connection with the construction of the Queens Midtown Tunnel, was moved to a site in Brooklyn to be used in connection with the construction of the Brooklyn-Battery Tunnel.

The building was placed on skids and rollers preparatory to rolling it down Borden Avenue, Queens.

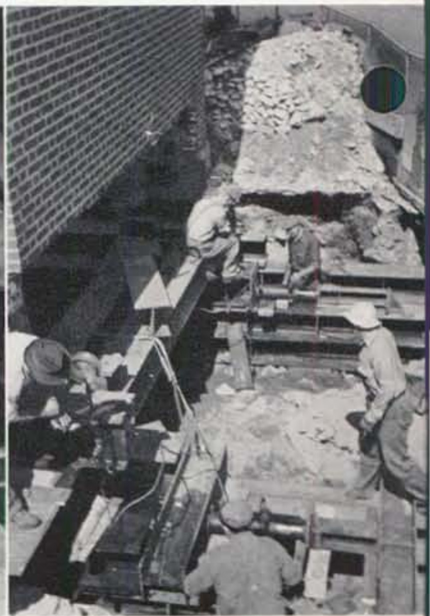
Below: Building on barges, tied up at N. pier at foot of India Wharf, Brooklyn, after having been floated down from its former location.

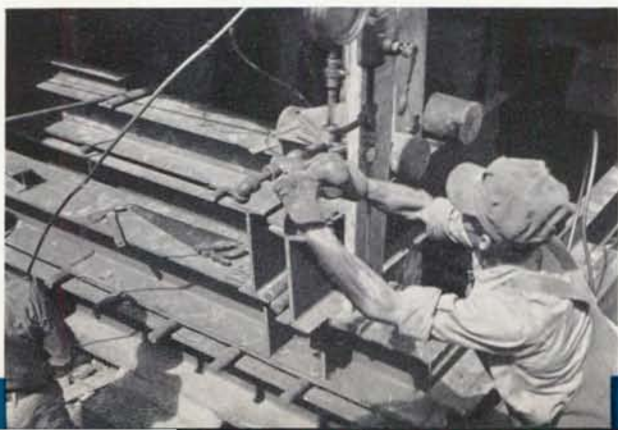
Photo from New York Tunnel Authority

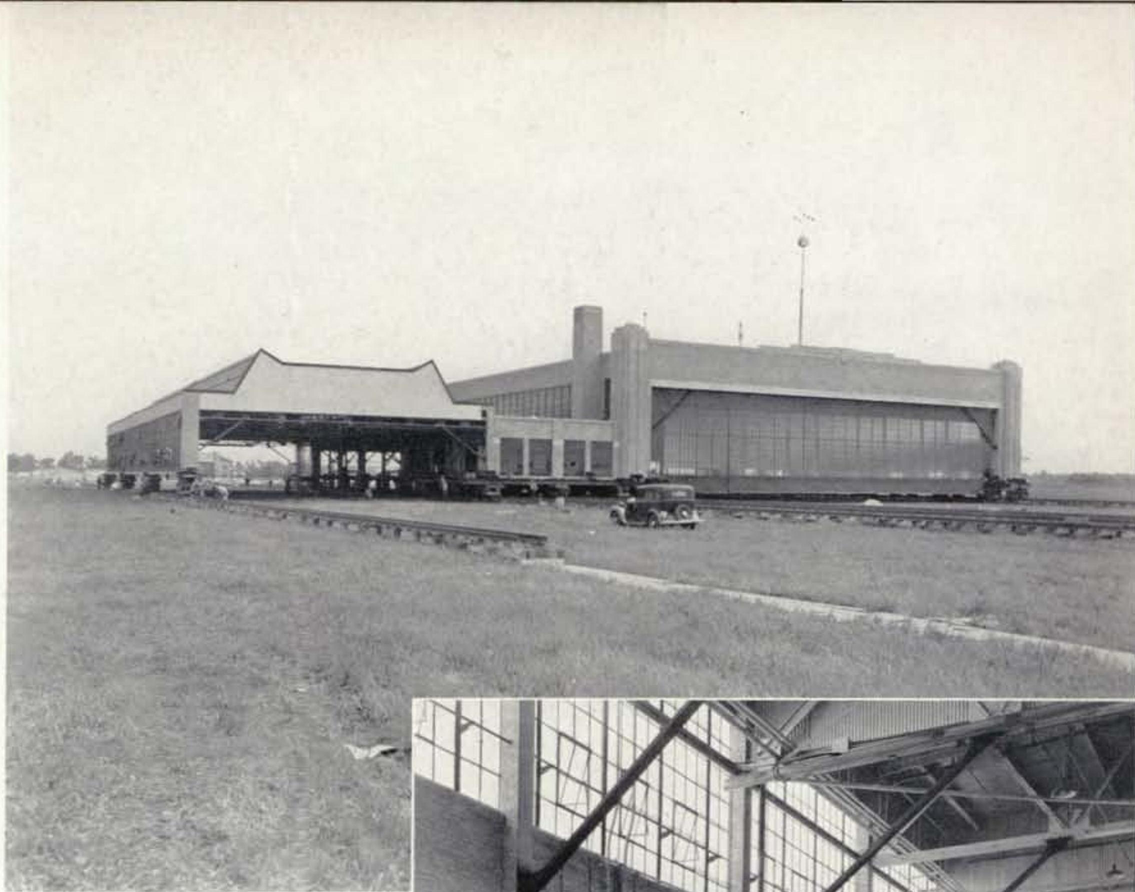
Wide World Photo

A six-story hospital at 15th Street, New York City, was moved sixty feet to make room for East River Drive. Pavilion No. 3, Willard Parker Hospital.

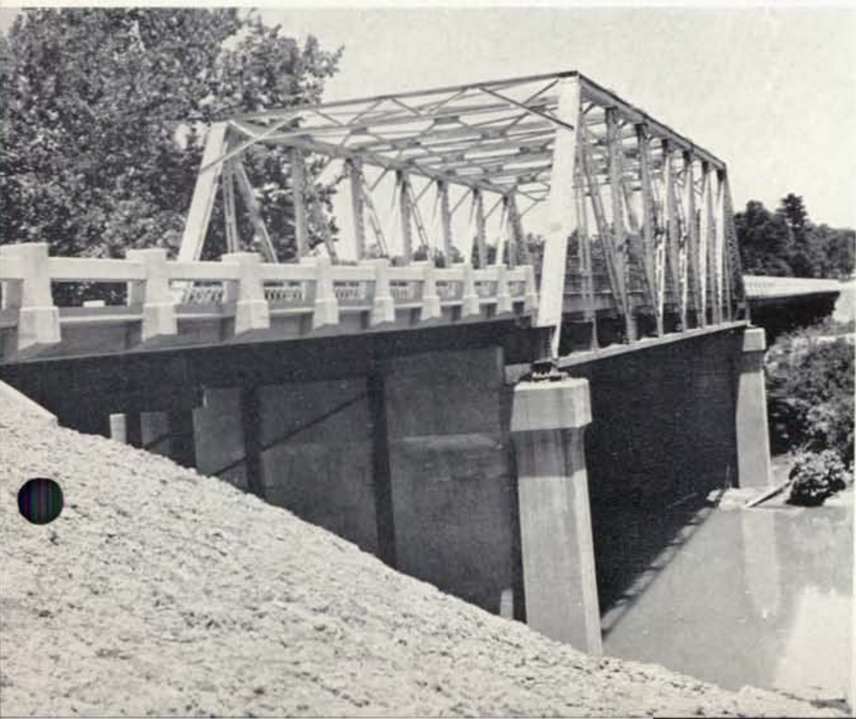
Spencer, White and Prentis, Inc., engineers and contractors, who undertook this operation, have said that the success of the operation which was completed without the slightest injury to masonry or plaster walls, was due to the fact that the building was moved 100 per cent "steel on steel."







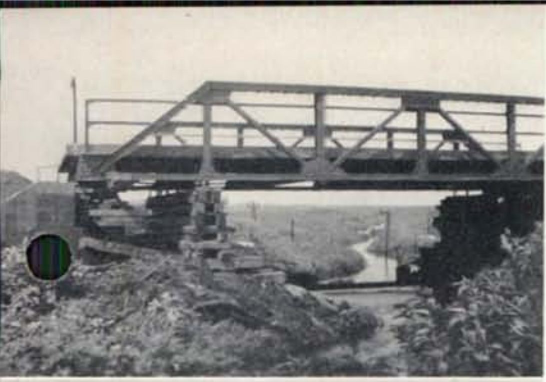
This building of the Pratt & Whitney Aircraft Company, a steel-framed structure, was moved to a new location in the manner illustrated. The absence of intermediate floor framing, which would have tied the walls together and otherwise stiffened the building is a remarkable tribute to the inherent strength of steel frame structures.



This bridge at Cedar Bluff, Alabama, after 16 years of service was widened and thereby given a new usefulness.

About ten years ago an office building for the Department of Public Works was erected in Richmond. At the time of building it was anticipated that the structure might later be moved, and it was designed with that prospect in view. Three years ago the building was moved, without interruption to services, 400 feet to a new location to make room for a new building for the Virginia State Library.

The relatively narrow passage through which the building had to pass necessitated twice swinging through an arc of nearly ninety degrees. The building has a frontage of 117 feet and a width of 52 feet. Note the excellent condition of the masonry walls which withstood the trip without any damage because of the continuity afforded by the steel frame.



This bridge, once on Route 20 near Rockwell City, Iowa, was declared unsuitable for primary traffic by the Highway Commission. It was given to Calhoun County by the State on condition that the County shift it to a new site. The bridge is a 50-foot warren-type truss, 20 feet wide, weighing about 75 tons.

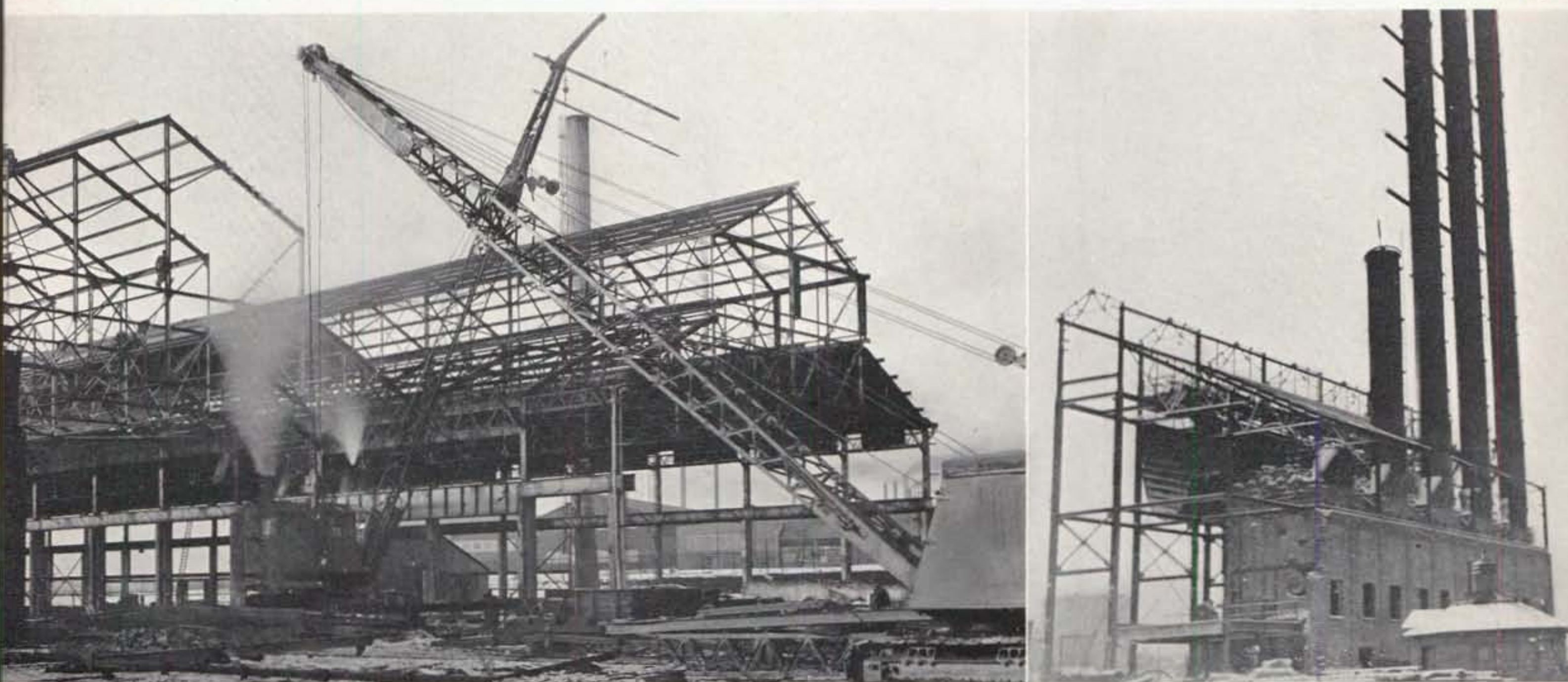
Standard house-moving equipment was used for the job, one four-wheel carriage being employed in front to facilitate steering, and two carriages at the rear.

The spring floods of 1936 tumbled the Maine Central Railroad bridge at Brunswick, Maine, from its piers. The four spans of the structure were lifted from the water by the Merritt-Chapman & Scott Corporation, righted and moved back into position upon its piers. Such a complete salvage job was possible only because the spans were of structural steel. Only a very few members were damaged by the fall. These members were cut out and new ones installed.

Calvin Coolidge frequently claimed that there were four things that contributed to the advancement of New England:

1. *Eat it up.*
2. *Wear it out.*
3. *Make it do.*
4. *Do without.*

Repeating this old saying, the U. S. Department of Commerce has recently added that these four are "particularly applicable to today's needs." An obsolete factory, if built of steel, may not wear out for many years after a location is outgrown; with some slight adjustments it may be rehabilitated and put to a new and different use—dismantled and moved to a new site if need be—economically and with great profit.

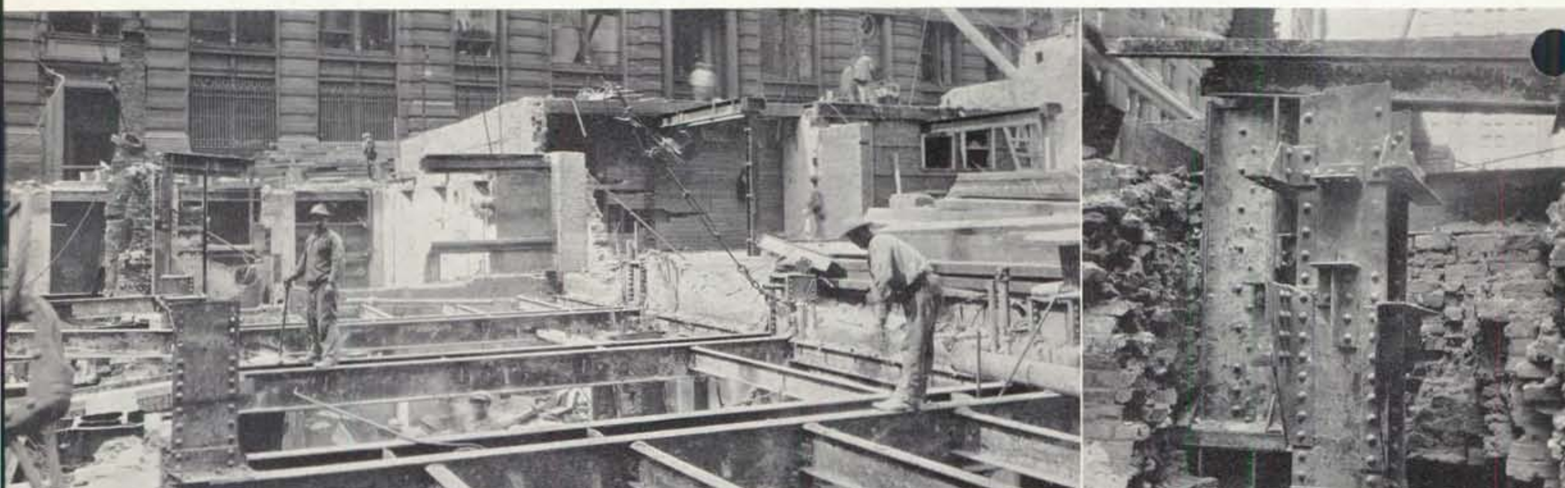


Here are two plants in the Pennsylvania-Ohio industrial area that have been successfully rehabilitated by the Hetz Construction Company.

New York State built a new bridge across Schoharie Creek at Cobleskill in 1938. The single span eliminated a pier in the center of the stream which was necessary to support the old bridge it replaced. But the old structure continued to fill a traffic need. The two old spans were dismounted and moved to new locations, one erected at Warnersville and the other at Barnerville, at both of which places Schoharie Creek is narrow and one span is sufficient to cross the water.

One new bridge of steel not only eliminated an obstruction in the middle of the stream, but provided three traffic crossings where but one had existed before.

The demolished elevated railways, World's Fair buildings, and other similar structures, have released many tons of material that can be and are being used in construction. The indiscriminate use of second-hand material is not recommended in construction. When used, the material should be tested to determine its properties. While most of the steel used in structures in this country was manufactured under controlled conditions, there has been enough foreign steel of questionable quality used to make it necessary to examine all second-hand material. It should be used only under the supervision of a competent engineer.



This is the steel work in an old structure that was wrecked on the site of the present Federal Reserve Bank, New York City. The material from this structure was inspected and tested by R. W. Hunt & Co., who reported "all material in good condition, free from rust; paint in good condition".

Such material, when in usable sizes, can be successfully incorporated in a new structure. Due to improved rolling technique, new steel is now stronger and can be safely worked up to 20,000 pounds per square inch. When this old building was erected a unit stress of only 16,000 pounds was permitted.

When the amusement center of New York City moved uptown, it left the monumental Old Madison Square Garden stranded in a neighborhood taken over by office buildings.

When torn down to make room for a new office building, it was found that the long roof trusses over the Garden were in perfect condition, without the slightest sign of deterioration in any respect, after 35 years of service—this in spite of the fact that little or no attention was given to periodic repainting. Much of this salvaged steel was used to build a racetrack grandstand in Cuba.

"If you are not using it now, most likely you will never use it. Scrap it." That is the slogan of the Salvage Section of the Bureau of Industrial Conservation, WPB. In the case of a bridge or building, however, it is not necessarily a question of scrapping, it may be a problem of reclamation. When needed facilities can be completed by a direct re-use, the burden upon steel mill production capacity will be lightened by the extent to which it is relieved of remelting and refinishing the salvaged metal. These facilities are in greater demand today than ever before, but new material for their construction is not easily obtained. Obsolete steel structures may be obsolete only because of their present surroundings. They may possibly be moved to a new location, thus filling a pressing want under different conditions in different surroundings. Or they may be redesigned and put to new uses with the expenditure of little new material and labor, giving the structure a new economic function.

Prior to 1939 few persons had given much thought to the importance of the steel framing in buildings as an insurance against the hazards of war. Recent photographs received from the bombed areas of London demonstrate however that bombed buildings so framed frequently come through in such condition that restoration is possible at an economical cost. If similarly exposed, buildings of less sturdy construction are completely destroyed. Under these conditions not only is the steel frame salvaged but so is much of the original value as well.

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Steel can be Salvaged

STEEL OFFERS HIGHEST SALVAGE VALUE WITH LOW REMOVAL COST

The permanence of steel itself, its enduring strength and value, is evidenced by its recovery from old buildings to serve again as important parts of new framework. The value of structural steel depreciates but little through years and years of service.

When progress warranted the demolition of the first skyscrapers the structural members of the steel frames were found to be plainly marked with the original place markings. The steel had stood unchanged throughout all the years and proved to be apparently as good as ever.

Structural steel buildings and bridges may be, and have been, taken down, removed to another site and reerected. When real estate values make a small building uneconomical it may thus be removed in its entirety so that a larger structure may furnish an adequate return on the investment. Steel bridges may be remodeled and added to economically in order that they may accommodate heavier and a greater volume of traffic.

When it becomes necessary entirely to demolish a bridge or building of structural steel the original material may be reused even in altered shape, due to its high salvage value. Structures built of other materials not only have little or no salvage value, but in many cases the cost of demolition is actually more than the first cost of the structure.

No other building material has such high salvage value, can be so economically recovered, or is so readily marketed after recovery. This is not a theory, but an easily provable fact. Hundreds and thousands of steel bridges and buildings, having outlived their usefulness in their original position, are now giving perfect satisfactory service in new locations and under changed conditions.

Steel structures are most easily and economically altered, reinforced for additional loads, taken down and re-erected or marketed for other use.

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