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New York Landmarks Conservancy

Common Bond

The newsletter of the New York Landmarks Conservancy's Sacred Sites Program on maintenance and preservation for caretakers of architecturally significant religious buildings.

AN URGENT MESSAGE

Dear Reader:

In 1986, the New York Landmarks Conservancy created the Sacred Sites and Properties Fund, the only matching-grant program in the country dedicated to preservation and maintenance of historic religious buildings. In 1992, the Fund celebrated a major milestone, topping $1,000,000 in grants authorized to religious institutions. Think of this for a moment: these grants have gone to replace leaking roofs, repair failed gutter systems, stabilize steeples, and save stained glass from falling out of its cames. These grants have facilitated not only the preservation of churches, synagogues, meeting houses, and other sacred sites but also their ongoing use for many community functions. Religious properties house essential social services; more than ever before they are anchors in their neighborhoods, landmarks of hope for the future.

Although this achievement is cause for great celebration, it comes at a time when we are seriously worried about the future of the Sacred Sites and Properties Fund. Over the years, a few generous foundations have supported the Fund, but their ability to sustain it is waning. If the Fund is to survive, we must find new sources of support--individuals like you who understand the importance of these buildings to their communities.

Friends of Sacred Sites was created to generate new support for the Fund. Inside this issue of *Common Bond* is a flier you can use to join **Friends of Sacred Sites**. Send whatever you can! This is an urgent appeal. Our immediate goal is to raise $60,000--this will ensure our next funding cycle. If we can galvanize the support of individuals, we will be able to sustain the Sacred Sites and Properties Fund. And the Fund can continue to help save houses of worship and the community services they provide throughout New York State.

The Rev. Thomas F. Pike
Chair, Advisory Committee

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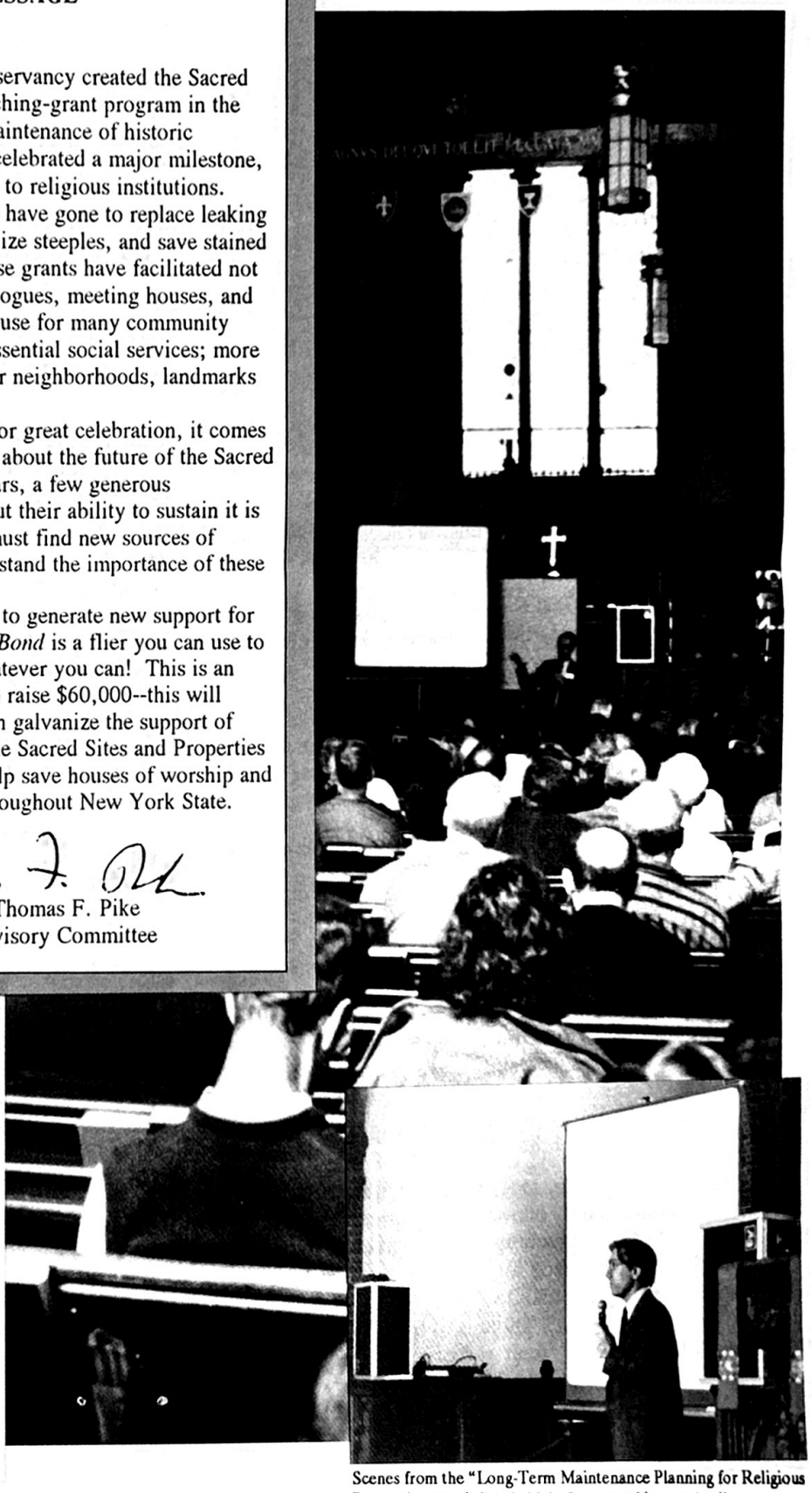

Scenes from the "Long-Term Maintenance Planning for Religious Properties" workshop held in Syracuse this past April.

Ask The Technical Preservation Services Center

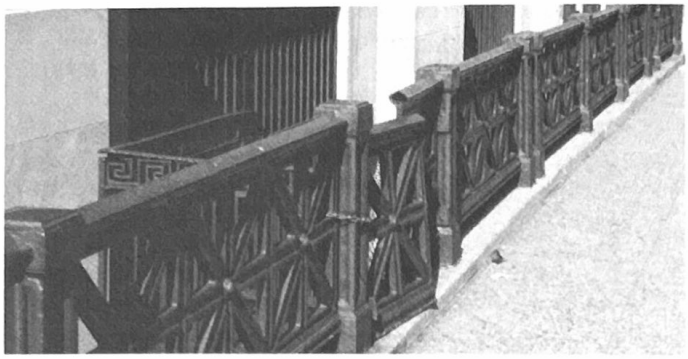

Photo: Ed Mohylowski

Figure 1

Question:
Our cast iron fence is badly deteriorated and sections are falling off. Should we remove the fence or repair it?

Arnie Goldfarb, Congregation Shearith Israel
New York City

Answer:
We always recommend repairing an historic feature of a building rather than replacing it. Besides its historic value, your cast-iron fence is also a superb example of turn-of-the-century craftsmanship (Figure 1). Unless it is completely rusted away, it should be possible, both financially and technically, to repair the fence and make it presentable without undue financial strain.

What is Cast Iron?
Although cast iron has been used in buildings since the middle ages, it was not until the mid-19th century that mass production techniques made its use common. Cast iron is an iron alloy with a high carbon content. This high carbon content lowers the melting point of the iron and makes it easy to pour into molds. Because of these properties, cast iron can be used to create an almost unlimited number of repeating structural and decorative architectural elements. The high carbon content also makes cast iron somewhat more resistant to corrosion than either wrought iron or steel. Unlike wrought iron or steel, however, cast iron cannot be rolled, pressed, or worked on an anvil. It is also extremely brittle and breaks easily under tension, and thus is unsuitable for many structural purposes.

Typical Construction of a Cast Iron Fence
While cast iron found its widest use in commercial buildings, it was popular for fences and gates in religious structures. Cast iron fences are typically composed of individual cast iron pieces bolted together and secured to footings using either anchor pins, which are integral to the cast iron units, or threaded rods, which extend through an entire architectural feature, such as a newel post or a baluster. The anchor pins or threaded rods are seated in holes in the footing and set in lead. Because cast iron expands and contracts in response to changes in temperature, the joints between the individual pieces typically open up over a period of a few years, exposing the interior of the cast iron elements to water.

Cast Iron Deterioration
The principal enemy of cast iron is oxidation or rust. Oxidation occurs whenever cast iron is exposed to water or air. This process can be accelerated by the presence of other corrosive agents, such as acid rain or sea water. As the metal rusts, its surface becomes pitted, promoting more water entrapment and more rust. Eventually holes form in the surface of the iron. If left untended, rust will eventually consume the metal entirely.

Another common source of deterioration in cast iron is galvanic corrosion. Galvanic corrosion most commonly occurs when cast iron has been improperly repaired using a dissimilar sheet metal, such as copper, without any intervening material to prevent a chemical reaction.

A less common source of deterioration is graphitization, which occurs as a result of acid rain or in the presence of sea water. Unlike rust or galvanic corrosion, graphitization leaves the surface appearance of the cast iron essentially unchanged but compromises its chemical integrity until only the carbon or graphite remains. To test for graphitization, scrape the suspected area. If the area under the surface is soft and broken up, resembling crumbled pencil lead, graphitization is probably the cause.

Minor Repairs
A close, physical examination of a cast iron fence is necessary to assess its condition before any repairs are undertaken. Signs of trouble, such as flaking paint, surface corrosion, open joints, and failed caulking, can usually be detected by a knowledgeable property owner.

Minor repairs to a cast iron fence can often be executed on a do-it-yourself basis. Small holes can be effectively repaired using a plumber's epoxy or auto-body putty. Open joints between different cast iron units can be filled with caulking, provided the caulking is elastic enough to move with the iron and still keep water out. Architectural-grade silicone rubber sealant is usually the best choice. Silicone is not paintable, but it is marketed in a variety of colors, so matching the finished color of your painted fence should not be too difficult. A paintable butyl caulk is also usually acceptable, although it is not flexible enough to work in very large joints or in climates with extreme temperature variations. When applying any caulk, be sure to follow the manufacturer's directions carefully.

If the deterioration of your cast iron fence has become so severe that disassembly of all or part of the fence is required, a professional ironworker will either need to execute the work or supervise work executed by an in-house crew. In addition, a professional should be called if lost pieces need to be recreated even if the fence is in otherwise sound condition. ■

The answer to this question was prepared by Christopher Jenks, Consulting Editor for *Common Bond*, using information from "The Maintenance and Repair of Cast Iron" by John G. Waite and Margot Gayle, and "Maintaining and Repairing Architectural Iron" by Patricia Poore, which appeared in the January-February 1990 issue of *Old-House Journal*. See the Helpful Publications column for more information.