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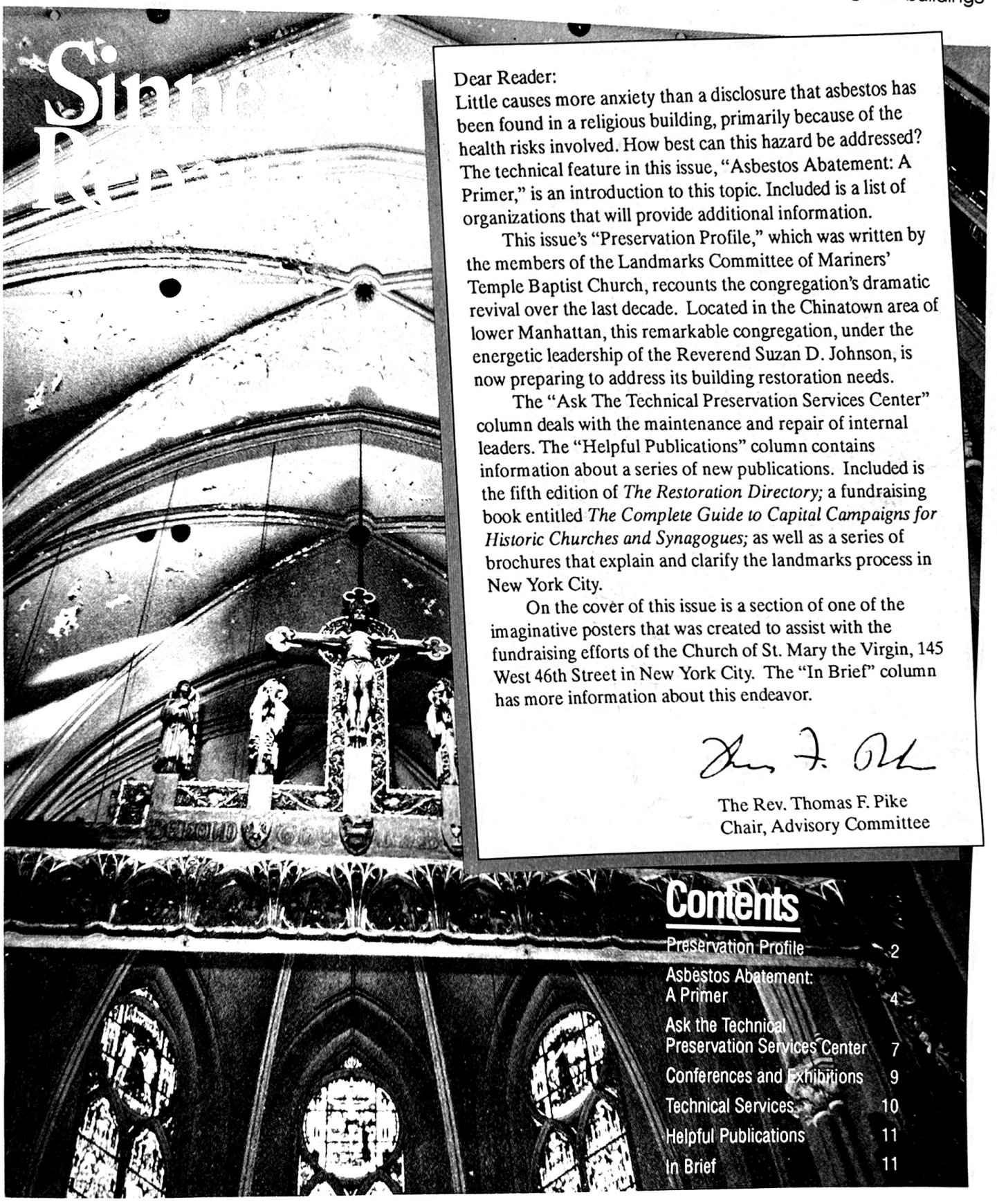
# Common Bond

A newsletter on maintenance and preservation for owners of architecturally significant religious buildings



Dear Reader:

Little causes more anxiety than a disclosure that asbestos has been found in a religious building, primarily because of the health risks involved. How best can this hazard be addressed? The technical feature in this issue, "Asbestos Abatement: A Primer," is an introduction to this topic. Included is a list of organizations that will provide additional information.

This issue's "Preservation Profile," which was written by the members of the Landmarks Committee of Mariners' Temple Baptist Church, recounts the congregation's dramatic revival over the last decade. Located in the Chinatown area of lower Manhattan, this remarkable congregation, under the energetic leadership of the Reverend Suzan D. Johnson, is now preparing to address its building restoration needs.

The "Ask The Technical Preservation Services Center" column deals with the maintenance and repair of internal leaders. The "Helpful Publications" column contains information about a series of new publications. Included is the fifth edition of *The Restoration Directory;* a fundraising book entitled *The Complete Guide to Capital Campaigns for Historic Churches and Synagogues;* as well as a series of brochures that explain and clarify the landmarks process in New York City.

On the cover of this issue is a section of one of the imaginative posters that was created to assist with the fundraising efforts of the Church of St. Mary the Virgin, 145 West 46th Street in New York City. The "In Brief" column has more information about this endeavor.

The Rev. Thomas F. Pike
Chair, Advisory Committee

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**CONCLUSION**

Asbestos-related problems in older buildings should be addressed in a rational manner. Ignoring the potential problems of asbestos is irresponsible, but careless and hasty removal without proper safety precautions is also irresponsible, and can lead to even greater problems. The best course of action is to identify asbestos-containing materials in your building, ascertain their condition and then develop an abatement plan that addresses any hazardous or potentially hazardous conditions in a deliberate and responsible manner.

Additional information about asbestos abatement is available from the following organizations:

Asbestos Information Association
1745 Jefferson Davis Highway, Suite 509
Arlington, VA 22202, (703) 979-1150

Building Owners and Managers Association
1259 Eye Street, NW
Washington, DC 20005, (202) 289-7000

Environmental Policy Advisory Committee
National Realty Committee
1250 Connecticut Avenue, NW, Suite 630
Washington, DC 20036

National Institute of Building Sciences
1015 15th Street, NW, Suite 700
Washington, DC 20005, (202) 289-7800

National Institute of Occupational Safety and Health
4676 Columbia Parkway
Cincinnati, OH 45226, (800) 356-4674

Safe Buildings Alliance
655-15th Street, NW, Suite 1200
Washington, DC 20005, (202) 879-5120

United States Environmental Protection Agency
401 M Street, SW
Washington DC 20460, (202) 382-3949

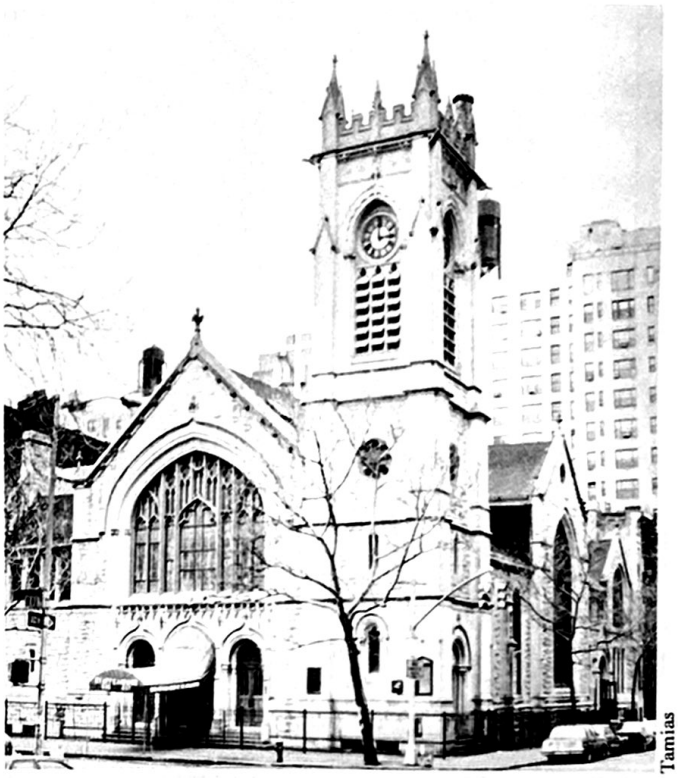
In New York City Contact:

Center for Safety in the Arts
5 Beekman Street
New York, New York 10038, (212) 227-6220

Council on the Environment of New York City
51 Chambers Street, Room 228
New York, New York 10007, (212) 566-0990

New York City Department of Environmental Protection
2454 Municipal Building
New York, New York 10007, (212) 323-8655

# Ask the Technical Preservation Services Center



Tamias

**Question:**

We've been told that some of the water-damaged plaster on our walls is caused by leaking internal leaders. How can we repair them?

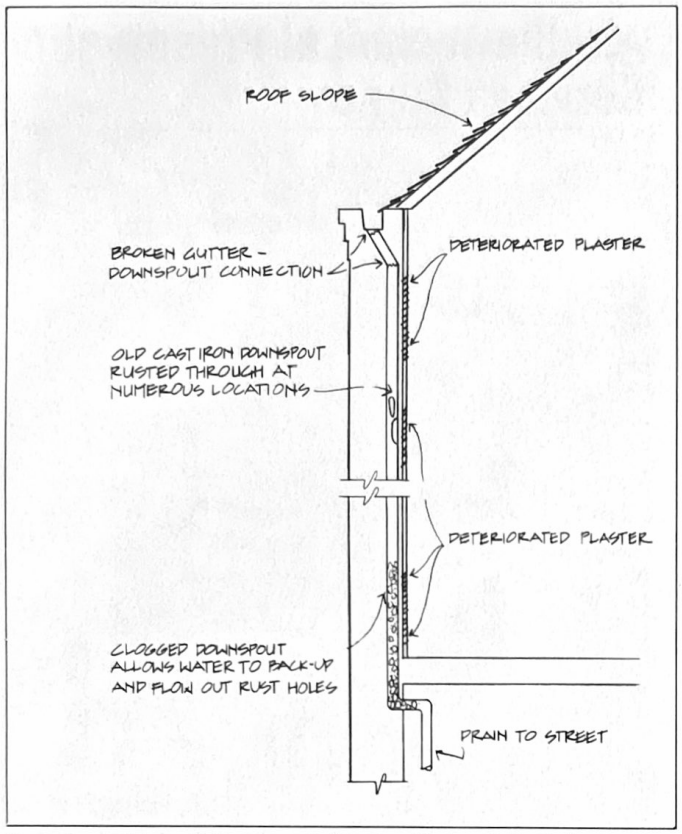
Christine Andreou Deaver
Annunciation Greek Orthodox Church
302 West 91st Street
New York, New York 10024

**Answer:**

Internal leaders, or downspouts, are rainwater drainage pipes located in wall cavities or hidden within projecting exterior masonry features. Gutters or surface drains feed water into the top of the hidden pipes which connect to the underground water disposal system. The primary advantage of internal leaders is aesthetic; the exterior is unmarred by drainpipes. Generally, the location of internal leaders can be identified by finding the roof drains. Original architectural plans may indicate leaders with small dots and abbreviations such as "L." or "C.I. pipe."

Inspecting, repairing or replacing internal leaders is difficult precisely because they are hidden within walls. Diagnosing and correcting problems requires analysis of the particular installation and some ingenuity. It may require the help of roofing, plumbing, masonry or plaster contractors. Usually the first indication of a problem is water damage to interior plaster, or leaching of mortar and recurrent dampness in masonry on a specific area of the exterior wall.

A common cause of leaks from internal leaders is blockage by objects that entered from the gutter or surface




Drawing: Michael Devonshire, Jan Hird Pokorny Architects.

Figure 1: Schematic diagram of the location of an internal leader in a masonry wall.

drain, such as construction debris from a roofing job, a bird carcass or large quantities of organic matter. Material can accumulate far down in the pipe, usually at a bend, and cause water to back up and leak out through corrosion holes (Fig. 1). Cast iron pipes and fittings can disintegrate to the point where sections are completely gone. Failed connections between the gutter and leader should not be overlooked as another possible cause of leaks in the wall.

A gutter or surface drain should not be blocked off more than temporarily to prevent water ingress into a leaking leader because it will disrupt the performance of the perimeter drainage system elsewhere. The locations, intervals and sizes of drain pipes are designed according to the roof slope and area. If one pipe is blocked, water will accumulate or "pond" on the roof and find joints to penetrate, or it will flow over the sides of gutters. Several inches of water on a flat roof adds a heavy weight, which could be structurally hazardous. Thus, a leaking leader must be made functional as quickly as possible.

Examine the design of the drainage system and the construction of the wall to determine the options for correcting the situation as well as the respective logistics, costs and aesthetic impacts. If you suspect that blockage is the problem, a plumber may be called to attempt to clear the pipe with a rod or mechanical rooter from above or below. Beware of abrasion from the equipment which can cause damage to pipes and fittings.

Deteriorated straight cast iron pipes can sometimes be made functional by inserting a new polyvinyl chloride (PVC) pipe as a liner. In New York City, cast iron pipes are required by the building code; PVC pipes may be allowed elsewhere as replacements.

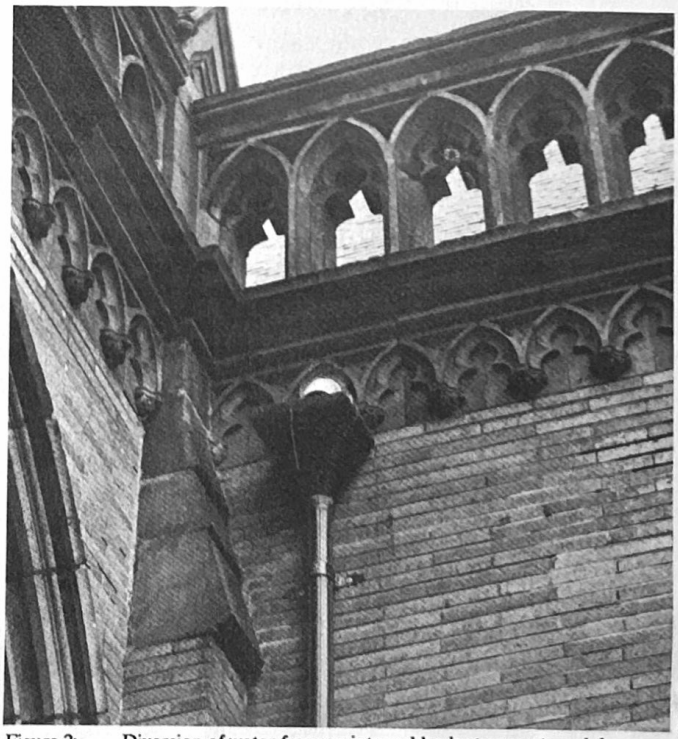
A badly blocked or corroded pipe can usually be reached by cutting through interior plaster. Breaking into the wall is feasible in buildings with plain plaster walls that can be patched and with simple wainscoting that can be removed and re-installed.

Another option is to divert water from the original gutter or surface drain to a new pipe running along the interior wall and continuing through the floors to the basement sewer connection. The character of the interior space and the visibility of a pipe must be considered before choosing this approach.

In some locations, it may be technically feasible to circumvent the internal leader by connecting the drain to a new exterior downspout (Fig. 2). However, the installation of such downspouts may penetrate the masonry and damage decorative elements. The possibility of damage and the visibility of exterior downspouts may make this an inappropriate option. In the case of designated landmarks, the installation of exterior downspouts may be subject to review by local commissions. Even if a new exterior downspout is inconspicuous and does not damage significant materials, it will be necessary to make sure that discharge from the new downspout does not overburden connecting parts of the drainage system.

**Preventive Maintenance**

The best way to avoid internal leader problems is to take steps to avoid the need for costly repairs. Make sure that the surface and gutter drains that feed into internal leaders are protected by strainers. A surprising number of religious buildings lack strainers over these inlets. Keeping a sturdy strainer in place, and unobstructed, over the inlet is the



Kim Lovejoy

Figure 2: Diversion of water from an internal leader to an external downspout by penetrating terra cotta with a pipe from the gutter.

Edward T. Mohylowski

Figure 3: A sturdy dome-type strainer.

most important preventive maintenance, but is often overlooked because of difficult access to gutters in high places. During a roofing repair project, in particular, it is essential that a good strainer be in place to prevent roofing debris from falling into unprotected drains and getting stuck far down in the leader. Sturdy cast iron dome-top strainers are recommended for roof drains that empty into internal leaders (Fig. 3). Bulb-shaped wire baskets are suitable over gutter outlets; however, they may dislodge if not soldered in place. Avoid placing dissimilar metals in contact with each other (i. e. aluminum baskets in copper gutters) because galvanic action will cause corrosion. Avoid using flimsy plastic strainers or 1/4" wire mesh that are easily blocked with small leaves and must be cleared frequently.

If a gutter, drain or strainer is clogged or cluttered with debris, clear it immediately. Establish a maintenance schedule to clear the debris that inevitably accumulates around the drains in your building. These inspections should be conducted at least monthly, and they can be undertaken by members of the building committee or employees of the congregation.

**Conclusion**

Internal leaders can perform well for many decades if preventive maintenance of gutters and drains at inlets keeps debris from clogging the pipes. When internal problems develop, it is better to retain the original design by repairing or replacing pipes in the wall, than to alter the drainage system with awkward diversions.

The answer to this question was prepared by Kim Lovejoy, Project Manager at the Conservancy's Technical Preservation Services Center, based on information generously provided by Larry Jones, Robert Meadows P.C. Architects; Michael Devonshire, Jan Hird Pokorny Architects; and Franny Eberhart, Manager for Public Affairs, New York Landmarks Conservancy, and former Chair, Building Committee, Church of the Holy Trinity, New York, New York.

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# Conferences and Exhibitions

The exhibition **"Landmarks of Hope: Preserving Sacred Sites in the Empire State,"** examines the work of the New York Landmarks Conservancy's Sacred Sites and Properties Fund, a matching-grant program for the preservation of architecturally significant religious properties, by highlighting 34 historic religious properties from throughout the state that have received grants from the Fund. The exhibit consists of a series of backlit, oversize color transparencies illustrating the architectural distinction and diversity of historic religious properties around New York State. Supplementing them are black-and-white photographs that reflect the range of activities and social services that are housed within religious structures. The exhibit was featured at Sacred Trusts III in Boston this past June, and was subsequently on display in the Jacob K. Javits Federal Building in lower Manhattan. "Landmarks of Hope" will remain on display at the H. Lee Dennison Executive Office Building, Veteran's Highway in Happauge, Long Island through October. The exhibit will continue to travel to locations around New York State over the next two years. If you are interested in sponsoring the exhibit in your area, contact Peter Pockriss at the New York Landmarks Conservancy, 141 Fifth Avenue, New York, New York 10010, (212) 995-5260.

Neal Vogel

An international conference on the preservation of historic Jewish sites and structures, **"The Future of Jewish Monuments,"** will be held at the Brookdale Center of Hebrew Union College, 1 West 4th Street, New York, New York, on November 17-19, 1990. The conference, which is designed for historians, architects, preservationists and