Volume 4 Number 2 Spring 1988

Common Bond

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

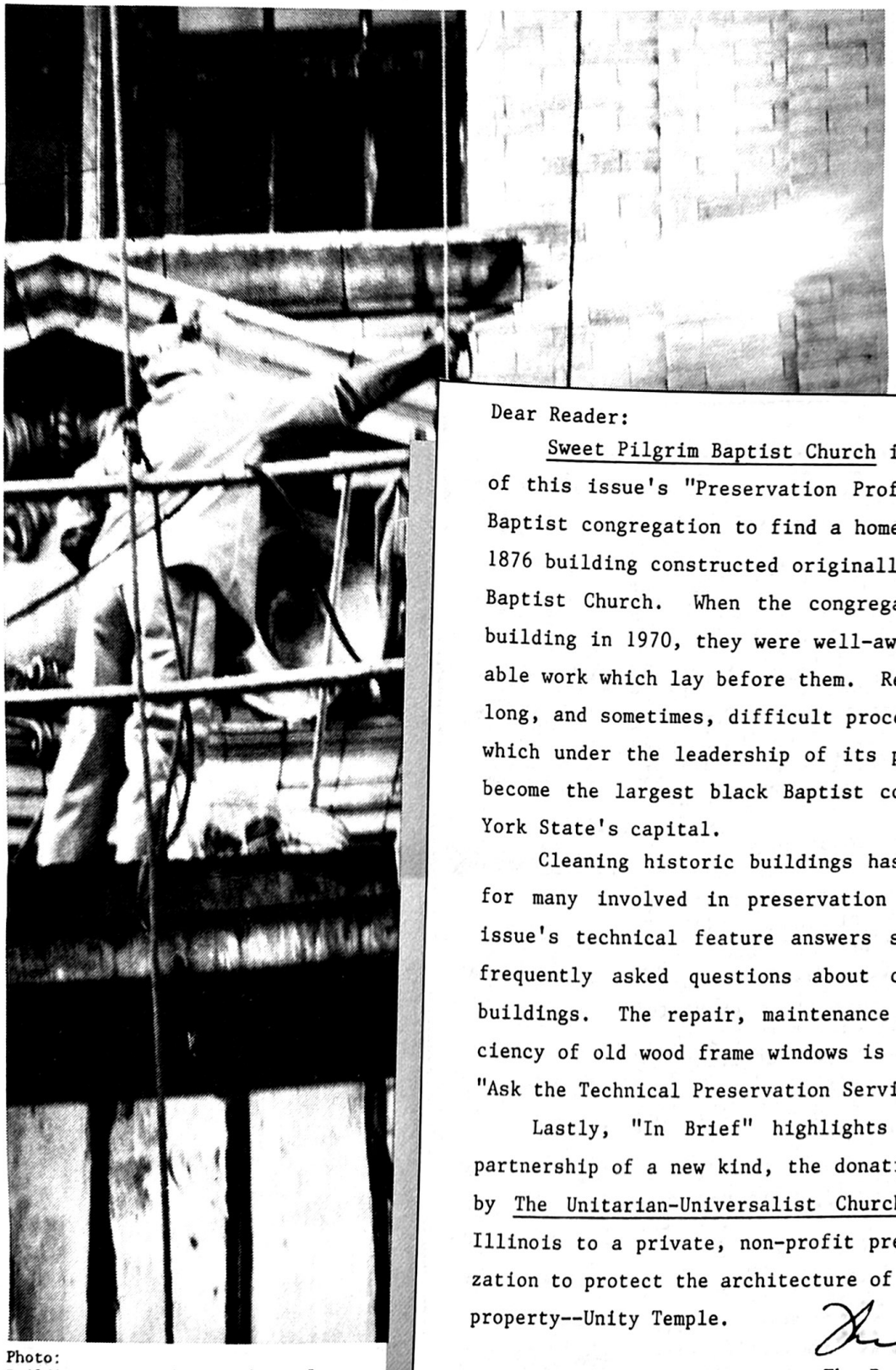

Photo:
Building Conservation Associates, Inc.

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Dear Reader:

Sweet Pilgrim Baptist Church in Albany, the feature of this issue's "Preservation Profile", is the third Baptist congregation to find a home in this magnificent 1876 building constructed originally for the Tabernacle Baptist Church. When the congregation acquired the building in 1970, they were well-aware of the considerable work which lay before them. Restoration has been a long, and sometimes, difficult process for this church, which under the leadership of its present Pastor, has become the largest black Baptist congregation in New York State's capital.

Cleaning historic buildings has become a dilemma for many involved in preservation projects. This issue's technical feature answers some of the most frequently asked questions about cleaning masonry buildings. The repair, maintenance and energy efficiency of old wood frame windows is the subject of the "Ask the Technical Preservation Services Center" column.

Lastly, "In Brief" highlights a preservation partnership of a new kind, the donation of an easement by The Unitarian-Universalist Church in Oak Park, Illinois to a private, non-profit preservation organization to protect the architecture of its historic property--Unity Temple.

The Rev. Thomas F. Pike
Chair, Advisory Committee

conceal. In addition, look at the causes of dirt accumulation and staining.

3. Always conduct several cleaning tests on an area of the building which is not highly visible before defining the scope of work and preparing specifications for the job. Try out several different cleaning products and rinsing methods in order to examine their effect on the masonry. An approved test area can be used as the standard to evaluate work as it is ongoing, as well as once it is completed.

4. Photograph the facade before, during and after cleaning. This documentation will come in handy if problems arise.

These measures will help to protect the building, your interests and those of your consultant and/or contractor (Figure 3).

There are many technical approaches to cleaning a building. The key to a successful project is to know what can be achieved relative to the type and fragility of different masonry materials found on the building, the type of dirt accumulation or coating, the size of the property, the available technical expertise and methods, and the constraints of time and weather. A cleaning project is successful not only if the institution and contractor are satisfied with the building's appearance, but if the process does not cause irreversible damage to the masonry surface or leave undesirable results such as staining or efflorescence (the formation of salts).

Although it is important to be familiar with cleaning products and methods, it is equally important to understand the specific conditions of your building which may affect the choice of a cleaning method and product.

Raymond M. Pepi is President of Building Conservation Associates, Inc., (40 Dover Street, New York, New York 10038), a private consulting firm specializing in masonry conservation.

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Ask the Technical Preservation Services Center

Question:

Our rectory has old wooden sash windows which are drafty and difficult to operate. Should we replace them?

The Rev. Robert Castle
St. Mary's Manhattanville
Episcopal Church
New York, New York

Answer:

Even though your old windows may have problems, replacement is not the only or even the most desirable option. In most cases, old windows can be repaired and made energy efficient for far less money than it would take to manufacture and install well-made, energy efficient, custom designed replacement windows. Inexpensive, ready-made replacement windows do not offer a sound alternative. These windows are generally inferior to older windows both in design and workmanship. Not only do they have a negative impact visually, but they will not make a significant contribution to improving a building's energy efficiency. Old windows have another significant advantage: they can always be repaired. Most so-called "maintenance free" replacement windows are constructed of stock parts (usually aluminum), which will be outmoded within one or two decades. If anything goes wrong with these windows they cannot be repaired, they can only be replaced.

The first step in making your windows more energy efficient is a thorough physical evaluation of their existing condition. This can usually be accomplished by members of the congregation with woodworking or carpentry skills, or by a professional carpenter who can be called in to do an evaluation. Any preliminary evaluation of this kind should note: 1) the location of the window; 2) the condition of the paint; 3) the condition of the frame, especially the sill; 4) the condition of the sash; 5) glazing problems such as broken glass or deteriorated putty; 6) the condition of the window hard-

ware; and 7) the overall condition of the window (excellent, good, fair, poor).

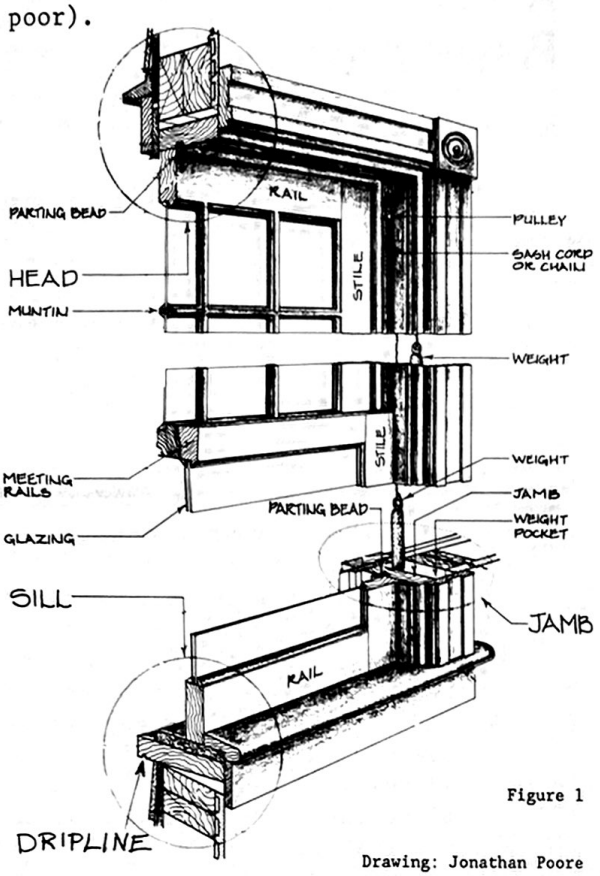


Figure 1

Drawing: Jonathan Poore

There are many causes of deterioration. Broken glass and glazing bars, and graffiti are obvious signs of vandalism. These are problems which should be taken care of in the normal course of maintenance. They do not, however, play a significant role in window deterioration.

Careless repairs and the lack of proper maintenance can cause problems of their own. The most common examples are window sash that are painted shut and broken sash cords or chains which impair or prevent window operation. Unevenly-planed, loose window sash is another frequent problem which is particularly detrimental to energy efficiency. The lack of a tight seal allows cold air to easily enter the building.

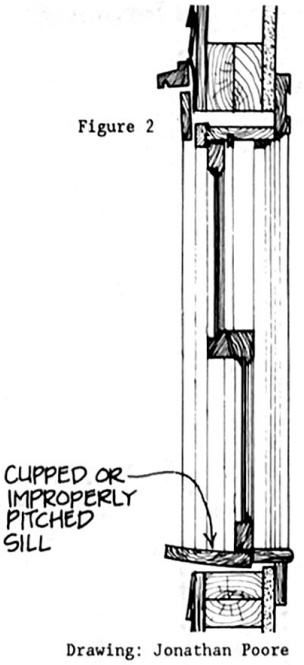
As with most building problems, however, the most serious concerns are those associated with moisture. Moisture causes rot which attacks the integrity of the wood elements of the window. Therefore, in any inspection of your windows, you should be particularly alert to signs of water penetration.

First, check around the frame of the window to see if there are any signs of moisture problems, particularly at the joints. After years of operation and exposure to the weather, the joints in the frame tend to separate, allowing water to easily penetrate the grain of the wood. The bottom parts of the sash and the sill are particularly susceptible to this type of decay.

Also, check around each individual pane of glass to see if water might be entering through deteriorated glazing putty or cracked glass. If this is the case, it may be necessary to have your windows reglazed. This requires the careful removal of the existing glass, so that it can be reused. Then the muntins must be cleaned of old putty and the sash stripped of old paint and refinished. In most cases, this is best accomplished by a professional carpenter. Besides taking care of water penetration problems, this simple treatment can do much to improve the energy efficiency of your windows and their appearance.

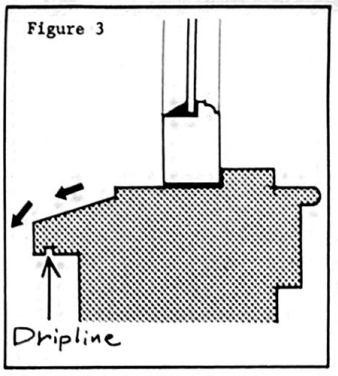
Blistering, cracking, peeling and flaking paint on the window frame and sash can be an important clue to locating areas of excessive moisture. However, unsightly paint does not necessarily mean that the wood underneath is rotted. Inspect the wood using an ice pick or awl. Gently prod the ice pick or awl into the wood at an angle (across the grain) and pry up a small section. Sound wood will splinter with the grain. Decayed wood will

Figure 2



Drawing: Jonathan Poore

Figure 3



When Making Repairs, Be sure Water Drains To Exterior.

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break across the grain or disintegrate into small irregular pieces.

Inspect the exterior sill of the window to be sure that it slopes away from the building. If water collects on the sill rather than running off, the sill will need to be reset with the proper slope (Figure 2). This work should only be done by a professional or an experienced amateur carpenter. Also check the underside of the sill to see if there is a dripline (Figure 3). This is a groove along the underside of the sill, about a quarter of an inch from the edge, which causes water to collect and drip off the sill rather than work its way up the underside of the sill and into the wall. If you find in your inspection that a window sill does not have a dripline, it should be installed in the course of your repairs.

Rot occurs in old windows less often than might be expected. Old windows are extremely durable. If rot is present, deteriorated sections can, in most instances, be easily replaced by a skilled carpenter for far less than the cost of replacing the window in its entirety.

Energy concerns should be taken care of at the same time as the general repair and upgrading of windows. Upgrading usually involves the removal of exterior and interior paint; the removal and repair of the sash, including any necessary reglazing; repairs to the frame; and the reinstallation of the sash. Skilled members of the congregation may be able to tackle this kind of project; however, if sections of wood need to be consolidated or replaced due to rot, a professional carpenter should be retained.

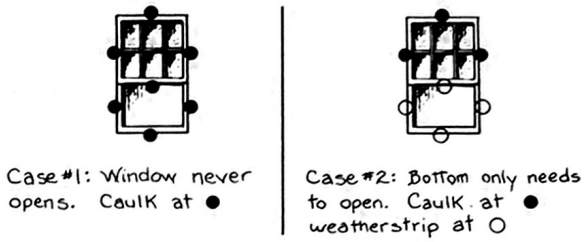

Figure 4 Drawing: Jonathan Poore

The most effective way to keep cold air from penetrating windows is by caulking them with one of the many waterproof compounds now on the market. Caulking can be used with great effectiveness on windows which are not needed for ventilation. However, most caulking is limited in its use as an energy saver because it does not allow a window to be regularly opened or closed. The one type of caulking which can be used is thick, roll-type caulking. This has a consistency similar to clay, and can be used on operable windows during the winter and removed every summer. It is pressed into place by hand, rather than applied with a caulking gun, and is easily removed, leaving no residue (Figure 4).

The most practical energy-saving option for use in operable windows is weatherstripping. Weatherstripping is installed around the edges of a window frame and is made of metal, plastic, felt, foam or rubber, which blocks air infiltration, while allowing the windows to open and close. Some weatherstripping you can install on your own; some types require the services of a professional (Figure 5).

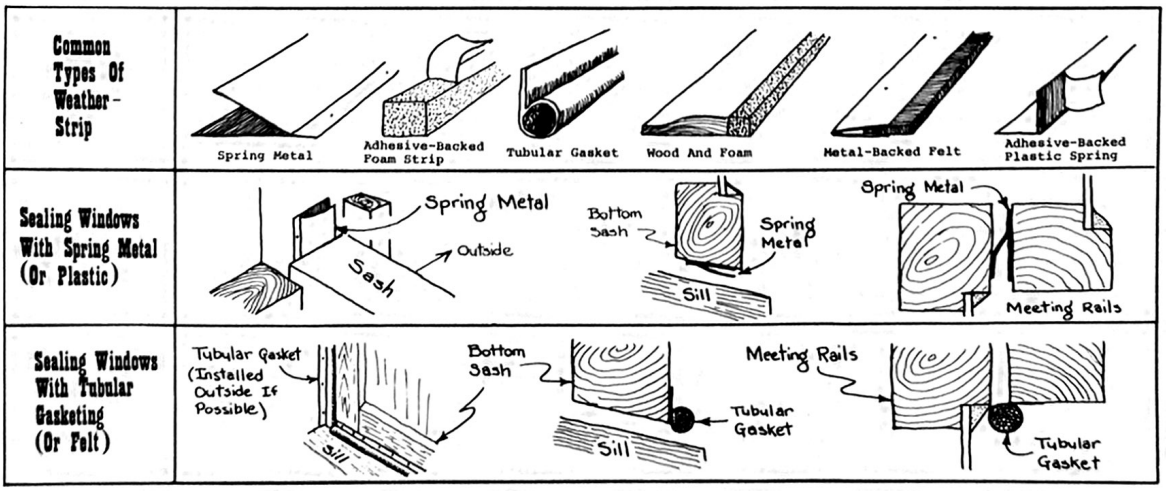

Figure 5

Drawing: Jonathan Poore

The most effective and durable type of weatherstripping, and also the least visible, is a shaped metal strip which is fitted to grooves in the sash (Figure 6). This type of weatherstripping is the most costly and requires that grooves be made in the sides of the sash. It should only be installed by a skilled carpenter.

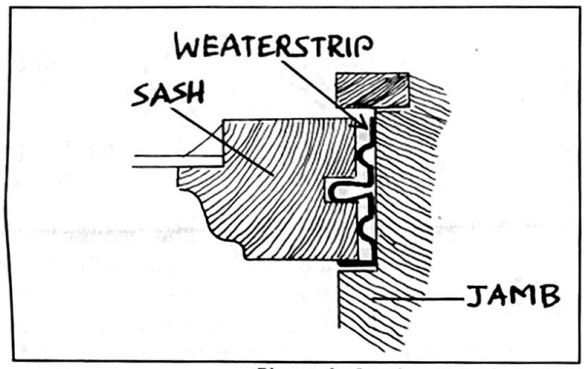

Figure 6 Drawing: Jonathan Poore

The second most effective type of weatherstripping is spring metal. This you can install yourself. It is nailed into place along the top, bottom, sides and meeting rail of the windows (see Figure 5).

Plastic stock can be used along window edges in the same way as spring metal (see Figure 5). It is less expensive than spring metal, and is applied with pressure sensitive adhesive instead of nails. However, it does not last as long as spring metal and the window frame must be clean as the adhesive will not bond securely with a dirty wooden surface.

Tubular gasket of rubber or plastic can also be used as weatherstripping (see Figure 5). Unlike spring metal and plastic stock, it is not hidden, but applied to the interior face of the window. It is fine for windows which are not conspicuous or where the interior frame is hidden most of the time by curtains.

Movable insulation--curtains and shades --is one of the oldest ideas for window insulation. If installed correctly, it is an effective means of conserving energy. The material used for movable insulation needs to be made up of multiple layers of a tightly woven fabric. Most of the fabrics made today for use in energy efficient curtains and shades have a fiberfill layer or a layer of reflective foil to improve their insulating qualities. To work as an insulator, curtains or shades must seal tightly at the bottom, top, and sides of the window frame. This can be done with a variety of materials such as weights, tacks, velcro, magnetic fastening strips, and high valences.

Storm windows are often presented as the answer to all air infiltration problems. Storm windows, if properly made and installed, will help keep out cold winter drafts. However, a window upgrading program combining caulking, weatherstripping, reglazing and movable insulation will often accomplish the same purpose at a much lower cost. Storm windows cannot take the place of well-maintained windows. If your windows are in good shape, the addition of storm windows will not significantly improve their energy performance. If your windows are in poor condition, the best storm windows will not make a difference.

Figures 1, 2, 4, 5 and 6 by Jonathan Poore are reprinted courtesy of The Old-House Journal.

WE WANT TO HEAR FROM YOU. PLEASE CALL THE TECHNICAL PRESERVATION SERVICES CENTER WITH YOUR QUESTIONS: (212)995-5260. ■

Technical Services for Religious Property Owners

The ENVIRONMENTAL QUALITY BOND ACT provides matching grants for rehabilitation projects undertaken by non-profit organizations or municipalities on properties in New York State which are listed on the State or National Registers of Historic Places. Applications are available from regional Parks offices located throughout the State. To obtain information on the program and the next deadline for applications, contact Michael Lynch, Senior Restoration Coordinator; Grants, New York State Office of Parks, Recreation and Historic Preservation, Agency Tower #1, Empire State Plaza, Albany, New York 12238, (518)474-7750.

The SACRED SITES AND PROPERTIES FUND provides matching grants of up to $15,000 to religious institutions in New York State for restoration projects. Grants are available to help fund planning and restoration work. Priority is