Volume 4 Number 3 Summer 1988

Common Bond

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

Contents

Preservation Profile	2
The Inspection of Structural Wood Systems	4
Ask the Technical Preservation Services Center	7
Technical Services	10
Helpful Publications	11
In Brief	11

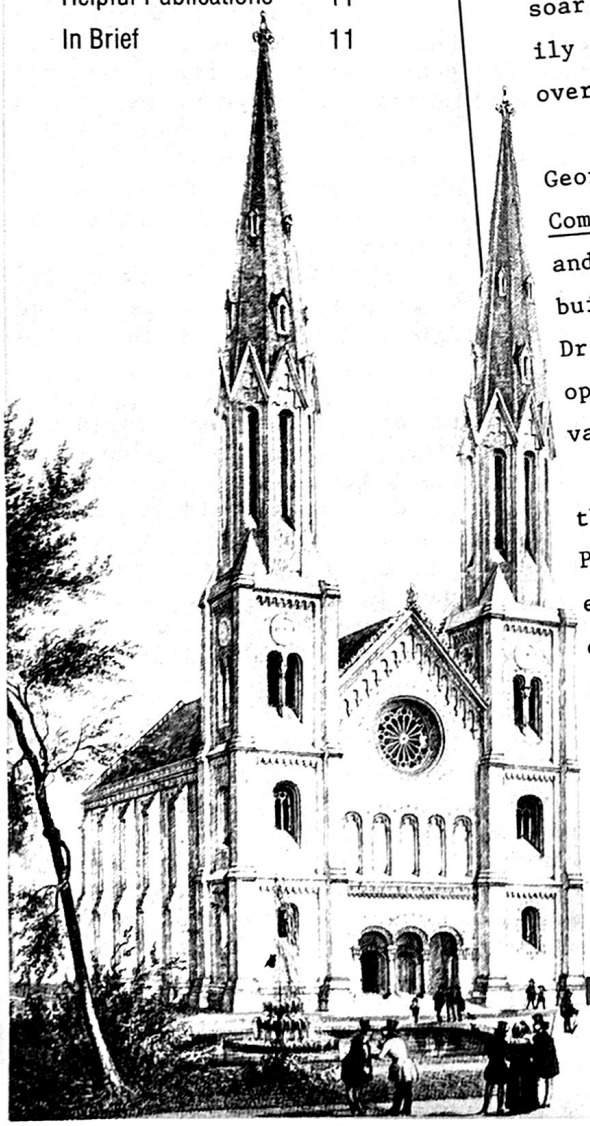
Dear Reader:

It was almost three years ago in the summer of 1985 that we set out to publish a newsletter which would address preservation concerns of the religious community. Our intent was to provide technical information on the care of older, historic properties, as well as a forum for clergy and congregation members to share their experiences. Since this date, we have seen interest in the preservation of religious buildings soar. From an initial mailing list of some 500 primarily from the State of New York, Common Bond now has over 2,500 readers nationwide.

The Rev. Thomas F. Pike, Rector of Calvary/St. George's Episcopal Church in Manhattan and Chair of Common Bond's Advisory Committee, has been both partner and leader in furthering efforts to preserve religious buildings. In this issue's "Preservation Profile", Dr. Pike writes about the challenges to be met and the opportunities that exist for the religious and preservation communities to work together toward this end.

Inspecting structural wood systems is the focus of this issue's technical feature. "Ask the Technical Preservation Services Center" describes the problems encountered in using aluminum and vinyl siding. For congregations involved in fundraising campaigns, a list of individuals willing to exchange information appears in "Technical Services for Religious Property Owners." If you would like to contribute to this network, please write to Common Bond, 141 Fifth Avenue, New York, New York 10010.

Diane Cohen
Editor



St. George's Episcopal Church
New York, New York

by the deterioration of a timber as a result of insect or fungal attack, or by the overloading of a structural timber.

While a sound timber may display some minor cracks and bending, the first sign of a structural problem may be the severe bowing of a timber or the presence of fresh cracks or splits along the wood. New cracks or splits can be identified by the presence of bright wood within the opening. Older cracks collect dirt and darken with exposure to light over a period of a few years. If signs of stress are evident, there could be any number of causes. It is best to review the situation with a structural engineer or a reliable contractor. At the first sign of severe deterioration, such as a sagging floor, splintered or broken joists or wood that has been damaged by insects or fungus, a structural engineer should be contacted immediately.

Maintaining a moisture free environment is the key to preventing the deterioration of wood structural systems. Through regular inspections, you can detect conditions before they escalate into major structural problems.

Harry P. Hansen is a Preservation Consultant (294 West 92nd Street, New York, New York 10025) specializing in the analysis of building problems and project management.

Ask the Technical Preservation Services Center

Question:

We have a frame church which is in need of painting. A suggestion has been made to cover the clapboards with aluminum or vinyl siding. Is this a wise solution?

The Reverend Thomas McNeir Lange
First Presbyterian Church of Ulysses
Trumansburg, New York

Answer:

Aluminum and vinyl sidings are usually applied to wood buildings in need of repair and painting as some sort of magical, "cure-all" solution. The use of these sidings to hide such problems as peeling paint, staining and other deterioration is not a substitute for proper maintenance. Although promoted as being "maintenance free", aluminum and vinyl age unattractively and are susceptible to different types of damage. They provide a building with an impenetrable skin which hides the early warning signs of deterioration. Consequently, minor problems, which are thus concealed and remain undetected, can escalate to the point where major, expensive repairs are necessary. Wood clapboards do require ongoing maintenance and repair, and should be repainted every five to eight years. It is a better investment of time and effort to properly care for original wood siding than to install substitute siding which can cause and promote extensive building problems (Figure 1).

Aluminum and vinyl sidings were developed in the 1950s and 60s as an alternative to wood siding. Both aluminum and vinyl, which unlike wood are not subject to rot, could be manufactured to resemble wood siding and a "permanent" color applied during the manufacturing process. Siding manufacturers believed that they had come up with a maintenance free substitute for wood. Neither aluminum or vinyl have fulfilled this initial promise.

Aluminum and vinyl siding can cause serious structural damage to a building through moisture entrapment. This routinely occurs in buildings where siding is applied as a cosmetic solution to remedy such problems as peeling paint and deteriorated window sills. These problems are usually symptoms of far more serious conditions related to the roofing, flashing and drainage systems. When aluminum

Figure 1 Deterioration caused by aluminum siding.

Photo: Reprinted courtesy of The Old House Journal.

or vinyl siding is applied to a building, these conditions are often left unrepaired. Large quantities of moisture can collect in the wall cavity between the new siding and the old clapboards. Since the aluminum or vinyl siding prevents moisture from exiting the building, it stays within the wall cavity eventually causing damage to interior finishes and promoting the deterioration of the building's structural system.

Aluminum and vinyl sidings can also promote more subtle moisture problems. Human activity within a building, such as cooking, cleaning, and simple movement, produces an extraordinary amount of moisture. In public buildings, such as churches and synagogues where large numbers of people gather at one time, this problem is increased.

Wooden buildings clad with synthetic siding provide the perfect environment for termites, beetles and carpenter ants. The materials serve to promote the moist environment the insects prefer, and considerable damage can occur before these pests are detected.

Aluminum and vinyl siding were once widely promoted as being effective in reducing energy costs. The energy efficiency of insulation is due in large part to its thickness. The minimal thickness of a typical rolled insulation is 3½ inches. Aluminum siding has a typical thickness of 1/20th of an inch; vinyl is slightly thicker. A recent report issued by the Federal Trade Commission states that synthetic siding has little or no insulating value.

In an effort to improve energy efficiency, vinyl and aluminum are often used to cover rolled insulation. Insulation of the side walls of a building is not, in itself, an effective energy saving measure. The primary sources of energy loss in a frame building are the windows, doors and roof. Maintaining a weather tight seal around windows and doors, and insulating the attic are the most effective means of decreasing energy loss.

Synthetic siding also creates fire hazards. Both aluminum and vinyl can prevent a fire from being detected in its early stages. If a fire occurs, aluminum siding will actually contain and intensify the heat. Vinyl siding will quickly melt off the building. There is increasing evidence that vinyl produces toxic fumes as it melts, endangering both the occupants of the building and the fire fighters.

Aluminum and vinyl siding impair the architectural integrity of a building. The appearance of a building is largely defined by its design and architectural style, and by the materials with which it is constructed. The clapboards used in frame buildings differ markedly in appearance from structure to structure due to such factors as the type of wood used, the tools used to cut or mill the wood, and the manner in which the clapboards were applied to the building. An early 18th century country church, for example, may have hand-split clapboards which exhibit a rough, uneven appearance. A late 19th century structure, on the other hand, with machine-milled clapboards and decorative trim, will have a more regular appearance and ornate effect.

Despite the best efforts of siding manufacturers to reproduce the appear-

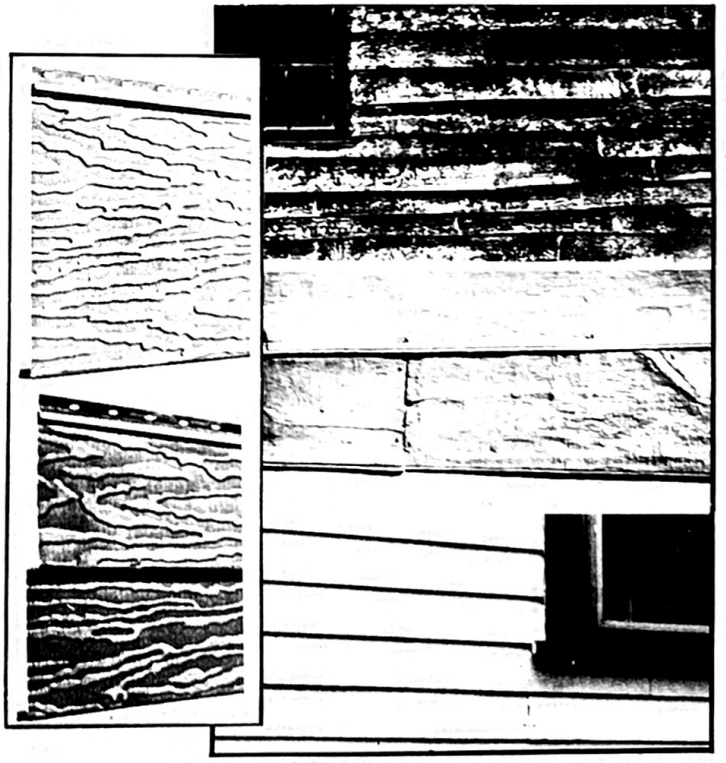


Figure 2 Historic wood sidings. Right Photos, top to bottom: Lee H. Nelson, Hugh C. Miller, John H. Myers.

Synthetic siding with wood grain finish. Left Photo: Technical Preservation Services.

ance of wood siding, the richness and diversity of clapboards and wood decorative details cannot be replicated by mass-produced, machine-made materials such as vinyl and aluminum. Synthetic siding is manufactured in only a few styles with none of the typical variations in width encountered in true wood siding. Only light colors are manufactured, as dark colors fade quickly when exposed to the ultraviolet rays of the sun. Synthetic siding has a shiny, glossy appearance which is never found in wood siding. To counteract these characteristics of synthetic siding, most manufacturers offer products that have a greatly exaggerated "wood grain" texture. This texture, if found on real wood siding, would be indicative of severe deterioration (Figure 2).

New siding is usually installed over the existing weatherboarding, which must be made free of all uneven areas. The cost of custom shaping aluminum or vinyl to such protruding details as window and door enframements, cornices and other ornamental details would make the siding prohibitively expensive. As a result, these architectural features are usually removed during the application process. The new siding is hung on nails over the old clapboards, in the same way a picture frame is hung on a wall. In most cases, prefabricated stock moldings, without decorative details, are used around the windows and doors.

Beyond the damage synthetic sidings can cause to the structural and architectural integrity of a building, both aluminum and vinyl have their own special "maintenance" problems which are difficult to remedy. Shortly after aluminum siding was introduced in the 1950s, it was found that the new material was easily scratched and dented, and that the color quickly faded. As a result, special paints for use on aluminum siding were developed to maintain color and to cover scratches caused by the impact of rocks, tree branches and other hard objects. Painted aluminum siding, however, quickly acquires a chalky appearance and must be repainted as often as wood siding. This negates claims of it being maintenance free (Figure 3).

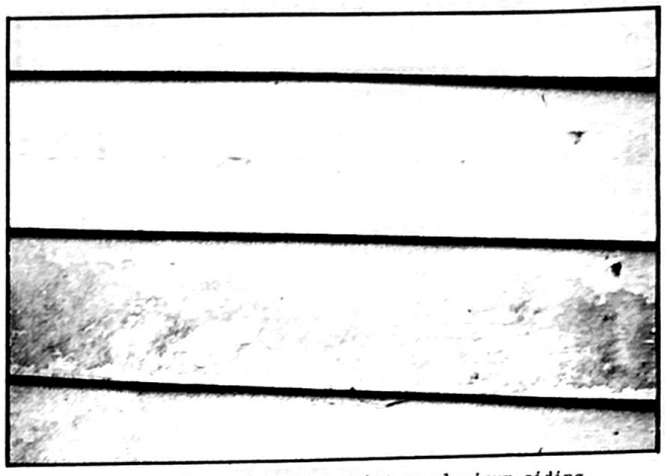


Figure 3 Faded color and peeling paint on aluminum siding.

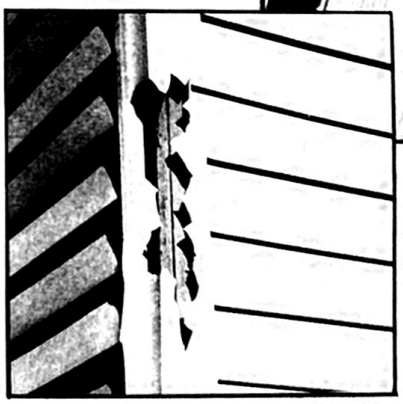
Photo: Reprinted courtesy of The Old House Journal.

Vinyl siding, which was developed as a maintenance free alternative to aluminum, is subject to extremes of heat and cold. In extremely cold weather, vinyl becomes brittle and may shatter if hit with a hard object such as a snow ball. In hot weather, vinyl tends to sag and lose its shape (Figure 4).

Figure 4

Vinyl siding after exposure to heat from a fire across the street.

Photo: Linda J. Flint



Vinyl siding shattered by the impact of a hard object.

Photo: Technical Preservation Services.

If either aluminum or vinyl is damaged, it may be impossible to find replacement parts. Siding which has weathered for a few years will have changed color due to its exposure to sunlight. If siding is damaged or becomes discolored and a section needs to be replaced, obtaining a color match may be extremely difficult, if not impossible. To add further complications, manufacturers often change such features as color and style, making small scale replacement even more of a challenge.

The first step in the repair and restoration of exterior clapboards is a careful inspection of the building's roof and drainage system. (For a detailed description of how to inspect your building, see "Warm Weather Maintenance" in the Summer, 1985 issue of Common Bond.) Wooden buildings should be inspected annually to identify areas in need of repair. In order to make the building easier to inspect, as well as lengthen the life of the paint job, the wall should be washed down with a hose and perhaps a mild detergent to remove any accumulated dirt.

Synthetic siding is marketed as being more economical and long-lasting than wood siding. This implies that wood siding is fragile, short-lived and difficult to maintain. To the owners of wood buildings who find their old clapboards in seemingly desperate shape, the lure of aluminum or vinyl siding is often difficult to resist. Wood siding can fall into disrepair if neglected. However, wood is easily repaired and if properly maintained, can last for many years.

Figures 2 and 4 are reprinted from Preservation Brief #8: Aluminum and Vinyl Sidings on Historic Buildings by John H. Myers for the Technical Preservation Services Division of the National Park Service. In New York State, the brief can be obtained through the Government Printing Office, 26 Federal Plaza, New York, New York 10278. Other requests can be directed to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Please include the title of the publication, author and Government Printing Office (GPO) Stock Number which is 024-016-00116-8. Cost: $1.00.

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

Within the past few months, a number of requests have been received for fundraising information. Many congregations embarking on capital campaigns to raise monies for restoration are eager to talk with other congregations about how to organize, how to assess the potential for giving from both within the congregation and the greater community, and using professional fundraising consultants. The following individuals are interested in sharing their experiences:

-David Dunlop, the former Business Manager of the Fourth Universalist Society in the City of New York and Director of the church's restoration campaign (27 Grumman Avenue, Norwalk, Connecticut 06851 (203) 849-8206). This church formed a non-profit organization with a board comprised of representatives of the congregation and neighboring community to raise funds.

-Terry Grace, Director of Development, Church of the Holy Apostles (296 Ninth Avenue, New York, New York 10001, (212) 807-6799). This church operates one of the largest soup kitchens in the city. The small congregation has used a variety of fundraising strategies to raise monies for both its social service and restoration programs.

-Dr Ianthe C. Harris, Church of the Intercession (550 West 155th Street, New York, New York 10032, (212)283-6200). For the past 4½ years, the church has been involved in a major campaign called the Fund for the Future. This campaign was initially targeted to the congregation, and then on the basis of recommendations from a professional feasibility study, expanded to include the community and beyond.

-Father Kevin O'Brien, St. James Roman Catholic Church, (32 St. James Street, New York, New York 10038, (212)233-0161). Faced with a structural condition that almost led to the demolition of this landmark building, the church worked with local preservation organizations and elected officials to raise funds. An outside consultant was used to help elicit foundation support and to ascertain the congregation's own giving potential.

-Gilbert Vasquez, Church Administrator, The First Presbyterian Church in the City of New York (12 West 12th Street, New York, New York 10011, (212)675-6150). This con-