INSPIRED

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Spotlight on Mars Hill Baptist Church

by Neeta Desai

In the early 80s, after ten years of dutifully paying the monthly mortgage on Mars Hill Baptist Church, Reverend Isaac Smith received a phone call from the Episcopal Diocese, the mortgage holder. The church had been having heating problems and Reverend Smith had been keeping the diocese up to date. Still, he was unprepared:

> "Reverend Smith, are you standing up or sitting down?," like that. And I said, "Well, I'm standing right now." And he said, "Well, sit down. We've decided … to give you the church free of debt (so that you don't have) this second burden on your hands." I said, "Repeat what you just said," and he repeated it, and I said "Boy…" Just like that.

With that call, Mars Hill was no longer financially indebted to the Episcopal Diocese. A mortgage-burning ceremony followed, attended by a church packed with members of Mars Hill and Monumental Baptist Church, where Reverend Smith received his calling to ministry. A soft-spoken man whose voice has the lilting quality of someone raised in the South, he counts that event as "one of the greatest hours of my life."

But Reverend Smith has other reasons to be proud. In the neighborhood around Ninth and Lehigh in North Philadelphia, with many disadvantaged youth, with drugs sold on street corners, and with recreation centers that can't fulfill the needs of the community, Mars Hill offers an alternative. Their after-school program offers tutoring, arts and crafts,

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Mars Hill Baptist Church, 9th and Lehigh, Philadelphia. Photo: J. Randall Cotton.

Inspecting and Maintaining Your Flat Roof

by Michael Stern

A congregation in Chester contacted the Historic Religious Properties Program last winter, plagued by peeling paint and crumbling plaster on one wall of their sanctuary. Since this wall was also at the base of the tower, they logically assumed there were problems in the structure and had obtained an expensive bid to replace the mortar on the exterior of the tower.

I visited during a snowstorm, as it turned out, to examine the situation. The tower's exterior masonry seemed in fairly good condition except for the very top, where there was a fair amount of missing mortar. But the damage wasn't enough to explain the amount of peeling plaster in the sanctuary.

So, with snow blowing horizontally through the belfry, several members of the congregation and I climbed the tower. At the top, it was apparent that the problem lay not with the masonry, but with the flat roof. The roof surface was peeling and the gutter was clogged, forcing water into the wall and, ultimately, into the sanctuary. My recommendation was to repair the flat roof, at a cost of hundreds of dollars, rather than repoint the entire tower, at a cost of tens of thousands.

Why are flat roofs more problematic than sloped ones?

Though they seem simpler than the ornate slate, shingle, or metal roofs more often associated with our historic places of worship, flat roofs manifest a number of problems.

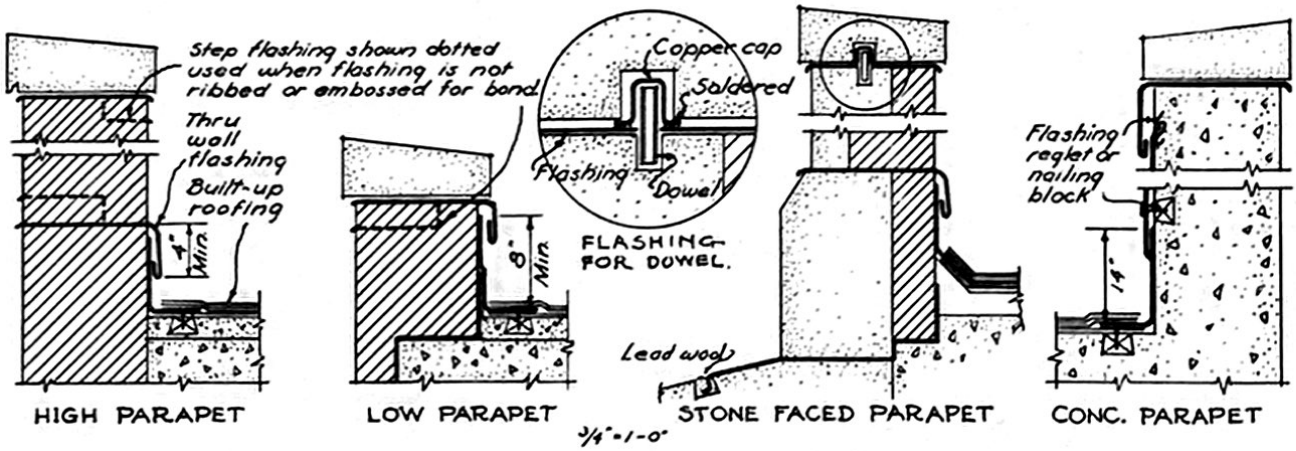
Most flat roofing materials, such as asphalt or tarpaper, have a relatively short life span of 10 to 12 years. Asphalt shingles can last 35 years and many well-made slate or metal roofs can last 100 to 150 years. Flat roofs are often in out-of-the-way or invisible locations like the tops of towers or between sections of sloped roofs, making it hard to perform regular inspections or maintenance, such as clearing drains.

Although they seem uncomplicated, flat roofs require a high level of craft, particularly at the edges, where they join the masonry walls. The metal detail in this area, called flashing, requires careful execution, so that the different parts of the roof can move while remaining watertight. Joints sealed with roofing tar or cement usually indicate poor craftsmanship and will not last long, since the cement quickly becomes brittle and cracked.

Ultimately, the problem with flat roofs is that they are... flat. I have seen deteriorated asphalt shingle roofs that continue to shed water, although many of the shingles were peeled or missing, because the slope of the roof and the overlapping layers of shingles keep the water flowing down and off the roof. Even a small hole in a flat or gently sloped roof has the opportunity to cause a leak, particularly if water forms puddles on the roof.

What can you do?

Assuming your flat roofs were properly installed, the key to avoiding headaches is regular inspection and maintenance. Plan to look at your flat roofs at least



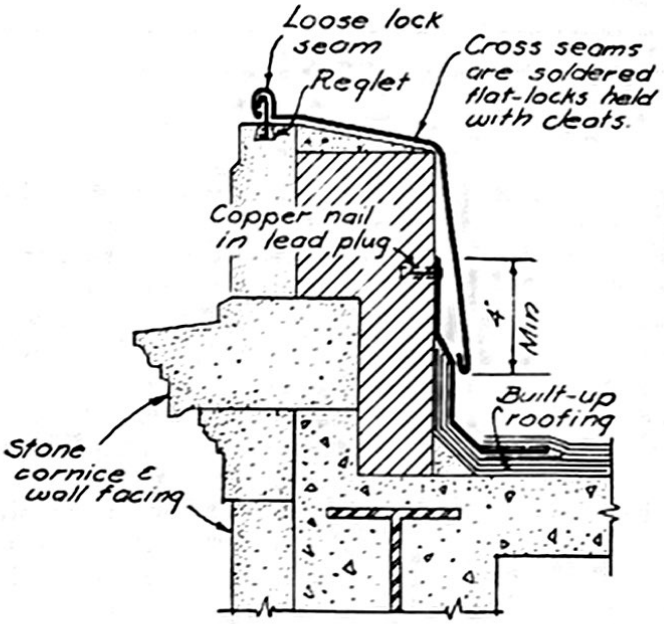
Drawings from Traditional Details for Building Restoration, Renovation, and Rehabilitation from the 1932-1951 Editions of Architectural Graphic Standards *© 1991 John Wiley & Sons.*

three times a year, more if you have a lot of trees nearby, since leaves and debris can clog drains.

During the winter, check flat roofs after heavy snowfalls, particularly during a thaw, since ice or snow could be blocking drains causing a buildup of water. When you walk around on the roof, look for signs of "ponding" or standing water — either puddles after a rain or, if it is dry, low areas that are filled with debris. These low areas may need to be built up with rigid insulation and a new surface to ensure a proper flow of water.

Look also for blisters, sections of the roof that feel mushy underfoot. These blisters are caused by water that has gotten in between the layers of roofing, allowing water to seep through the roof. These areas may need to be cut out and replaced. Pay particularly close attention to the edges of the roof, particularly where the roof runs into the exterior walls. Since water is often directed along the edges of the roof to a drain, even small gaps in the flashing can lead to leaks.

Finally, look at the roof surface overall. Is it cracked or "alligatored?" If so, it may require a new application of roofing tar. To extend the life of the roof, consider applying reflective aluminum paint, which prevents sunlight from breaking down the roofing material and heating up the building. Both the application of roofing tar and reflective paint can be done by volunteers. Avoid the temptation to apply roofing tar or cement ("black goop") indiscriminately. This is, at best, a short-term solution that will make future repairs and inspection even more difficult.



STONE FACED PARAPET
1"=1'-0"

Once your flat roof has reached the end of its life expectancy, it is time to get a qualified roofing contractor to strip and replace the roof. The Historic Religious Properties Program can provide referrals to roofing contractors with expertise in flat roofs.

For further information, contact the Historic Religious Properties Program for reprints of articles by the New York Landmarks Conservancy, *Building Components: Flat Roofs* and *The Importance of Flashing.*○

Types of Flat Roofs

from *Common Bond* December 1996 issue. Courtesy, New York Landmarks Conservancy.

The four most common types of flat roof systems, listed in order of increasing durability and cost, are: roll asphalt, single-ply membrane, multiple-ply or built-up, and flat-seamed metal. They range in cost from as low as $2 per square foot for roll asphalt or single-ply roofing applied over an existing roof to $20 per square foot or more for new metal roofs.

Asphalt roll roofing, used since the 1890s, generally consists of one layer of asphalt-saturated organic or fiberglass base felts, applied over roof felt with nails and cold asphalt cement, and usually covered with a granular mineral surface. Seams are typically covered with a roofing compound. Roll asphalt lasts about 10 years. Minor maintenance and temporary repairs such as small patching can sometimes be performed by knowledgeable building staff or volunteers. Permanent repairs and reroofing should be performed by a qualified contractor.

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Types of Flat Roofs

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Single-ply membrane roofing is the newest type of roofing material and is often used to replace multiple-ply roofs. Hundreds of proprietary products are on the market, including modified bitumen (bitumen is a class of cementitious substances found in asphalts or tars), rubberized asphalt, elastomeric membranes such as ethylene propylene diene monomer (EPDM), and polyvinyl chloride (PVC) sheets. They may be self-adhered, installed with hot asphalt, or installed by heating the underside of the sheet with a propane torch or other device. Installation and repairs should only be performed by roofers authorized by the manufacturer. Warranties of 10 to 12 years are typical, but as with any roofing system, proper installation is crucial and maintenance by the owner is still required.

Multiple-ply or built-up roofing (BUR) is composed of overlapping rolls of saturated or coated felts or mats, interspersed with layers of bitumen, and generally surfaced with a granular roofing sheet, ballast, or tile pavers to protect the underlying materials from weathering. Built-up roofs are designed to last 10 to 30 years, depending on the materials used. Ballast (also called aggregate) of crushed stone or water-worn gravel is embedded in a coating of asphalt or coal tar. However, since the ballast or tile pavers cover the membrane, inspecting and maintaining the seams of the roof can be difficult.

Flat-seamed metal roofing, used since the 19th century, is made from small pieces of sheet metal soldered flush at the joints. It can last many decades, depending on the quality of the material, maintenance, and exposure to the atmosphere. Galvanized iron requires regular painting to avoid corrosion. Split seams must be resoldered. Metal surfaces, such as copper, can become pitted and pinholed from acid rain and generally require replacement. Copper, lead-coated copper, and terne-coated stainless steel are favored today for long-lived roofs especially for those in inaccessible or seldom-inspected locations.

For more information, contact the New York Landmarks Conservancy at 212-995-5260.○

Program News

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The HRPP Advisory Board, composed of clergy and lay people from a variety of faiths and backgrounds, met in May to review the applications and make the awards. Three broad criteria were used in evaluating the applications: architectural significance of the building, critical need for the repairs, and the extent of the congregation's community involvement, with preference given to congregations that were new to the program.

Funded projects range from new roofs to boiler replacements to stained glass repairs. In addition, five congregations were awarded funds to hire consultants to evaluate structural and heating problems. The next awards will be made in May 1998; application forms will be available in January.

Michael Stern, HRPP director, will help lead a tour of three historic synagogues in Philadelphia. **"Turn of the Century Jewish Philadelphia,"** jointly sponsored by the Preservation Alliance for Greater Philadelphia and the Foundation for Architecture, is set for 5:30 p.m., Tuesday, December 2. The tour will focus on the Eastern European Jews who settled along the South Street corridor and will go inside three historic synagogues, Kesher Israel, Congregation B'Nai Abraham, and Vilna Shul. Meeting place: Kesher Israel Synagogue, 412 Lombard St. The fee is $10 for members of the Preservation Alliance and Foundation for Architecture; $15 for non-members. Limited to 30. For information, and to register, call 215-569-3187.

Michael will speak about the HRPP program, and reaching out to members of the clergy at the **National Trust for Historic Preservation Conference** on October 18 in Santa Fe, New Mexico.○

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