

An Illustrated Tale of Our Sanctuary Roof By David Newton, B&G

Much of the history of our remarkable Meeting House is interwoven with the history of the now infamous Sanctuary Roof. Come with me for an entertaining journey of discovery and improvements to our shared Meeting House home since about 1964.

After attending Unitarian churches and fellowships elsewhere, Janice and I joined the Unitarian Society of Hartford in the 90s during the ministry of Jon Luopa. Not long thereafter, I joined the Building and Grounds Sub-Council soon becoming a Secretary Pro Tem of the group, something continued until 2022!

Early on it was apparent something was unique about the Sanctuary roof as whenever it rained, we needed to fetch out buckets that were placed strategically among the pews. Some individual pews were delaminating from becoming wet so frequently.



This is the roof. If you look carefully, you will see a lake on the left side! 2005

The story I was told when something like this:

When Victor Lundy designed the Meeting House, his vision was of the vaulted ceiling we now enjoy in the Sanctuary. The method of creating the vaulted space was by

suspending the entire structure with cables emanating from individual buttresses rising above sloping peripheral roof segments. Incidentally, these buttresses are of different height thus symbolizing separate paths to truth as visioned by Unitarians on their spiritual journeys.

The cables supported a kind of inverted tent or bowl shape. As rain fell on the inverted "bowl," it flowed toward four peripheral drains. In keeping with the aesthetics, these four roof drains conducted water inside the buttresses thus avoiding pipes and other plumbing items in view. The internal pipes emerged above the roof line about halfway down the sweeping lower roofs. No one realized at the time exiting water would first pass into the buttress surrounded by warm sanctuary air only to exit above the roof line in freezing conditions. More about that later.

Remember the inverted bowl shape.

As soon as the building was populated in its mostly finished status, the roof began to leak. The difficulty was the bowl shed water to the peripheral parts of its construction as planned but puddled around the perimeter and at points the exiting drains turned out to be above the accumulating water! The buildup of water beneath the drains soon found its way inside the building. Because the cables were fixed in length, the roof structure could not be raised above the exit drains.

To address the situation, the late architect, Roy Cook, designed an additional roof over the original with gentle slopes toward the four drains such that all falling water would go downhill, as water tends to do, and be drained away properly by the drains. The tent part of the bowl was subsequently covered with EPDM roofing glued together with a kind of rubber cement. Those joints tended to become leaky. Not surprisingly, nobody apparently thought much about the cable supported roof moving in response to the wind thus flexing building materials not known to resist such motions as might be common on a sailing ship. Further, the light fixtures contemplated for the original roof were never installed, as the roof was always leaking and of questionable construction.

Notice the pool on the next page:



Stu Spence is preparing for wading in a pool to release a controlled flood through the unplugged drain. The pooled water, naturally leaked into the Sanctuary via any defects in the EPDM covering. 2005

In addition, the drains tended to become blocked from time to time by, especially, by cottonwood fluff in May. Failure to tend to the drains resulted in enormous weight/lake above causing serious leaking.

Roy Cook designed the hockey puck light as a partial solution to the unlit sanctuary space.

Nevertheless, leaking persisted!

As a new B and G recruit, I was told, Roy Cook NEVER attended services on rainy days!

During my time, member of B and G have continued efforts to control leaks with increasing success.

These efforts included painting the entire sanctuary roof white to cause less heat stress on the moving EPDM joints. Stu Spence, Janice and David Newton painted the entire

roof one summer day. In addition, a kind of rubber cement was used to plug leaks where cables entered the roof structure. In addition, various leaks elsewhere were plugged or patched. When the EPDM was replaced previously, the result was increased leaking because of the many cable penetrations of the structure. Thus, maintenance efforts were pursued as long as possible.

Nevertheless, leaking persisted!

Not only did we have leaks in the sanctuary, but water appeared on the wall in Servetus, flowed down the wall, and was at the time diverted from a light plug in the buttress by a string to a nearby bucket. Remember the part about the freezing portion of the drain, well, apparently the pipe within the buttress was cracked in freezing and caused the Servetus leak. This was cured by running a plastic pipe the length of the drain and fortunately today, few members even remember this source of leaking. Further, roof heater cord was placed in all four drains for the winter keeping the drains open during freezing weather and thereby preventing ponding of water on the roof with ensuing leaks.

Nevertheless, some leaking persisted back in the Sanctuary

At about this time, a contractor working on one of the side roof sections, wondered if the Sanctuary leaking might be related to the cables descending from the buttresses to a central hub holding up the middle of the "inverted bowl" of roof. As an experiment, he folded tar paper over the cables for their entire length. Shortly thereafter, the folded paper accorded into clumps against the hub. Frustrated by the entire mess, I cut them off of the cables. On the following Sunday, after a substantial Saturday night rain, the flood in the sanctuary was extraordinary. The south side was an effective pond requiring extensive mopping before the service.

Obviously, the cables above the roof were a substantial source of water entering the central hub and being distributed into the space below. Something had been learned by the entire miserable experience.

Shortly thereafter, Janice and I went to Home Depot, purchased lengths of plastic pipe, and cut a slot into the pipes lengthwise, and set off to the Sanctuary roof to install our new invention to keep water out of the cables. It worked and to this day the cables remain covered. The slots at the bottom of the pipes are to make sure no water is trapped in the cables to cause rusting and deterioration.



*Cables covered with plastic slotted plastic pipe to prevent water flowing down inside the wire cable to the hub and then into the sanctuary. Janice Newton assistening
10/29/2005*

Leaking was reduced significantly. All those years of looking for and fixing leaks under your feet, were somewhat replaced by looking up at the cables to make sure that was not a source of water entering the spaces below.

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We thanked the weather gods for their help during construction!

Nevertheless, some leaking persisted!

Now that things were somewhat better viewed from the Sanctuary, thoughts about pew repair and, can you believe it, pew cushions could be seriously contemplated.

By this time the EPDM on the Sanctuary roof was so deteriorated, further repair efforts were impossible. We finally needed renew the EPDM on the roof. Much of the difficulty with EPDM was caused by the triangular sections and their glued joints. Thus, when we had a roofer who would make a bid on recovering the roof, I said something like, “..surely somebody has a spray on rubber fluid that will give us a continuous layer of roofing with no joints.” To our surprise and happiness, he said, yes there was a new application that did just that and was being used by his company in the Greater Hartford area. The substance was mixed with a catalyst and applied over existing roofing with a squeegee becoming a continuous leathery waterproof sheet. This new *AlphaGuard* roof covering was indeed applied to our Sanctuary roof and has been very successful, though experience tells us nothing is perfect. We still need to watch the drains to make sure debris does not plug them, make sure drain heaters are functional, and recognizing a flexing moving structure may develop cracks needing repair.



*The process was somewhat new to the roofers, as you can see the new substance, AlphaGuard Bio A high Performance Two-Part Bio-Based Polyurethane Base Coat was a liquid applied with squeegee after mixing. The material cures to a leathery sheet.
5/24/18*

See below..



Completed Job - Left to Right, Eagle Rivet Roofing Contractor, Arthur Dias, Architect Hugh Schweitzer and Stu Spence, Chair of B and G

And, now the roof leaks little if at all.

And, as the current congregation knows, we have decided to put up lights realizing Victor Lundy's vision of interior lighting in a new way.

And some other time, I shall tell you about the floods and drains around the building. That, however is another story for another time.
