

State Preservation Board

Texas Capitol Roof Replacement and Rehabilitation Update 7/31/2024

More interior dome work was completed at the center portion of the roof. Structural brick vaults were repointed for the first time in their history. These are exposed to wet and freezing conditions from the terrazzo-covered outdoor colonnade above. Many joints had lost much of their mortar, leaving bricks hanging loosely.



IMG_4778.JPG



IMG_9346.JPG

Initial mockups were approved to confirm quality of work. All mortar batches were tested for the appropriate strength for its structural purpose, while being soft enough that it doesn't grind away at the soft, low-fired brick as the building moves.



IMG_9762.JPG



IMG_5028.JPG

Intact mortar was left in place. All joints requiring repointing were marked, carefully raked out by hand, and repointed to match remaining mortar.

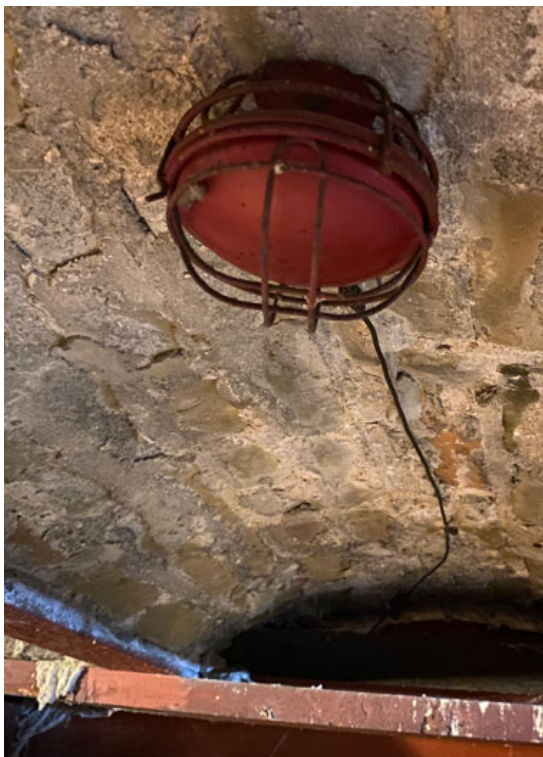


IMG_4983.JPG



IMG_0714.JPG

The work gave us close access to remnants of a 1940's-era fire protection system which can be found throughout the historic attics. We believe these UFO-shaped, red-painted metal "pods" were kept under air pressure by small copper tubes. In case of fire, the heat would cause the pod to burst and the air to flow through. The release of pressure would signal the location of the fire at a central monitoring point, based on which branch of tube had depressurized. These were placed throughout the attics, where fires could burn undetected. They were installed shortly before the 1949 roof replacement, which would have been helpful for fire monitoring during soldering work on the wood roof deck. Today we have both modern fire detection systems and a live "fire watch" whenever soldering is occurring on the roof deck, to avoid fires such as happened recently at Versailles, during roof renovations.



IMG_8432.JPG

The work provided extensive access to the upper reaches of the tight, circular, tall space between the inner and outer dome. The opportunity was taken to exclude pigeons from what were discovered to be unfortunately good “nesting boxes” within the decorative metal at the upper portions of this space. After chicks had fledged, access points were blocked, the spaces cleaned, and pigeon spikes were added.



IMG_8105.JPG



IMG_4584.JPG



IMG_6081.JPG

Roof work proceeds on the east wing and the west wings, including their skylights and corner pavilions.



IMG_3409.JPG



IMG_3215.JPG

The east skylight has been replaced.



IMG_7955.JPG

The patterns of vertical batters on the new skylight closely match the original, historic skylight.



Collection of Kevin Koch

During work, the opening in the roof was protected with a tarp custom designed to withstand winds of at least 100 miles per hour.



IMG_6071.JPG

Access to the skylight from below was achieved with a scaffolding system hung from chains, designed for work under bridges. All point loads on the historic wrought iron structure were carefully considered.



IMG_5987.JPG

New glass and framing was flown to the roof with a crane.



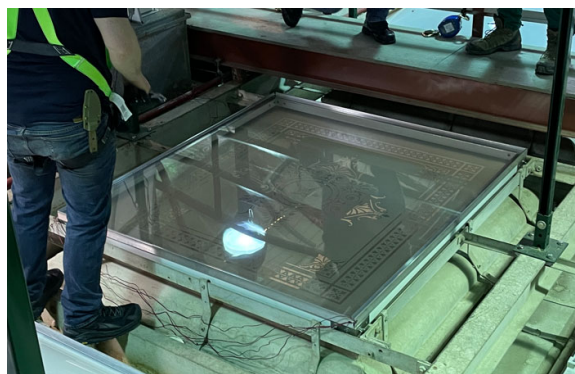
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The new glass is tinted grey instead of the bronze color which has existed since 1949, to provide a more natural color sunlight to the chambers below...the original glass would have been clear. It has UV blocking and a low-e coatings, balancing the goal of maximum visible sunlight for the historic chambers below, while protecting furniture and art below from harmful UV rays and providing energy efficiency by limiting heat gain in the attics.

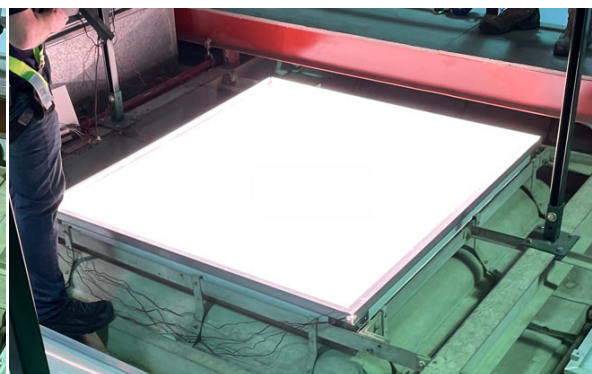


IMG_3364.JPG

The new LED lighting system will begin to be installed soon at the glass laylights in the chamber ceiling below the skylight. It uses side-lit panels which are completely transparent, allowing them to supplement natural light from the skylights above without impacting the historic appearance of the transparent glass laylight ceiling from the chambers below. It will provide long-needed light for late evening work during legislative sessions, and a full range of color and intensity controls. It replaces a metal halide lighting system installed in 1993. It will save energy, maintenance costs, and reduce heat loads in the attics.



IMG_7853.JPG



IMG_7854.JPG

Reglets have been rebuilt to provide a clean, solid connection where the roof meets historic stone walls.



IMG_3422.JPG

This includes a difficult condition where the peak of the roof hits tightly under a projecting cornice, not providing sufficient room for flashing. This is being detailed to address this condition.



IMG_3456 (2).JPG

The fascia of the four corner pavilions have been a major focus of work. The decorative metal fascia had been replaced with a vent system in 1949, and was largely restored in 1993. However, the thin, shallow sheet metal construction was never fully waterproof and was a frequent source of leaks, especially in wind-blown rain.

The 1993 construction was also rusting internally and required reconstruction to stabilize.



IMG_4586.JPG



IMG_4627.JPG



IMG_4592.JPG

The base structure also had structural deficiencies from the original 1888 construction which led to damage over time, and required extensive repair and reinforcement.



IMG_7142.jpg



P2292110.JPG



IMG_8986 pavilion rafter repair.JPG

The fascia is being completely rebuilt to be stronger, solidly backed, strongly attached, and fully waterproofed for the first time in its history.



IMG_5972.JPG



IMG_6895.JPG

Vents are being incorporated into the decorative metal, but hidden from view.

We are taking this opportunity to restore the full depth and height of the fascia decorative metal, which will complement the corner and base trim restoration on these key architectural features which have been degraded over time.

1888 original construction seen in 1915:



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1949 vent system:



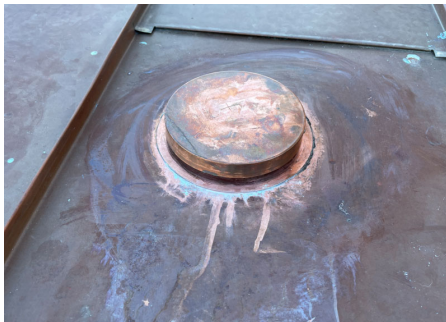
P5-D1.b_1991-08-28_RollA_No6_East_Roof.jpg

1993 reconstruction of historic profile:



IMG_1904.JPG

The fall protection system will receive its decorative caps soon, hiding the mounting points for the tie-off devices, which can be deployed as needed without impacting the historic appearance of the roof.



IMG_1559.JPG



IMG_8117.JPG

In the fall, work will begin on the final phase of the project, the north wing and its skylight.



IMG_8220.JPG

Work will continue through summer of 2025, with all work over the chambers being complete by the end of the year to avoid impacting the 89th legislative session in the spaces below.