



PROJECT PROFILE

Antelope Valley Indian Museum

Stabilization and Historic Preservation Services | Lancaster, CA



CLIENT

California State Parks

BACKGROUND

Built in 1928, the Antelope Valley Indian Museum is a mostly one-story, wood-framed structure located in the Mojave Desert. The museum was designed by H. Arden Edwards to house Native American artwork, artifacts, and historic documentation. The chalet-style building, along with its surrounding grounds, is listed on the National Register of Historic Places.

Extreme daily temperature swings made it difficult and extremely inefficient to properly condition this uninsulated structure. Given that the museum collection was inadequately protected from temperature fluctuations, the State of California retained WJE to execute an ambitious stabilization program to insulate the building, heat and cool the museum using a geothermal heat exchange, and structurally and seismically strengthen the building.



SOLUTION

Since the structure typically could not be insulated from the interior due to the presence of historic artwork on the underside of the exposed roof sheathing, insulation had to be added from the outside. Blown-in insulation was added to the walls where interior historic finishes were present, and batt insulation was added to walls where the interior finishes were not historic and could be easily removed and reset. Old, inefficient swamp coolers were removed and replaced with new energy-efficient heat exchangers. To preserve the collection, two humidifiers were also added to help keep the ambient humidity in the museum at optimum levels.



The addition of insulation and associated wood framing and sheathing to the roof of the museum nearly doubled the weight of this minimally framed structure. As the interior finishes were actually exposed structural elements, structural strengthening methods were carefully weighed against the potential impacts on the historic fabric and against the cost of the work. After considering a number of approaches, an unusual arrangement of horizontal internal wire ropes to increase the vertical load capacity of the gabled roof areas and angled and inclined external stainless steel wire ropes to provide increased lateral stability was selected. WJE's role in this project was publically recognized with the California Preservation Foundation's Preservation Design Award and the Los Angeles Conservancy's prestigious Preservation Award.

