



RESTORATION OF KANSAS STATEHOUSE



ABRAHAM LINCOLN

**CLIENT :**

Department of Administration,
Office of Facilities and Property
Management, Topeka, Kansas

ARCHITECT:

Treanor, Topeka, Kansas

INSTALLER:

Baker Roofing, Raleigh, NC

ORNAMENTS: Ornametals

Manufacturing LLC, Cullman,
Alabama

RESTORATION OF KANSAS STATEHOUSE'S, TOPEKA, KANSAS (USA)

The Kansas State Capitol in Topeka in the USA is not just the headquarters of the state government, it's also a major historical building dating back to 1866. From 2010 to 2013, significant renovations were carried out in order to bring the building in line with current standards and restore its former glory. The ultimate phase of these renovations is the full renovation of the impressive dome with its 15 metre diameter. Ornametals, a zinc and copper ornaments company offering standard and custom ornaments, has provided the fabrication for this dome. As a proud partner of Ornametals, VMZINC® has also played such a significant role in the restoration of this prestigious historical treasure..

At more than a century old, planning for restoration of the Kansas Statehouse began in 1999, and construction was divided into six major phases to allow the capitol and legislative chambers to remain open during construction. In addition to the dome, the phases also encompassed restoration of the interior of the first through fifth floors, expansion of the basement and underground parking

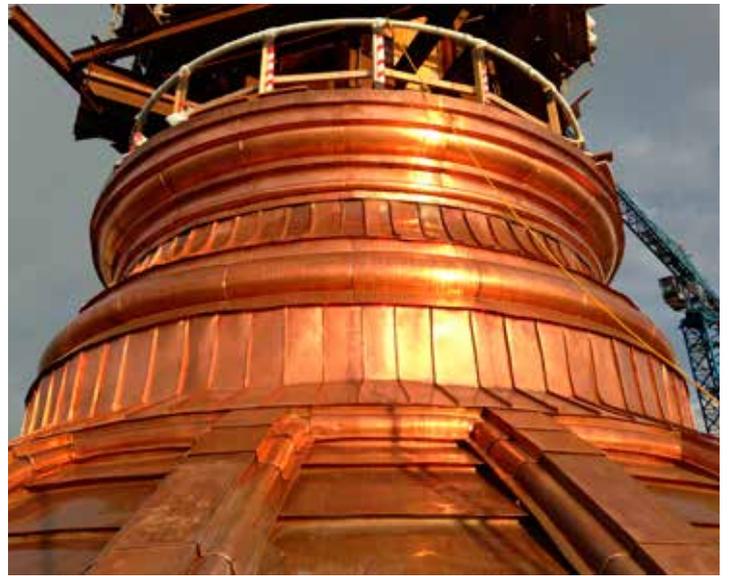
garage, and restoration of the exterior masonry.

After an extensive study finished in 2010, lead architecture firm Treanor Architects determined that the building's copper cladding on the existing roof and dome needed replacement. Copper was selected to preserve the original historic aesthetic and architectural design, as well as to provide a solution that would last

for generations to come. From the preexisting dome, the scales of original copper were recycled, portions of which were reused to produce jewelry and other gifts available in the visitor's center. Installed by Baker Roofing, the dome is covered with nearly 25,000 square feet of 20-ounce copper horizontal-seam roofing panels joined at ribs moldings custom fabricated by Ornametals.



BEFORE



AFTER



In addition to these panels, the dome incorporated new copper window surrounds, stainless steel gutter frames, heat trace, roof drains and lightning protection

The entire roof had been badly damaged by wind and hail. The most serious long-term damage to the dome, including major leaks, was caused mainly by the traditional 19th century soldering methods used to assemble it, which did not allow for expansion.

As it was not possible to re-use 19th century techniques, Ornametals had to adapt all the products for more modern installation and use (taking into account the constraints of the wind and the expansion) while at the same time retaining the initial aspect of the roof and the monumental parts of the building.

“The quality of the custom fabricated copper ornaments and panels from Ornametals was an exceptional addition to the renovation of the Kansas Statehouse” said Julia Mathias Manglitz, AIA, Treanor Architects project manager.



"Ad Astra" is a 22-foot sculpture of a Kanza Indian warrior aiming an arrow at the North Star that was placed on top of the dome in 2002. Its title is taken from the state motto, "Ad Astra per Aspera," which means "to the stars through difficulties." The sculpture, hollow cast of silicon bronze, weighs 4,420 pounds.

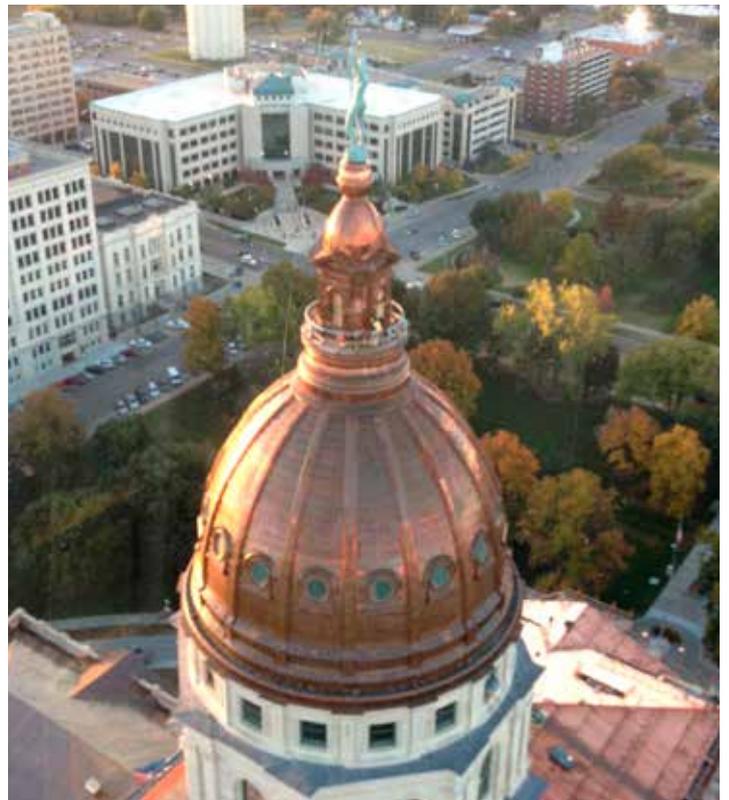
Successful partnership

"As a proud partner of Ornametals, VMZINC® is honored to have played such a significant role in the restoration of this prestigious historical treasure," said D. Nicely, managing director at VMZINC®-US. We provided stamping expertise (presses and forming skills), technical roofing advice and our quality standards to help them successfully complete the renovations.

The biggest challenge was to copy the existing design, with all details included. The original supporting frame had to be partly replaced. The hips were quite complex, curved and tapered at the top.



BEFORE



AFTER



Preparation of the plaster



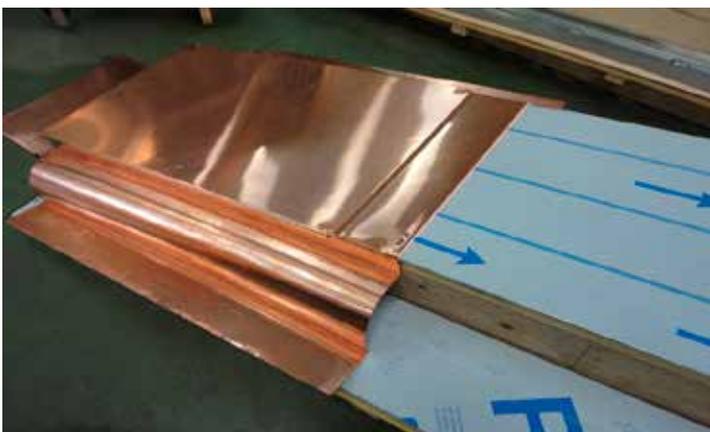
Plaster

To facilitate all production stages and guarantee parts that meet the client's requirements precisely, various meetings were organised between Ornametals and the VMZINC Ornaments teams. In Topeka, on the building to be renovated, measurements and readings of curves and slopes were taken on the old dome so that accurate and precisely adjusted production drawings could be made. These drawings, which were sent to the architect for validation, depict the various connections used during assembly of the parts and made installation easier.



Stamping

In Bray-et-Lû, at the VMZINC ornaments production site, the various parties involved were able to visualise and discuss quality and progress of production. "These meetings make it possible to reassure everybody" says Sammy Baron, Customer Support Manager with VMZINC Ornaments. "The parts and sometimes the mock-ups made in the workshop make it possible to deal with any future special points during installation. It's a real time saver."



Hip

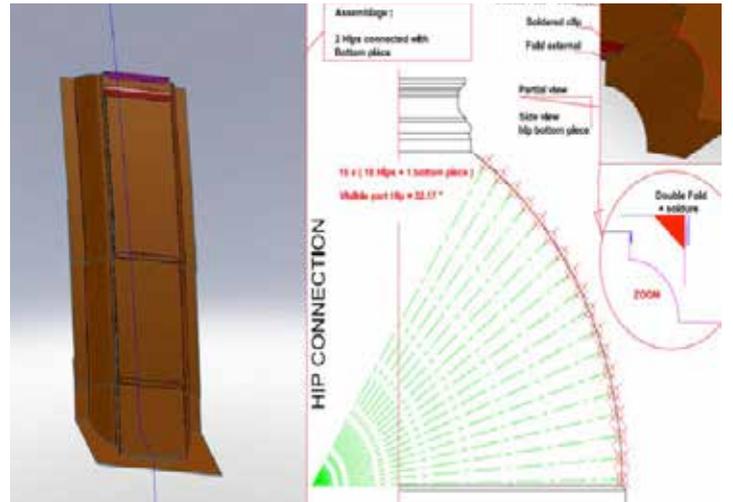




Replication according to best practices

To design the 340 copper parts for the new dome, the VMZINC Ornaments teams used all their know-how, inherited from 19th century craftsmen. From matrix through to laser cutting, the new parts produced demonstrate the teams' perfect mastery of metal transformation.

"On top of these traditional production techniques, we added a complementary approach proposing numerous 3D drawings" says Sammy Baron. These drawings made it possible to check the adjustment of all parts and provide the architect and the company with an overview of all the elements to be produced and installed. This simplified work during the crucial installation phase and ensured a better end result.



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