Case Study
GOVERNMENT & PUBLIC

Minnesota State Capital Restoration Department of Adminstration

LOCATION | Wabasha Hill, St. Paul, MN
CONSULTING ENGINEER | HGA
GENERAL CONTRACTOR | JE Dunn Construction
INSTALLING CONTRACTOR | Harris Company
EQUIPMENT SUPPLIER | SVL, Inc.

BACKGROUND

The Minnesota State Capitol building was constructed in 1905 from a design by renowned architect Cass Gilbert. After more than 100 years of service, the Capitol showed signs of deterioration. Portions of the exterior were crumbling, its antiquated mechanical and electrical infrastructure was failing, and its safety systems did not comply with modern standards.

A century of withstanding the harsh Minnesota environment had made portions of the roof unsafe and unserviceable. This led to water damage from the dome, causing issues with the interior finishes, even starting to fade the fantastic murals that grace the rotunda walls.

Besides its structural issues, the Capitol also presented practical problems. Legislators and government officials wanted more meeting spaces within the existing footprint. The public facilities were in dire need of upgrading, while the art and historic finishes needed to be preserved for future generations.

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The consulting engineers had to decide how to update and integrate new mechanical systems and products while preserving the historical integrity of the building.

From 2010–2011, a team of historians, architects, and civic leaders gathered to decide the best way to restore and preserve the Capitol. Construction began in 2013 and was completed in August 2017.

CHALLENGE

The consulting engineers had to decide how to update and integrate new mechanical systems and products while preserving the historical integrity of the building and its original architecture. The renovation team also had to complete this work while providing temporary heating, cooling, and ventilation for legislators during their session, which was required by law to be held in the House chambers.

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SOLUTION

The products for this application were chosen for their performance, aesthetics, and seamless integration features. A structure built in 1905 could not have anticipated the space considerations necessary for a modern HVAC system. Seeking to limit any aesthetic changes to Gilbert's iconic design, the engineer's solution was to upgrade the HVAC system by running the ducting underground.

They selected BlueDuct from AQC Industries (supplied by SVL) for its energy efficiency and the ability to maintain the original square footage without compromising the space with chases, soffits, and dropped ceilings to hide ductwork.

RESULT

All parties involved were satisfied with BlueDuct. The materials were delivered promptly and kept the construction schedule on pace with its ease of installation. BlueDuct also increased the indoor air quality at the Capitol, significantly reducing the allergens, pollutants and environmental factors that accumulate and infiltrate buildings with traditional ducting systems.

With little-to-no maintenance needed, BlueDuct will provide reliable air delivery for the life cycle of the newly remodeled Capitol, ensuring it will continue to be a productive fixture of the Minnesota community for the next hundred years.