



# EMPOWERED

A NET-ZERO HOME WITHOUT THE PRICE TAG 74



# RESTORED

ILLINOIS CAPITOL BUILDING WEST WING  
SPRINGFIELD, IL  
J. RICHARD ALSOP, ARCHITECT OF THE CAPITOL

*By Alan Oakes*

# A CAPITOL FOR THE 21ST CENTURY





# \$43m

Project budget

# 40

Years since the building's last HVAC renovation

# 70

Workers on-site every day

# 57,480

Square feet renovated, roughly 20% of the structure



## PROJECT

**LOCATION** Springfield, IL**Size** 57,480 ft<sup>2</sup>**Completed** 2013**Cost** \$43 million**Program** Historical renovation of capitol building and office spaces

## TEAM

**ARCHITECT** J. Richard Alsop, Architect of the Capitol**Architect of Record** Vinci Hamp Architects**Client** State of Illinois**General Contractor** CORE Construction**MEP Engineer** Henneman Engineering**Woodworking** Imperial Woodworking Company**Decorative Painting** EverGreene Architectural Arts

## GREEN

**CERTIFICATION** LEED Gold (expected)**Materials** Reused sourced locally or regionally, low-VOC chemicals and solvents**Energy** High-efficiency mechanical system, insulated glass, occupancy sensors, CFL and LED lighting**Water** Complete plumbing upgrade, low-flow toilet fixtures**Equity** ADA and life-safety upgrades

One of the most challenging portions of the renovation was preserving an iconic mural by Gustav Fuchs in the public space of the west wing. The mural had to be separately conditioned and protected during construction.

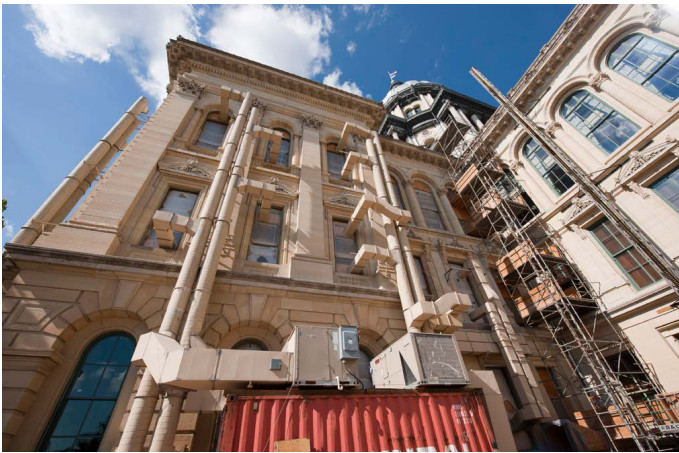
**HISTORY** On a gentle rise of Illinois prairie in the heart of downtown Springfield, the elegant Second Empire-style **Illinois State Capitol** building continues to be a symbol of the optimistic resilience of the citizens of the state. Built on land originally slated to be the final resting ground of Abraham Lincoln after his shocking assassination in the wake of a civil war that devastated the nation, the state house stands as a noble reminder of the will of the people to overcome a difficult past while welcoming a prosperous future.

Throughout the years, however, maintenance was deferred, codes changed or were not followed, building systems became outdated and inefficient, and space had to be repurposed. "The west wing, like many areas of the capitol, was code deficient for both life-safety standards and accessibility standards for those with disabilities," says **J. Richard Alsop**, the architect of the capitol for the **State of Illinois**. "In addition, all of the infrastructure systems including HVAC, plumbing, electrical, and IT were outdated, inefficient, and needing constant maintenance as they were all past their useful life."

Renovating an existing structure to bring it up to LEED standards can be complicated, but when the building is almost 150 years old, the job becomes even more difficult. Alsop and his team were tasked with overhauling the west wing of the 293,367-square-foot capitol building, and the \$43 million project wasn't going to happen overnight. After two years planning the extensive renovation, Alsop's work reinforces the saying, "success is not an accident."

**STRUCTURE** Although the project was intended to restore the building to the appearance of its period of historic significance (1867–1908), Alsop wanted to make sure sustainable elements were incorporated. He thought it was critical for this renovation to not only follow LEED guidelines,





**TOP** A new emergency egress stair was installed in the west wing to enhance life-safety of the building's users.

**BOTTOM** Temporary air-handling units had to be installed during the renovation. To not blemish the façade, the supports were attached to the mortar of the exterior and not into the stone itself.

but also get official certification. "While typically a mandate for new construction, I made it a goal to achieve LEED certification for this major renovation," Alsop says, who adds that though the renovation work required specialists, there were surprisingly few out-of-the-ordinary challenges for such an aged structure.

The statehouse is a true load-bearing masonry building with some walls as thick as 17 feet and foundations resting on bedrock 25 feet deep. It boasts original opulent wall finishes of marble, wood wainscot, or three-coat plaster over wood lath attached to the masonry. Alsop's team preserved and restored the plaster walls and ceilings, many of which were decoratively painted with ornate stencil work with highlights of gold or silver leafing. An entire mezzanine level above the second floor that was not a part of the original structure was removed to let the tall, two-story windows bring as much daylight into the wing's interiors as possible.

**SYSTEMS** The team installed a highly efficient mechanical system, using the original vertical ventilation chases that run the height of





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**J. Richard Alsop, Architect of the Capitol,  
State of Illinois**

the building as infrastructure ducts, a solution that—combined with occupancy sensors, CFL and LED lighting, and low-flow fixtures—will achieve substantial efficiencies in thermal comfort, electricity, and water use. New, insulated glass was set in original window frames.

The project team diverted construction materials from landfills and set up containers for recyclable materials. In lieu of new ones, the team reused existing materials whenever possible. Any new materials that were required came from local and regional manufacturers,

and environmentally safe cleaning products were used after the project was completed. Commissioning, measurement, and verification procedures were put into place to ensure the building is achieving target operational efficiencies.

“Designing to a standard is not the same thing as obtaining recognition of having achieved that standard,” Alsop says. “A lot can happen between the end of design and occupancy that compromises design intent.” He believes the project has a real possibility of achieving LEED Gold, making it one of the oldest

structures in the United States to do so. “We have set the bar for subsequent renovations,” he says.

The restoration of the west wing of the State of Illinois Capitol is proof positive of citizens desiring a sustainable future. Alsop is well aware of the significance of the project. “This building just as easily symbolizes the best attributes of the entire population of Illinois,” he says. “It is a building our citizens should be proud to own, and it is a true reflection of the human spirit through architecture.” **gb&d**

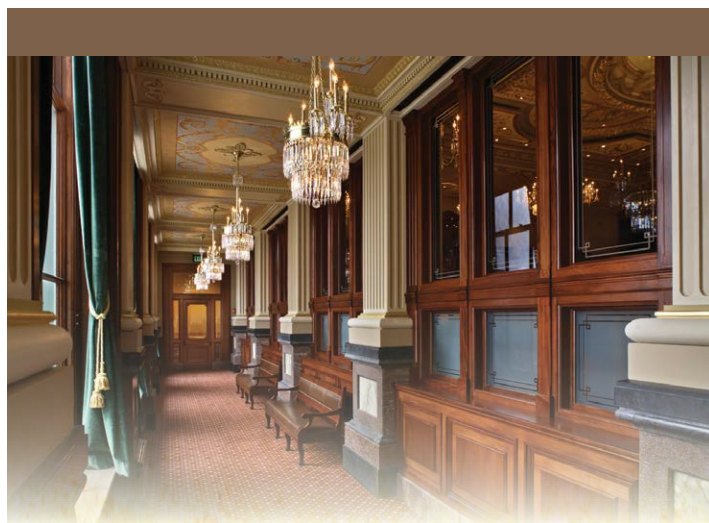


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Illinois State Capitol  
Springfield, IL



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