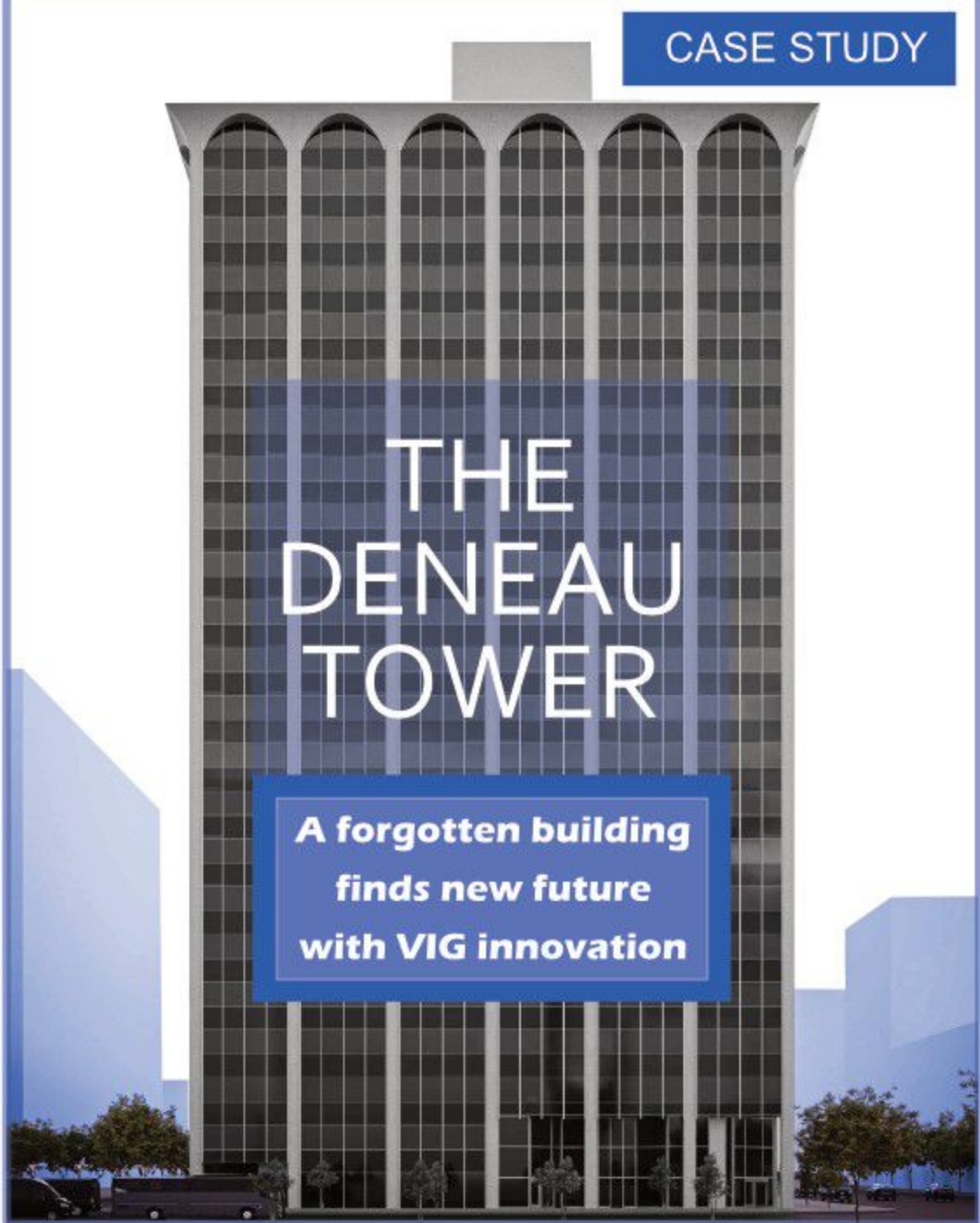




CASE STUDY

THE DENEAU TOWER

**A forgotten building
finds new future
with VIG innovation**

Challenges

Built in 1969, and celebrated as the tallest building in Dayton, Ohio, the Deneau Tower, is a 265,600 sq. ft., 22 story highrise in the heart of the downtown.

Sadly, after years of occupant frustration, it was abandoned in 2017 due to excessive heating and cooling costs, complaints about glare, drafts and a noisy environment.

Negative Factors:

- Inefficient original single-pane glazing 1/4" monolithic glass R-1.
- Glass becoming loose in the façade.
- HVAC issues including inoperable dated chillers, and inefficient boilers.
- Peeling and cracking solar control film.





Ideal Site for the Right Solutions

Retrofitting with Vacuum Insulating Glass (VIG):

Vacuum Glass LLC provided over 51,000 sq ft of VIG, transforming the façade thermal performance while preserving the historic aesthetic.

Three types of VIG:

Vision VIG R-9 & R-11, VIG thickness: 7/16", glazing with tinted outboard lite to match original circa 1969 PPG Solar Gray glass. **This allowed for Historic Tax Credits.**

Spandrel VIG opaque glass provided to hide floor slabs, and mechanicals, has insulation capability that allows omitting the backing insulation.

Shaped VIG provided to match the original curved top penthouse units.

New zipper gasket system designed for VIG was specified to replace the 56 year old original zipper gasket. The original aluminum wall was kept in place, saving time and money.

Mechanical System Overhaul:

Antiquated, inefficient HVAC system scrapped.

Latest Aquifer-Sourced Variable Refrigerant Flow (VRF) System technology installed on each floor.

Circulates 58°F water from the Great Miami Aquifer to the heat pumps.

Smart controls via a Building Automation System (BAS).

Simplifying RETROFIT

Deneau Tower

Dayton, Ohio

VIG Technology & Supplier
Vacuum Glass LLC

Project Developer
Windsor Companies

DOE Partner
Lawrence Berkeley
National Laboratory

22

Floors

51,000

Sq. Ft. VIG

R1→R12

R-Value
Improvements

Web: vacuumglassllc.com

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RESULTS THAT MATTER

This abandoned mid-century masterpiece has been meticulously restored, blending timeless architecture with cutting-edge design, premium amenities, panoramic views and sustainable innovation.

265,600 sq ft of revitalized space

Converted from commercial use to mixed-use: 17 residential floors including 6 luxury penthouses, a fitness center, 4 commercial floors, a grand lobby and cafe space.

The building was studied by Lawrence Berkeley National Lab for performance validation.

PERFORMANCE HIGHLIGHTS

VIG:10X the performance of original glass.

Heat pump VRF Systems: Now possible with VIG envelope, quiet, reliable, and easily maintained.

Aesthetically matched to the original tinted glass.

City noise reduction by using VIG.

LOOKING AHEAD

The Deneau Tower serves as a model for future high-rise retrofits with repeatable success using VIG + VRF systems.

This project is positioned for 179D Federal Tax Credit at over \$1.5M.

Vacuum Glass LLC revolutionizes retrofit energy savings performance in America's aging building stock.

Simplifying RETROFIT