



Mid-Atlantic Region

Lewis F. Powell, Jr. U.S. Courthouse

IRA Low Embodied Carbon Glass Procurement

Richmond, Virginia

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Presented by:
Ben Hastings, Project Manager
GSA Mid-Atlantic Region



Powell U.S. Courthouse



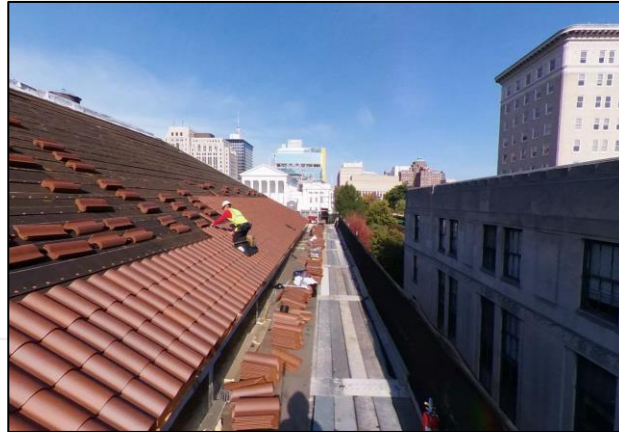
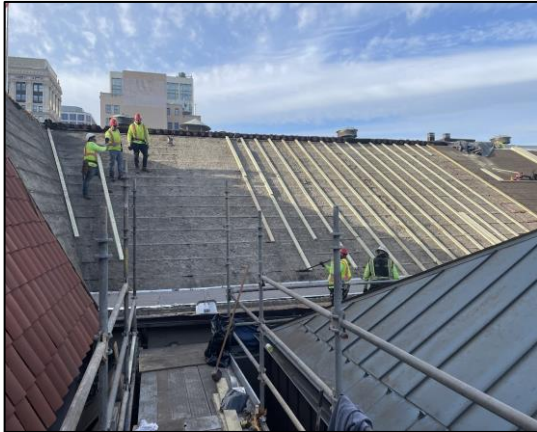
- 176,000 square foot Courthouse and Annex facility.
- Courthouse constructed in 1858, oldest in GSA's inventory; Annex added in 1936.
- Courthouse and Annex listed on the National Register of Historic Places.

Powell Exterior Envelope Project

Region 3 secured funding in December 2022 for envelope prospectus. Construction kicked off in March 2023; substantial completion scheduled for February 2025.

Scope:

- Removal and replacement of the existing terra cotta roofing and flat roof systems.
- Repairs to the rain leaders and installation of a fall protection system.
- Window restoration and replacement (exercised option).



IRA - Low Embodied Carbon Pilot

May 2023: GSA announced 11 low embodied carbon (LEC) pilot projects funded by the Inflation Reduction Act, including Powell window replacement. Pilot focused on four construction materials: asphalt, concrete, glass, and steel.

September 2023: \$5.3M awarded to restore and replace Powell U.S. Courthouse windows.

- First LEC project awarded nationwide.

February 2024: Additional \$5.5M awarded to restore and replace Powell Annex windows.

Embodied Carbon refers to the greenhouse gas (GHG) emissions associated with the production, use, and disposal of construction materials. Buildings are a significant contributor to carbon emissions:

- Operations = 28% annual GHG emissions.
- Materials and Construction = 10% annual GHG emissions.

Powell - LEC Glass Procurement

LEC Glass procured through Vitro Architectural Glass, located in Pennsylvania.

Glass meets one of the limits (top 20%) established in GSA's Interim IRA Low Embodied Carbon Material Requirements for flat glass. The product generates fewer emissions from manufacturing, with a third-party verified global warming potential of 1,350 kilograms of carbon dioxide equivalent per metric ton.

Glass Manufacturers Within GSA IRA GWP Limits:

Cardinal Glass Industries

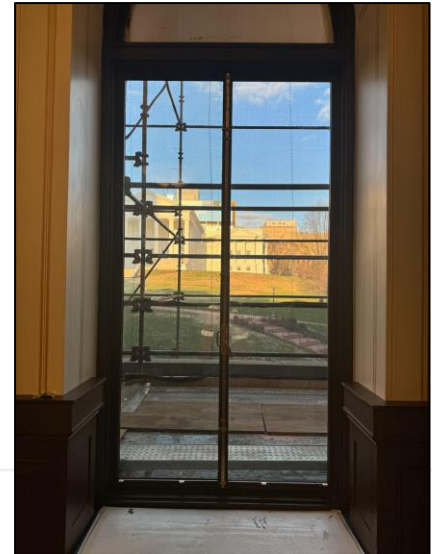
- Mooresville, NC - Top 20%
- Winlock, WA - Top 40%
- Durant, OK - Top 40%

Vitro Architectural Glass

- Carlisle, Wichita Falls, Salem, Fresno - Top 20%

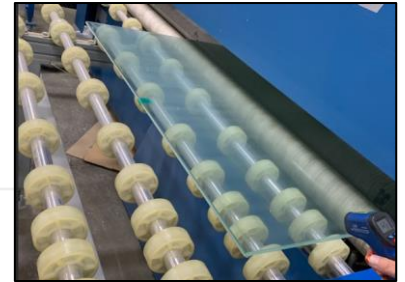
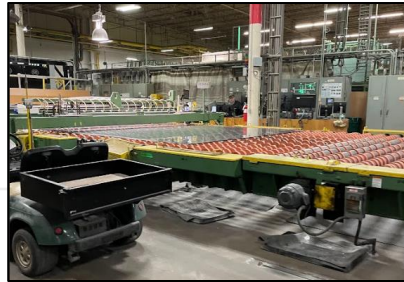
Guardian Glass

- Various Locations - Better than average



Unique Challenges and Information

- Lack of LEC glass manufacturers nationwide
 - Only 3 eligible vendors identified
 - 2 plant locations in practical geographic range
- Benefits of local contractor
 - Site visits to Carlisle, PA (IRA team, GSA Administrator)
 - Faster freight/shipping to fabrication workshop in Pittsburgh
- Cardinal Glass (Mooresville, NC) original manufacturer GSA targeted but couldn't meet production schedule due to low volume of order (low priority)
- Updated EPM pre-dating glass production bumped tier to 20% from 40%



Powell - Project Benefits

- LEC glass materials reduce harmful emissions.
- Employ local contractors to stimulate the economy.
- Accelerate American innovation by directing business towards high-efficiency glass manufacturers.
- Encourage the market to explore energy-saving measures in glass/window production.
- Improve efficiency and reduce long-term energy costs by employing upgraded windows, frames, and sashes to help eliminate air leakage, water infiltration, and increase insulation ratings.



Progress Photos

