

New, Zero Energy Ready City Maintenance Building



City of Pittsburgh Maintenance Facility Uses Passive House Strategies

4th Division Maintenance Facility, Pittsburgh, PA

At the end of 2019, the City of Pittsburgh passed a law that all new or renovated City government buildings were required to reach zero energy ready. The City's 4th Division Maintenance Facility was the first new construction facility built under this law and AUROS Group was retained as the Zero Energy Ready consultant.



Credit: Architectural Innovations

Owner's Project Goals

The City of Pittsburgh embraced the use of an Owner's Project Requirements tool to align the project team to expected building performance metrics:

Metrics

- 20% or greater reduction in EUI
- Temperature – continuously monitored
- Humidity – continuously monitored
- Particulate Matter 2.5 (PM2.5): < 12 µg/m³
- Particulate Matter 10 (PM10): < 50 µg/m³
- Total Volatile Organic Compound (TVOC): < 400 µg/m³
- Carbon Dioxide (CO₂): < 600 ppm

Sustainability Programs

- Passive House strategies for low energy
- RESET Air strategies for healthy IAQ
- Zero-Energy-Ready



Project Highlights

As experts in building science and data science, AUROS Group provided the energy modeling & simulation capabilities with deep passive-first experience necessary to deliver Zero Energy Ready performance at that traditional cost of construction. Passive-first approaches require super-insulation, installed continuously, with a continuous air barrier, along with high-performance windows and doors. Designing and constructing a high-performance building envelope, sets the foundation for affordably realizing Zero Energy Ready performance. Once the team agreed on the envelope design, the engineering team used that design to gain the confidence necessary to reduce the size of the mechanical systems, which offsets the higher costs associated with an improved envelope design. By doing these things, buildings consume significantly less energy and provide healthier indoor air quality.

Historic Renovation

Maintenance Facility
5,000 square feet

Project Team

AUROS Group
Civil & Environmental
Engineering
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Project Reference

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