CASE STUDY

New, Zero Energy Ready for Medic Station 4

City of Pittsburgh, Medic Station 4
Net Zero via Passive House Strategies

At the end of 2019, the City of Pittsburgh passed a law that all new and renovated City government buildings were required to reach zero energy ready. The City of Pittsburgh's Medic Station 4 is the first newly constructed facility built under this law and AUROS Group was retained as the Zero Energy Ready consultant and Commissioning Agent.

Commissioning and QAQC services included project orientation/training, Passive House envelope commissioning, and MEP functionality testing.

Credit: Kiley Koscinski / 90.5 WESA

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

- Target EUI 20-30 kBtu/sf/yr
- All electric, no fossil fuels
- 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
- 50% reduction in potable water – Pittsburgh's 2030 District Goals

Sustainability Programs

- Zero-Energy-Ready operational performance
- Passive House envelope-first load reduction strategies to reach low energy
- RESET Air strategies for healthy Indoor Air Quality

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 traditional cost of construction. Passive-first and envelope 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.

New Construction

Medic Station 4

5,800 square feet

Project Team

AUROS Group, zero energy expert

AE7, architect

Allen & Shariff, MEP Engineers

Caliber Contracting Services

City of Pittsburgh Reference

Provided upon request

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