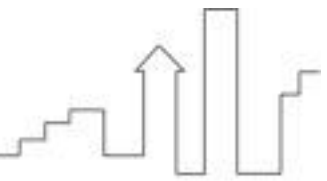


# Charter School Integrates Building Science with Data Science



Evidence of building performance teaches students the benefits of making old buildings perform like new

## Environmental Charter Middle School Pittsburgh, PA

The esteemed Environmental Charter School chose to renovate an abandoned Middle School to incorporate 6<sup>th</sup> through 8<sup>th</sup> grades along with their newly formed 9<sup>th</sup> grade academy.



## Owner's Project Goals

The project's goals required the use of Passive House building science strategies and RESET Air indoor air quality guidelines to achieve the following metrics:

### Metrics

- Energy Use Intensity: 30-35 kBtu/Sf/year
- Temperature: Meet 5.4 Adaptive Comfort, WELL Std.
- Humidity: 30-50%, for virus mitigation
- Carbon Dioxide (CO<sub>2</sub>): <600 ppm
- Carbon Monoxide (CO): <9.0 ppm
- Formaldehyde: <27 ppb (0.027 ppm)
- Ozone (O<sub>3</sub>): <51 ppb (0.051 ppm)
- Particulate Matter 2.5 (PM 2.5): <15 µg/m<sup>3</sup>
- Particulate Matter 10 (PM 10): <50 µg/m<sup>3</sup>
- Radon: <0.148 Bq/L (<4 pCi/L)
- Total Volatile Organic compound (TVOC): <0.4 mg/m<sup>3</sup> (<400 µg/m<sup>3</sup>)
- Ventilation Rate: 30% more outdoor air than required by ASHRAE 62.1-2013



## Project Highlights

As Owner's Performance Advocates, AUROS Group used Owner's Performance Requirements (OPR) to align team members to the performance metrics expected to be realized during building operations.

Using whole building performance modeling, smart building infrastructure and an integrated performance dashboard, the project team created the basis of a high performing building that is becoming an integral part of ECS students' learning process which is fundamentally rooted in solving real-world problems.

## Project Reference

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## Renovation

Renovation of Existing School  
77,018 square feet  
\$11.3 million

## Project Team

AUROS Group  
Wildman Chalmers Architecture  
McKim & Creed  
PJ Dick