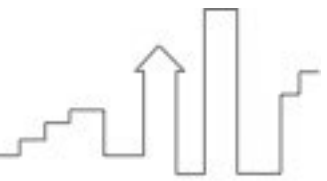


## Charter School Integrates Building Science with Data Science



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 renovated an abandoned Middle School to incorporate grades 6-9.

AUROS Group's award-winning book, [The Power of Existing Buildings](#) documents the process used to renovate buildings to their

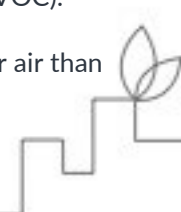


### Owner's Project Goals

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 Building Standard
- 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 an Owner's Performance Requirements (OPR) report to align team members to the performance metrics expected to be realized during building operations.

The most important un-asked question when renovating a building is, "[What is my building's performance potential?](#)"

Using whole building performance modeling, AUROS Group answered that question and supported a design for an Energy Use / Decarbonization goal of 30 kBtu/sf/yr. By incorporating smart building infrastructure and an integrated performance dashboard, the project team created the basis of a high performing building to inform the students' learning process which is rooted in solving real-world problems.

### Renovation

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

### Project Team

AUROS Group  
Wildman Chalmers Arch.  
McKim & Creed  
PJ Dick

### Project Reference

Nikole Sheaffer  
Environmental Charter School  
[nikole.sheaffer@gmail.com](mailto:nikole.sheaffer@gmail.com)



243 East Main Street  
Carnegie, PA 15106

[beth.eckenrode@aurosgroup.com](mailto:beth.eckenrode@aurosgroup.com)

[www.aurosgroup.com](http://www.aurosgroup.com)