



## Equipment Requirements

GFH Ductless Filtering Fume Hoods:

(11) Thermo Scientific hoods featuring Erlab's GreenFumeHood Technology

## Product Expectations

New R&D Lab that replaced ducted fume hoods with ductless filtering fume hoods, for newly designed R&D Space

# CASE STUDY

## \$100 Million LEED Gold R&D Tech Center

Akron, Ohio



### Project Background

The laboratory manager of this prestigious racing tire tech center was given the opportunity to design a new world-class laboratory, and wanted maximum flexibility to promote a productive workflow, encourage innovation, and allow for ergonomic placement of equipment. The lab is located on the fourth floor, with a high ceiling and full length windows that give an open and innovative working atmosphere.

### The Challenge

The new lab would be built upwind of a residential neighborhood and adjacent to a ball field, so they wanted to protect the community and create a positive impact on the local environment. Additionally, LEED Gold certification required thinking differently about the lab design.

### The Solution

#### Testing

When the lab manager first learned about Erlab's GreenFumeHood (GFH) Technology she gave serious consideration to this innovative fume hood design because of its next-generation

filtration technology that captured and retained contaminants at the source. She also learned that the filtration design included redundant “safety” filters and automatic detection of filter breakthrough.

When the lab project was approved, she brought this new filtration technology before the board. They felt this was a safe, viable option because of the type of chemicals used for their research, provided it passed their testing. There were some individuals that were still skeptical to adopt this technology, so they purchased a GreenFumeHood and tested 306 chemicals over 20 months.

The results exceeded expectations, in fact precision weighing operations could now be performed within the hood because of the minimal vibration generated by the GFH technology.

The GreenFumeHood Technology, which utilizes Neutrodine® filtration, proved successful and they determined that this was a safe,



### Substantial Cost Savings

The new lab was originally designed on the top floor of the building to accommodate a ducted solution. However, when the GreenFumeHood Technology was selected, the engineers on the project reported that this technology provides substantial capital savings and reduced operating costs. The MEP engineers removed the exhaust ductwork, and the new laboratory was designed with smaller mechanical systems. The lab’s ventilation system was designed with a simplified, lower cost, airflow control system.

### Flexibility

Eight filtered fume hoods, placed back-to-back in the center of the room, allowed for easy access from the lab benches to the hoods where they would be used for wet chemistry. An additional three filtered hoods are placed throughout the lab, plus one ducted floor-mounted fume hood.

### The Result

- LEED Gold certification awarded, V2.2
  - Optimize energy performance - 6 out of 10 credits earned
  - Innovation credit - 11 filtered fume hoods saved 5.8% of the total building load
- The filtered fume hoods aid in cleaner air to the surrounding community.
- Improved laboratory personnel safety: Balances could now be utilized inside the filtered fume hoods keeping hazardous compounds contained within the hoods.
- GreenFumeHoods provided \$385,000 of net operational cost savings over the first 10 years.
- Anecdotally, after the first three months of lab operations, corporate accounting inquired when the lab would go on-line because they had not seen an increase in their utility bills as they had seen with other new labs.