



## Equipment Requirements

Ductless Filtering Fume Hoods:

(11) Labconco Echo Ductless Fume Hoods featuring Erlab's GreenFumeHood Filtration Technology.

## Products Expectations

The need to replace an inefficient and dated biology facility, along with the goal to expand faculty and student enrollment, the Rockwell Integrated Science Center houses scholars teaching and conducting research in the fields of biology, environmental science, neuroscience, environmental science, and computer science. The project included biology labs, computer science labs, faculty office, classrooms and (2) greenhouses.

# CASE STUDY

## Lafayette College

### Rockwell Integrated Science Center



## Project Background

Lafayette College set a goal for the facility to reduce energy consumption by 45% below the LEED baseline. The project was designed to meet LEED Gold or better. Furthermore, the college's Climate Action Plan has pledged to reach carbon neutrality by 2035.

## The Challenge

Using eleven ductless and two ducted fume hoods, allowed the MEP Engineers to employ higher efficiency ventilation techniques within the laboratory spaces.

The ducted hoods' exhaust is separated from the rest of the exhaust. The ductless fume hoods recirculate their clean exhaust within the lab they are operating. Recirculation is possible because Erlab's GreenFumeHood Filtration Technology ensures less than 1% TLV-TWA exposure.

This clean exhaust air allowed the MEP Engineers to use an enthalpy wheel heat recovery system because they are not handling contaminated exhaust. To ensure safety, air-quality monitoring is used in the building allowing the facility to vary the Air Change Rate in the labs based on air quality. These ventilation techniques are possible because the labs were not over-ventilated by hazardous ducted hood exhaust.

## The Solution

- Replacing an inefficient biology building resulted in a 40% reduction in campus CO2 emissions
- 74% reduction in energy usage compared to 2030 baseline.
- EUI of 76 kBtu/SF/yr. Placing the building in the 99th percentile of cold climate labs.
- 56% Reduction in cooling tower water usage attributed to the energy load reduction
- 41% Reduction in building water usage

## Awards include:

- LEED Platinum Certified
- AIA COTE Top Ten 2021
- Boston Chapter of USGBC - Carbon & Energy Award 2021

