

YALE UNIVERSITY KLINE CHEMISTRY LAB NEW HAVEN, CT

KEY PARAMETERS

- Type of Facility – Existing Building (EB)
- Function – Higher Education
- Area – 4 stories, 300,000 sf
- Project Completion – 2014

In need of remodeling, the building that houses the Sterling Chemistry Laboratory and Kline Chemistry Laboratory at Yale University was considered a cutting-edge design when it was built in 1923, incorporating a flexible, factory-like interior core with a state-of-the-art natural ventilation system enclosed within a ring of gothic-revival building elements.

Challenges: With a deep commitment to environmental sustainability, Yale established goals of carbon neutrality and LEED Gold certification for this building. As a teaching and research laboratory, designers needed MERV 13 or better filtration. Other challenges included managing the effects of a substantial increase in program area and the introduction of day-lighting throughout building's deep floor plan.

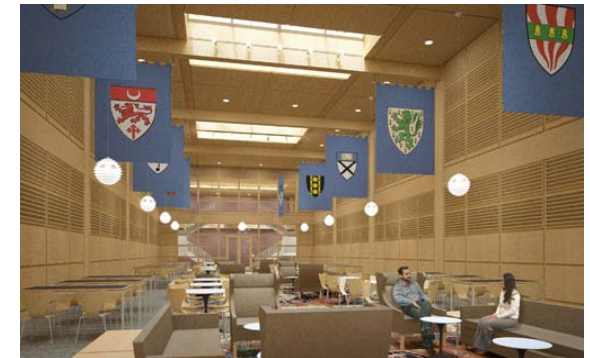


The scheme uses a continuous, vaulted roof profile to minimize the addition's visual impact.

Solution: Dynamic V8 Air Cleaning Systems were installed in 100% outside air units serving the laboratories.

Results: The low static pressure of the Dynamic Air Cleaners reduce operational costs by providing a static pressure reduction of approximately 1" w.g. when compared to 2" prefilters with MERV14 cartridge filters. This reduction is expected to provide owners with

significant ongoing energy savings due to lower fan horsepower consumption. The systems also offer substantial maintenance cost savings as a result of eliminating the need for prefilters which normally require replacement quarterly and cartridge filters which require replacement annually. Dynamic V8 replacement media will last 3 to 5 years between media changes. Return on Investment calculations that were run using building usage information, labor costs, filter replacement costs, and utility rates indicated a payback of under two years.



TEAM

- Client – Louis Dreyfus Property Group
- Architects – HBRA Architects / Greelon Group
- Engineers – WSP Flack + Kurtz, Boston
- General Contractor – Turner Construction Company

MECHANICAL SYSTEMS

- HVAC – Trane
- Ventilation – Energy Recovery

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