

# BARNES FOUNDATION ART GALLERY PHILADELPHIA, PA

## KEY PARAMETERS

- Type of Facility – New Construction
- Function – Art Gallery / Museum
- Area – three stories, 93,000 sq ft
- Project Cost: \$150M
- Project Completed – May, 2012
- LEED® Platinum Certification

**Challenge:** IAQ, climate control, sustainable design. Environmental conditions were paramount - designed to preserve one of the world's finest collections of art using constantly stabilized temperature and humidity levels in gallery spaces where temperatures of 70° F and relative humidity of 50% are maintained year round. The building experience includes a main gallery, classrooms, garden, interior light court, auditorium, special exhibition gallery, painting conservation studio, library, restaurant, coffee bar, gift shop, and offices. A translucent canopy is located above the stone building to cast indirect daylight onto interior spaces.

**Solution:** Designers specified Dynamic V8 Air Cleaning Systems and Dynamic Activated Carbon Matrix systems for the optimum control



THE BARNES FOUNDATION



of ultrafine particles, odors and VOCs-including those entering with outdoor fresh air.

Energy modeling was used for the building in a variety of ways to support LEED certification. Mechanical systems were operated for a nine month period prior to any artwork being moved into the building, to properly condition the environment for the artwork and ensure that systems were operating as designed.

**Results:** Dynamic provided high efficiency air cleaning that removed ultrafine particles as

well as gas phase contaminants. Low static resistance saves energy by reducing the fan horsepower required to move air through the HVAC system. And the long service life of the V8 replacement media translates to a smaller environmental footprint and lower ongoing maintenance costs. MERV13-15+ performance, as well as the energy savings, helped earn LEED points.



*Dynamic Activated Carbon Matrix System*

The museum was designed to exceed the performance of the ASHRAE 90.1 energy standard by an impressive 43 percent. In addition to the Dynamic V8, other strategies that contribute to these savings include ventilation-air heat recovery, demand-control ventilation, rooftop solar panels and thermal properties of the envelope, along with overhangs and other shading devices that help control heat gain.

## TEAM

- Owner – Barnes Foundation
- Architects – Tod Williams Billie Tsien
- Construction Mgmt – L.F.Driscoll Co.
- Engineers – Altieri Sebor Wieber LLC

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