

BYRNE-GREEN FEDERAL COMPLEX PHILADELPHIA, PA

KEY PARAMETERS

- Type of Facility – Existing (EB)
- Function – Government
- Area – 26 stories, 1,400,000 sf
- Project Completed – 2011

Challenges: 1) Improve indoor air quality, 2) meet GSA guidelines for MERV13 minimum filtration, 3) reduce outdoor ventilation air, 4) bring outdoor ventilation air up to indoor air quality levels, 5) stay within the existing mechanical system footprint, and all while reducing energy consumption.

For almost a decade, the James A. Byrne Federal Court House and William J. Green Federal Building complex has undergone several major renovations including construction of nine new courtrooms, new judge chambers, libraries, jury rooms and support spaces. Mechanical system upgrades included replacing over 1500 fan coil units and increasing the energy efficiency of all of the buildings' single and multi-zone AHUs.



It was determined that the existing duct system in the building was not capable of meeting current ventilation air requirements. Adding additional

ductwork throughout the building was going to be a very costly proposition.

Solution: Dynamic V8 Air Cleaning Systems were installed throughout the buildings HVAC systems.

Results: Because Dynamic V8 Air Cleaning Systems exceed MERV16, they met the GSA MERV13 minimum efficiency stipulation.

Using its AirQ™ air quality simulation program, Dynamic was able to calculate the impact of the cleaner indoor air on the volume requirements for fresh outdoor air and was able to reduce outdoor air requirements. The reduced ventilation air requirements eliminated the need to add supplementary duct systems.

Low static pressures that reduce fan energy consumption, and high dust holding capacities that extend filter maintenance cycles from months to years, mean reduced operating costs relative to other MERV13+ filters for many years to come.

TEAM

- Client – U.S. General Services Admin
- Architects/Engineers – Ewing Cole
- General Contractor – Keating Building Corporation
- Mechanical – River Mechanical, Inc.

MECHANICAL SYSTEMS

- HVAC – McQuay/Daikin
- Ventilation – McQuay/Daikin
- Building Controls – Direct Digital (DDC)
- Energy Monitoring – Green Energy Controls

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