

Building Automation & HVAC Systems

Project: Richard J. Hughes Justice Complex

A comprehensive, two-year BAS and HVAC renovation delivering energy efficiency, streamlined operations, and enhanced occupant comfort across this +1M square foot combination office-courthouse space in Trenton, New Jersey.

Background

A 136-foot tall modernist structure, the Richard J. Hughes Justice Complex is home to the New Jersey Supreme Court, Attorney General and Department of Law and Public Safety.

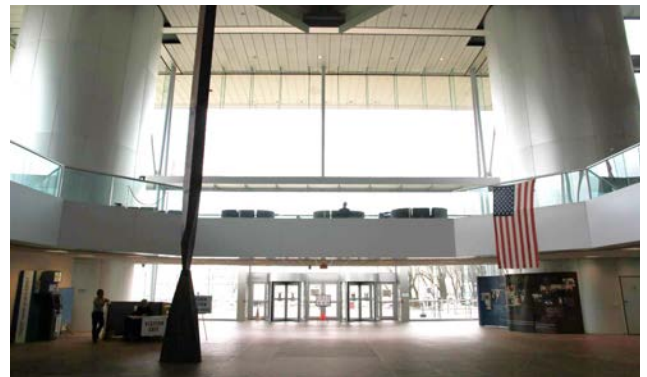
It was designed in the late 1970's by Grad Associates (Newark) and StudioHillier (Princeton), who won an American Institute of Architects award for their work.

A 40-Year Relationship

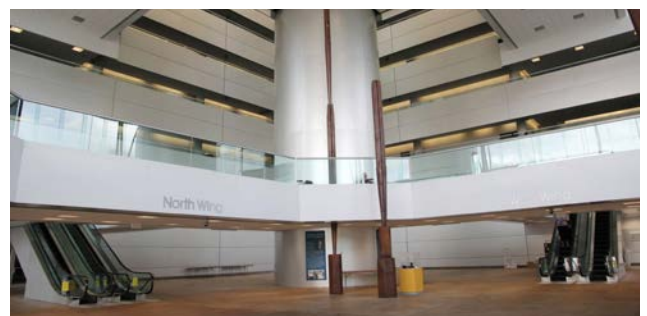
From its early days, CM3 – as a Robertshaw and later Invensys office – was the building automation and HVAC provider for the building, first installing a Robertshaw system and later replacing it with DMS.

Throughout the following 4 decades, CM3 provided maintenance services and building automation expertise. Additionally, given the long tenure of most CM3 teammates, many of the original people who designed the BAS and HVAC system and those who maintained it throughout the years are still working for CM3, providing continuity both in terms of systems operations and equipment knowledge.

When the time came to upgrade the building automation system, CM3 was selected to serve as both project manager and contractor for this extensive building technologies renovation project.



With CM3's 40-year legacy at the building, the project team understood both the history and the operations of the system. This helped streamline the project and anticipate potential challenges.



Project Summary

A complex, building-wide upgrade process conducted from 2019 through 2021. Because the facility operates 24/7, an extensive project plan was developed to enable a systematic, section-by-section control equipment replacement:

- » Every Controller, Sensor, and Actuator
- » 32 Air Handlers
- » 1000+ VAV Boxes
- » 400 Control Valves
- » 3 Heating and Ventilation Units
- » Chilled & Hot Water Systems
- » Lighting Upgrades: Interior, Exterior
- » VFD Replacements and Additions
- » Fan Coils, Exhaust Fans, and other Equipment
- » Air & Water Balancing of Entire Building



EcoStruxure™



MNB VAV



MNB 300



MNB 1000

Highlights

- » The Schneider Electric EcoStruxure Building Operations software seamlessly integrates with the Schneider Electric field devices which include the MNB 1000, 300, and VAV controllers to allow command and control of the entire Building Automation System from an easy-to-use dashboard.
- » CM3 stationed a single point-of-contact on-site every day throughout the project duration to oversee CM3 work, as well as that of electrical, mechanical and other subcontractors.
- » A new IP network backbone was installed to enable the building automation system to run independent of other data within the building.
- » A comprehensive recycling program was simultaneously managed to identify all reusable replacement equipment for other state facilities.

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Beyond the sheer complexity of the project, one thing which stands out is that we strengthened our relationship with the customer throughout the course of this project. This is an important accomplishment given that there are so many moving pieces which involve long-term, daily collaboration, communication, and flexibility on the part of both the customer and the contractor.

- Jim Stubenhofer

Senior Project Engineer, CM3 Building Solutions

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