

Wentworth Institute of Technology (WIT)

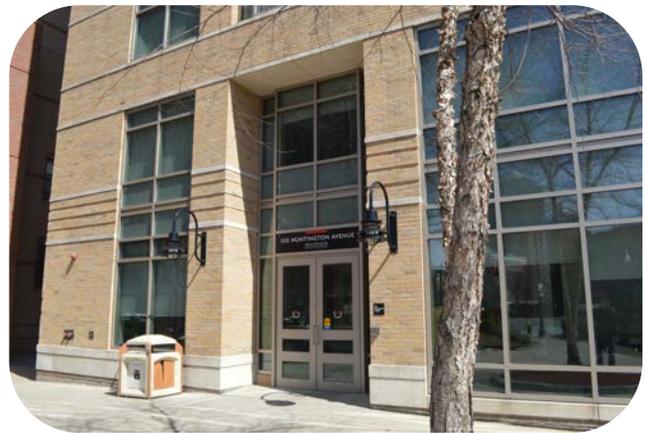


- Located in the heart of Boston, Wentworth is a nationally ranked university and leader in engineering, design, management and sciences education
- Approximately 4,000 full-time students, most of whom live in dormitories across the urban campus
- Air handling unit (AHU) components are operating 24/7 and constantly exposed to airborne substances due to dormitory applications
- Underperformance and inability to maintain the equipment due to limitations of existing AHU location and design adds approximately \$5,000 per year in operating costs for the institution

Maintenance and Repair Challenge

After enduring 12 years of continuous operation, an existing six-foot diameter energy recovery wheel serving Wentworth's Huntington Avenue dormitory was beyond repair due to a limited ability to properly maintain it. With the combination of failed internal wheel bearings, plugged heat exchange media and loss of \$5,000 in annual energy savings, Wentworth was tasked with finding an economically feasible replacement.

However, the design and location of the AHU posed a significant replacement challenge for the university's facilities group. Mounted in a small equipment room surrounded by piping and electrical conduit, the bulky construction and inflexible design of the current AHU made access extremely difficult and logistically challenging. The old wheel could be removed with a Sawzall, but there was no way to physically install a six-foot replacement wheel into the AHU without compromising the cabinet structure or causing disruption.



Wentworth dormitories on 555 Huntington Avenue

Innovative Wheel Technology

As the leading manufacturer and the best-in-class of segmented energy recovery wheels, Airxchange developed a unique retrofit solution that allowed the entire wheel and cassette frame to be carried into the mechanical room in manageable pieces for reassembly inside of an AHU cabinet with minimal disruption.

Airxchange can provide a replacement solution for any monolithic wheels with their patented segmented wheel design. The installer friendly design can be assembled within the existing air handling unit space and is often compatible with the original control equipment, including the variable-frequency drive (VFD).

Wentworth's replacement wheel from Airxchange was efficiently assembled in less than a day, economically restoring the energy saving benefit to the air handling system.



Airxchange segmented wheel resolves AHU access restrictions without compromising the cabinet structure.

The Airxchange Advantage

Innovation . Reliability . Performance

In addition to reducing the replacement costs, the Airxchange design addressed the need for maintaining performance over the life of the equipment with minimal effort.

- Airxchange features fully segmented energy transfer media that can be easily removed, cleaned and reinstalled by a single technician in about 30 minutes. Actual [cleaning time and methods](#) vary by circumstances.
- The polymer energy transfer media is designed for easy maintenance, longevity and can be continually cleaned or replaced without affecting its integrity or performance.

- The Airxchange stainless steel wheel design ensures that the media's support structure will remain rigid and rotate true throughout the life of the HVAC system.
- Airxchange uses a robust outbound bearing design which requires no maintenance. A robust metal cassette frame removes all load-bearing responsibility from the stainless steel wheel, allowing it to rotate freely without restrictions.
- A reliable 5-Year warranty is standard quality assurance for Airxchange wheels.

“The modular aspect of Airxchange’s replacement solution helped WIT overcome all installation obstacles, and the advanced engineering of the wheel also addressed the service and reliability problems that ended the useful life of the original ERV wheel.” – Zone Mechanical, HVAC service contractor of Wentworth

National Grid Energy Rebate Program: ERV Custom Express

National Grid developed a utility incentive program for Energy Recovery Ventilation in the Northeast territory.

ERV Custom Express has been designed for both New and Retrofit ERV applications and produces upfront incentive values to offset up to 75% of the incremental cost of ERV.

ERV Custom Express can be used by building owners and consulting engineers to quantify ERV incentives and paybacks upfront in the design process or when planning the replacement of older HVAC systems.

Save now! Click for more info:

[National Grid Custom Express Rebate Program](#)

National Grid's generous "Custom Express" program offers significant cash rebate for new and replacement ERV upgrades. This incentive rebate offsets most of the installation cost, allowing Wentworth to implement an energy saving solution while enabling their AHU to once again operate at peak performance.