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Humber Building Nx Retrofit
CaGBC Accelerating to Zero - Toronto

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Building Nx Retrofit – Background

- 1989 Construction
- 48,300 ft²
- Major Interior Renovation in 2016
- Thermal Comfort Issues
Building Nx Retrofit – Project Scope

- CaGBC Net Zero Carbon – Design Certification
- Passive House Institute EnerPHit Certification
- Complete Envelope Replacement

IMAGE: PRE-RETROFIT
Building Nx Retrofit - Design

- Architectural/Building Envelope
Building Nx Retrofit - Design

● Mechanical
  ● Air-Source Variable Refrigerant Flow (VRF) Heat Pump System
  ● Dedicated Outdoor Air System (DOAS)

● Electrical
  ● Networked Lighting Controls
  ● Metering
  ● 25 kW Solar PV Array
Building Nx Retrofit – Construction Progress
Building Nx Retrofit – ‘By the Numbers’

- 70% Reduction in Energy Use
Building Nx Retrofit – ‘By the Numbers’

- 97% Reduction in Heating Energy (TEDI = 12.5 kWh/m²)
Building Nx Retrofit – ‘By the Numbers’

- 90% Reduction in Greenhouse Gas Emissions
Building Nx Retrofit – the ‘Business Case’?

- Recognizing an Opportunity
  - Thermal Comfort Issues
  - Deferred Maintenance

- Build on Past Successes

- Meeting Corporate Objectives
  - Alignment with Strategic Plan
  - Enhance Core Business - Education
Building Nx Retrofit – Student Participation

- Multi-Disciplinary Student Team formed to complete a design in parallel with the actual project.
Who’s Next?
Aman Hehar
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