

Aircuity case study

University Health Network

Aircuity Program makes an impact at Clinical and Medical Research Organization

UNIVERSITY HEALTH NETWORK (UHN) is a research hospital located in Toronto, Ontario, Canada which operates four major hospitals: Toronto Western Hospital, Toronto General Hospital, Princess Margaret Cancer Centre and Toronto Rehabilitation Institute. UHN currently employs 837 researchers and over 1500 research support staff.



In need of additional research space, UHN leased the Toronto Medical Discovery Tower (TMDT) located in the MaRS Discovery District, which consisted of lab and office space. The TMDT was completed in 2006 and is a total of 15 floors and nearly 400,000 sq ft. UHN recognized the significant amount of energy required to operate the large amount of labs and knew there had to be a way to lessen utility costs, allowing more of UHN's funding to be spent on research.

CHOOSING AN AIRSIDE PROGRAM

Labs are known for being one of the most energy intensive spaces to operate thanks to the large amount of outside air being continuously exhausted through the research space, even when the environment is perfectly clean. With lab space occupying a vast amount of the square footage of the building, optimizing the ventilation was the perfect opportunity to greatly reduce costs. The labs were in 24/7 operation so installation of the chosen energy conservation measure needed to be discrete and not disrupt the research taking place.



Photo Courtesy of Adamson Associates Architects.

Through the help of local channel partner, AirGenuity, Aircuity was identified as the best solution and an airside program was developed to optimize the ventilation throughout the building.

ENOUGH AIR...TO FILL A BLIMP

When the project first began, the lab spaces were running at 12 air change rates per hour (ACH) and a study found that the building was exhausting enough air to fill a Goodyear blimp every minute! With the clear overventilation of the lab and office spaces, the project to match ventilation to current conditions within the spaces got underway. Aircuity enabled the beginning ACH of 12 to be reduced to a baseline of 3–4 ACH, which increases when additional fresh air is needed. At the start, Aircuity was implemented on three floors of the building. A reduction in supply air and yet



fully managed ventilation was established on each floor and soon after the solution was installed in the remaining spaces.

“Creating sustainable research programs must be supported through the creation of sustainable research labs. Keeping staff safe by measuring the quality of air is far better than assuming enough air exchange is doing the job. Having a sustainable air management system while ensuring safety and reducing our environmental impact is the greatest success of this project.”

Ian McDermott, Senior Director
Research Planning and Safety
University Health Network

ENERGY SAVINGS

Once fully implemented the Aircuity program began to make immediate impact. Based on four months of UHN’s data, kWh was reduced by 744,000, and based on 6 months of owner data, UHN reduced its steam usage by 36M lbs (degree day corrected). Today the research institute is saving approximately \$800,000 annually in utility costs. As a result, more of University Health Network’s funding is freed up and can be directed back into research.



Photo Courtesy of NXL Architects.

ABOUT UNIVERSITY HEALTH NETWORK

University Health Network consists of Toronto General and Toronto Western Hospitals, Princess Margaret Cancer Centre, and Toronto Rehabilitation Institute. The scope of research and complexity of cases at University Health Network has made it a national and international source for discovery, education and patient care. It has the largest hospital-based research program in Canada, with major research in cardiology, transplantation, neurosciences, oncology, surgical innovation, infectious diseases, genomic medicine and rehabilitation medicine. University Health Network is a research hospital affiliated with the University of Toronto. www.uhn.ca.

ABOUT AIRCUITY

Aircuity creates smart airside solutions through its intelligent building platform, significantly reducing energy costs and improving the indoor environmental quality for occupants. As the demand control solution, Aircuity optimizes ventilation rates through its patented technology. As a result, commercial, institutional and lab building owners can lower operating costs, protect occupants and verifiably reduce energy use by as much as 60 percent. Founded in 2000 and headquartered in Newton, MA, Aircuity’s solutions have benefited over 400 organizations such as Google, Amazon, Eli Lilly, Masdar City, the University of Pennsylvania, and the University of California-Irvine. For additional information on the company and its solutions, please visit: www.aircuity.com.

