

10% savings give co-op comfort zone with air sealing

Which comes first – energy savings or comfort?

The answer, as always: ‘it depends’

By Jim Bunting

Recent air sealing upgrades at Cathedral Court Co-operative, just behind St. Lawrence Market in downtown Toronto, have proved that saving energy can be achieved at the same time as making occupants more comfortable.

This story of a successful energy efficiency and comfort upgrade has taken more than five years to unfold. Property managers will recognize an all-too familiar, lengthy balancing act of trying to prioritize funding for improved aesthetics, occupant comfort and energy efficiency.

Cathedral Court’s Jane Davidson-Neville manages the 69-apartment non-profit co-op. When she arrived on the scene just two years ago, she knew immediately that the building needed work. Tenants were complaining about extreme discomfort from drafts. There were also fairly serious condensation problems around the windows. Air was very stale in some units, but occupants were reluctant to open windows because of street noise.

Energy bills were also a factor. The apartments are individually metered and heated by radiant floor slab. Tenants pay for their own electricity and many of them are on fixed incomes. After taking a look at the energy bills and comparing them with what other co-op managers reported as being a normal range, Jane felt that something needed to be done.

Although this was a decisive moment for Jane, the wheels had actually been set in motion a long time earlier. In 1998, Canada Mortgage and Housing Corporation (CMHC), holder of the mortgage insurance on the building, commissioned a technical audit.

Taline Tajerian, project manager for building science consultants Buchan Lawton Parent Ltd. (BLP), reports that her firm’s investigation of five units found that mould was evident around the sliding door and window openings.

BLP tested mould spores and prepared an occupant survey regarding comfort and health issues. Microscopic analysis found nothing known to be toxic. The team also determined that the mould was not caused by water coming in, but by humid air condensing on cold surfaces. There was insufficient air circulation, poor ventilation and air leakage around windows and sliding doors.

Test cuts found a big gap between the wall and the window perimeter and blackened insulation around the windows. Recommendations, which were implemented soon after they were made, included the installation of a humidistat, along with bathroom exhaust fans vented to the exterior.

Says Taline Tajerian, “BLP next looked at the windows, which were aluminum frame sliders with two sets of single glass. They had been manufactured about twenty years ago

and had no thermal breaks. Unfortunately, they were simply too expensive to replace. It was much more economical to re-weatherstrip.”

In July 2003 BLP did a reserve fund audit and technical study, which eventually resulted in the first air sealing retrofit projects. Jane Davidson-Neville followed the consultants’ recommendations and called in Canam Building Envelope Specialists Inc. of Mississauga.

Canam’s inspection team reviewed the state of weatherstripping in seven of the units. They proposed a package of measures that included removing the old weatherstripping from the window interiors, replacing it with Zerodraft fin seal weatherstripping, silicone sealing all mitre joint and gasket corners, caulking window perimeters and realigning windows to fit squarely.

The contractor also proposed air sealing the openings behind baseboard heaters, the exterior wall/floor joints and the installation of gaskets and inserts on all exterior wall electrical outlets and switches. In November 2003 Canam carried out the recommended retrofit air sealing measures on seven units in order to test for effectiveness.

In early 2004 Cathedral Court hired Talbot Enterprises (Ontario) Inc. to replace sliding patio doors in 56 units and 9 exterior doors, also a BLP recommendation. Company owner, Michael Talbot Lester said that weatherstripping on the original doors had deteriorated badly and that the wheels were in a state where door operation was becoming very difficult. Exterior caulking was also badly in need of repair. Low-E, argon-filled Sunview Thermal Guard 2-panel sealed unit sliding aluminum doors were chosen. Since the original doors were oversized, Talbot Enterprises helped Cathedral court save money by using standard size replacements combined with a fixed top light.

As 2004 drew to a close, Jane Davidson-Neville was very pleased with the way in which comfort complaints about drafts and aesthetic problems such as condensation had been resolved.

She also checked the electricity bills – a ten per cent reduction over the same period in 2003. Combined with the comfort and aesthetic improvements, this was all that the Board needed to make the next retrofit decision. In late November, Canam completed the air sealing retrofit of the remaining 62 units.

About the author:

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