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BETTER BUILDINGS

58 Lakeview, Timmins, Ontario

CASE STUDY NUMBER 5

OVERVIEW

A number of retrofits were carried out from 1990 to 1995 to upgrade the 58 Lakeview apartments in Timmins, Ontario. Built in 1974, this 6-storey, 60-suite seniors building has single wythe brick masonry bearing walls and a precast concrete floor system.

Facades were re-clad with an "Outsulation" system, one of the early applications of the acrylic finish in Northern Ontario. Renovations also included a new roofing system, windows, storm doors, and an addition that includes an elevator and a communal sunroom. The heating system was converted from electricity to natural gas. The total cost of the renovations was \$1,168,313.

ASSESSMENT

The building was not energy-efficient. In fact, the exterior wall system was a source of heat loss due to the lack of an air barrier. The existing walls were 150 mm through-the-wall (TTW) load-bearing brick with 63 mm rigid insulation with gypsum board finish. The use of colour was also considered to make the building more attractive, and a unique, three-colour scheme would tie the addition in to the rest of the building.



The 16 year-old built-up roof needed to be replaced. There were problems at the drains, serious leakage into the upper floor suites, and the insulation level was too low.

Aging wood-frame slider windows and storm doors let in cold air, and were not energy-efficient. The weatherstripping was not replaceable. The windows were hard to open and rattled in strong winds.

A second elevator was needed to accommodate an ambulance stretcher. Another objective was to build a comfortable sunroom area where tenants would be able to enjoy the view of the lake (the existing lounge had four small windows facing the parking lot). The storage of electric scooters also had to be addressed.

To reduce the annual heating costs, the existing electric baseboard heating system was replaced with a gas-fired

boiler system. A key objective was to reuse the existing aluminum wiring and to avoid replacing other wiring in the building.

The interior finishes in the corridor and the two public washrooms on the ground floor were deteriorating. The corridor also required better, more energy-efficient lighting. Finally, there was a need for a private office and clinic which would provide privacy and convenience for the tenants and the health unit nurses.



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THE WORK

Exterior Insulation and Finish

An acrylic finish “Outsulation” system by Dryvit Systems Canada Ltd. was installed over the existing face brick and included the following materials:

- 50 mm rigid insulation mechanically fastened;
- reinforced, embedded Exsul-mesh;
- Exsul base coat;
- acrylic coating with integral colour and texture.

The additional insulation on the exterior increased the wall performance from 2.4 RSI (R13.6) to 4.16 RSI (R23.6). This was one of the first times that the “Outsulation” system was used in Northern Ontario, so it was necessary to find a contractor who was familiar with the system. The work was performed from a roof-suspended platform. The contractors installed the insulation in the fall and placed a scratch coat of parging over it to protect it from ultraviolet rays. The exterior finish was completed in the spring.

Roofing

The existing built-up roofing and insulation were removed and replaced with a mechanically fastened PVC roofing system with fully adhered PVC flashings and prefinished metal parapet flashings. The roof drains were replaced, tapered insulation was installed along the perimeter of the roof and the elevator shaft projection, and PVC roofing was placed over balcony roofs.



Before



After

Windows and Storm Doors

The wood-frame windows were replaced with solid fiberglass-framed units with Low E argon-filled glazing and melamine jamb extensions. The new windows were slightly smaller than the original windows to accommodate the tie-in of the new air/vapour barrier to the window frame. Heavy-duty aluminium storm doors were installed. The work had to be coordinated with the exterior of the elevator/sunroom project, since the “Outsulation” finish was being extended around the northeast and southeast corners of the building.

Elevator and Sunroom Addition

Soil conditions under the main part of the six-storey addition were found to be very poor after construction began. The soil was removed to a depth of approximately 3.5 m below the original grade, which was about 1.7 m more than anticipated. Engineered fill was placed in

layers not exceeding 300 mm, compacted and tested.

Existing floor-to-floor heights varied by 25 mm to 50 mm, which created a problem with the steel framing at the top floor roof elevation. The steel sections were therefore extended at the top floor to accommodate these differences in floor-to-floor heights.

The 88 m² addition includes the new elevator, the sunroom and the relocated main entrance. The sunroom was constructed with sloped glazing and prefinished metal roofing. The concrete slab-on-grade was poured with an in-slab hydronic heating system to increase the comfort of the tenants.

The main entrance was relocated to the new sunroom area, and the existing main entrance space was transformed into a room for the storage and recharging of electric scooters.

HEATING CONVERSION

A 6-stage boiler plant, complete with temperature reset control was created. The main piping was hung in the existing 1 m high crawl space and the electric baseboard heaters were removed. The wiring was reused as much as possible. Pipe risers and new hydronic baseboards were installed throughout.

For the higher-than-usual system pressure (120% higher), boilers with 50 psi relief valves were ordered. The contractor used press-fit piping instead of the standard threaded type, which resulted in faster installation, fewer pipe threading, less clean-up, and very low leak percentage on fittings. Additional cool air ventilation was installed because of the excessive heat build-up in the boiler room. The boiler room floor required added support before the new equipment could be installed.

Because core drilling, and therefore noise, were unavoidable, an excellent rapport between the contractors and the building's occupants was very important at this stage.

COSTS

The final construction cost was \$1,168,313. The cost breakdown is as follows:

	construction cost	cost per m ²
Roof (1990)	\$48,000	\$79/m ²
Windows and storm doors (1994)	\$94,882	\$375.62/m ²
Elevator and sunroom (1994)	\$594,323	\$3,080/m ²
Heating conversion (1994)	\$185,280	\$51/m ²
Exterior insulation and finish (1995)	\$189,207	\$110/m ²
Ground floor renovations (1995)	\$56,621	\$622/m ²

The Timmins Housing Authority maintained extensive communications with the tenants and their families throughout the renovations.

Ground Floor Renovations

New paint finishes, carpets, and a suspended acoustic ceiling were among the improvements made to the ground floor corridor. Fluorescent lighting, controlled by a motion sensor, was installed in the corridor. The laundry room was relocated, and a nursing clinic and office were set up in the laundry's former location. Proper ventilation was also provided throughout the main floor areas.

The contractor scheduled the work to minimize the period of inaccessibility to the kitchen, lounge and laundry room. Another concern was maintaining the life safety features (such as the exits) during the work. The construction debris and

dust were kept to the work areas by screening them off; the work area was cleaned up at the end of each day.

COSTS

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The Ontario Housing Corporation funded the project. Fixed-price contracts were awarded following tenders for each major component. Subcontractors submitted a 10% bid bond and a 50% performance bond.

RESULTS

Overall, the renovations have met the owners and tenants objectives.



The Timmins Housing Authority has received numerous compliments on the new look of the building. The new roofing system is performing well, and the tenants find the new doors and windows easy to open.

During the first heating season after the conversion to gas, there was a record cold winter. Both the "Outsulation" system and the heating system performed well. Overall, the building's living conditions have improved. In summary, tenants enjoy improved living conditions, the heating costs dropped from \$193 to \$116 for each unit and operating costs have been reduced by 50%.

CONTACTS

Property Manager:

Timmins Housing Authority -
Alex Szczebonski, Operations Manager.

Consultants:

B.H. Martin Consultants Ltd. Architects
and Engineers

Roof: Osburn, Cotnam, Belair -
Architects

Contractors

Roof: Simluc Roofing
Windows: J.J. Construction
Elevator and sunroom: LCL Contracting
Heating: Lacroix Plumbing & Heating
Exterior insulation and finish: Western
Ontario Drywall Limited
Ground floor: RLG Contracting

Canada Mortgage and Housing Corporation
Société canadienne d'hypothèques et de
logement

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Canadian Housing Information Centre
Centre canadien de documentation sur
l'habitation



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