

CASE STUDY - TALISMAN SQUARE, GUELPH, ON

DRYVIT PLAYS KEY ROLE IN OVERCLADDING AN OCCUPIED APARTMENT BUILDING

Talisman Square, a 40-year-old residential apartment complex on prime real estate in Guelph, required extensive repairs by the mid 2000s, forcing the owner to make hard decisions about its future.

The exterior concrete block and steel elements of the building were deteriorating. Decades of moisture penetration had begun to undermine the load bearing, split-rib masonry in localized areas and the steel lintels above windows and doors were corroding. “If we stood by and did nothing the buildings would crumble,” says Mike Balnar, President of the property’s management company, Balnar Management Ltd.

Tacoma Engineering and BJC architects Inc. were retained in 2009 to evaluate the existing building’s envelope and provide the owner with recommendations and suggestions for

upgrades to the two building, 119-unit complex. During BJC and Tacoma’s evaluation it became apparent that simple spot repairs would not be in the best interest of the owner if continued performance of the building was considered. A complete retrofit of the building’s structural elements and exterior façade would need to be appraised; however, this proposed solution would be costly.

“The proposed work would essentially create a brand new exterior façade which would be much more energy efficient and provide greater protection from the elements and reduce the amount of future maintenance required to keep the building operating as well as reduce operating costs,”



BEFORE



AFTER

PROJECT INFO

Dryvit Applicator:

CMT Plastering Inc. - Kitchener, ON

Architect:

BJC Architects Inc. - Guelph, ON

Engineers:

Tacoma Engineers - Guelph, ON

Owner:

Balnar Management - Guelph, ON

Dryvit System:

Outsulation® Plus

Dryvit Finishes:

Sandblast® - Sandpebble®

Energy Savings: 20% Heating

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says Paul Critchley, architect, BJC architects. Meeting that goal wasn't easy. "The project was somewhat unique as BJC architects and Tacoma Engineering had to develop special details to suit existing conditions," Mr. Critchley stated.

According to BJC, Dryvit Systems Canada played a key role in the success of the restoration. John Smith, Dryvit's regional sales manager, contributed to the development team early in the design phase. "John's considerable experience and attendance at site meetings was very helpful in giving the restoration team guidance on the details and versatility of the EIFS products. He also supplied a list of prequalified, highly skilled EIFS mechanics that could undertake the work. Overall, they (Dryvit) were quite involved," Mr. Critchley commented.

The decision to retrofit the six-storey complex with EIFS seemed an obvious way to go from the early stages of the project. "We needed a cladding that was continuous and could mould over and around various shapes and forms. We could have clad the

building in metal siding or covered everything behind some type of water resistant membrane, but that would have been quite limiting in terms of colour and detailing" the architect stated. Balnar endorsed Dryvit's support and system as well.

The Outsulation® Plus EIFS (with drainage capability) assembly was applied to roughly 100,000 square feet of the building's exterior. Following the installation of GlassRoc sheathing by Balnar's forces, Backstop™ NT water resistive barrier and the EIFS assembly was installed by CMT Plastering Inc., an established Kitchener-based firm. Installation of the Outsulation Plus assembly spanned the 2012/13 seasons.

Mr. Critchley stated, "A traditional EIFS system wasn't an option because of the irregularity of the building's exterior with a 6" split-rib concrete block. "There were a lot of different planes and shapes in the existing building façade that would not allow the EIFS assembly to be applied without careful detailing."

Detailing was a big challenge in many areas. A case in point was where the wing walls of balconies intersected building walls. New scuppers needed to be installed in the existing concrete block balcony walls to facilitate drainage. Meanwhile, anchoring methods and placement of eaves troughs and downspouts was tricky on the six-storey complex and designing



drainage for air conditioning units required careful attention. "There were a lot of opportunities for water to get into the building which needed to be addressed," stated the architect.

Dryvit's Outsulation Plus gave the design team flexibility to meet the detailing challenges.

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“It is fluid in a lot of ways, it can form around or be made to fit basically any substrate,” says Mr. Critchley.

“On new buildings a manufacturer’s rep is required on site during installation of EIFS to insure compliance with manufacturer’s recommendations and specifications. While a manufacturer’s rep support early on in a renovation project such as Talisman Square is critical, it isn’t required perhaps as much during installation”, says Mr. Critchley. In the case of Talisman Square however, John Smith visited the site on numerous occasions during installation to provide advice to installers throughout the project on such issues as: base coat thickness requirements and product application, application controls during varying temperatures. “Having the manufacturer complete site visits provided all parties with a level of comfort regarding the installation”, added Mr. Critchley.

Adding to the project complexity, structural consultant Tacoma Engineers concluded that many existing damaged six-inch concrete blocks and steel elements such as lintels were beyond repair and required replacement. Once the block and steel were replaced, a vertical 3 5/8 inch steel stud assembly was fastened to the existing concrete block façade. It was a complex task, says Mr. Critchley. “You can imagine the difficulty of making the newly installed frame level, straight and square, as the existing building was constructed with large tolerances.”



When the building was constructed in 1973, it was constructed without a vapor barrier. Various options of applying a barrier to the restoration were reviewed. Before a decision to use exterior spray foam insulation was made, building science expert John Straube from the University of Waterloo was consulted to confirm the restoration was in keeping with good construction techniques. The existing coatings on the building façade that had been applied over the years to mitigate moisture intrusion were left intact and spray insulation applied overtop.

“Electrical-based heating consumption has been reduced by 20% because of the addition of the retrofit assembly inclusive of Dryvit’s Outsulation Plus cladding.”

A three-inch layer of spray foam insulation (about R-20) was applied within the metal stud cavity with a 5/8 ± inch airspace for moisture drainage behind the GlasRoc sheathing. GlasRoc sheathing was then fastened to the metal studs. The Outsulation Plus system applied over the GlasRoc sheathing consisted of a watertight barrier system, 1.5-inch EPS insulation complete with vertical notched trowel insulation adhesive for moisture drainage and a reinforced base coat and finish.

In addition, the flashing and roofing membrane were modified and extended to cover the additional built-out wall. About 5,000 square feet of single ply membrane was mopped onto the existing roofing and extended out and over the retrofitted wall assembly. The work was done with Tremco Roofing and Waterproofing products –

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also members of the RPM group of companies. In addition, the 25,000 square feet of balcony slab waterproofing was done with Vulkem 350 / 351 NF (Neighborhood Friendly, Low VOC).

The worksite itself created many challenges. Scaffolding had to be configured in a certain manner and anchored to the irregular-shaped exterior. The scaffolding anchors were drilled into the existing block and were left to accommodate future scaffolds if required to complete building maintenance.

Overall, the renovation cost the owner more than originally expected, but BJC says the owner now has a watertight building, which has been repaired properly, and going forward will only require minor maintenance and should last a very long time.

While the key objective of making a structurally sound building was achieved, another goal met was the creation of “an aesthetically pleasing exterior,” says Balnar. “Before the renovations, the concrete block was turning color and it was ugly.”

Balnar adds another important point: electrical-based heating consumption



has been reduced by 20% because of the addition of the retrofit assembly inclusive of Dryvit’s Outsulation Plus cladding. “With all of these benefits, we will see some benefits in the rents,” says Balnar.

“It was a complicated project and we spent a significant amount of money (\$6 million) but we will see the benefits over the long term,” stated Balnar.



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