

AJAX LIBRARY BUILDING ENVELOPE REHABILITATION

BARRY BRYAN ASSOCIATES

PROJECT DESCRIPTION

Constructed in 2002 by Bondfield Construction and designed by Teeple Architects Inc. the Ajax Main Branch Library was a project designed within the community present; Town Hall and Outdoor Main Pool, and served as a gateway off the 401 into the Town of Ajax, originally settled south of the 401 Highway. The Ajax Main Central Library is not only a library facility but a community hub. The library is an attribute of the Town Hall Present, and used for community groups within (Lions Club, Kinsmen as well as many local organizations) and most recently has been used as a COVID 19 Testing and Vaccination Centre. The project over the past 20 years has seen a large amount of degradation to the building envelope primarily on the roof, skylights, EIFS and mosaic wall tile assemblies. The project's original design and innovation through architecture develops a high level of innovation and creativity- however given the complication of initial design details and lack of construction execution, the architecture and building envelope had shown premature degradation, thus providing this renovation opportunity.



IMPACT

The Ajax Main Central Library, is not only a library community facility but also serves a community hub, with many community groups using the interior spaces for events and local gatherings and meetings. Most recently the facility has been used as a Covid 19 Testing and vaccination centre for the Town of Ajax. The Library, as shown in the aerial photo above helps form the community present with the Town, adjacently located to the Town Hall facility and Main Outdoor Pool. A library in

any community serves as a community asset, as the importance of public space is shown, especially as we navigate thru this pandemic. The architecture for the main central library also forms a gateway to the Town of Ajax from the 401 and the community as a signified elements of design from Teeple Architects.

DESIGN

The original design represents a high level of design and creativity, bringing together forms and materials to deliver an exceptional design, winner of the 2004 Ontario Library Association Awards as best new public library. This also brought a high level of challenge and opportunity to this renovation scope, as the renovation was specifically not to divert from the architecture, however modern technologies and constructable details needed to be designed to prevent further degrade and preserve a great community facility. Working with STO Canada, BBA reviewed the initial investigation report (By RJC Engineers) and developed some possible solutions to areas that would deliver building envelope performance without sacrificing the sharpness of the original design intent. With respect to the main EIFS areas, the existing assembly was showing failure at many areas, incorrect assemblies, and transition details, caused damage in not only the surface areas but back to the wall substrate. A complete tear off-replacement and



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installation of new substrate, liquid applied barriers and STO Ci Therm systems along with Lotusan finish coat was delivered. The new Lotusan finish is a proprietary product of sto that contains technologies that enable a self-cleaning process. Transitions in areas to materials were accomplished through detailed reveals and proper transition membranes found within the drawing details of this submission.

The other challenge in this project was the mosaic wall tile areas where the existing envelope was simply mosaic tile;(unsuitable product) directly adhered to a masonry cavity wall. The proposed solution for these areas also used a STO Canada solution, found within their subsidiary wall cavity rainscreen systems- Ventec Assemblies. Though not EIFS, the Ventec systems and technologies represent and borrow similar design elements. A series of panels are installed on site, and through a pre-manufactured clip-and-rail system. On the new cavity substrate, a field applied process (like EIFS process) is applied with weather barriers, mesh, and base coat render materials. The final coat applied in lieu of a finish coat, is an exterior tile (designed purposely for exterior cladding) that is adhered through the base and second coat mesh process and final grout and cleaning. This project represents the first Ventec system project for STO Canada as its scale, choice of material and typology are used correctly and purposefully for this project.

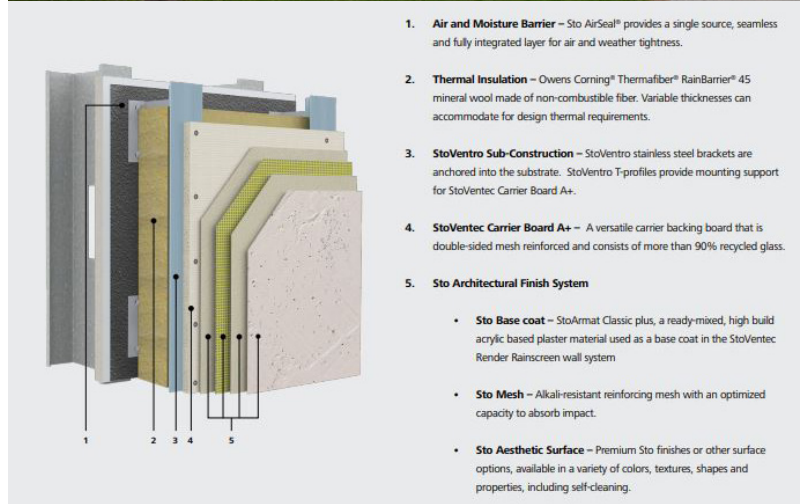
With a combination of these two major building envelope systems and the use of new technologies with the EIFS systems, the existing architecture and cladding materials are preserved, and design intent is maintained within the exterior renovation.

SUSTAINABILITY

With respect to sustainability, the largest factor(s) within a renovation project is not to develop new land for an existing use and to make an existing building more energy efficient. With new roof assemblies, new EIFS and Rain Screen Wall Assemblies and new glazing elements, the building envelope rehabilitation has provided to make the Ajax Main Central Library a more energy efficient building. The continued use of this facility, with a better building envelope adheres to the true principles of sustainability; building less to achieve more. In addition to the larger concepts the materials themselves through the STO Ci Therm System, STO Ventec and STO Lotusan offer a low VOC component(s) contributing to the overall sustainability of material(s) within the project

USE & SIGNIFICANCE

This project uses the EIFS, STO Panel Ci Therm and STO Ventec system, which is one of the first projects in Canada to incorporate this European technology



(developed in Germany and the UK) as a rainscreen system that uses EIFS wall components and prefabricated sub structure to compliment the EIFS wall technologies. The project also combines new technologies while having to maintain original design intent and specific envelope requirements of scale and detail. With the combination of these systems and products, the existing library will continue to provide community services in an efficient, aesthetically pleasing and sustainable environment.

TECHNICAL EXCELLENCE

Through the renovation-recladding process, the existing building envelope had degraded overtime due to improper construction and execution of complex building details. Within this project, many areas within the envelope were removed and re constructed back with the proper/modern building envelope and science techniques, through air-moisture barriers, proper transition membranes, adequate insulation, and installation methods as well as correct application of finish levels and transitions. Through these materials, technologies and proper construction details-applications, a better envelope is achieved through this project, better insulative and weather-tight barrier achieved, making the Ajax Central Library a more sustainable community building that preserves the great design intent originally delivered.