

# TORONTO CITY HALL

## case study

Toronto City Hall was officially opened in 1965. In 2009, C3 Specialty Glazing Solutions was awarded the contract to undertake the design and replacement of 780 original windows on the East tower. They were replaced with energy efficient, double-pane units. Not only were the existing windows stained, but occupants complained of discomfort due to inconsistent temperatures in their working environment. The City of Toronto recognized the negative impacts this had on both energy efficiency and employee productivity and morale.

The original City Hall design by Finnish architect, Viljo Revell, was the winning entry of the international design competition for a new Toronto City Hall. The City Hall is an established Toronto landmark and tourist destination. In undertaking the retrofit, the architectural significance of the building required consideration. Aside from the existing glazing and gasket, all components of the historic fabric of the building had to remain. The scope of the project included the preliminary design and evaluation of six different alternatives. Each system was evaluated based upon *Health and Safety, Heritage, Thermal Performance, Project Cost and Lifecycle Cost*.



### MODELLING WIND LOADS

Scale model of City Hall and surrounding buildings was fabricated to define loading criteria for design.



### PRECONSTRUCTION TESTING

Testing chamber allowed for verifying resistance of glazing system to air and moisture penetration and thermal and structural performance.



### IN SITU MOCKUPS

Eight in situ mockups were completed prior to widespread replacements. These mockups allowed for training, examination of typical conditions and establishing installation protocols.



### INSPECTION

Meticulous inspection protocols throughout re-glazing process ensured success with varying conditions.

# C<sup>3</sup>B

SPECIALTY GLAZING SOLUTIONS

Re-defining Project Delivery



# TORONTO CITY HALL

CASE STUDY



**C3 Specialty Glazing Solutions** assembled the team necessary to work alongside their hands-on, knowledgeable staff to ensure on time, on budget delivery with minimal disruption to tenants during replacement.



**C3 Specialty Glazing Solutions** is a full service contractor providing:

- Engineering Design,
  - Testing,
  - Fabrication, &
  - Installation
- for the replacement of 630 large and 150 corner windows on the East Tower of the Toronto City Hall.

181 Rutherford Rd. S., Unit 7  
BRAMPTON, ON L6W 3P4  
t. 905.451.4901 f. 905.451.0101  
[www.C3SGS.com](http://www.C3SGS.com)



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