STONHARD
CONSTRUCTION SOLUTIONS

8 CUMBERLAND STREET **FAÇADE** RETENTION

JOB DETAILS:

MARKET:
Architectural/Commercial

PRODUCT:
CarboComp Textile 300

AREA:
Façade Retention

DATE:
2018

MATERIAL QUANTITY:
135 Square Metres

LOCATION:
Toronto, Ontario

One of the mandates for development in neighbourhoods, such as Toronto's Yorkville, is maintaining the look and feel of the Victorian streetscape. This requires developers to retain the 1850's era brick façades at street level and incorporate them into their buildings. One such example is the Great Gulf and Phantom Developments project at 8 Cumberland Street, which combines old and new with a modern 51 storey steel and glass building that has a century-old brick Victorian podium facing onto Yonge Street.

THE CHALLENGE

To clear space for the new tower, the original brick façades are shored and strengthened, allowing the rear of the buildings to be demolished, creating the footprint for the new development. Typically this process requires the internal structure of the brick building to be supported as floors, roof structures, staircases and associated joists and beams are removed, significantly weakening their original structural integrity.

This is where modern façade strengthening techniques using carbon fibre come into play. Structures from the 1850's tend to use fairly soft (by modern standards) bricks, and have many internal and external openings for windows, light wells, fireplaces and staircases, further compounded by relatively shallow foundations.

THE SOLUTION

Stonhard in conjunction with Laurie McCulloch Movers developed a structural strengthening system, using a combination of micro fibre reinforced mortars and CarboComp Carbon Fibre Fabric to support these delicate structures throughout the demolition process.

A fully bonded reinforcement system is designed to provide support to the internal faces of the brick structure by adding new carbon fibre beams and columns. Using carbon fibre in this way has other practical advantages, including minimal visual impact, a relatively thin profile (less than 10 mm) so it does not impact internal space.

These engineer designed systems have been developed in conjunction with Heritage Architects to ensure that brick structures are also still able to "breathe", helping ensure future longevity as part of any new hybrid building.