CINTEC
REINFORCEMENT SYSTEMS

Case Study

Rehabilitating the exterior of an apartment complex:

77 Howard / The Toronto Residences

Toronto, ON



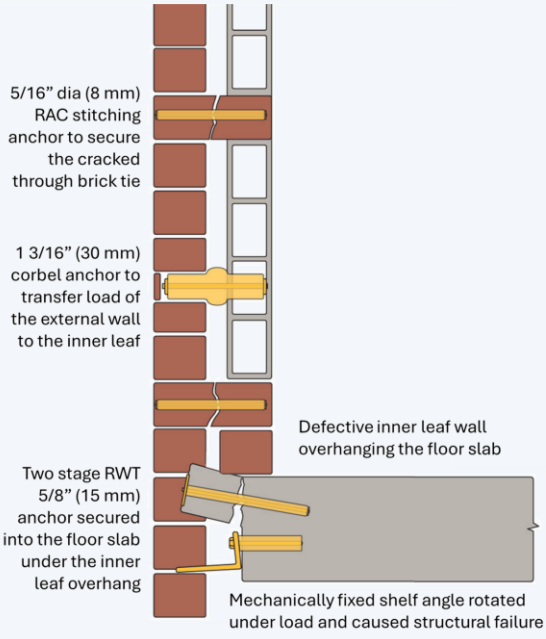
Project Highlights

24 stories / 381 units

Application:
Façade stabilization

The outcome:
Repairing of the façade

Completion date: 1992



Engineer: Halsall Associates
Contractor: Maxim Group General Contractors

Originally built in 1966. The exterior wall consists of two wythes tied together by header bricks. The exterior wythe is a glazed clay brick supported by a steel shelf angle connected at each floor into the floor slab. The inner wythe is a 4" hollow concrete block backup wall.

Over time, the structural frame experienced shortening, which led to **deterioration**. Due to the absence of flexible joints beneath the shelf angles, the wall system could not accommodate movement. As a result, the walls began to **bow**, and the shelf angles became **over-stressed**, eventually causing the backup walls to rotate and suffer **corrosion.** Due to the building being occupied, **full wall replacement was not feasible.**

Cintec corbel anchors were used to **transfer vertical loads** from the exterior walls to the inner backup walls, and Cintec stitching anchors to **restore broken header ties**.

These concepts were proven effective with full laboratory load tests.

During construction, it was discovered that the backup wall lacked support in certain areas. To address this, a custom two-stage anchor system was implemented to provide the necessary structural reinforcement.

The use of **Cintec Anchors** enabled structural stabilization and repair **without disturbing or relocating residents**.

