



The Glen Manor Condominium Association consists of six 3-story wood-framed buildings constructed in about 1980. The exterior walls primarily consisted of brick masonry that was anchored to wood studs with corrugated galvanized steel ties. Gravity support of the walls was only provided at the building foundation. The exterior walls also included vertical strips of windows and siding panels.

During a high wind event, a portion of the exterior wall on one of the buildings collapsed. The maximum wind gust reported in the area on the day of the collapse was approximately 48 miles per hour.

BTC's field investigation indicated that the collapse likely started at the peak of the gable wall immediately adjacent to the vertical strip of windows and siding panels, due to the discontinuity in the masonry at this location. However, the cause of the collapse was corrosion of the corrugated metal wall ties. Significant corrosion of the embedded portions of the ties was observed. Ties observable within the remaining portions of the wall were corroded through their entire thickness. It is likely the ties within the collapsed portion of the wall also had corroded to this extent prior to the collapse. As such, these ties would have provided no resistance to wall movement.

A borescope review indicated that the corrugated metal ties on the remaining buildings also were significantly corroded. Based on the findings, BTC recommended that the walls be stabilized in place or rebuilt to address the potential for future wall collapses.

**Project Name:**  
*Exterior Wall Collapse Investigation  
Willow Glen Manor Condominiums*

**Project Location:**  
*Wheeling, Illinois*

**Client:**  
*Willow Glen Manor Condominium  
Association*

**Approximate Construction Cost:**  
*Not Available*

**Year Completed:**  
*2013*

**Nature of Services:**  
*Forensic Investigation*

