

Terminal Tower

Facade Assessment and Stabilization
Cleveland, Ohio



CLIENT

Forest City Enterprises, Inc.

CHALLENGE

A landmark office tower constructed in 1930 had undergone various facade repairs over its life, including selective terra cotta replacement, terra cotta patching, installation of sealant, and selective removal of significantly deteriorated terra cotta features. Water infiltration was active in isolated locations, and terra cotta distress was severe at cornices, windows, and setbacks. The building owner sought an assessment of the tower's facade and development of a plan for phased restoration.

STRUCTURE

Located at the southwest corner of Public Square, Terminal Tower is the signature building of the Cleveland skyline. Chicago architecture firm Graham, Anderson, Probst & White designed the Beaux-Arts tower in 1919. The fifty-two-story building is supported by a concrete-encased steel frame and is clad with limestone and glazed terra cotta. Reaching over 700 feet in height, it was the second tallest building in the world at the time of its completion in 1930. It remained the tallest building in Cleveland until 1991.

SOLUTION

WJE performed a comprehensive condition assessment of the exterior building envelope, including review of design and previous repair documents, visual survey and close-up inspections of the exterior walls and roof, and roofing inspection openings. Based on findings from the review and field assessment, WJE concluded that terra cotta deterioration was mainly the result of corrosion of steel framing and anchorage elements and that insufficient flashings and drainage at projecting features provided access to moisture that had accelerated the corrosion.

Severe deterioration in parts of the exterior walls had compromised the integrity of the stone and terra cotta cladding. As part of an initial repair effort, WJE designed a temporary facade stabilization program to mitigate potential safety hazards, including netting, steel strapping, and helical anchors. Subsequently, we developed a phased master plan to address facade deterioration above the thirty-fourth floor. We also prepared bidding documents for the first phase of repair work, which included waterproofing improvements and roof replacement in selected areas.