PROJECT PROFILE

Silver Gardens

Investigation of Brick Facade Distress | Dallas, TX

CLIENT

Dominium Apartments

BACKGROUND

Silver Gardens is a multibuilding senior living center that was designed and constructed in two phases between 1979 and 1984. The center consists of seven wood-framed buildings with brick and wood panel facades. Each building is three stories tall. Wood framing is supported on post-tensioned, shallow foundation systems.

When purchasing the property, Dominium Apartments intended to repair and upgrade the facilities. The planned renovation and maintenance activities included replacing roofs, repairing facades, and upgrading apartments. WJE was engaged to evaluate the existing conditions, determine probable causes of facade distress, and recommend repairs to mitigate further distress.

SOLUTION

WJE performed a visual condition assessment of the facade and supplemented that work with exploratory wall openings, scanning with a Fisher M Scope, and exploration of concealed conditions with a borescope. WJE determined that facade distress was a result of inadequate provisions for brick volume change and support from an overly flexible foundation system. Damage caused by these stressors included vertical cracking emanating out of corners of wall openings, diagonal cracking resulting from foundation movement, over sailing of the foundation at building corners, bowing of masonry walls at constrained conditions, and disengagement of brick ties from the wood framing. WJE prepared corrective details and specifications to mitigate the distress. New vertical expansion joints were cut into the brick facade at the corners of windows and at building corners. Bowing facades were supplemented with additional brick ties or were partially removed and rebuilt with newly installed brick ties.

WJE observed construction of the repairs and provided additional consulting when unforeseen conditions were discovered. The repairs greatly increased the number of brick expansion joints, producing a facade that is more accommodating of volume change and can flex with foundation movement.

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS