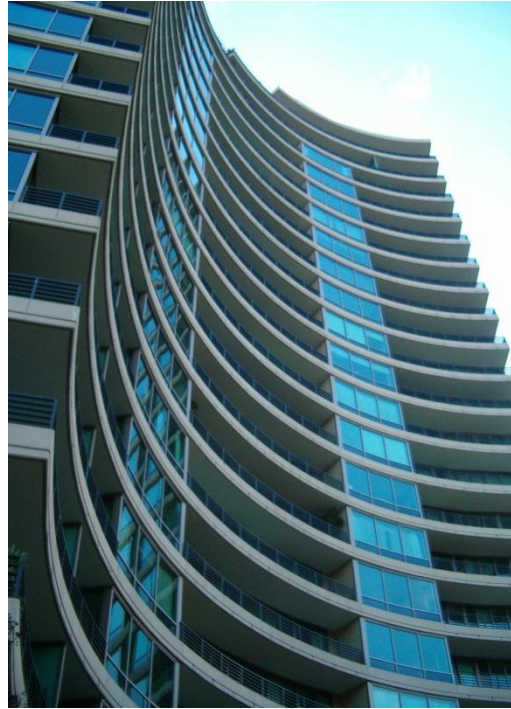




PROJECT PROFILE

Park Regency Condominiums

Balcony Wall and Handrail Repair | Atlanta, GA



CLIENT

Park Signature Properties

BACKGROUND

The Park Regency is a twenty-eight-story luxury condominium building. Completed in 2001, the structure features a semicircular plan with cantilevered balconies on the upper levels of the east elevation. The posts for the balcony handrail system were set into pockets in the balcony concrete.

Shortly after construction of this high-rise condominium building, cracks developed in the concrete at the bases of the balcony handrail posts. Initial repairs were attempted by others but proved ineffective as the distress worsened and concrete began to stain and spall from the balconies. In order to develop effective repairs, the cause of the distress had to be determined.



SOLUTION

WJE engineers documented existing distress conditions and collected samples of the grout material used to fill the post pockets in the concrete balconies. In-house laboratory studies revealed that the grout was a gypsum-based product that, when exposed to the elements, created expansive forces in the post pockets and promoted corrosion of the mild steel reinforcing in the concrete. The engineers also analyzed a typical railing system to show that thermal stresses did not contribute to the distress. In order to effectively address the grout pocket problems, WJE recommended that the gypsum-based grout be removed from each post pocket, that damage to the reinforced concrete balconies be repaired using conventional repair methods, and that the railing posts be surface mounted rather than set in pockets. The WJE engineers subsequently prepared repair drawings and specifications for this work and provided construction period services, including periodic observations of repair work.