

## STRUCTURAL ASSESSMENTS CAN HELP BUILDING OWNERS AVOID COSTLY REPAIRS

### PARKING GARAGE ASSESSMENT: *DMS HURSTON GARAGE*

Constructed in 1988, the seven-story parking garage was built to serve the Zora Neale Hurston State of Florida Regional Service Center. The garage is in the heart of Downtown Orlando and serves the North and South Hurston buildings. More than 1,000 parking spaces are provided by this 140,000 square foot concrete structure.

Over time, the Hurston Garage has endured impacts from Florida's weather, including large temperature swings, extreme rain events, and hurricane winds. Weather conditions can have significant structural effects on parking garages. Heat and exposure to sunlight can degrade sealants and waterproofing membranes, allowing water to penetrate cracks in the concrete. Hot and humid weather can accelerate steel reinforcing corrosion, leading to cracks and other structural damage. Extreme rain and wind events can put additional stress on the structure and cause damage to weakened elements. Due to this, parking garages should undergo regular maintenance and inspections to identify and address any potential issues before they become severe.

TLC's structural team conducted a condition assessment of the entire multi-level parking garage. TLC also provided construction documentation for repairs, waterproofing, threshold inspection, and construction administration. Some conditions observed throughout the garage included cracked concrete, spalled concrete, exposed reinforcing, corroded Cazaly hangers, corroded barrier cables (some cables broken), and delamination of the top-level waterproof traffic coating.

Regular maintenance and condition assessments are vital to preserving parking garages' structural integrity and safety, regardless of location. By maintaining these parking structures more frequently, owners can avoid costly repairs and extensive renovations that may be needed if issues are not caught early on.



## STRUCTURAL STABILITY AND SAFETY: SWAN AND DOLPHIN BALCONY SURVEY

Located minutes away from each of Walt Disney's Orlando theme parks, the Swan and Dolphin Resorts offer guests an unforgettable stay. The Swan resort opened in January of 1990, with the Dolphin opening just a few months later. There are more than 2,000 guest rooms combined between the two resorts. Deluxe rooms in the Swan and Dolphin resorts include exterior balcony space. Beautiful, palm-leaf-shaped railings line each of the resort's balconies. There are over 180 balconies between the Swan and Dolphin resorts. With the opportunity to enjoy resort views, these balconies provide guests with a dedicated outdoor seating area. Guests can also catch a glimpse of the Tower of Terror ride in Disney's Hollywood Studios or the iconic Epcot Ball from their balconies.

To ensure the stability and safety of these balconies, TLC conducted individual condition assessments for each. Any signs of damage were documented, and repair drawings were provided to address any issues observed. TLC served as threshold inspector during the repairs, ensuring the repairs were completed correctly. As with all reinforced concrete structures, the balconies are susceptible to concrete spall, which occurs when the steel reinforcement corrodes, causing it to expand and crack the surrounding concrete. While, hot and humid weather can accelerate the corrosion of steel reinforcing, routine inspections and timely repairs can ensure safety and prevent any issues from becoming costly and severe.

