



## PROJECT PROFILE

# 711 Elm Street

Historic Preservation and Materials Testing | Dallas, TX



### CLIENT

Icon Lodging and L.A. Fuess Partners, Inc. (LAFP)

### BACKGROUND

711 Elm Street is thought to be the first parking garage constructed in Dallas, Texas. Designed by architect J.A. Pitzinger—the designer of the original Dr. Pepper Headquarters—as part of the Sanger Brothers Department Store and built in 1925, the parking structure is a five-level cast-in-place concrete frame.

Sanger Brothers Department Store was demolished long ago, and the parking garage has been used as an independent parking facility with retail at ground level. In 2018, building ownership changed hands and the new owner engaged an architect and structural engineer to study the structural feasibility of repairing, renovating, and adding floors to the structure to create a hotel.

The structural engineer requested assistance in evaluating and preserving the historic structural system. Based on their recommendation, WJE engineers were engaged to perform a visual and nondestructive evaluation (NDE) condition assessment, to document typical bays of the framing system, and to evaluate archaic building materials by performing strength testing of concrete and reinforcing materials. Materials were sampled and sent to WJE's Janney Technical Center for testing and evaluation.

### SOLUTION

A visual and NDE structural condition assessment was performed by documenting typical bay framing; physically measuring key elements of the structure; and noting significant spalls, delaminations, and cracks. Observations were supplemented with NDE methods that included sounding of concrete for hidden delaminations, crack mapping to understand the general behavior of the structure, testing with a rebound hammer to discover relative hardness and strength of various elements, and ground penetrating radar to estimate reinforcing patterns and configurations.

Samples of concrete cores and reinforcing bars were obtained for testing at WJE's Janney Technical Center in Northbrook, Illinois. Strength testing was performed on both materials with results evaluated by ACI 562 methodology. WJE then prepared a report on the material strengths and framing layout that included recommendations for repairs.

