WJE

Joule Hotel

Concrete Restoration and Load Testing | Dallas, TX

CLIENT

Vendigm Companies

BACKGROUND

The Joule Hotel in downtown Dallas expanded its facility by acquiring and renovating four buildings constructed circa 1920 to 1940 located adjacent to its original property. The renovated building included the 1604 Main Street and 1511 Commerce Street buildings. The 1604 Main Street building is a 9-level cast-in-place concrete structure. The floor framing typically consists of a two-way flat slab with spandrel beams. The 1511 Commerce Street building is a two level cast-in-place concrete structure. The floor framing system varies by floor level and bay. The floor and roof framing systems include beam-supported flat plate slab, wall-supported flat plate slab, concrete pan joists, and concrete on metal deck.

Vacant for several decades, widespread concrete deterioration resulted from prolonged exposure to moisture and elevated humidity. Concrete restoration work was specified by the engineer of record. WJE was retained by the contractor to assess the condition of the concrete and to design a restoration program.

SOLUTION

During its assessment of the 1604 Main Street building, WJE determined that many reinforcing bars had minimal concrete cover or were partially exposed. The concrete bond at these bars and therefore the slab strength was uncertain. As a result, a load test was performed at a portion of one level to aid in assessing the load carrying capacity of the existing slab.

WJE developed concrete restoration documents for both buildings based on findings from its condition assessment. In addition, the load test designed by WJE enabled the design team to understand the strength and deflection performance of the tested portion of the structure. As a result of information gained from the load test and other evaluations, the engineer of record had a greater confidence in the load-carrying capacity of the slab system than was possible using analytical means alone.

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ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS