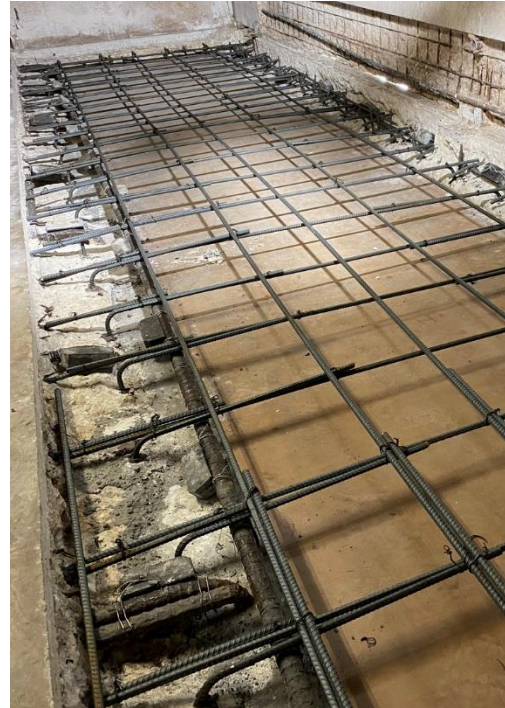




PROJECT PROFILE

UTSA, Arts Building

Concrete Beam and Floor Repair | San Antonio, TX



CLIENT

The University of Texas at San Antonio (UTSA)

BACKGROUND

The UTSA Arts Building is a cast-in-place, reinforced concrete-framed building with exterior precast panels constructed in 1972. The first-floor mechanical room houses water softeners that were reportedly leaking and had been replaced. After the water softener replacement, the concrete floor around the water softeners was observed to be cracked on the top surface and spalled with areas of exposed and corroded reinforcing on its underside.

The client engaged WJE to provide assessment, repair design, and construction support services to determine the root cause of the distress and develop repair documents for construction. The observed distress consisted of spalled and cracked concrete on the floor surface, the supporting concrete beam below, and the precast concrete exterior wall panel. Areas of exposed and corroded reinforcement were also present.

SOLUTION

To determine the root cause of the distress, WJE and a contractor removed areas of the distressed concrete and took core samples of the concrete for laboratory analysis. The core samples were sent to our laboratory in Austin, Texas, and the Janney Technical Center in Northbrook, Illinois, for evaluation. The evaluation confirmed through carbonation and chloride analysis that the likely root cause of the concrete distress was the leaking water softeners.



Based on this assessment, our repair design consisted of removal of all unsound concrete, including the entire slab and portions of the supporting beam, and cleaning of all corroded reinforcing. Carbon fiber-reinforced polymer was used to replace the compromised beam shear capacity around severely corroded shear stirrups, and galvanic anodes were used to protect the reinforcing steel from future corrosion.



Our construction period services included answering contractor requests for information, performing site visits to observe the repair construction, keeping the owner informed of the repair progress, and participating in preconstruction and post-construction site meetings.