

## Class is in Session

### Proactive Foundation Repair Averts Elementary School Catastrophe

Derby, Kansas

COMMERCIAL PROJECT OF THE YEAR FINALIST

Located in Derby, Kansas, Derby Hills Elementary was built in the early 2000s to serve students just southeast of Wichita. The school contacted IWP after noticing early signs of foundation settlement. While there weren't any major structural failures yet, interior gaps between the walls and floors became large enough to fit a hand through, and minor exterior damage began to appear.



The goal was to proactively address the problem and get ahead of the worsening settlement. Over the course of 3 weeks, IWP's crew installed 88 helical piles to stabilize the affected areas and prevent further movement.

Per the engineer's recommendation, this project was completed in two phases across two years. After installing all of the helical piers, the IWP team is scheduled to return in a year to perform a controlled lift once conditions are confirmed to be stable.



The project faced several significant challenges, beginning with severe weather that impacted the region during the first week of work. On June 3<sup>rd</sup>, a powerful storm brought record-breaking rainfall and tornado activity to central Kansas. Rainfall rates reached 1 to 3 inches per hour, with Wichita Eisenhower Airport recording 2.4 inches by mid-afternoon, breaking the previous daily record set in 1932. The resulting flash-flood emergency caused jobsite delays and accessibility issues.

In addition to weather related setbacks, the team encountered delays related to engineering coordination, along with process and procedural adjustments mid-project. IWP had to drive piles beyond the initial depth clauses to reach competent load-bearing strata. The existing footings were not cut flush, requiring the team take extra time for precision. The job was in moderately expansive clay soil, typical for the Wichita area, but requires careful pile placement and torque monitoring to ensure stability under variable moisture conditions.



To address the impact of heavy rainfall and protect the foundation area from future water intrusion, IWP implemented several drainage upgrades around the perimeter. This included installing 8-inch PVC downspout extensions over the trench system and integrating rain meters to manage flow directly into the upgraded piping. Additionally, sump pumps were used on-site to manage active groundwater during installation.

Despite delays and jobsite challenges, the project was completed in less time than originally allotted. Due to footings not being cut flush, the 88 helical piles had to be installed in tighter, more crowded conditions, requiring strategic placement and coordination. In collaboration with the engineer, they also applied grout along all the bracket-to-footing contact points to eliminate voids and improve load transfer. IWP adapted quickly to evolving site conditions, expanding their scope and material quantities as needed to maintain quality and ensure long-term success of the repair. Additionally, their commercial waterproofing team returned to tuckpoint and grout the brick joints, and addressed areas where the steel lintels began to rust, further ensuring the building remains protected.



IWP's team of installers: Shane Isham, Jairo Gonzalez, Deven Kirkendoll, Francisco Mandujano, Tranquilino Carlos, Angel Maldonado, and Colhyn Turner.