



HOTEL EXPANSION STAYS ON SCHEDULE WITH ACRYLATE GROUT SOIL STABILIZATION

Wisconsin



THE PROBLEM

The planned excavation was located directly alongside the existing hotel foundation. Once exposed, the loose granular soils could slough from beneath the footing, compromising support for the existing structure.

The project required a solution that would:

- Stabilize loose sandy soils beneath the existing footing.
- Allow excavation immediately adjacent to the building.
- Minimize vibration and disruption around an occupied hotel.
- Preserve the original building design and construction schedule.

While a redesigned excavation with steel sheet piling was possible, it would have increased costs, required larger equipment, and introduced additional construction complexity.





THE SOLUTION

Before excavation continued below and beyond the existing footings, helical piles with underpinning brackets were installed in accordance with the project engineer's underpinning design to transfer foundation loads and provide permanent structural support.

With the underpinning system in place, HMI's geotechnical engineer designed the soil stabilization program, selecting HMI AG100 Acrylate Grout because its extremely low viscosity allows it to permeate loose granular soils rather than simply displacing them. The engineered repair plan established the required grout quantity, injection locations, injection angles, and installation rates needed to create a continuous stabilized soil mass beneath the existing footing.

The contractor then injected 675 gallons of HMI AG100 Acrylate Grout beneath the footing at multiple angles following the engineered grouting plan. After excavation was complete, grouted soil nails and shotcrete were installed to stabilize the excavation face while helping prevent buckling of the exposed helical pile shafts.

The combination of underpinning, engineered permeation grouting, and excavation support allowed construction to proceed safely while maintaining the original project design.



THE SUMMARY

The collaborative approach between the Engineer of Record, HMI's geotechnical engineering team, and the specialty contractor delivered a comprehensive ground improvement solution without modifying the original building design.

Project Outcomes:

- The engineering firm's underpinning design provided permanent structural support for the existing foundation.
- HMI's geotechnical engineer developed a customized permeation grouting program, including material selection, injection locations, installation rates, and grout quantity.
- 675 gallons of HMI AG100 Acrylate Grout successfully stabilized the loose granular soils beneath the footing.
- Excavation proceeded safely adjacent to the existing hotel foundation.
- Construction remained on schedule, allowing the hotel addition to open before the busy season.
- Hotel operations experienced minimal disruption throughout construction.

By combining engineered underpinning with a project-specific permeation grouting design, the team stabilized the excavation while avoiding the cost, vibration, and construction impacts associated with a conventional sheet pile solution.