

Micro-piles halt further property subsidence

Client: Private homeowner

Location: Wycliffe Avenue, York

Engineers: Helifix

Installers: Corinthia

This two storey mid terrace property, of solid wall construction, was suffering from subsidence that was affecting the wall bordering the narrow covered passageway between residences, known as a ginnel.

The movement, which affected the mid to rear section of the passageway, was considered to be progressive. It had resulted in 40mm of subsidence, causing the kitchen floor to slope and producing cracking in some bed joints and around the ginnel opening.

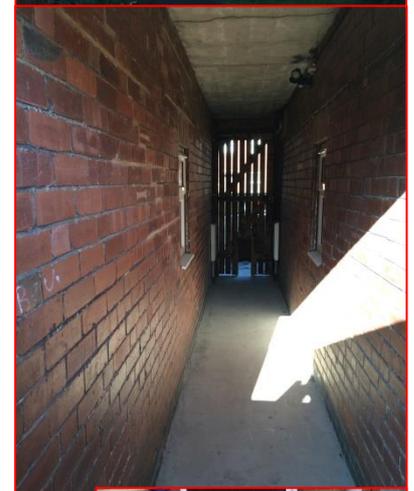
A reliable means of stabilising the property was required that would also prevent further movement. In addition, the 1m wide narrow ginnel with low headroom severely restricted access and limited the possible repair options.

The Helifix solution

Helifix Dixie pipe piles provided the ideal solution as this ICC certified micro-pile system can be installed in restricted areas using just lightweight hand-held equipment. They are simply screwed into the ground and produce no spoil removal or vibrations.

- Comprehensive soil investigations were not possible so the piles were installed until the drive head gauge achieved a reading of 2025-2050 PSI. This ensured that suitable strata had been reached and the ultimate load bearing capacity would be a minimum of 225kN, including a safety factor of three.
- A total of eight micro-piles, with triple lead helices sections, were installed to a depth of 7m and at 1m-1.5m centres. Six piles were installed beneath the ginnel wall and one each next to the front and back doors.
- Holes were dug adjacent to the foundations and notches cut into the wall's footings. Adjustable 'L' shaped brackets were fitted to the piles and placed under the foundations. They were then jacked up until the specified safe working load was achieved, with the piles then fully supporting the building loads.

Operating in cramped conditions, the Dixie micro-piles were rapidly installed to stabilise the property and restore structural integrity.



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