

Teretek® Raises and Re-levels 58m² MOD Property Affected by Subsidence



INDUSTRY

Residential

STRUCTURE

Semi-detached House

PROBLEM

Subsidence, wall cracking

LOCATION

Lyneham, Wiltshire, UK

DURATION / YEAR

7 days / 2020

TECHNOLOGY

Teretek®

BUSINESS UNIT

Mainmark UK

Summary

A 58m² semi-detached residential Ministry of Defence (MOD) property had been affected by foundation subsidence and its internal slabs were sinking. The property was uninhabitable as its structural integrity was poor due to invasive tree roots and damaged pipes leaking water into the foundation soils. These issues were exacerbated by the fact that the foundations were on clay soil and the property had experienced significant subsidence across its entire footprint, with some sections down between 50mm-80mm.

As demolition and rebuilding was not an option due to time restraints and other refurbishments that were already underway on the property, the client needed to seek alternative solutions. Therefore, repair was required to raise and re-level the property while closing the evident cracking as much as possible*. This would then allow further refurbishments to continue on the property upon completion.

Objectives

The primary objective was to raise and re-level the property, closing the cracking as much as possible and allowing for further refurbishments to continue directly after the project completion.

Teretek® Raises and Re-levels 58m² MOD Property Affected by Subsidence continued

Solution

The client required a cost competitive, minimally intrusive and time efficient solution. Without Mainmark's solution, rebuilding the property would have been the only alternative. Mainmark assessed the site to establish the best course of action to achieve the desired outcomes. The significant cracking throughout the property on both ground and first floor made for a complicated and technical lift, but Mainmark's extensive experience in the UK and globally using its proprietary engineered resin injection solution, Teretek®, made it possible.

Using this method, Mainmark was able to work within the tight confinements the site presented, without interfering with other works, by injecting the resin into the foundation through small holes. Upon entering the ground, the resin expands, targeting the weak soils beneath the building, consolidating and improving them in first instance and then providing the desired lift.

Once this was achieved, the perimeter and internal party walls were treated with Teretek® and the voids under the internal floor slabs were injected to both fill the voids and help provide further lift.

Mainmark raised and re-levelled the entire property by 50mm, providing both ground improvement and crack closure in just seven days, on schedule and within budget. By using this method, the project was completed when a rebuild would have been the only other alternative, helping the client avoid a lengthy and costly procedure.

Amey Defence Services said: *"This project achieved a great outcome and we're thoroughly impressed that the lift was achieved to the extent it was. Mainmark was able to raise and re-level the property, which avoided the need to demolish and rebuild, saving us valuable time. The job was completed as quoted, within budget and on time, allowing us to continue our renovation works. We are very pleased."*



Significant cracking on wall of the property's ground floor



Cracking on external wall of the property before Teretek® resin injection



After Teretek® resin injection, the voids under the property were filled and significant ground improvement and lift were achieved, also helping to close some of the cracks

**With brickwork, some re-pointing of mortar joints may be required*