

Teretek® Strengthens Ground and Helps Preserve Existing Renovation Work



INDUSTRY

Residential

STRUCTURE

House

PROBLEM

Soil subsidence

LOCATION

Prairiewood, NSW,
Australia

DURATION / YEAR

1 day / October 2017

TECHNOLOGY

Teretek®

BUSINESS UNIT

Mainmark Australia

Summary

Poor drainage and a sloping block had contributed to significant settlement under a 1970s house in Prairiewood, New South Wales. The owner noticed a number of cracks had started appearing inside the home and in the external brickwork, with visible separations around the windows, and the living room floor sinking due to what seemed to be poor compaction.

During Mainmark's initial site inspection, large cracks were visible on the external walls where recorded measurements indicated the house had settled by as much as 38mm. As the homeowner had already started re-tiling the floors and painting walls, the subsidence needed to be addressed immediately. If left untreated, the ground settlement would get worse and continue to cause more damage to the house.

The homeowner contracted Mainmark to strengthen the ground under the house and, where possible, lift the internal infill slab back to as close to its original level as possible.

Objectives

Mainmark was required to strengthen the weak soil under the house to prevent future subsidence. Two sections of the property needed to be treated. Approximately 30m² of the downstairs infill slab was to be corrected by 10mm–15mm and improvement to the bearing capacity below 10 lineal metres of the external strip footings foundation also needed to be addressed.

Works had to be planned around newly renovated sections of the home, with care taken to avoid damaging any of the finishes.

Teretek® Strengthens Ground and Helps Preserve Existing Renovation Work continued

Solution

Mainmark used Teretek®, its proprietary engineered two-in-one resin injection solution, to remediate the property. Teretek strengthens the ground to increase its load bearing capacity while re-supporting and re-levelling the structure above. This efficiency helps to reduce overall project time-frames.

Prior to commencing any works, Mainmark undertook an electronic level survey. The survey recordings found the external walls had subsided by up to 38mm and the internal slab between 10mm and 15mm. This assessment identified two independent areas that required separate treatment.

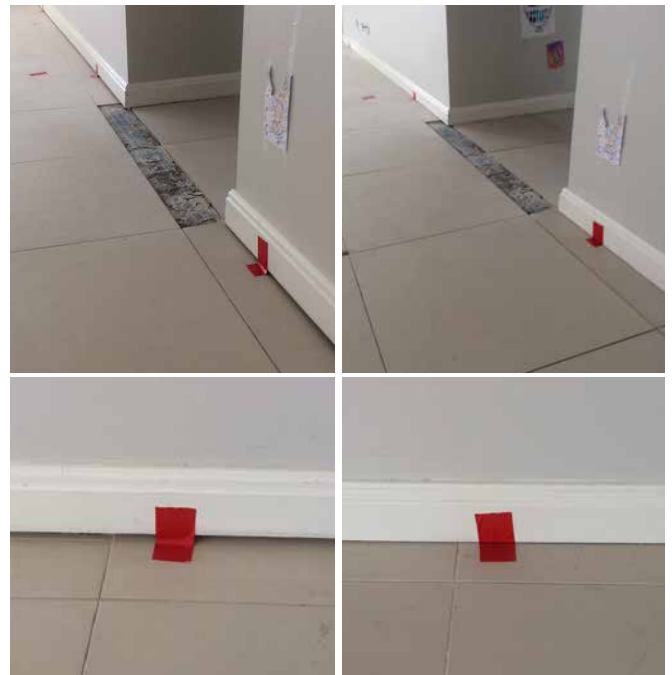
The internal infill slab, which was sitting on ground fill, was subsiding due to weak uncompacted soil. The laser level readings found the slab had dropped approximately 15mm which Mainmark addressed by injecting Teretek to lift the slab back to its original position.

The home's external strip footings had also suffered serious subsidence, sinking up to 38mm. However, to avoid causing further damage to the recent renovations, it was not possible to lift the footings back to their original position. Therefore, Mainmark used Teretek to improve the bearing capacity of the soil, with a minimal lift of up to 5mm, strengthening the underlying ground while preserving the completed renovation work.

Teretek is injected through very small holes and is recognised as a fast and clean process that minimises any inconvenience to the homeowner. Using this approach helped to avoid the mess and need for significant make-good fixes associated with traditional underpinning options.

Mainmark completed the project in a single day, delivering peace of mind to the homeowner, who could continue with the renovations and sell the house, backed by Mainmark's 50-year product warranty.

Roy Di Salvo, homeowner, commented, "We contacted Mainmark as we were keen for a fast resolution. The team was clearly honest and genuine, and the cost was slightly lower than competitive quotes. The crew was professional, punctual and did the job quickly with minimal intrusion, then cleaned up after themselves. We were so happy with the result that we've already recommended Mainmark to another potential customer."



Before/after injection of Teretek® engineered resin