PROJECT PROFILE
Z13Y378

mainmark

Shopping & Office Complex Re-levelled

INDUSTRY
Commercial

STRUCTURE
Shops

PROBLEM
Earthquake remediation

LOCATION
Christchurch, New Zealand

DURATION / YEAR
22 days / 2014

TECHNOLOGY
JOG Computer Controlled grouting & Uretek Slab Lifting

BUSINESS UNIT
Mainmark New Zealand

Summary

Due to siesmic events, this pair of buildings, that make up a small shopping and office complex, had each subsided, tilting backwards quite markedly.

Mainmark rectified the settlement, with JOG integrated computer grouting, lifting the load-bearing elements, with Uretek expanding resin injection raising and undersealing the floor slabs

The two buildings were raised simultaneously, the project taking 22 days.

Objectives

The rear of the building pictured on the left subsided and tilted 153mm, and the one on the right sunk 67mm, in the earthquakes of 2010-2011.

The building structures themselves were not substantially damaged but the subsidence was reasonably severe.

Solution

84 JOG injection ports were installed to inject beneath the load-bearing elements of both buildings.

Different injectors were also installed to raise the non-load-bearing floor slabs by means of Uretek expanding resin injection.

The two injection processes were applied at the same time, beneath both buildings. This way the entire complex was brought up, very gradually, and without placing any uneven stress on the structures.

The preparation and establishment plus the final disassembly and removal took approximately 4 days and the injection took 18 days.

The combined JOG and Uretek processes were successful in raising and re-levelling the entire building complex.

Substantial saving of time and cost was achieved by raising the two buildings simultaneously.