

STABILISING FOUNDATIONS TO SAFEGUARD RENOVATIONS

Site Profile

One of the biggest cardboard manufacturing plants in Australia had done some recent renovations to its warehouse

The warehouse is a high-tech processing facility based in Revesby, located 22 kilometres southwest of the Sydney central business district.

The industrial site included office space, a canteen, and a bathhouse area. The building was built on a concrete slab which happened to sit on poorly compacted fill material.



Figure 1: The side entrance to the manufacturing plant

The Situation

The building was experiencing significant cracking due to subsidence and movement of the foundational slabs. The settlement, which affected an area of 392 square meters, was particularly concerning to our client. If the subsidence continued, the receiving area would become unusable, causing unsafe workspaces, operational downtime, and loss of revenue.

The client had recently done a renovation, so they didn't want to re-level the slab and risk misplacing the windows and doors of the warehouse and office block.

Even though a renovation had been carried out the warehouse soon began to see hairline cracks. The owners knew that they needed to fix the root cause and stabilise their foundations to protect their renovations.

While the client had considered alternative rectification solutions for this project, these would have involved excavation and slab replacement, requiring the receiving area to shut down for several weeks.



Figure 2: The cracked wall due to subsidence

Our Solution

The factory engaged Resinect to propose a suitable solution to consolidate the uncompacted ground beneath the foundations, stabilise the slabs and therefore prevent any further movement of the building. Subsequently, Resinect's experienced consultants promptly attended the site and assessed the foundation issues.

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To consolidate the ground beneath the foundations and stabilise the concrete slab, Resinfect proposed using its RSJ170 Resin injection solution. RSJ170 Resin was chosen for its ability to rapidly expand to over 40 times its original fluid volume, seal off void defects and harden to a very high strength. Rapid expansion of the void-filling RS170 Resin compresses the surrounding materials to consolidate the poorly compacted ground and ensure the overlying item is sufficiently re-supported.

Resinfect proceeded to inject the engineered RSJ170 polyurethane resin deep beneath the uncompacted sections, filling any voids to maximise ground support. The controlled force generated by the RSJ170 expanding resin gently consolidated the ground with Resinfect closely monitoring the soil and site conditions to ensure the appropriate level of lift was achieved.

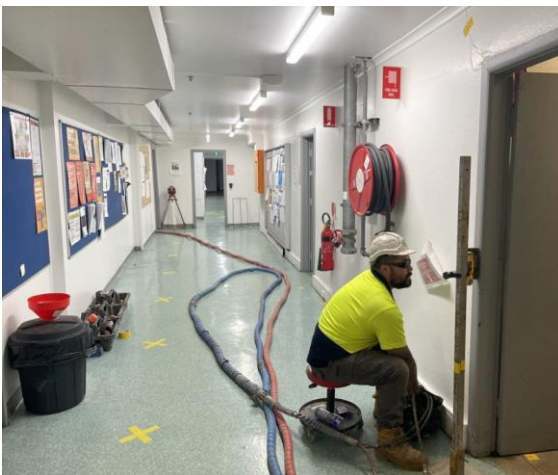


Figure 3: Resinfect Technician completing the proposed works.

This not only consolidated the ground beneath the foundations but also brought the underlying slab

up to the same load bearing pressure as the rest of the building.

The factory agreed to the proposed solution and Resinfect's services were booked for shortly thereafter.

The Results

After completing the proposed slab-jacking solution, Resinfect confirmed that the ground beneath the foundations was now solidly supported and that no further movement would occur to the building as a result. The client's renovations were successfully protected for years to come.

Furthermore, Resinfect services were completed outside work hours so that the busy site experienced zero downtime during their busiest production period.

Acknowledgements

Resinfect would like to thank our client for the opportunity to demonstrate our sustainable, and cost and time-effective solutions.

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