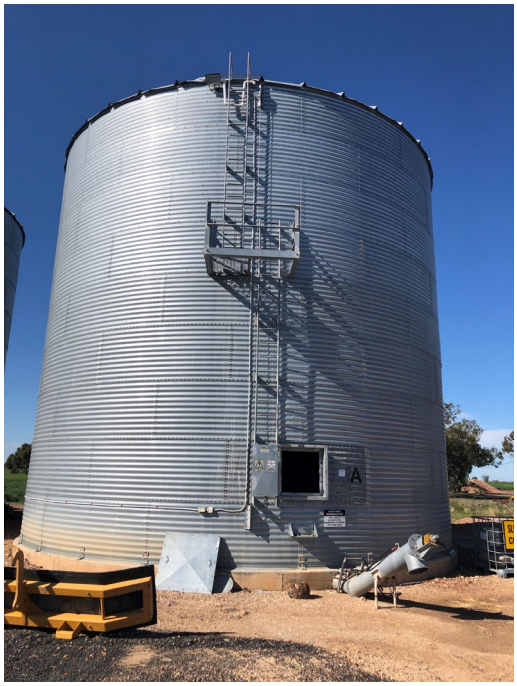
CASE STUDY

RELEVELLING, STABILISING AND RE-SUPPORTING A FARM'S SINKING SILOS

Site Profile

Dragonfly Agriculture Pty Ltd ("Dragonfly") is a prominent and successful agri-business, based on a large wheat and barley farm near Moree in Northern NSW. Among other services and functions, Dragonfly provides support services for crop production, agriculture, and forestry.

The owners of Dragonfly recently noticed some stress cracking and subsidence in the concrete base slabs under two of their large grain silos.



The Situation

Whilst the steel silo shells themselves were not showing signs of damage at this stage, the uneven floor surface was causing the internal auger to drag on the concrete in places which was damaging the blade.

Furthermore, the workers on this farm were required to manually shovel lots of leftover grain into the conveyor trenches at the end of each cycle since the auger was working on uneven ground.

Knowing that if left untreated, they would likely have to remove the silos and augers, demolish the concrete slabs, re-work the foundations, replace new concrete slabs and then re-install the grain silos, Dragonfly was keen to find a more cost-effective and timely alternative treatment.

Dragonfly reached out to us after hearing about how Resinject had fixed a friend's house foundations in Moree, and subsequently one of our experienced Structural Consultants promptly attended their farm to assess the situation and develop a tailored resin injection solution.

Our Solution

Resinject's Structural Consultant attended the site for an inspection and measured up to 60mm subsidence from original levels in some areas of the silo slabs, which was suspected to be the primary cause for the concrete cracking.

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Resinject proposed to treat the underlying soil foundation using resin void-filling which would also raise the sunken areas of concrete throughout the inside the silos, and to also provide an additional long-term support structure around the perimeter of the silo slabs with a series of deeper injected resin piers.

With Dragonfly's acceptance of our proposed solution, which came in at a fraction of the 'remove and replace' option cost, Resinject were on-site within a matter of weeks to complete the works over the course of two days.

The Results

At the completion of the works, Resinject had successfully raised the concrete slabs, filled the underlying voids, compacted the foundations, and installed stabilising piers to ensure a robust and enduring support structure remained for the future heavy loading.

All of this was competed through a pattern of small diameter drill holes through the concrete base slabs, which were re-filled with non-shrink grout upon completion of the Resin Injection works.

Dragonfly were thrilled with Resinject's results and are now looking forward to many more successful harvests without having to worry about this potentially very costly problem anymore.

Acknowledgements

Resinject would like to thank the team at Dragonfly Agriculture Pty Ltd for the opportunity to demonstrate our time and cost-effective, sustainable solutions and for their permission to publish this case study.