

## RE-LEVELING FLOORS IN ONE OF BRISBANE'S BEAUTIFUL HISTORIC BUILDINGS

### Site Profile

With its namesake river meandering its way through the city and surrounding landscape, the City of Brisbane, established in 1823, is one of the most unique capital cities in Australia, if not the whole world. Brisbane is also one of the fastest-growing capital cities in Australia in terms of population and employment.

The local government managing this iconic city is Brisbane City Council and it is the largest city council in Australia by both population count and land area. The Council's jurisdiction includes 26 wards and 27 elected councillors covering 1,338km<sup>2</sup>.



Figure 1. Brisbane and the Brisbane River

### The Situation

The Council manages many beautiful historic buildings located across the city. In one of these buildings, Council had discovered that multiple areas of flooring in three rooms (an art room, a dance studio, and a lobby) had sunken considerably, in some cases by over 100mm below original levels.

This left the flooring uneven and posed tripping and stability hazards to anyone walking over them.



Figure 2. Dance Studio

In order to fix the underlying issues with the ground that these rooms were built on, Council had considered a full "remove and replace" option for the entire flooring area, despite the relatively good condition that the floors were in. This would also have required several weeks' worth of expensive building work and would have cut off access for staff and the public and would also mean that over 300m<sup>2</sup> of the original flooring materials would be wasted to landfill.

### Our Solution

Council approached Resinject for an alternate solution to the full "remove and replace" option.

Resinject's experienced Structural Consultants promptly attended the site and inspected the

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floors and foundations, and subsequently proposed a more sustainable, cost-effective, and time-efficient slab-jacking solution to treat these sunken floors.



Figure 3. Lobby with Resinject Treatment Underway

To raise and re-level the sunken floors, Resinject proposed a slab-jacking solution consisting of a grid of injection points across the slab area.

In addition to these, a series of stabilising piers were proposed to a depth of 1.5m in the areas experiencing the greatest amount of sinking to improve the load bearing capacity of the ground and counteract any future subsidence, further ensuring the longevity of the re-leveling works.

### The Results

Resinject's solution was successful in consolidating and stabilising the underlying

ground and providing considerable lift to the sunken areas of flooring.

We were able to raise all the effected floor slabs, to mostly within less than 10mm tolerance of the target levels.

The entire service was also completed within four (4) night shifts as well, leaving the facility open during daytime working hours, which minimised the disruption to the public, staff, and council activity schedule for this facility. During the night works, Resinject was able to maintain access for the staff as required as well, due to having such a small work area footprint.

Finally, the whole project came in well under budget with Resinject being much less cost compared to the full remove and replace option previously considered.

### Acknowledgements

Resinject would like to thank the friendly staff at Brisbane City Council for the opportunity to demonstrate our sustainable, and time and cost-effective solutions, and for their permission to publish this case study.

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