

PROJECT CASE STUDY
CS 006

Project:
Revolution Apartments

Location:
Marrickville, Sydney

Client:
Deicorp Constructions

Pile Type:
Foundation & Retaining Wall
Piles

Pile Installation Process:
Contiguous Flight Auger
Bored

Project Duration:
September 2012 – March 2013

Project Value:
\$1.2M



REVOLUTION APARTMENTS, MARRICKVILLE

Frankipile Australia was the specialist foundations & geotechnical contractor selected to install the retention wall and foundation piles for the Revolution Apartments, Marrickville.

The development comprises a seven level building underlain by a two level basement car park. The significant challenge for this project was the design and construction of a contiguous pile cantilevered retaining wall adjacent to the existing railway line. The solution had to meet Railcorp's strict settlement and movement limits without the use of ground anchors.

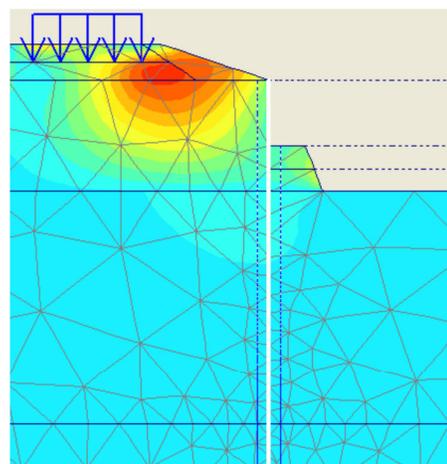
The nearest track of the railway line was only 3m from site boundary. To add to the challenges of the site an existing underground storm water channel was running through the proposed building.



Frankipile installed over 540 piles in sizes ranging from 450mm up to 900mm diameter. The piles were installed using both continuous flight auger (CFA) and conventional bored pile techniques.

The geotechnical investigations disclosed highly variable subsurface conditions of fill and natural soils, with rock levels changing by up to 12m across the site.

Frankipile's design engineers used advanced finite element modelling to develop an alternative retention solution which represented a significant saving to the Client in terms of both cost and programme. This analysis was undertaken with the PLAXIS and WALLAP software packages.



Locations

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Perth

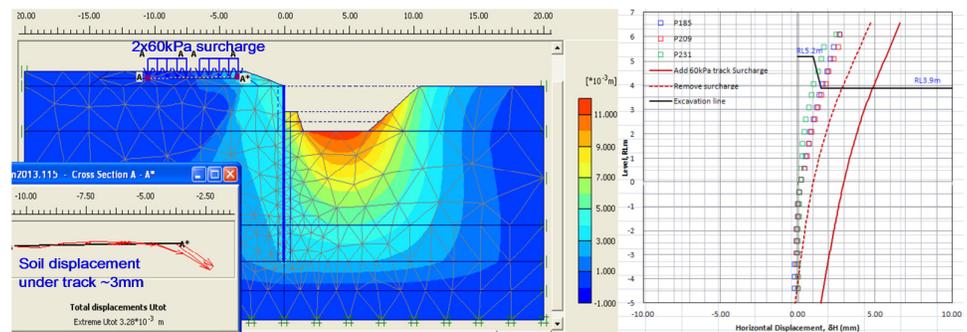
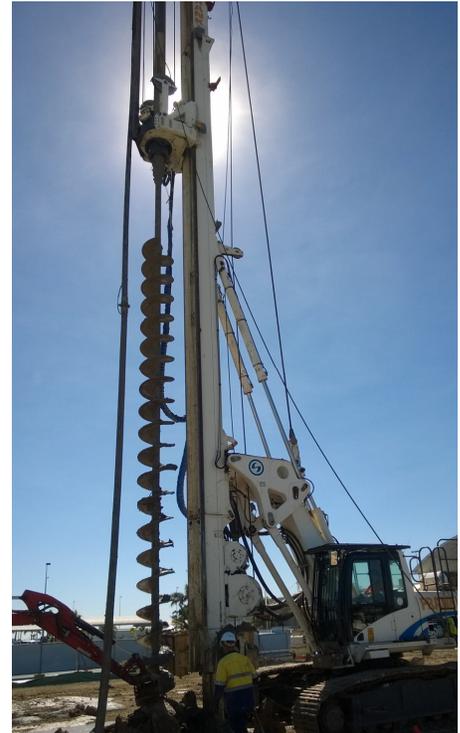
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The alternative had reduced pile lengths and reinforcement quantities. In the section of the wall that was not adjacent to the railway line, Frankipile also eliminated a complete row of anchors.

Inclinometers were installed at critical sections of the contiguous shoring wall adjacent to the railway track boundary to monitor the deflection of the wall during the excavation works.

The railway lines were also monitored independently by Railcorp at some 200 points adjacent to the development.

Observed wall deflections were within the magnitudes predicted by the finite element analysis and satisfied Railcorp's specification.



Other related services offered by Frankipile include:

- Large Diameter Bored Piles;
- Enlarged Base "Franki" Piles
- Driven Precast Piles;
- Displacement Piles.