

WESTLINK M7

WALLGROVE ROAD INTERCHANGE DYNAMIC REPLACEMENT



Sustainable Technology



Client: Abigroup / Leighton Joint Venture

Specialist Contractor: Austress Menard Pty Ltd

THE PROJECT

The new Westlink M7 link road in Sydney's West has many proposed on/off ramps, one of which crosses the location of a disused landfill site. Austress Menard was contracted to design and carry out Soil Improvement to a 5,300m² area and to guarantee long term settlements not exceeding 2% of the fill thickness.

AUSTRESS MENARD'S ROLE

Austress Menard carried out an extensive assessment of the fill material by Pressuremeter Testing to assess the most suitable treatment process, and once selected, to estimate accurate costs and programme to complete the works. It was essential that prior to any works being carried out that the correct treatment process was chosen and that this would allow minimum settlement rates to be predicted and guaranteed.

Dynamic Replacement was the process chosen to treat the landfill. Once established on-site a series of tests were carried out in a calibration area to determine the drop height, number of blows per print and the print spacing. Further Pressuremeter tests were carried out to demonstrate the calibration area had been treated successfully and that production works could commence. The calibration area also allowed an accurate programme to be established for the completion of the works.

Due to the site being a disused landfill rubbish tip there was a significant risk of encountering trapped methane gas pockets. Gas monitoring was undertaken daily and results assessed to ensure a safe working environment was maintained.

Dynamic Replacement works require a large +80 tonne crane, a 20 tonne excavator and 20 tonne front end loader all to be working continuously in a confined area. This requires detailed planning to be in place prior to and during the works, with a great emphasis on safety and quality. All works are supervised by specially trained operatives who record numerous details for each print location to ensure quality is maintained at all times.

Post treatment another extensive round of Pressuremeter tests were completed and analysed to demonstrate that the predicted improvement has been achieved and therefore, that the long term settlements would not exceed those defined in the specification.

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