

Mascot Station

Mascot, NSW

Safely managing logistics for multiple foundation techniques on an extremely confined site abutting a key transport hub within a busy residential Metro suburb



The project

Mascot Station in Sydney is surrounded by apartment buildings. With one of Australia's busiest pedestrian crossings, More Trains More Services (MTMS) commissioned a new escalator system for commuters to access from the residential side of the street to avoid the pedestrian crossing. Keller's brief was to construct a diaphragm wall for the new escalator box and install temporary plunge columns and a jet grout blanket to provide strutting to brace the new wall.

The challenge

A constant challenge for the Keller team was managing all the activities on such a restricted site, not least of which was the proximity of the rig to residential buildings. At times, the rig was positioned centimetres from apartment balconies. Restricted on-site storage required daily deliveries and the need to manage traffic flows and pedestrians. Other challenges included the requirement for an on-site polymer set-up, and the nature of the jet grouting component.

The solution

Part of the solution to the site issues lay in Keller's early involvement with the project. Keller was consulted by Downer EDI regarding the difficulties around setup and access before contractor selection had taken place. Keller's advice, reputation and previous experience with Downer EDI no doubt contributed to Keller being awarded the contract. Keller proposed a polymer fluid support system rather than a bentonite to reduce the plant footprint. Keller consulted with their colleagues with additional expertise in Victoria and Queensland and the site ground conditions were tested to ensure it was feasible. The challenge with the jet grout strut was the high strength requirement. Keller conducted extensive trials to monitor and assess the strength being achieved, modifying the slurry mix to work with the ground conditions.

Project facts

Owner(s)

NSW Transport

Keller business unit(s)

Keller Australia

Main contractor(s)

Downer EDI

Solutions

Excavation support

Bearing capacity / settlement control

Markets

Infrastructure

Techniques

Diaphragm walls / barrettes

Jet grouting