Newstead Central Stage 4

Brisbane, QLD

A sheet pile cut-off wall installed to reduce the impact of tidal influences from the Brisbane River on temporary works.

The project

Stage 4 consists of a 20 storey high rise tower incorporating a 5 level basement. Due to the staged implementation of the entire project (5 stages), top down construction was employed. Foundation works comprised a design and construct combination of 126linm x 800mm diameter secant pile wall, 40linm of temporary sheet pile wall, and 67No CFA foundation piles ranging from 600mm to 1050mm in diameter.

The challenge

Ground conditions consisted of very soft, water-logged, silty clay soils overlying strong rock, all within the Brisbane River tidal zone.
The design solution had to mitigate the potential impact of the works on two existing buildings with basements on the adjacent boundaries, and major sewage and storm drains on the other two sides.

The solution

The CFA technique was chosen as the most efficient method to install piles in the wet unstable ground, and with minimal disturbance to the adjacent structures. Steel plunge columns were placed in the CFA piles to enable the top down construction approach adopted by the builder.

Project facts

Owner(s)
Hutchinson Builders

Keller business unit(s)
Keller Australia

Main contractor(s)
Metro Developments

Solutions
Heavy foundations
Excavation support

Markets
Residential

Techniques
CFA piles