Cairns Convention Centre, QLD

Cairns, QLD

Showcasing Keller innovation and expertise in the design and construction of foundation works for a A$180 million expansion.

The project

Keller was contracted by Lendlease to design and construct the foundation works for the A$180 million expansion of Cairns Convention Centre. One of the key factors in the choice was Keller’s unmatched breadth of expertise in combining different techniques and optimising pile layout to create budget and timeline efficiencies.

The job included the design of 450mm franki piles to support the proposed structure’s individual columns; 900mm CFA piles for high loads; 400mm driven tube piles and 150mm micropiles for areas constrained by limited headroom; and 100 linear metres of sheet piling for retention of the lift cores.

The challenge

One of the biggest challenges of this job was safely coordinating the two franki rigs, CFA rig and materials on a multilevel site with only one access point, close to the existing building. Adding to the complexity were existing stone columns and metre-thick stabilised sand in various locations across the site. During initial work, hydrocarbon contamination was discovered in the ground, due to old fuel tanks on the site. On top of all that, extreme wet weather and cyclones proved formidable.

The solution

Keller R&D innovation provided solutions to many of the challenges. Keller's plant experts converted a franki rig to caterpillar tracks, rather than its usual 'walking' technology, making the rig more agile, adaptable and faster. A mini pre-drill rig was used to examine the size of the existing stone columns, and the stability of the sand. All contaminated soil was carefully disposed, with no harm to the environment or crew.

Project facts

Owner(s)
Queensland Government

Keller business unit(s)
Keller Australia

Main contractor(s)
Lend Lease Building

Solutions
Heavy foundations
Excavation support

Markets
Commercial

Techniques
Franki piles
CFA piles
Driven steel piles
Micropiles
Sheet piles