

60 King William Street

Adelaide, SA

Carrying out extensive analysis and design work for a fully cantilevered retention system with retained heights up to 7m.



The project

60 King William Street is a 14-storey development in Adelaide's central business district, which will be home to more than 2200 Services Australia staff. Keller was contracted to undertake the retention and foundation piling works, and was chosen principally because of its experience in designing and managing geotechnical risks.

The challenge

Designing a fully cantilevered retention system, for a retained height of up to 7m, adjacent to existing structures including a hyper-sensitive heritage façade. A further challenge was to sit a 90m tall tower crane on the cantilevered retaining wall. The tight site constraints in the heart of Adelaide, also posed challenges around logistics, access and egress.

The solution

Keller's main task was to install a retaining wall around the perimeter of the site to enable excavation work. Due to adjacent working restrictions as the demolition of the existing historical foundations were ongoing in the centre of the site, a cantilevered solution was preferred. The technical challenge in this choice was to meet the specified deflection criteria around the perimeter of the site, and this was achieved through detailed analysis and the implementation of a robust control and monitoring regime. Keller developed excavation and propping solutions that included stiffening up the piles and introducing temporary raking props in front of the façade and designing an excavation profile to make it buildable to meet the criteria. An extensive amount of numerical analysis was carried out to enhance the standard design to support the tower crane.

Project facts

Owner(s)

Charter Hall

Keller business unit(s)

Keller Australia

Main contractor(s)

Delta

Solutions

Heavy foundations

Markets

Commercial

Techniques

CFA piles

Soldier and contiguous pile retaining walls