

THE PRECINCT ON OGILVIE

CONTIGUOUS PILE WALL & PLUNGE COLUMNS



Developer: Oracle Projects
Specialist Contractor: GFWA

THE PROJECT

Located at 19 Ogilvie Road the Precinct at Ogilvie includes 2 underground car parks, two floors of commercial and office spaces and 7 levels of apartment units ranging in size from 57 m² to 257 m² in Perth's sought after Mount Pleasant suburb.

The car park in the second basement was 5.6 m below ground floor level, and the site had to be excavated to reach the required level; however open pit excavation was not possible due to the presence of neighbouring buildings and infrastructure. Consequently, a peripheral contiguous pile was envisaged around the basement.

In the commonly used *bottom-up* construction method initially the ground is excavated to the bottom most level, and construction commences upwards from the lowest level. However, in the *top-down* construction technique that was adopted by the project team, it is possible to reduce construction programme and costs by utilising the flooring system in lieu of ground anchors or temporary internal supports as the wall's horizontal support from the beginning.

THE ROLE OF GFWA

GFWA was awarded the design and construction of the specialist geotechnical works that included the peripheral wall and load supporting piles.

462 piles, each 0.35 m in diameter, and 9 to 15 m deep were installed to form the contiguous pile wall around the basements. The cast in place piles were installed using the CFA (continuous flight auger) method.

GFWA also installed 24 plunge columns using the CFA method. The depth of these 0.75 m diameter piles varied from 11 to 19 m.

The plunge piles not only transferred to the structural loads of the building to the foundation as classical piles would do, but also included internally reinforced circular hollow steel sections that would create the columns in the basement levels as well.