



BUILDINGS

CROWN INFINITY

Green Square, Sydney

AUSTRALIA



Construction of the diaphragm wall

Owner

Crown Group Construction Pty Ltd

Engineer

AFS Bachy Soletanche

General contractor

AFS Bachy Soletanche

Period of works

October 2015-August 2016

Main figures

Diaphragm walls

4360m² of 800mm thick using clam and Evo2-5

4000m³ Concrete

340 Tons of Steel

Anchors

150# 500 kN anchors



Hydrofraise used to build the diaphragm wall

Project description

The Infinity Project at Green Square will be a 20 floor reinforced concrete building, with 18 floors dedicated for residential and 2 floors for commercial purposes. The building will have a 3 level basement constructed by the use of the Diaphragm Wall technique, to achieve the permanent, watertight retaining structure for the basement. The wall is an 800mm thick reinforced concrete wall up to 15m deep. The wall is supported by one row of anchors during excavation phase. The North West corner is buttressed instead of anchors to avoid clashing with the railway tunnel directly underneath that section of site.

Ground conditions

The site consisted of approx. 10m of Fill material, variably compacted overlain with class IV and II Sandstone.

Solution

The works were carried out with the use of two excavation cranes to support the Grab and Hydrofraise and one service crane for the cage installation. The purpose of the grab was to excavate the other than rock material. Once the rock layer was reached the Hydrofraise excavated to the design toe. In the North West corner, deep Barrettes were installed to support the outer wall during excavation phase which will be demolished once the basement slabs are installed.

Sustainable development

With the location of the site in the city close to residential areas, the Diaphragm wall technique was utilised as a means of reducing the noise impact on the local residences. It was also chosen as the technique produces low amounts of vibrations to the ground next to live rail.

