



BUILDINGS

20 MARTIN PLACE

Micro Piles

AUSTRALIA



Owner

Pembroke Real Estate

Engineer

Taylor Thomson Whitting

General contractor

Built NSW Pty Ltd

Period of works

February 2014-February 2014

Main figures

Micropiles

installation of 10 micro piles over two basement levels



Project description

The existing 22 story building at 20 Martin Place in Sydney's CBD was completely redesigned and renovated by Built. The \$105M renovation project involved stripping the building back to its steel frame and rebuilding it floor by floor. Menard was engaged by Built for the design and installation of a number of micro piles to prevent the uplift of the building when the weight was reduced.

Ground conditions

During the planning stage the project consultants identified the problem that stripping the building back to its steel frame would reduce the weight of the building to an extent that uplift from groundwater pressure became an issue. The steel columns of the building were founded on concrete footings which were installed on class III Sydney sandstone.

Solution

The micro piles were designed to anchor the steel columns into this sandstone. 200mm diameter holes were cored through the footings. The micro piles were installed through these cores to a depth of 7m into the sandstone. Freyssibars® were installed, grouted and then connected by steel beams to the structural columns.

The main challenge on this project was mobilising and operating a drill rig in the confines of a basement. The head height was limited to 2.6m on several micro piles and overall the basement was very low, narrow and difficult to maneuver in. Menard utilised its specialized Beretta T43 mini rig to overcome this challenge: the T43 is highly maneuverable and can be configured to operate with a 1.95m mast height.

Menard Oceania mobilised and completed the installation of 10 micro piles over two basement levels in less than one week in February 2014. The prompt installation program allowed Built to continue the renovation works unimpeded by the uplift issue.

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