

SYDNEY METRO MARTIN PLACE

# A FLEXIBLE CRANAGE SOLUTION FOR A MAJOR INFRASTRUCTURE PROJECT IN THE HEART OF SYDNEY'S CBD

## AT A GLANCE

CLIENT	JOHN HOLLAND CPB GHELLA (JHCPBG) JOINT VENTURE TUNNEL AND STATION EXCAVATION WORKS
PROJECT	SYDNEY METRO CITY & SOUTHWEST
LOCATION	MARTIN PLACE STATION SITE
SECTOR	TRANSPORT INFRASTRUCTURE
DATE	2019 - 2020

## WHAT IT TOOK

CRANES	1 X M1280D
ENGINEERS	2
INSTALLATION CREW	6
OPERATIONAL CREW	3
MAINTENANCE CREW	1

### THE PROJECT

Located in the heart of Sydney's CBD, Sydney Metro's integrated station development at Martin Place will include the new Martin Place metro station, two new commercial buildings above the station, a retail space, new underground pedestrian connections and improvements to the public domain.

The John Holland CPB Ghella (JHCPBG) Joint Venture was contracted to deliver the Tunnel and Station Excavation Works for the Sydney Metro City & Southwest project, which included the excavation of the Martin Place Station site.

Construction of the Martin Place Station site included building an underground platform-to-platform connection between the existing heritage-listed Martin Place Station and the new Sydney Metro Martin Place Station – built mainly by excavating new pedestrian tunnels from the Sydney Metro construction site.

Faced with a challenging schedule of works, JHCPBG partnered with Marr Contracting for a solution.

### THE CHALLENGE

Excavation and construction works on a congested CBD site in the middle of a busy pedestrian thoroughfare and high traffic area presented a number of challenges in terms of access, in particular the heavy equipment required onsite at different stages of the works to meet the demanding program.

Added to these constraints, JHCPBG's scope of works included lifting into the site 14 plunge columns that were 30-metres long and weighing 80 tonnes each as well as the associated 90-tonne drilling rigs, excavators and spoil removal.

The original craneage scheme proposed the use of two crawler cranes and a small tower crane installed on a steel platform to complete general and medium lifting requirements. For the heavy lifting requirements, a mobile crane operating on the

street was proposed, but this would have required costly road closures and associated risks to the construction program. This solution could also only deliver the plunge columns in 20-tonne sections which then had to be assembled and welded onsite prior to installation.

### OUR SOLUTION

Marr's solution was to eliminate the need for road occupancies by installing one of our M1280D heavy lift luffers to do all the lifting from a single point within the site. This also allowed for the 80-tonne, 30-metre plunge columns to be prefabricated offsite and lowered into their final position.

The M1280D heavy lift solution gave JHCPBG the flexibility to meet the demands of lifting a range of different equipment as requirements changed on the project – which meant delays to the construction schedule were avoided.

### THE RESULT

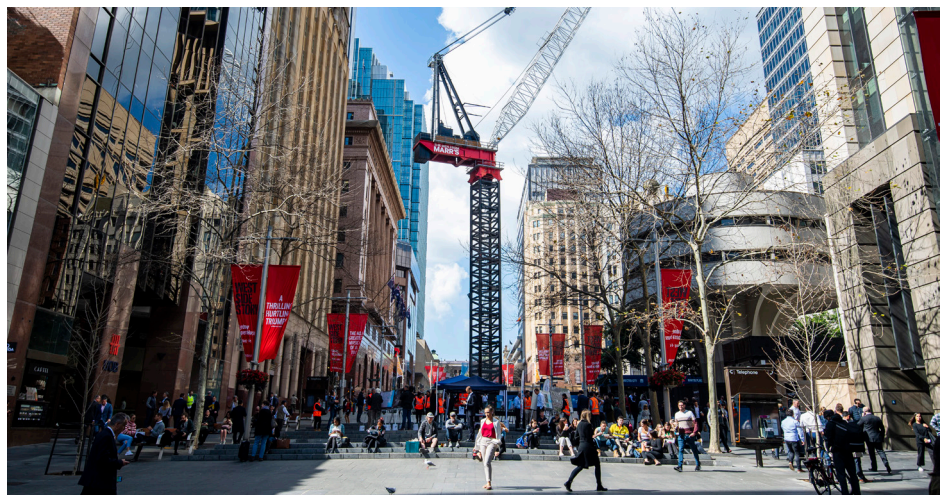
The Martin Place South site was delivered ahead of schedule and Marr's has now been engaged by the construction partners appointed to construct the follow on above ground works on Sydney Metro Martin Place Station.

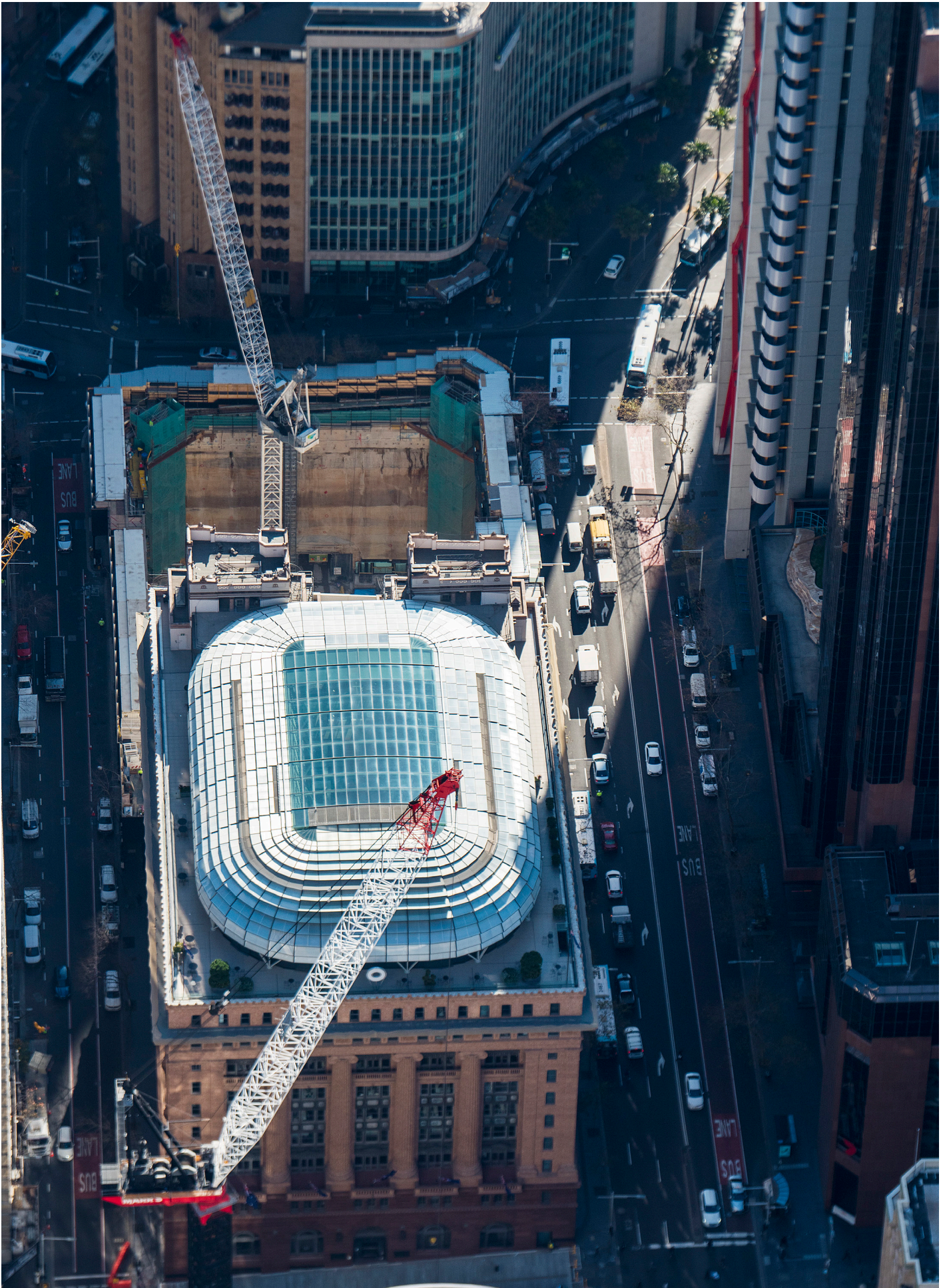


Site productivity improved by more than 100%. We would have taken more than the same time again if we had used crawler cranes onsite.



**WILL FREELANDER**  
CONSTRUCTION MANAGER, JHCPBG  
MARTIN PLACE STATION



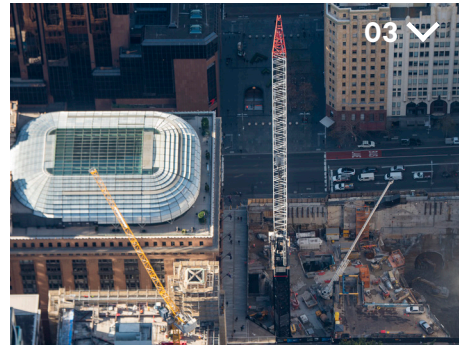




Located in the heart of Sydney's CBD, the redevelopment of Martin Place Station required building an underground platform-to-platform connection between the existing heritage-listed Martin Place Station and the new Sydney Metro Martin Place Station.



John Holland CPB Ghella (JHCPBG) joint venture was contracted to deliver the Tunnel and Station Excavation Works for the Sydney Metro City & Southwest project, which included the excavation of the Martin Place Station site.



Excavating on a congested CBD site in the middle of a busy pedestrian thoroughfare and high traffic area presented a number of challenges for JHCPBG, including lifting 14 plunge columns that were 30-metres long and weighing 80 tonnes each as well as the associated 90-tonne drilling rigs, excavators and spoil removal.



Use of the 150-tonne capacity M1280D allowed for the 80-tonne plunge columns to be prefabricated offsite and lowered into their final position – eliminating the need for complex technical welding of smaller sections on-site. This was a more efficient and safer solution which helped JHCPBG to deliver the Martin Place South site ahead of schedule.



With a challenging schedule of works, JHCPBG partnered with Marr for a better solution to the original scheme proposed which relied on crawler cranes operating from a platform over the site and on the street, which would have required costly and risky road closure permits. Our solution was to eliminate the need for road occupancies by installing one of our M1280D heavy lift luffers to do all the lifting from a single point within the site.

