

A NEW APPROACH TO HEAVY LIFTING AT AUSTRALIA'S BUSIEST RAILWAY STATION

AT A GLANCE

CLIENT	LAING O'ROURKE
PROJECT	SYDNEY METRO CENTRAL STATION
LOCATION	SYDNEY METRO CITY & SOUTHWEST LINE
SECTOR	TRANSPORT INFRASTRUCTURE
DATE	2020 - JAN 2021

WHAT IT TOOK

CRANES	1 X M1680D
ENGINEERS	2
INSTALLATION CREW	6
OPERATIONAL CREW	3
MAINTENANCE CREW	1

THE PROJECT

As Australia's busiest railway station, Central Station supports up to an estimated 270,000 passengers every day, with daily capacity demands expected to grow to more 450,000 passengers over the next 20 years. As the main hub for Transport for NSW's suburban and regional train services, the redevelopment of Central Station is pivotal to the new Sydney Metro network.

After working with Marr's team on the successful delivery of the Sydney Yard Access Bridge (SYAB) to facilitate heavy vehicle access to Central Station, Laing O'Rourke was keen to explore how a similar heavy lift craneage solution could be adopted on construction of the new above and below ground works for Sydney Metro Central Station.

THE CHALLENGE

Laing O'Rourke needed a solution that allowed their team to adopt a new method of modularised construction – which required lifting large architectural columns and heavy pre-assembled structural steelwork – in a confined, live rail environment.

With restricted space and the need to de-risk rail possessions, the requirement was for a crane with a small footprint and heavy lift capacity to meet the heavy lift requirements of the project whilst also servicing general construction needs.

OUR SOLUTION

Marr's solution uses one of our M1680D heavy lift luffers (HLL) with a 71-metre radius boom installed on a purpose-built steel grillage to complete the heavy lift requirements of the project – including lifting 60-tonne prefabricated roof trusses and skylight modules from laydown into place on the new concourse roof structure.

With the M1680D also used to complete the lighter lifts associated with general construction activities as well as supporting the excavation works and lifting of large earth moving equipment, it has met the varied scope of lifting requirements and eliminated the need to use a range of different sized cranes which would have presented another set of challenges in such a confined space.

THE RESULT

The craneage solution allowed Laing O'Rourke to construct the roof using their preferred methodology, which in turn has resulted in them delivering the roof installation ahead of schedule.

Marr's engagement on the project was completed in January 2021. Central Walk and the new escalators from Platforms 12 to 23 will be open in late 2022, with the new metro platforms due to become operational once Sydney Metro City & Southwest services begin in 2024.



Marr's M1680D HLL was installed at Central Station to complete heavy lift and general construction requirements on above and below ground works associated with the redevelopment of Australia's busiest railway station.

