

161 SUSSEX STREET SYDNEY

TWO WORKING TOWER CRANES ON TOP OF AUSTRALIA'S LARGEST OPERATING HOTEL

CLIENTS	BROOKFIELD MULTIPLEX
PROJECT	161 SUSSEX STREET REDEVELOPMENT
LOCATION	161 SUSSEX STREET, SYDNEY NSW, AUSTRALIA
SECTOR	CONSTRUCTION
DATE	JULY 2014 – ONGOING (PROJECT DUE FOR COMPLETION MID 2016)

CRANES	1 X M1280 1 X M860D
ENGINEERS	4
INSTALLATION CREW	10
MAINTENANCE CREW	2

When the Men from Marr's received a call from Brookfield Multiplex for our help on the 161 Sussex Street Redevelopment, we knew we had a challenge on our hands.

After being involved in the construction of the Four Points by Sheraton Sydney, Darling Harbour on the former corn exchange heritage building in the late 1980's, we were already familiar with intricacies of a working on a large-scale construction site situated alongside a major CBD freeway. Not to mention working on top of an operating hotel.

With an approximate project construction value of AU\$220 million funded by property owner M&L Hospitality, the project involved the expansion of what is already Australia's largest and most-occupied hotel and includes the addition of 220 hotel rooms and 4,800 square metres of new convention and meeting space overlooking Sydney's busy Darling Harbour.

THE CHALLENGE

In early 2014, we received a call from Brookfield Multiplex looking for a solution to installing the 78 concrete elements weighing up to 30 tonnes that would form the foundation for the new conference centre.

The challenge was that the beams were suspended over the busy Western Distributor Freeway – one of the major feeder roads from the CBD to the Sydney Harbour Bridge. This meant that the project would require permission for a number of costly night road closures from the NSW State Government's Roads and Maritime Services (RMS).

Brookfield Multiplex was considering using mobile cranes to do the job, but with only a four-to-five hour window for each road closure, at least half of that time would be lost setting up and packing down the crane. The risk was that the time allowed would not have been enough to get a single lift done. An even greater risk was if there was a problem with a crane during the closure and the road could not open again on time, Brookfield Multiplex would have faced heavy fines from the RMS. Additionally, all this work had to take place without interruptions to the existing hotel operations or inconveniencing nearby residents.

OUR SOLUTION

Our solution was to eliminate the need for using mobile cranes to do the heavy lifting from road level by installing two tower cranes – an M860D and M1280D – on the rooftop of the hotel. After erecting the M860D on a steel grillage structure on one of the building's lift cores, we were able to use that crane to erect the larger M1280D on the adjacent lift core.

It was a big effort, particularly from an engineering point-of-view. The risk mitigation associated with the weight of two of the world's largest tower cranes working within limited space on the rooftop of a CBD hotel full of people was significant. By adopting our usual practice of sound engineering methodology and design, we came up with a successful solution.

THE RESULT

With the M1280D installed to do the heavy lifting of the beams across the freeway, we eliminated the high cost and risk of using mobile cranes. Productivity gains were the main benefit as the concrete elements could be lifted from the beginning to the end of the road closure period that the project was granted.

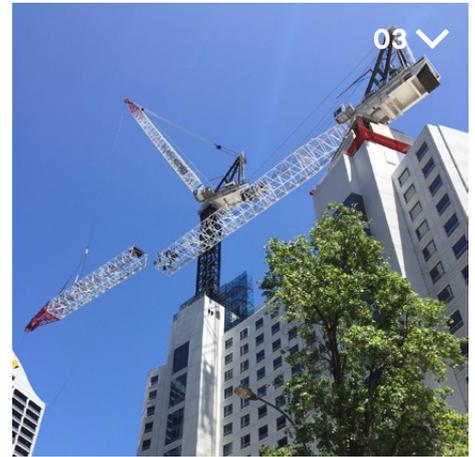
In talking about the project, Regional Manager Director for NSW at Brookfield Multiplex said, "There are a couple of unique aspects to this crane installation. Aside from being the largest crane we have ever used on a project, it sits on top of an existing active passenger lift core servicing the operating hotel, which to our knowledge is the first time a crane of this size has been located over an existing building in Australia."



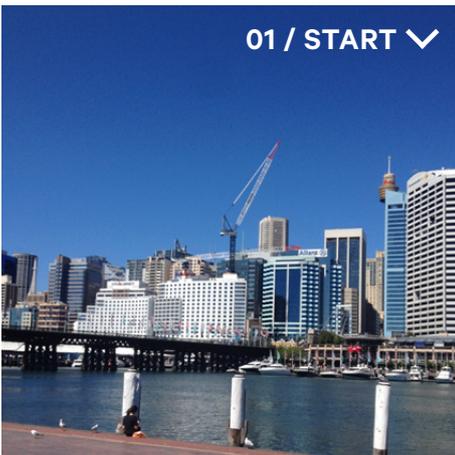
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DAVID GHANNOUM, REGIONAL MANAGING DIRECTOR - NSW,
BROOKFIELD MULTIPLEX

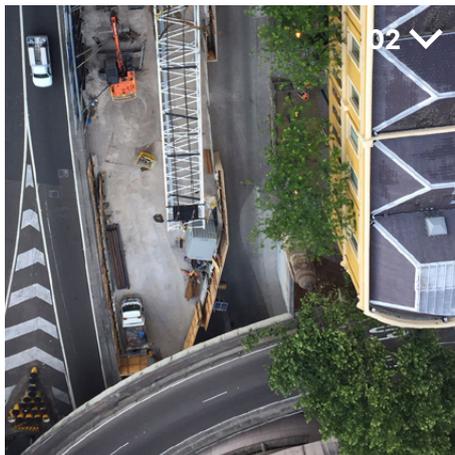




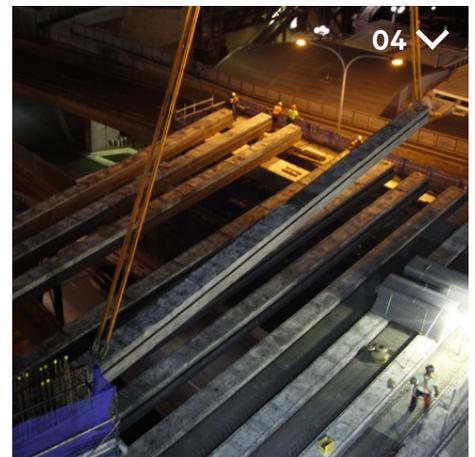
Our solution was to eliminate the need for using mobile cranes to do the heavy lifting from road level by installing two tower cranes – a M860D and M1280D – on the lift cores of the hotel's rooftop. After erecting the M860D with a steel grillage structure on one of the building's lift cores, we were able to use that crane to erect the larger M1280D on the other lift core.



2014: In early 2014, Brookfield Multiplex contacted us for support on the 161 Sussex Street Redevelopment. They needed to find a crane solution to install the 78 concrete elements weighing up to 30 tonnes that would form the foundation of the Four Points by Sheraton Hotel Sydney's new 4,800 square metre conference centre across the busy Western Distributor Freeway.



The job required permission for a number of costly night road closures from the NSW State Government's Roads and Maritime Services (RMS). It also required a crane solution that would allow the maximum time during each closure to get each installation done.



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