

Construction Cranes Factsheet

The NSW Government is investing \$720 million to redevelop the Prince of Wales Hospital and strengthen Randwick as a world-leading centre for health and wellbeing, research, education and teaching. An Acute Services Building will be built in Stage 1 including a new adult emergency department, extra beds, intensive care unit, and new operating theatres for the campus.

Tower cranes

During construction of the new Acute Services Building, two tower cranes will be used on site, one north and one south of the new hospital building.

These two crane locations will allow materials to be efficiently and safely lifted over a large portion of the construction site.

Due to the site's proximity to the airport, hammerhead cranes will be used on this construction site.

Hammerhead cranes have a fixed horizontal jib arm. The jib arm can rotate 360 degrees around the tower.

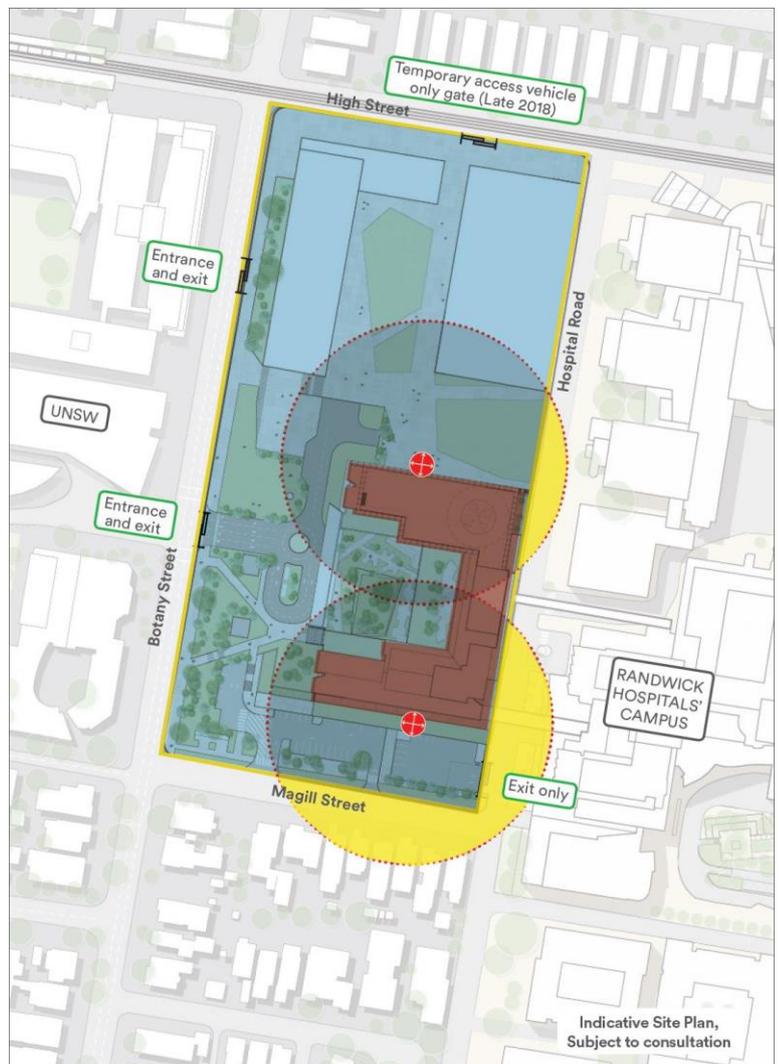
Where will the cranes lift materials?

The cranes will lift loads within the boundary of the site during construction hours only.

The **Indicative Site Establishment Plan (right)** shows the proposed crane locations north and south of the indicative building footprint, as well as the area the crane will 'weathervane' over adjacent roads and properties.

Legend:

-  Site Boundary
-  Indicative Building Footprint
-  Tower Cranes Locations
-  Tower Cranes Load Lifting Zones
-  Tower Cranes Load 'Weathervaning' Zone (No Lifting Permitted)



What is weathervaning?

When the cranes are not in use, they will be placed into 'weathervane' mode. 'Weathervane' mode allows the jib arm of the crane to rotate in the direction of the wind like a weathervane, reducing pressure on the crane structure and associated footing system.

When not in operation, both cranes will weathervane over Hospital Road, part of the Randwick Hospitals' Campus and nearby properties in Magill Street.

Weathervaning is safe and occurs on construction sites around Sydney. During weathervaning the hook will be tied and no lifting of materials will occur.

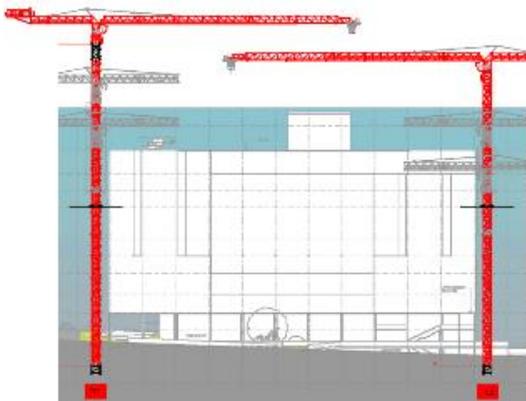
If the cranes are not allowed to weathervane they would be forced to remain rigid, and during strong winds this would place increased pressure on the crane tower structure and associated footing system.

As a safety priority, the cranes must be allowed to weathervane 360 degrees around the crane towers.

Indicative timing

The southern crane is proposed to be in operation for approximately 18 months from mid-late 2019. The northern crane is proposed to be in operation from mid 2019 to early 2021.

Indicative cross-section showing one crane north of the building and one crane south of the building.



Electric or diesel?

Electric cranes have been chosen for this redevelopment as they produce less noise and pollution compared to diesel cranes thus providing an eco-friendly, community favourable and sustainable solution.

Why use hammerhead cranes?

Hammerhead cranes must be used on this site due to the site's proximity to Sydney Airport and surrounding flight paths.

Although there is a different type of crane commonly used on more constrained construction sites called a luffing crane, this alternative type of crane is not suitable on this site.

The main difference between a luffing crane and hammerhead crane is that the luffing crane jib arm can pivot up while the hammerhead crane is horizontally fixed.

Although raising the jib arm of a luffing crane reduces the weathervane area (the area under the jib arm when the crane is not in use) it also means the jib arm intrudes much further into protected airspace. For this reason hammerhead cranes must be used on this construction site.

The below graphic depicts the main differences between the two types of cranes.

