

REGIONAL WINNER

Jacobs and Roads & Maritime Services The Sydney Harbour Bridge High Precision TLS Survey & 3D CADD Modelling

What was the problem?

Roads & Maritime Services are undertaking the design, manufacture, and installation of new features to improve the maintenance of the Sydney Harbour Bridge. The project hopes to allow comprehensive analysis of a wide range of structurally important features of the bridge, and to protect it from future issues, especially environmental factors such as corrosion. Considering the bridge is constantly moving due to loads and changes in temperature, this is a complex task to undertake with high accuracy.

How did you address it?

A well-designed survey control network was critical, particularly given the very tight tolerances required for the final survey. This was done in tandem with laser scanning being used to identify bridge contraction and expansion, and extensive CADD modelling; a difficult task to undertake on a structure as old as the Harbour Bridge.

What were the key outcomes?

Survey results greatly assisted with understanding the actual movement patterns and magnitude of the bridge structure, and customised modelling procedures were developed to identify an inordinate amount of rivets, hatches, brackets and other structural bodies. Whilst generally encompassing, the survey highlighted specific areas for technological advancement, and a large amount of new observations about the behaviour of the bridge were able to be made.

For more information about this project or to contact Jacobs and Roads & Maritime Services please visit their websites <http://jacobs.com> and <http://rms.nsw.gov.au>

