

# Eliot Sinclair

surveyors | engineers | planners

Issue Number 13003

## Detailed Design Survey

### Description of Project

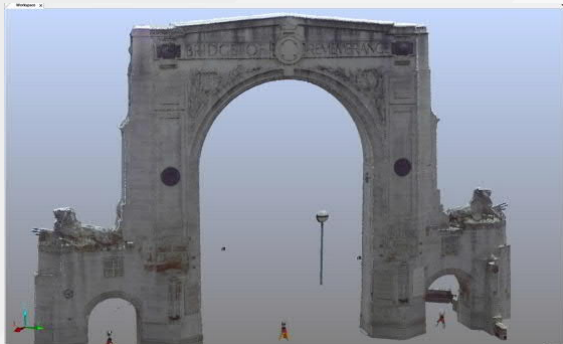
Eliot Sinclair took the opportunity to undertake a detailed 3D laser scan of the Triumphal Arch on the Bridge of Remembrance. The scan was intended to supplement other recent topographic surveys of the adjacent bridge and surrounding area.

### Description of problem faced/task undertaken

Significant earthquake related damage was recorded to the Triumphal Arch and Bridge of Remembrance. Only a detailed point cloud scanning option would ensure that an accurate record was available for heritage preservation, repair, design and rebuilding purposes. A high density point cloud (3mm x 3mm) was required to allow engineers to accurately develop cross sections of the arch pillars. Further investigations of the internal structure of the arch would later be referenced to the supplied high accuracy external scan.

### How the Problem was solved

3D Laser Scans were taken from six scan positions around the Triumphal Arch at very high resolution. High resolution colour photographs were also captured by the scanner. Common targets and surfaces were used to register the six scans to form a combined colour point cloud of more than 100 million points. The size of the final registered and combined point cloud project was 3.3GB.



### Future enhancements

This project served to showcase the efficiencies, benefits and functionality of high density and colour point cloud data. 3D Laser Scanning technology has developed significantly in recent years and Eliot Sinclair are continually leading the way in Christchurch with client focussed solutions developed at the project outset.

