# CASE STUDY:
## Melbourne University

## OVERVIEW

The University of Melbourne decided to undertake redevelopment work to its site. In particular, the Old Commerce Building was to be demolished as part of the redevelopment. However, due to its façade being of significant heritage value, it had to be retained whilst the remainder of the building was demolished.

*TLS Point-Cloud of Joseph Reed Façade*

## SITUATION

Due to its heritage value, it was imperative that the construction works did not cause any movement and potential damage to the façade during the demolition of the building and the erection of a façade retention structure

## ACTION

AAM were consulted to provide a solution to this potential problem. To ensure that any façade movement was detected, monitoring works were proposed as a requirement to this project. Through discussion with the client, AAM installed three tilt-meters at the top of the façade. To alleviate any concerns about the façade movement, measurement data was recorded every 5 minutes via radio link to the monitoring station utilising Leica GeoMOS software. Leica GeoMOS software allowed for the setting of acceptable tilt status limits and SMS, email or phone contact was made at any change of 'status' to relevant personnel (as set out by the client's monitoring specification). Therefore real-time monitoring resulted in client confidence that any movement would be detected instantly and if appropriate, corrective measures could be implemented. In the event that movement was detected, AAM were able to quantify this through Laser Scanning acquisition and supply engineers with a complete and clear understanding of any building movement.

## RESULT

Terrestrial Laser Scanning (TLS) acquisition was also proposed to be conducted on monthly basis. Acquisition by TLS produces a 'point-cloud' which contains millions of measured points on the building's façade, therefore providing a broader and more complete dataset than conventional target measurements at individual locations.

A visual analysis of overlaying the point-cloud data can be used to determine the exact location and nature of façade movement or deformation. Hence, AAM implemented various modes of detecting any façade movement immediately to ensure a timely and reliable response for the client.