

# 3D Scanning and Modelling

Based on our philosophy of employment of latest technology to improve quality and efficiency, LandScope has developed a 3D laser scanning capability. As with all survey instrumentation, the critical success factor is a thorough understanding of application, economy of accuracy and quality of deliverable. LandScope has identified several areas where 3D laser scanning has greatly increased our capability and efficiency. Without the need to create detailed time consuming and expensive 3D CAD models, the surveyor or end-user has the capability to extract vector distances, create 2D plans or elevations or cross sections directly from the measurement domain, which in this case is a point cloud.

With scan rates of up to 50,000 points per second, field acquisition times are greatly reduced and the inevitable redundancy of data aspect provides an additional level of quality control, not possible with traditional survey instrumentation.

## Applications include:

- Structural and Engineering applications
- Visual Impact Assessment
- Building and Architectural Survey
- Slope and Embankment Stability Modelling
- Cityscape modelling
- Specialist topographic surveys
- Manufacturing and processing facilities management
- Volumetric and Extraction Modelling
- Restricted Access Surveys
- Ports, harbour and water course modelling
- Erosion monitoring
- 3D modelling for film and CGI productions
- Crime and Accident scene recording



## Building and Architectural Survey

In combining laser scanner data with our extensive measured buildings survey experience we can put together a complete package for your building survey requirements. Operable in either an outdoor or indoor environment the system enables an incredible amount of high order accuracy data capture in a fraction of the traditional instrumentation time. Augmentation of high resolution photographic images to the data-set allows unambiguous point picking with the reassurance that those costly site re-visits due to missing details will now be a thing of the past. Without the need to create detailed time consuming and expensive 3D CAD models, the surveyor or end-user has the capability to extract vector distances, create 2D plans or elevations or cross sections directly from the measurement domain, which in this case is a three dimensional point cloud.

The outside-in approach means LandScope can provide you with any additional geospatial visualisation you require including:

- 2D Elevation Drawings
- Section Drawings
- 3D Point Clouds
- 3D Photo-draped Models
- 3D Rendered Models
- Building Information Model (BIM)



## Volumetric and Extraction Modelling

One of the key features of our processing software is the ability to rapidly calculate volumes. Capable of constructing a 10mm volumetric grid spacing across a surface, we can ensure a greatly increased accuracy over traditional volumetric calculation methods. We are also able to introduce pre-determined surface levels to the model that can be used to rapidly calculate various scenario volumes.

By scanning a site before and after extraction we are able to accurately determine the volume of extracted material. This process accesses a range of applications from soil remediation to quarrying analysis.

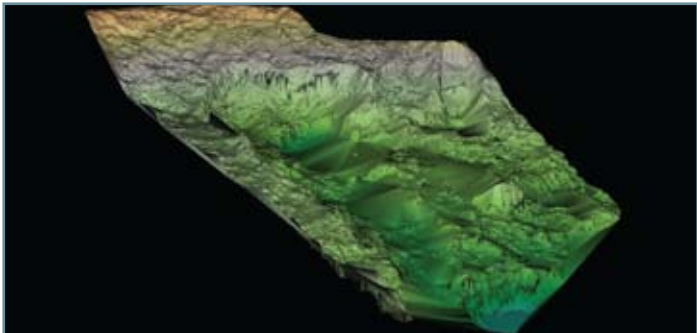


## Heritage Surveys

With the unique properties of laser scanning we are able to undertake detailed surveys of important heritage sites and buildings without marking or damaging the subject. The survey can be completely unobtrusive and we are still able to gather the required level of detail and accuracy. We create a permanent, geo-referenced, record of the feature that can be visited again and again to take additional data and measurements.

## Restricted Access Surveys

Restrictions due to safety and access can cause problems and delays with traditional surveying techniques. One crucial advantage of laser scanning is that you never have to set foot on to the target scan area. Such a benefit is vital when considering the recording of a high volume traffic environment or a road traffic accident scene. As is often the case with restricted access sites, it is very important to ensure that everything is recorded on the first visit as this is often the only chance to gather data. The laser scanner has the ability to do this, and with the combination of high resolution images overlaid on the data, additional peace of mind is assured.



## Slope Stability / Slip Monitoring

As our built environment becomes ever more dense and complex additional responsibility is being placed on the construction community to ensure the welfare of existing structures adjacent to construction activity. A new tunnel development may impact subsidence rates of structures above whereas a deep piling operation may affect an adjacent embankment – complex dynamics and inter-dependencies can now be measured and modelled with the latest advanced survey instrumentation.

### Related Inserts Available

Measured Building Survey



Land Survey/  
Geomatics



Monitoring  
- Structural  
Movement

