

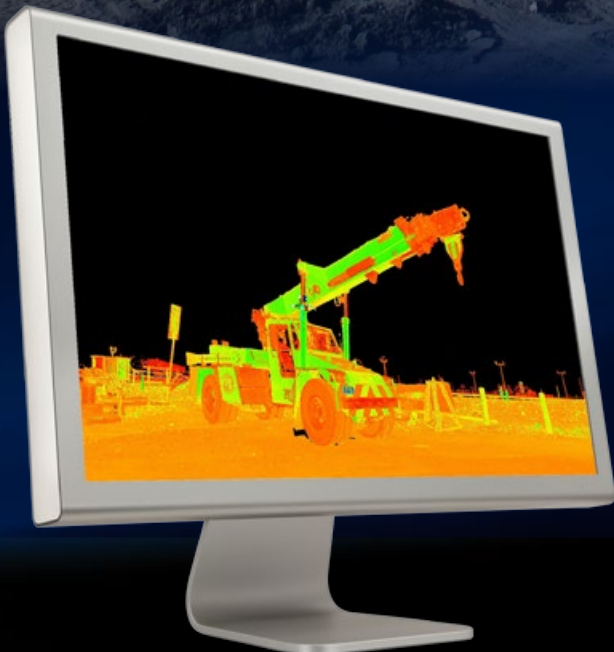


High Definition Surveying

High Definition Surveying (HDS) is a fast and efficient means of collecting highly detailed and accurate physical data.

It is able to provide high-density data with survey-grade accuracy for distances of up to hundreds of meters, even in highly complex and hazardous environments. This is possible using the very latest in laser scanning technology, capturing data at a phenomenal 50,000 points/second.

Large and complex sites can be mapped simply by capturing data from multiple vantage points. The numerous scans are then 'stitched' or registered together to create a complete, navigable point cloud of the entire site.



Why use Long Range Laser Scanning?

Our staff and clients benefit from the use of long range, high density scanning in multiple ways.

For example: in existing plants, infrastructure can vary greatly to that which is documented. With a scanned environment, unforeseen obstacles and inaccuracies are minimised. New works can be completed without the frequently incurred rework costs. This also means that variation risks in quote/tender situations are mitigated.

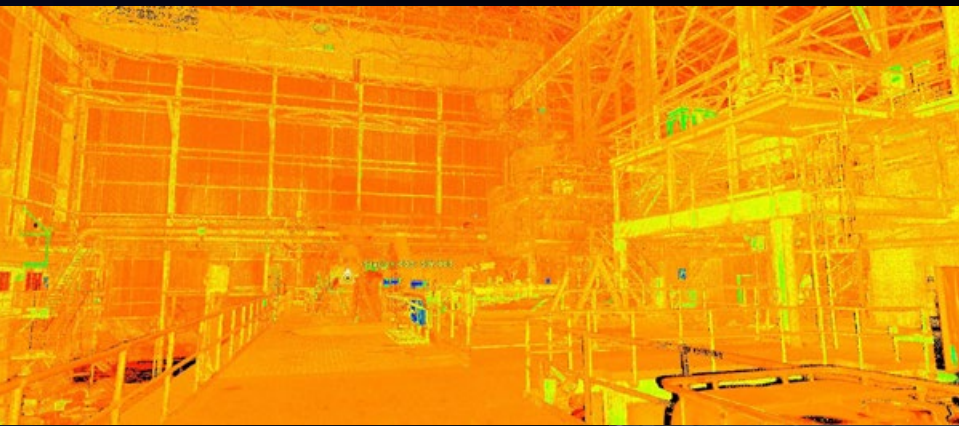
A laser scanner also allows for the safe acquisition of site measurements by reducing the need to go into high risk areas, working at heights or navigating environmental hazards. Significant cost savings and efficiency gains are possible through the elimination of spotters and access equipment.

Scanned data is available for use by our clients via TruView files, without the need for the complex scanning software. With a free browser plug-in, all users can position themselves within the scanned world to see, measure and evaluate the environment around them.

The applications and benefits of this technology are wide ranging. HDS gives unprecedented amounts of data with incredible accuracy, which is why it is fast becoming critical to successful site management by best practice operators.

Deliverables

- **Complete 3D surface and solid models**
- **Site plans**
- **Intelligent plant models**
- **Space and asset inventories**
- **Links to asset information**
- **Spatial Data Standards** for Facilities, Infrastructure, and Environment-compliant GIS data
- **Clearances** – point-to-point and point-to-surface measurements
- **High & low points** and tie points
- **Detailed topographic maps**
- **Volumetric reports** – piles and pits
- **User-friendly panoramic images** with geometric information instantly available from each pixel using the free TruView client plugin



◀ *Navigable Point Cloud (left), with matching TruView 3D interface (below right)*



Benefits of HDS

This technology provides huge functional and cost-saving advantages.

3D Laser Scanning is:

ACCURATE | The capacity to capture large quantities of precise data and removal of the factor of human error

FAST | Acquisition of data is extremely fast thereby reducing the time required for access and shutdowns.

SAFE | The ability for remote data capture minimizes site intrusion and maximizes operator safety.

COMPREHENSIVE | The profusion and quality of data captured allows for future 'data mining' without the need to revisit the site.

USEFUL | A range of viewing choices, along with data exchange with many CAD platforms allow for a vast range of deliverables.



Industry Applications

CIVIL ENGINEERING & INFRASTRUCTURE

- Road and bridge planning
- Construction progress records
- Surveying hard-to-reach areas
- Creating up-to-date information records
- Condition and damage assessment
- Change detection and monitoring
- Volumetric analysis of piles and pits

PLANT & INDUSTRIAL

- Complete 3D CAD models from point clouds
- High quality as-built information
- Detailed plant measurements
- Clash/Interference checking
- Planned lifting activities
- Surveying hard-to-reach areas
- Precise dimensions for the design of modifications and retrofits
- Eliminate re-works
- Reduce installation man-hours
- Aid to inspections
- Volumetric analysis of tanks and vessels
- Maximizing field productivity
- Minimizing field hot-work
- Hazard surveying
- Condition and damage assessment

ASSET MANAGEMENT & MAINTENANCE

- Plant evaluation from local workstations, allowing efficient and accurate assessments for:
 - » Risk mitigation
 - » JSEA preparation
 - » Shutdown and maintenance planning
 - » Operational decision making
- As-built records of structural, mechanical, electrical and pipework installations
- Building information modelling
- Links to asset information
- Condition and damage assessment

INCIDENT INVESTIGATION

- Incident scene recording
- In-situ 3D snapshot
- Crane rollovers
- Environmental incidents
- Hazardous areas
- Catastrophic event mapping

HERITAGE & ARCHAEOLOGY

- Historical building preservation
- Digital records of pre- and post-site works
- Detailed measurements
- Archeology site recording



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Office Address

Canberra Place
Level 2, 123 Margaret St
Toowoomba Qld 4350

Postal Address

PO Box 2772
Toowoomba Qld 4350

Contact Numbers

T 07 4659 9730
F 07 4659 9731

Website

W www.solidtech.com.au
E info@solidtech.com.au