



3D SCANNING & PHOTOGRAMMETRY



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3D scanning is the process of using electronic instruments to capture the precise shape of an object or building in digital form. We specialise in both long range and object 3D scanning, as well as photogrammetry for coloured point cloud and textured meshes.

3D scanning represents up to 25% of the total project time, rebuilding the geometry of the object using 3D modelling software is the remaining project time.

3D MODELLING

Using various software tools, the point cloud data is stitched together to create a total 3D representation of the object(s) and converted into the desired deliverable format. This could be 3D CAD models, animations, 2D CAD drawings, or a print-to-3D ready model. It's a highly accurate representation of the scanned object or building/landscape and can be used for design modifications, metrology, inspection, training or historical records.

A collection of measurements is called a point cloud. This is the data from which we extract valuable information & 3D models.



Stage 1: Gathering of point cloud data. Recorded at a rate of 10,000 pts / second.



Stage 2: 3D polygon mesh created by joining points. Missing data generated.



Stage 3: Solid or surface models generated for use in animation or manufacturing software.

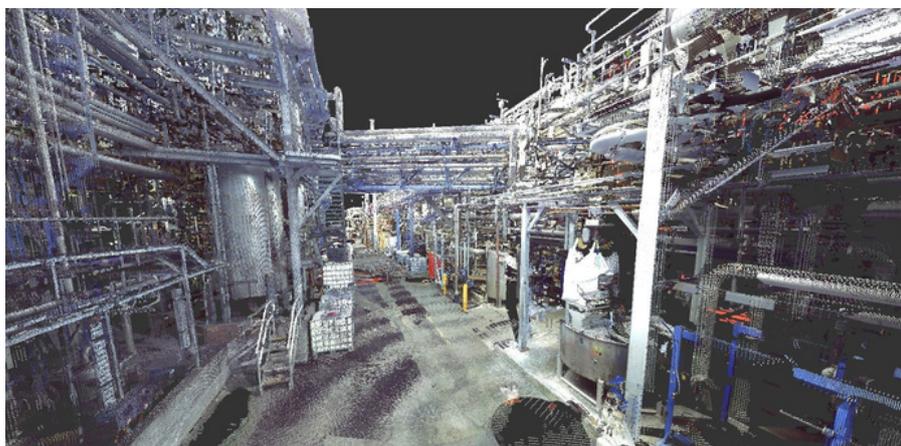
MEETING YOUR NEEDS

With the largest range of handheld and terrestrial scanning technologies our specialist engineers can capture data to meet the needs and quality standards for a range of applications, including:

- **Digital Twin**

3D scanned data brings a physical object to life in the form of a fully digitised model, or digital twin. While there are a number of competitors who also offer 3D scanning services, their methods don't yield enough data to create a complete geometric digital twin.

Digital twins store exact measurement and essential information about specific projects and physical assets. This information is used to evaluate design, operations and additions.



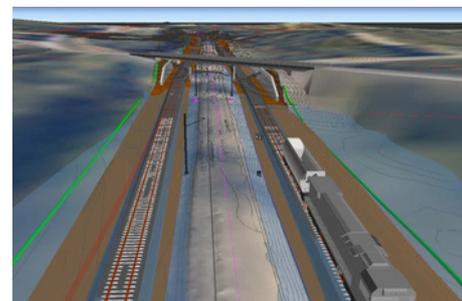
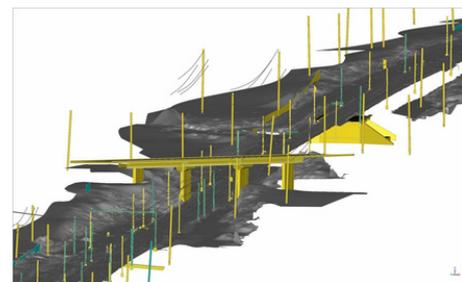
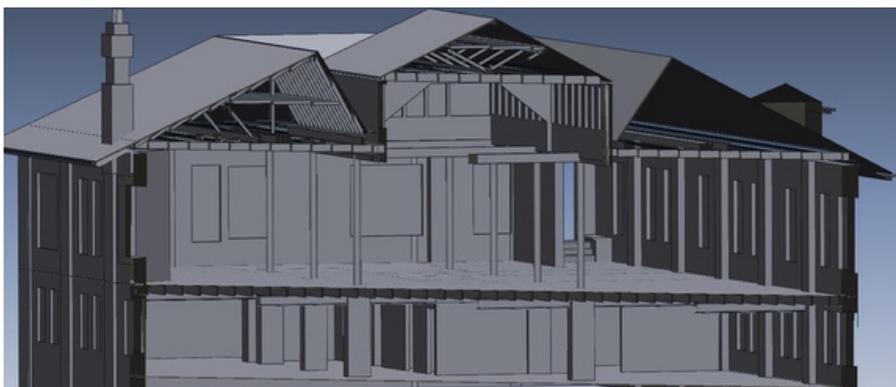
3D scanning a NSW factory enabled planned scheduling for major plant refurbishment.

- **Building Information Modelling (BIM)**

3D laser scanning quickly produces point cloud model data ideally suited for input into BIM applications. An accurate BIM model provides benefits throughout all stages of a project. Examples include:

- Feasibility studies
- Enhanced communications
- Seamless collaboration with contractors
- Accuracy in estimates and fewer variation expenses

Traditional survey techniques only create basic symbolic drawings, but with a 3D scanning approach everything visible can be captured.



Railway feasibility study. Entire rail corridor scanned (5kms totalling 4.6 billion points). Benefits extend beyond feasibility & design, it also included the evaluation of risk management processes.



Above & left image: 3D scanning captures the existing condition of a building. We supplied our customer with Autodesk Revit files for construction planning.



• Augmented & Virtual Reality (AR/VR)

Our ability to scan small intricate components to large buildings and everything in between, allows us to supply a range of digitised data that's used for virtual walk-throughs and simulations.

This same technology is also ideal in creating realistic video fly-throughs for marketing and cultural heritage applications for museums.



• 3D Printing

3D printing allows an architect to build a physical representation of a design quickly and in a time and cost-efficient manner.

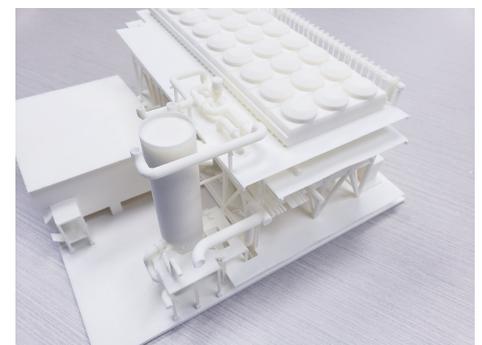
We're experienced in generating fine feature CAD files of scaled buildings suitable for 3D printing. This means we take care to increase any detail that may not replicate during the scaling process, such as pipework, window features or stairs.

Our large format 3D printers and finishing skills enables us to provide you with a detailed presentation model in full colour, translucent, grey or white materials.

GEOMAGIC
We sell what we use.

Geomagic by 3D Systems, is a leading suite of software for reverse engineering & inspection.

As distributors for the APAC region, we apply our product knowledge to help you make the right software choice.



Scaled architectural model of a processing plant containing complex pipework.





BENEFITS

1. Fast & Thorough

Other measuring technologies, such as coordinate-measuring machines and traditional surveying devices, only measure one data point at a time, making them tedious and time-consuming. Our 3D laser scanning can record thousands to tens of thousands of data points per second as the laser is moved over the surface of the object or terrain. Additionally, the greater density of data points collected results in a more thorough, detailed picture.

2. Accurate

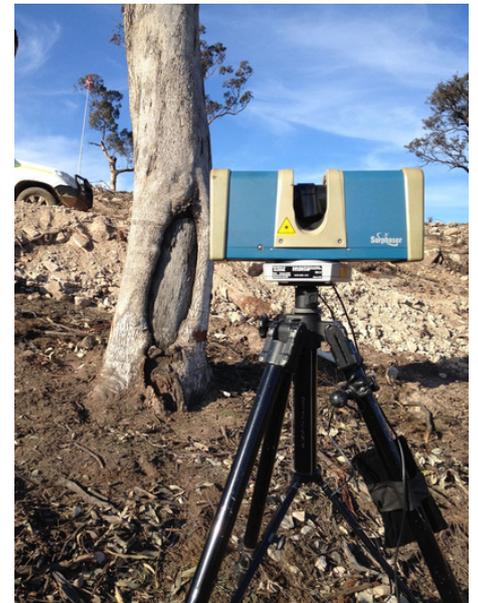
Our high level of accuracy helps ensure that measurements are correct the first time so that less work is needed to complete subsequent steps in design and production.

3. Non-Contact

Because 3D laser scanning is an optical-based technology, there is no need for the scanner to touch the object. This can be helpful when seeking to measure small, intricate, or fragile features that may be distorted or damaged when touched.

4. Safety

The portable 3D laser scanners used for surveying can record accurate measurements from any distance up to several hundred meters. This can help keep operators safe when they survey dangerous areas due to topography or toxic conditions. The speed of this technology also reduces the time that operators may be exposed to such conditions.



Digital scans and images of local landscape used in agreement with aboriginal community for heritage conservation.



About GoProto

GoProto ANZ specialises in a range of 3D scanning, prototyping and advanced manufacturing services dedicated to assisting you throughout all steps of the product development cycle.

Adhering to strict ISO industry standards we continuously monitor quality at every step of the production process, so our customers can be confident in receiving quality parts.

About WYSIWYG 3D: GoProto's 3D Scanning Division

Wysiwyg 3D has been providing 3D scanning services since 2003. In 2020, Wysiwyg 3D became part of the GoProto group, providing quality laser scanning, photogrammetry and 3D CAD modelling services.

The varying capabilities of our equipment makes us extremely versatile with the ability to scan people, artefacts, buildings, consumer products, machinery, tools, mines and boats.

Who Uses 3D Scanning?

- Power Plant & Facility Engineers
- Architects
- BIM Managers
- Aerospace & Defence Engineers
- Mould makers & Machinists
- Designers
- Archaeologist
- Art/Sculptures
- Transport/Rail Engineers
- Costume & Entertainment
- Museums
- Mining Planners

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