

High Density 3-D Laser Scanning



SGC Engineering—A Lloyd's Register Company

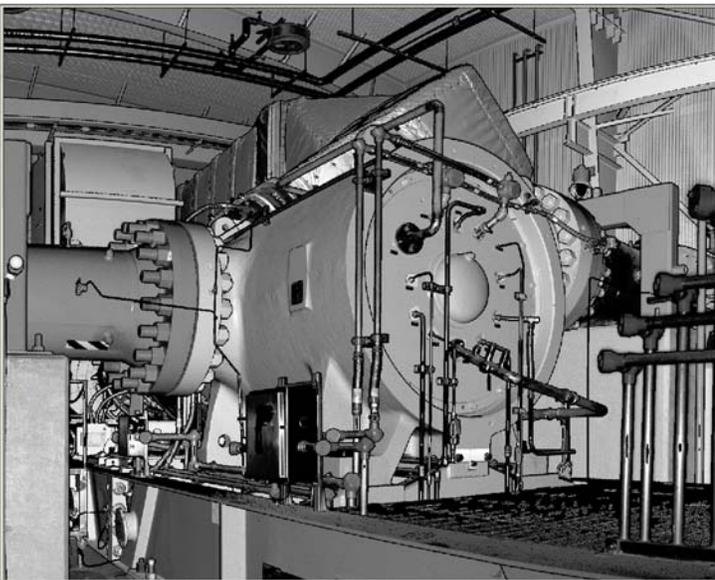
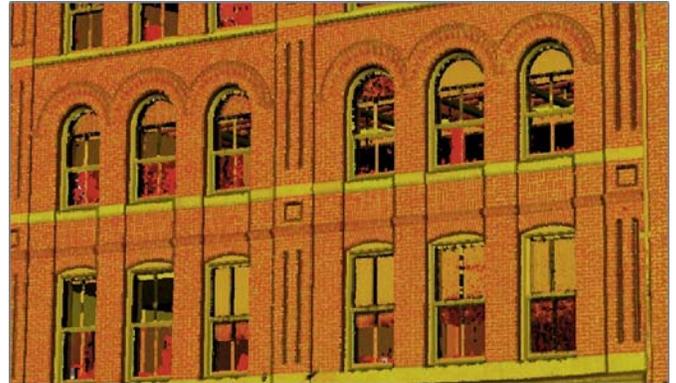
Committed to engineering your best solution:

Have you ever wished you could get an accurate, three-dimensional model of a complex assembly?

Capturing accurate three dimensional data of complex or inaccessible structures has always been a challenge for those in the design and construction fields. Traditional survey tools and techniques can often be time consuming and lack the level of detail required to support today's design requirements. The advent of HDS (High Definition Surveying) Laser Scanning has changed this. HDS scanning allows for the rapid capture of extremely dense "clouds" of three dimensional points that accurately define solid surfaces. These point clouds become the framework for developing highly accurate models that can be utilized by all commonly available engineering design software.

HDS Scanning Applications:

- Architectural as built surveys and modeling
- Crime and accident scene reconstruction
- As built surveys of inaccessible or hazardous locations
- Structural members for bridges, buildings, and supports
- BIM (Building Information Modeling)
- Mining or stockpile volume monitoring
- Accurate as built of complex electrical or mechanical systems
- Deformation monitoring



Mechanical assembly defined by dense point cloud

Case Study:

A natural gas transmission company interested in upgrading several compressor stations hired SGC to scan piping assemblies identified as candidates for modification. SGC was able to rapidly mobilize crews to each location, collect scanner data accurate to 1/8", and model each assembly as a 3-dimensional structure with piping design software.

When the as-built drawings prepared by SGC were compared with the company's own redline as-built drawings, discrepancies of over two feet in pipe lengths, location of valves, etc. were discovered. If the facility owners had based the new design from their in-house as built drawings, planned upgrades would not have fit.

The advantages of engaging SGC for your scanning needs:

- Extensive experience in rapid, cost effective geospatial modeling of complex structures.
- Ability to deliver data that seamlessly integrates with all commercially available design software.
- SGC has developed an in-house process for also capturing and associating metadata of scanned components. For example; serial numbers, make, model, and size for valves.
- Ability to mobilize anywhere in North America.