

TOPICS



April 2008

Laser Scanning Provides High-tech Surveying Tool for Energy Developers

Energy project development may not be as glamorous as Hollywood film-making, but special effects technology can help energy developers inject substantial value into their projects. Just as film-makers use 3D laser scanning to create scenes that mix reality with digital creations, land surveyors can use the technology to generate highly detailed models of complex energy project infrastructure.

A laser scanner records physical characteristics of an object by emitting a laser beam that bounces off surfaces, resulting in a "point cloud" of 3D data. The point cloud consists of a georeferenced X, Y, Z coordinate for every surface point touched by the laser. The data are extremely accurate, providing a strong foundation for design documentation and modification in instances where existing plans are incomplete, incorrect, or non-existent. In addition to its high level of accuracy, laser scanning is faster than traditional surveying methods. It can also improve the safety of survey work by allowing data points for dangerous or sensitive facilities to be captured from a reasonable distance.

Laser scanning enhances project value in diverse applications, ranging from structural engineering to mining operations to topographic mapping. It can be used, for example, to verify locations and dimensions of high-voltage wires, structures, and substations. This work can be crucial in the planning stages of transmission system upgrades that are often necessary for wind farm development.

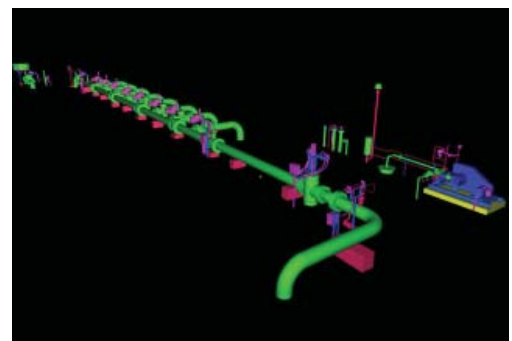
Similarly, pipeline developers can utilize laser scanning to document the compressor stations that exist along a particular route. Scans of the compressor stations can be performed with accuracies approaching sub-millimeter level, showing all pipes, fittings, and accessories as small as 5 millimeters in diameter. Such scans provide thorough digital records, allowing a seamless integration with the subsequent design steps of station modification. These scans also eliminate the need for additional site visits to capture data that traditional survey techniques may have missed.



Photograph of compressor station



"Point cloud" of 3D data generated by the laser scanner



Integration of data with design software

TOPICS



The speed, accuracy, and safety of laser scanning makes it the tool of choice whenever an energy project involves a structural feature that needs to be documented, designed, or engineered. Laser scanning saves time during project Pre-Design, improving the bottom line for energy developers.



For more information, contact
Jason Oberg, Project Surveyor
jason.oberg@westwoodps.com
320-229-2302

Solutions
for *your* **Success**
LAND · ENERGY



Westwood