

GSVCC Spotlight: Stahl Sheaffer Engineering Captures Reality to Enhance Future Design

Stahl Sheaffer Engineering provides site, structural, and transportation engineering design as well as survey and construction inspection in the Greater Susquehanna Valley and across the northeast US. The firm has invested in resources that enhance the value of these services, including an innovative technology for scanning and modeling project sites.



Reality Capture Technology

Stahl Sheaffer provides advanced 360° scanning services using LiDAR, a remote sensing method that uses light in the form of a pulsed laser to measure ranges. The resulting geo-referenced 3-D point cloud data can be used for projects related to streetscape, road, building, and bridge improvements as well as asset inventory mapping.

With a variety of LiDAR scanners, including both mobile and terrestrial units and the added mapping ability of a Matrice Mid-Sized Drone, Stahl Sheaffer can cover every reality capture situation with the appropriate tool to ensure the best match of speed, safety, and accessibility for the conditions, and the most appropriate data points for the application. Stahl Sheaffer can also create “intelligent” 3D models of the survey data. Project data can be imported directly into AutoDesk, Bentley, and ESRI software packages as an industry standard .LAS format for clients and used directly as if clients were on site to pull measurements, locations, and clearance information, saving time and money.

Design Applications

Our terrestrial scanners provide survey-grade ground-based laser scanning to collect high resolution LiDAR data and panoramic imagery to extract topography, traditional survey data, and 3D modeling information. The data can be used for Building Information Modeling [BIM], streetscape analysis, stockpile volumetrics, plant process modeling, underground tunnel and quarry mapping, road surface evaluation and modeling, overhead utility clearances, and bridge inspection and modeling.

Roadway Mapping & Conditional Analysis

Our survey-grade mobile mapping unit has a high resolution and extremely fast operating rate, allowing us to collect massive amounts of data at high speeds detailed enough for engineering design purposes. This enables us to perform more long range / high end mapping projects such as interstate corridor mapping and state highway survey contracts. It is accepted and approved by more than 30 state DOTs for use as a design tool on highway projects. The addition of a directional camera focused on roadway surfaces provides enhanced technology to assist in pavement condition analysis.



Stahl Sheaffer is the Next Century Reality Sponsor for the GSVCC Second Century Soirée and will be at the event with interesting perspectives on data collected during a 17-mile scan of the Sunbury and Milton streetscapes!

Survey, Inspections, and Basemapping

Using point cloud imagery with various levels of intensity provides the ability to show cracking, moisture or water seepage, elevation and depth, reflectivity and more. Figures 1 through 4 below show different point cloud intensity levels of the church on Front Street in Milton.



Fig. 1 – Point Cloud Image

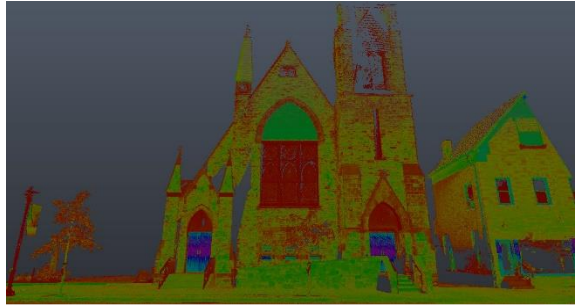


Fig. 2 – Point Cloud Image with Spectrum Intensity

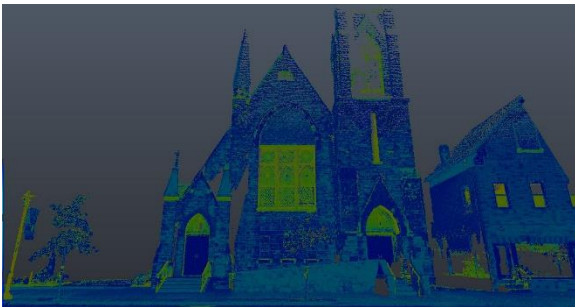


Fig. 3 – Point Cloud Image with Spectrum Intensity, Modified



Fig. 4 – Point Cloud Image with Grayscale Intensity

Overhead Clearances

The 3D data allows the site to be viewed and measurements to be made from any angle, supporting site design, architectural renovations, roadway upgrades, overhead utility determinations, and more.



Fig. 5 - Point cloud image of the Intersection of Market & Front Streets, Sunbury

Read more here: <http://www.stahlsheaffer.com/survey-reality-capture.html>

Stahl Sheaffer Engineering is a multi-discipline civil engineering firm with more than 100 employees and offices in Selinsgrove and seven other locations in three states.