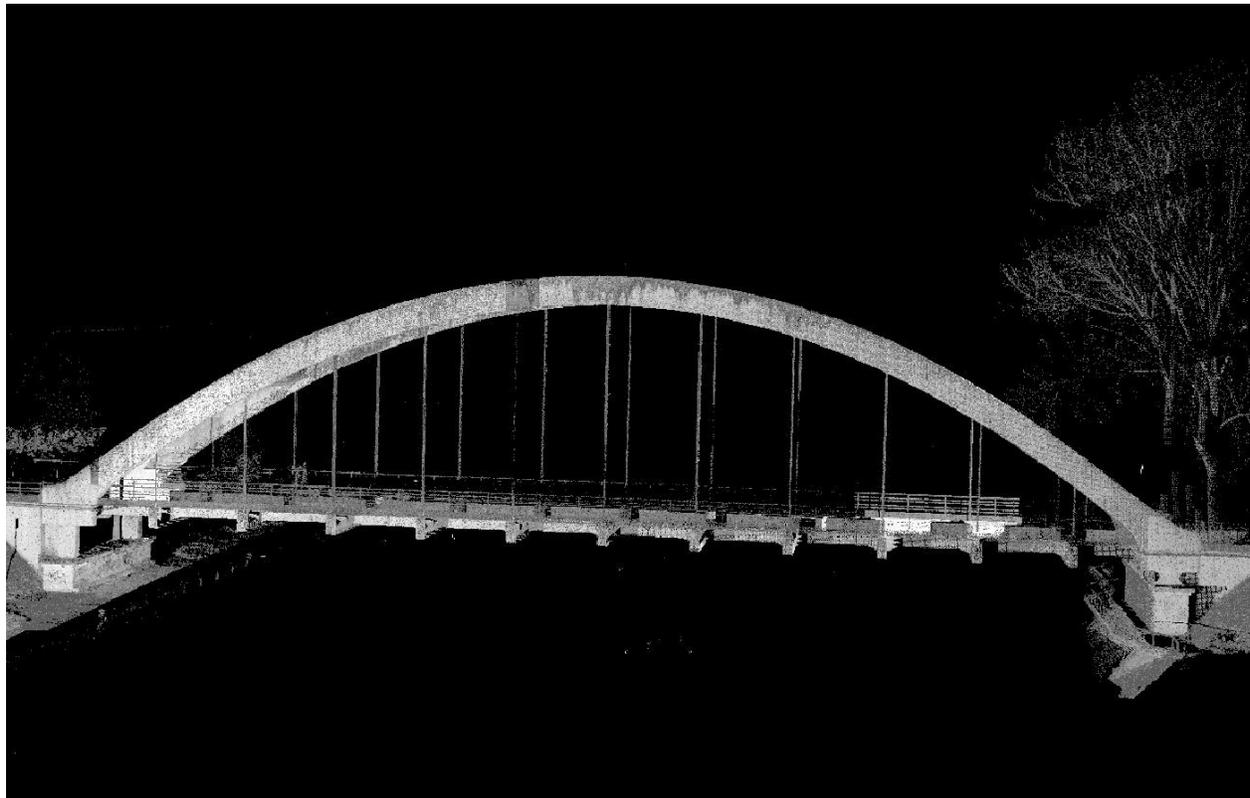


# VBMP Ground-Based LiDAR

## VIRGINIA BASE MAPPING PROGRAM

As an alternate means of terrain and digital image acquisition used to capture detailed, accurate 3D geometry, laser scanning technology captures more detail and is faster than traditional surveying methods. This technology has a 360 degree horizontal field view that captures digital images and dense point clouds. With its rapid acquisition method, prompt turnaround time, and higher accuracy rate, Sanborn delivers better data faster with the ground-based laser system. The instrument captures 3D point-clouds of natural features or man-made structures for core markets and applications.



Traditional methods of data acquisition, i.e., manual cataloging of assets, closing roadways to assess pavement condition, are more costly than mobile mapping when considering the cost of labor and processing data. Sanborn uses ground-based LiDAR for high-definition, high-accuracy mapping of any surface achieving 3cm to 5cm vertical accuracy with post intervals between 2" and 3" that can be used for transportation design, topographic mapping and asset management.

### Uses for Ground-Based LiDAR

- Civil Engineering and Transportation
  - As-built surveys
  - High accuracy/tolerance terrain mapping
- Structural Engineering and Architects
  - Building design for construction
  - Historical building preservation
- Mining and Landfills
  - Volumetric calculations
  - Cut, Fill, X-sections
- Airport Obstruction Analysis
- Process Engineering
  - Chemical
  - Refineries (gas and oil)

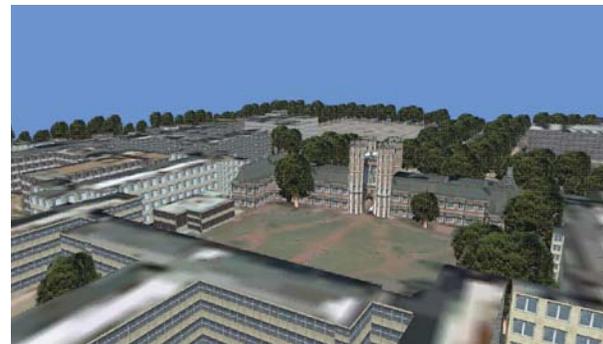
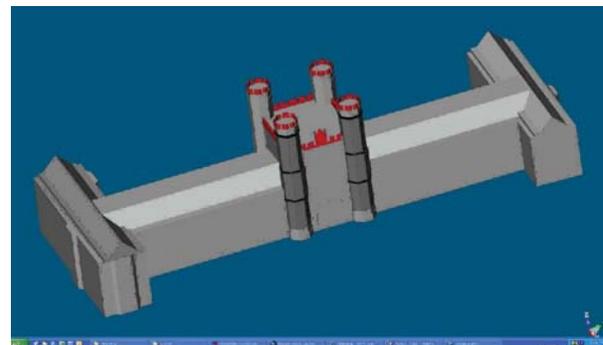
Combining kinematic GPS, Inertial Measuring Device (IMU), stereo imagery, video, and LiDAR collection provides robust datasets, and the data can be delivered in many image, GIS and CAD formats.

Additionally, the system can be equipped to collect video and/or 360 degree video. Assets such as cabling, signage, signals, etc can be extracted from the combination of the video and the LiDAR data. The system integrates with traditional LiDAR and image workflow. The LiDAR data can then be used for further feature extraction and surface generation.

**Mobile Mapping**

Sanborn's Mobile Mapping services include infrastructure asset management and LiDAR mapping. Public works, transportation, public safety and other entities use mobile mapping to acquire and characterize information vital to infrastructure management. The systems are most commonly used for LIDAR imaging, urban

asset collection, trackside inventory for rail applications, sign database construction and pavement condition assessments, right of way data collection, pole and transformer inventory and property assessment for taxation records, and 3D buildings.



Combining airborne LiDAR (top left) with Ground Based LiDAR (top right) can produce street level complex 3D buildings. Sanborn can filter the scan data and generate CAD linework of the facade, building surfaces, building models, and pixelized images.

Pixelized images are generated by rectifying an image over the LiDAR data. This differs from an orthometric rectified image in that it creates pixels that are placed on the TIN surface. This provides a full 3D image. This creates a building model that looks very realistic.

Street level complex 3D buildings can be created from the combined airborne and ground LiDAR to create complex solid textures. These complex solids can be used to texture the buildings resulting in a complete 3D building model of a building as shown above.

**About Sanborn**

With a rich tradition of mapping dating back to 1866, Sanborn provides comprehensive end- to-end geospatial solutions. Sanborn offers products and services that satisfy diverse and evolving customer needs for GIS software systems, application development, systems integration, and spatial analysis and modeling. Leveraging precision remote sensing techniques, Sanborn also supports a wide

range of applications and users. Sanborn's solutions are founded on a strong legacy of innovative geospatial data collection and processing capabilities. An internationally recognized company, Sanborn has multiple U.S. offices with customers worldwide. For more information, visit [www.sanborn.com](http://www.sanborn.com).