



Terrestrial Laser Scanning Introduction and Demonstration

SCOTT D. HAMSHAW, P.E.

06.10.2016

Terrestrial Laser Scanner (TLS)

Also referred to as Terrestrial LiDAR

Near infrared laser

> 100,000 measurements/second

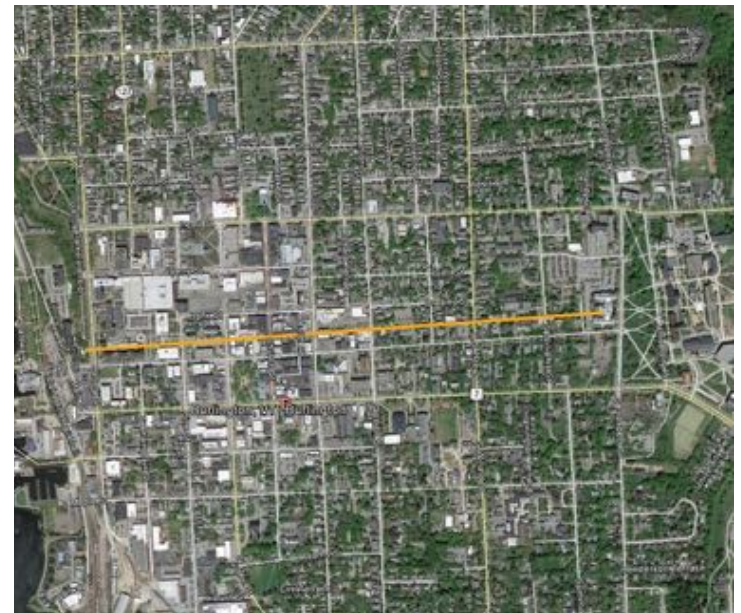
Integrated GPS and digital camera

Typical scanner ranges:

- Min. range between 0.1 m – 5 m
- Max. range between 300 m – 6,000 m

Typical performance:

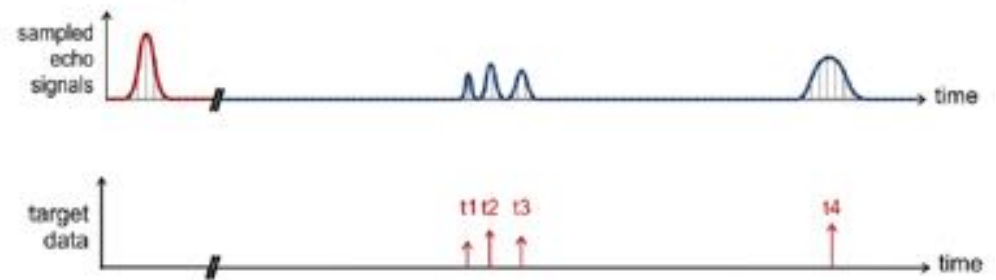
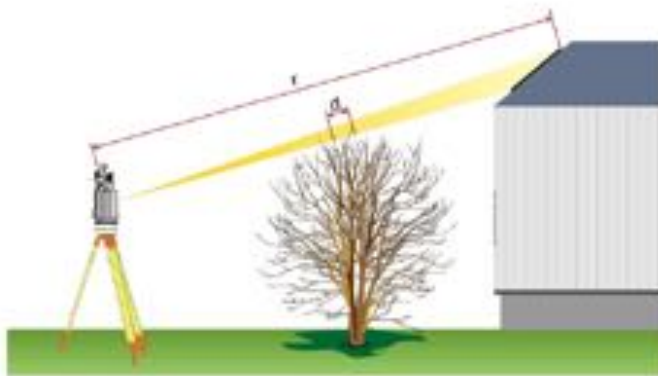
- Accuracy: 8 mm
- Precision: 5 mm



Burlington, VT

Terrestrial Laser Scanning

Produces true color 3D point cloud of measurements



Data Processing and Output

Manufacturer software provides post-processing of data with different filtering algorithms

Output data directly from processing software as point cloud, TIN surface, or DEMs

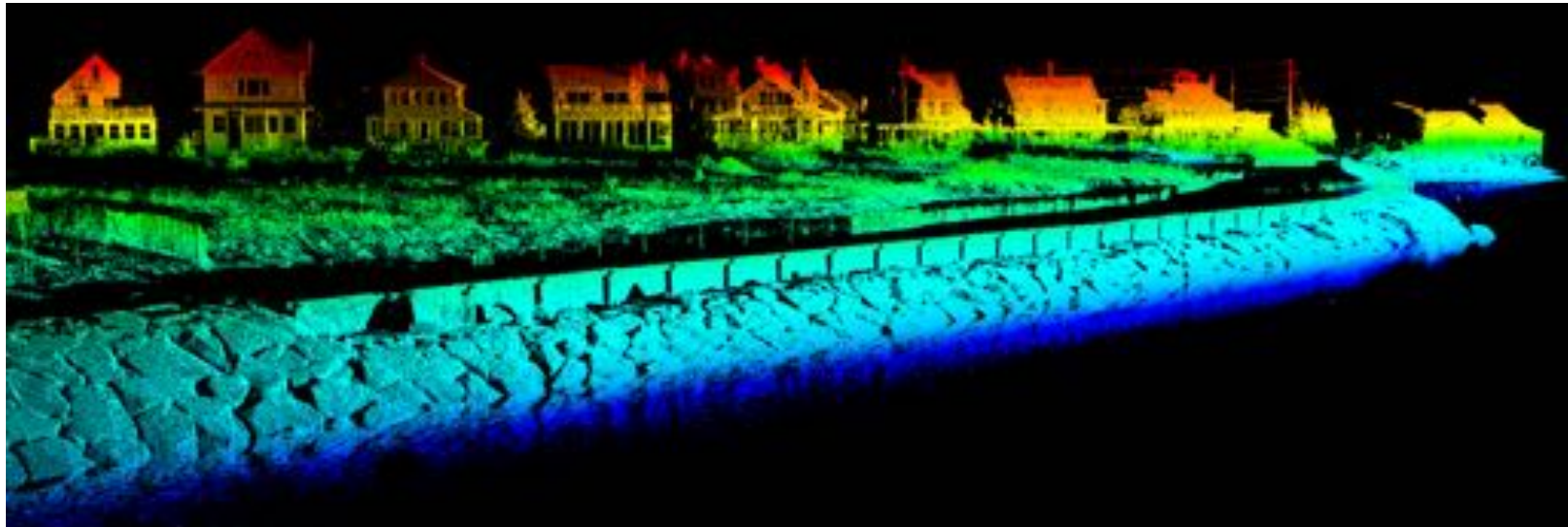
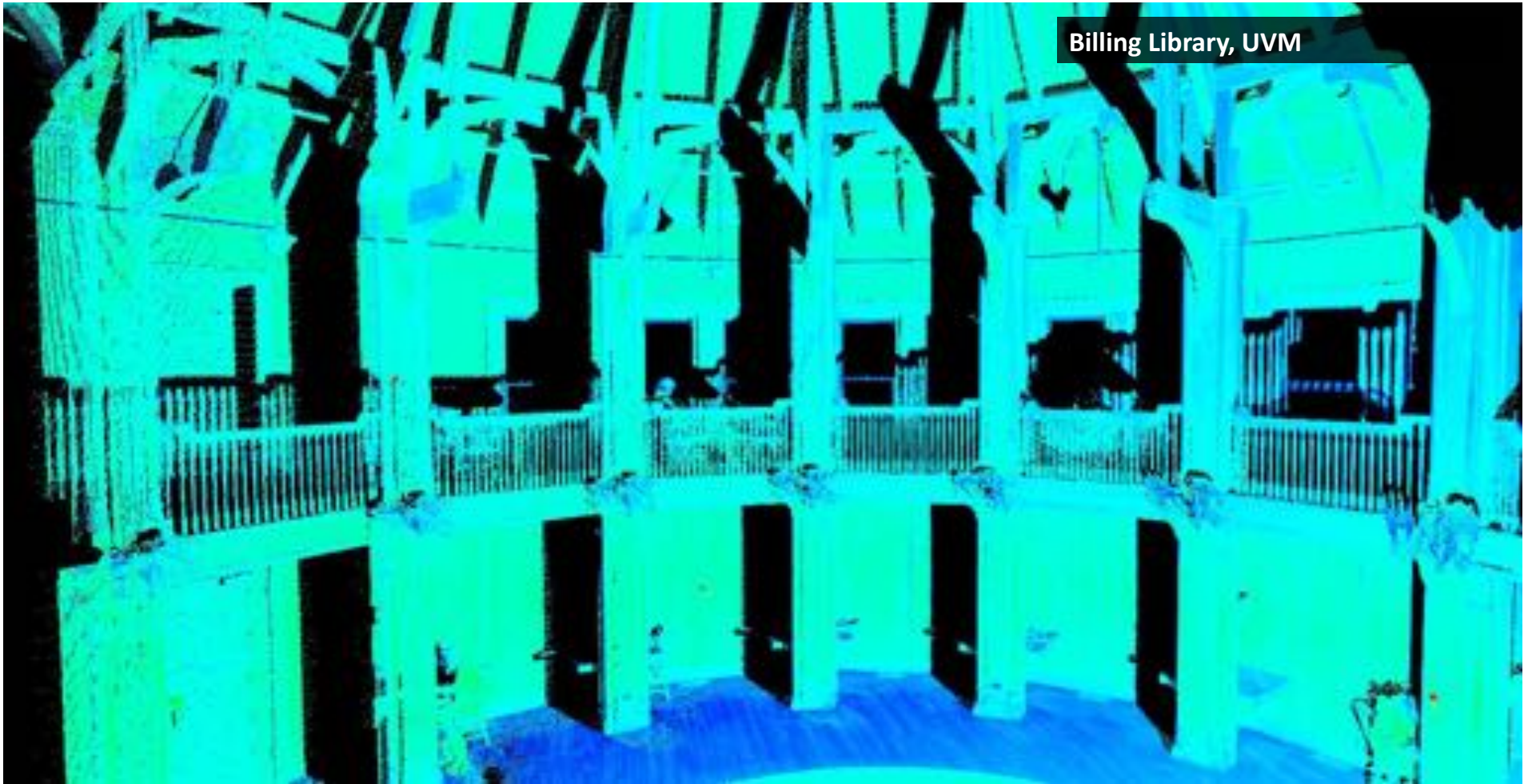


Image courtesy of RiegI

Billing Library, UVM



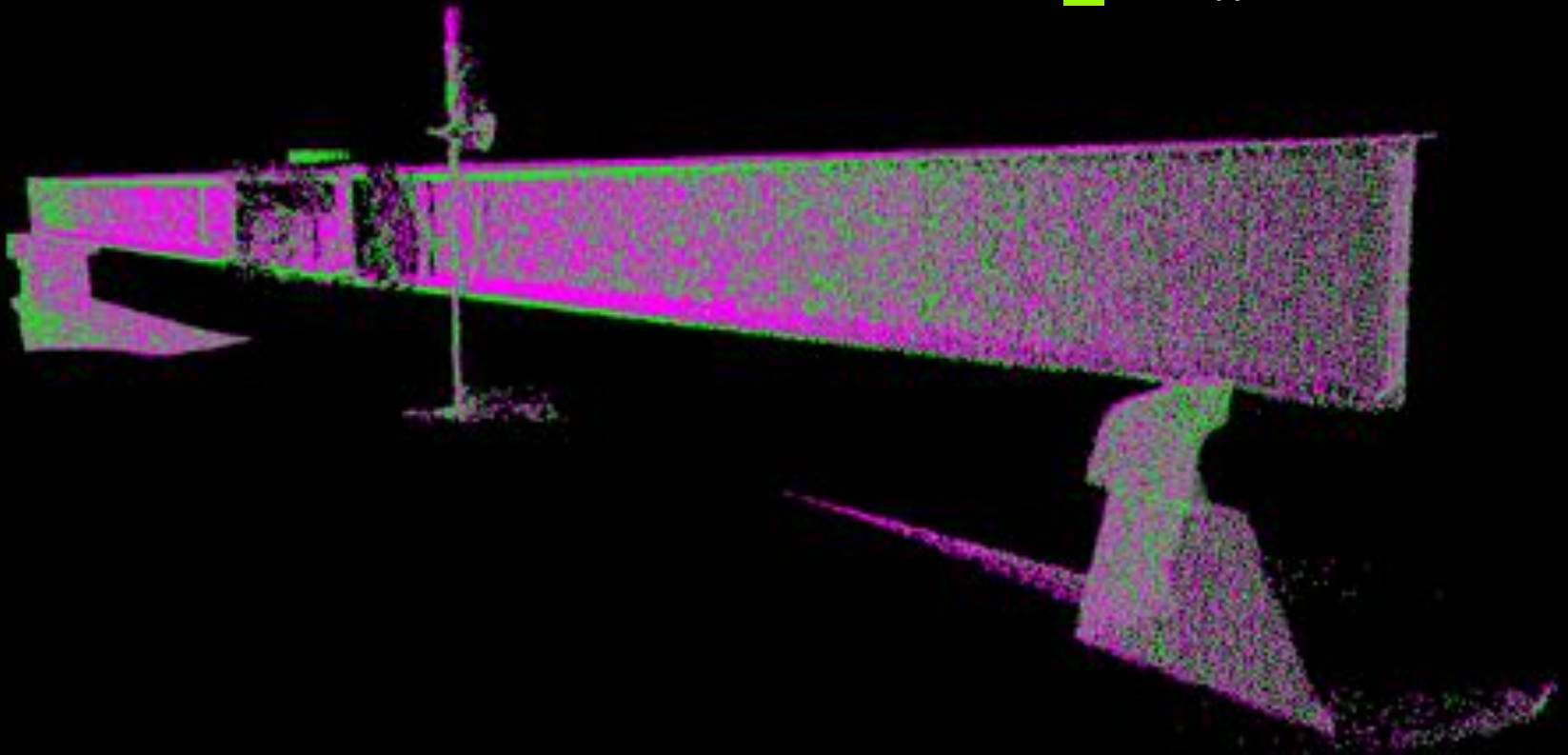
Billing Library, UVM



Steel Beam, UVM Structures Lab

Unloaded

Load Applied



Fleming Museum, UVM



Quinlan Covered Bridge Abutment, Charlotte, VT

