

# Bridge Survey and Inspection

LandScope Engineering has developed versatile solutions that address the numerous challenges of bridge survey and inspection. This includes the integration of the latest sonar technologies, our autoMAP mobile mapping system, terrestrial laser scanning and photogrammetric imaging.

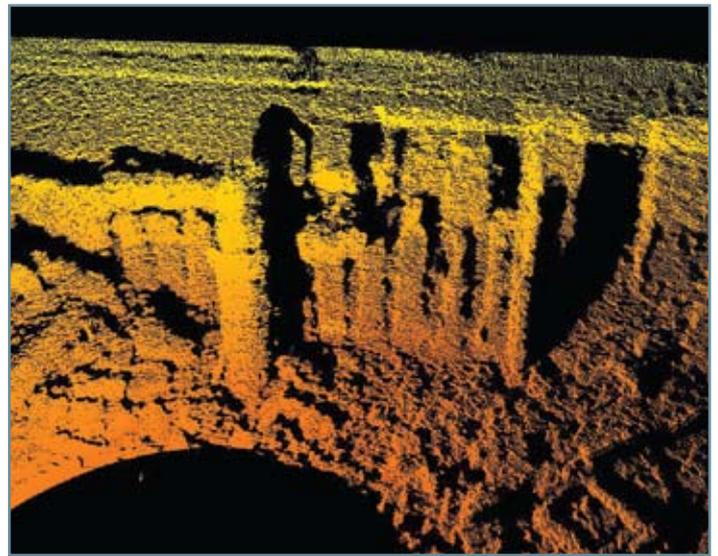
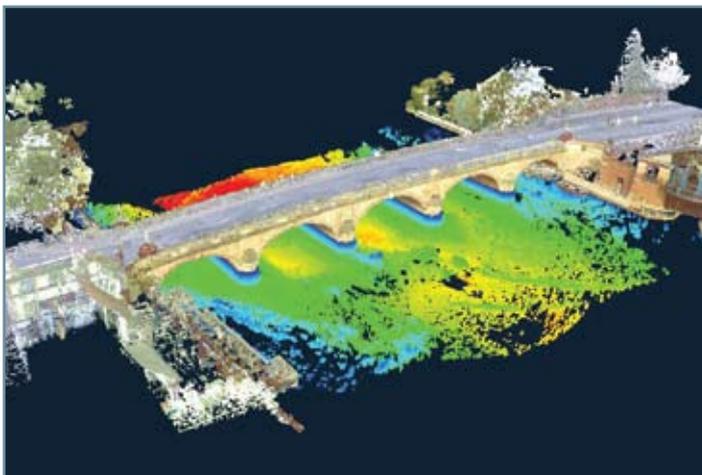
## Applications Include:

- Scour and Undercut Evaluation
- Structural Survey
- High Resolution Photographic Survey
- Geophysical Survey for Condition Assessment
- Movement and Deformation Monitoring

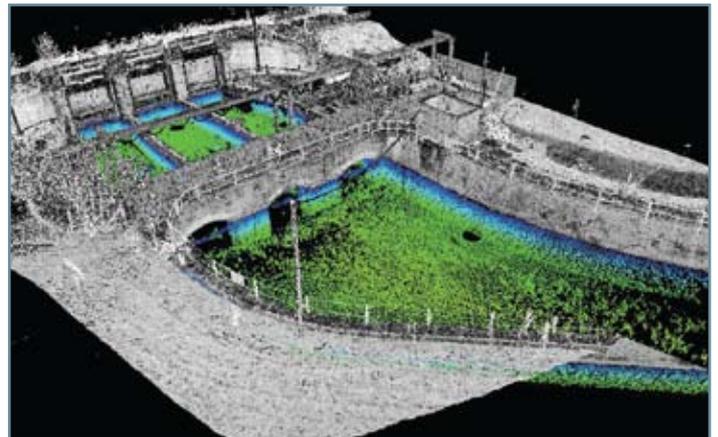
## Detailed Underwater Survey

Using the latest 3D multi-beam based sonar systems, such as the Teledyne BlueView system, LandScope is able to acquire point cloud data beneath the water line. The resultant resolution and accuracy of the data - even in turbid, fast flowing water - provides for greatly increased detail either as a complementary or a replacement service to the traditional diver based inspection. The bridge asset engineer or inspector is able to visualise the full underwater condition, identify any anomalies and quickly quantify areas of scour or accretion.

Underwater point clouds may be readily integrated to above water laser scan or photographic datasets to provide the ultimate detailed reference for bridge inspection.



A single underwater survey may provide invaluable data on structural defects – as with the sheet piling and outfall pipe above. It may also identify any obstructions or hazards to navigation, provide bathymetric plans and sections and give an insight into river bed stability and identifying scour, undercut and erosion.



Given all data is accurately geo-referenced to Ordnance Datum subsequent underwater surveys can easily model change – providing a measure of the dynamic nature of the underwater conditions. Such an approach facilitates risk categorisation of each structure and assists with design of the survey and inspection programme.

Additionally, traditional sidescan sonar and single beam echosounders may be deployed.

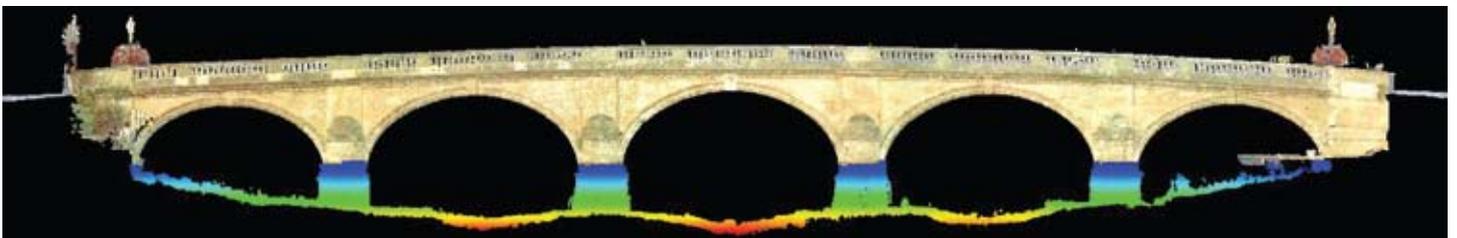
## Above Water Survey

LandScope offers either terrestrial (static) based laser scanning and photographic systems or a mobile mapping based solution. In each case, the LiDAR and photographic datasets are accurately geo-referenced to ensure maximum possible value is derived by end users.



3D laser scanning systems may be deployed from the bridge, adjacent banks and even pier structures to provide the highest resolution and highest order accuracy 3D LiDAR models.

The autoMAP mobile mapping system deployed on a small survey craft or RIB offers the ability to acquire LiDAR and photographic datasets in less accessible areas such as in and around piers and the undersides of bridges.



## Structural Survey - GPR

LandScope specialises in non-destructive investigation using Ground Penetrating Radar (GPR) to assess structural form and condition.

Our GPR survey service can be used to identify:

- Bridge Deck Structure
- Steel Element Distribution – incl. Reinforcing
- Voids and other Defects
- Conduits, pipes, buried cables and other anomalies

Applying the GSSI BridgeScan system, GPR can also provide a non-intrusive, accurate condition assessment of bridge structures.



Related Inserts Available

<p>autoMAP</p>	<p>Monitoring Structural Movement</p>	<p>3D Scanning &amp; Monitoring</p>	<p>Hydrographic Survey</p>	<p>Land Survey - Geomatics</p>
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