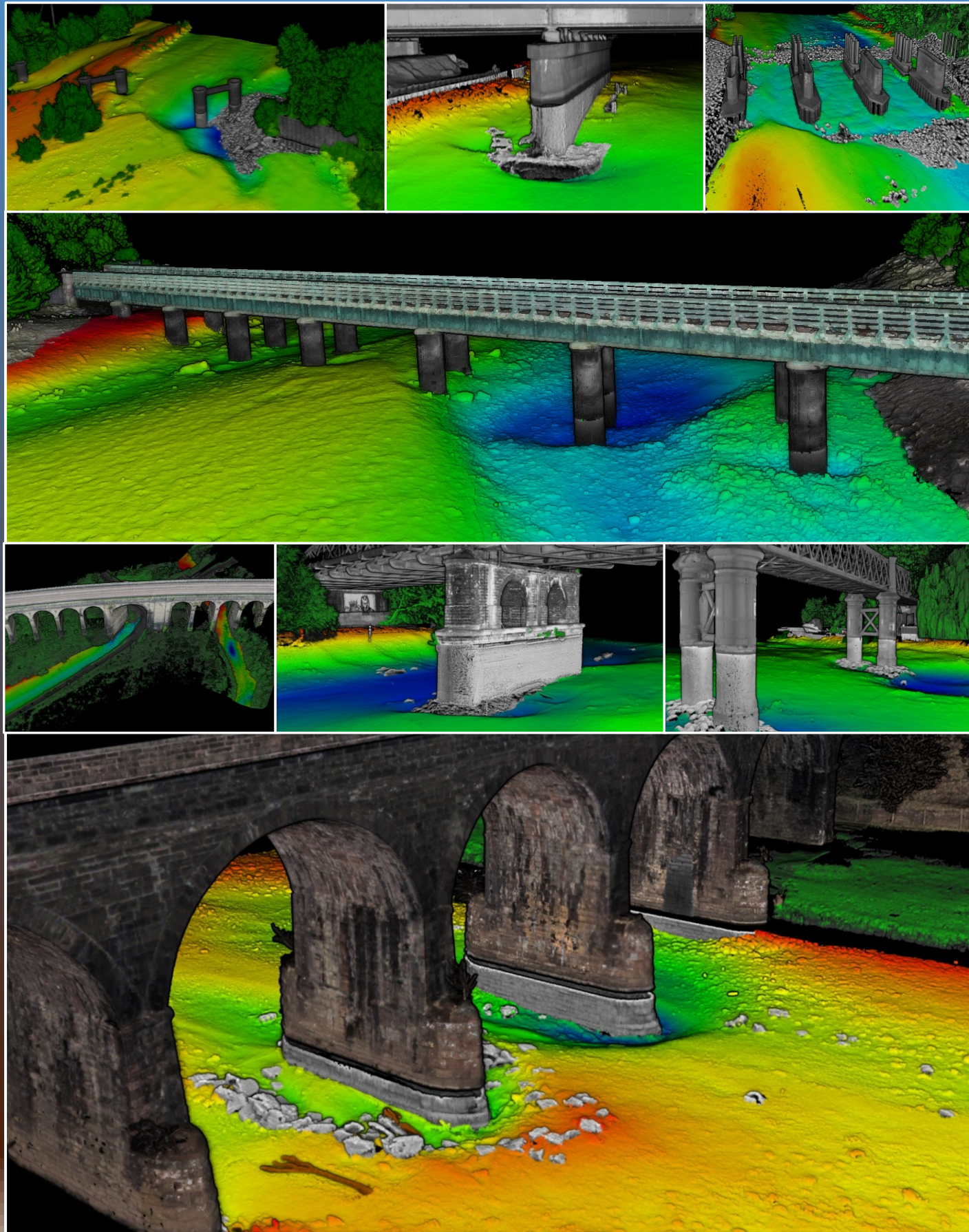


3D Above & Below Water Bridge Surveys

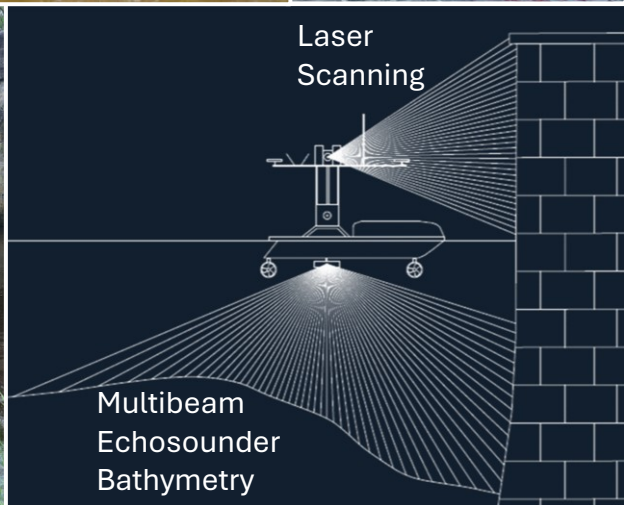
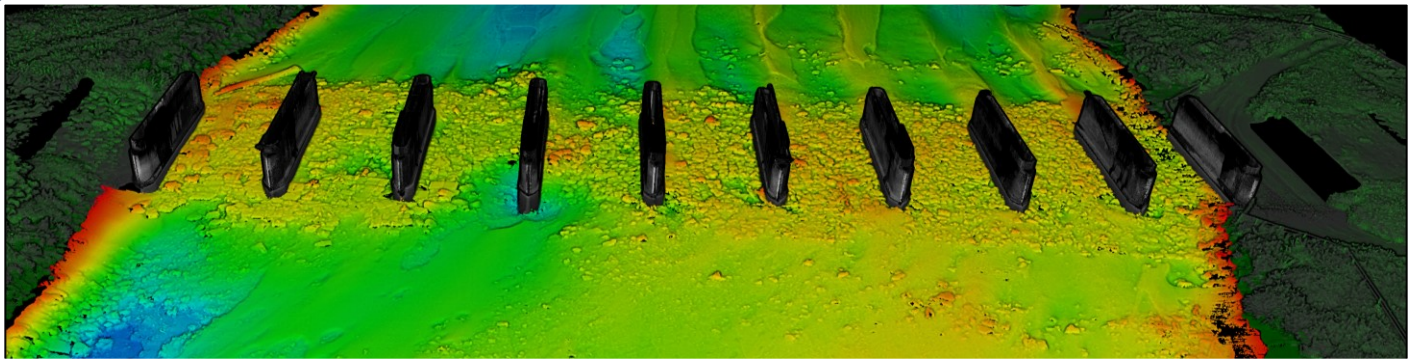


ultrabeam
HYDROGRAPHIC

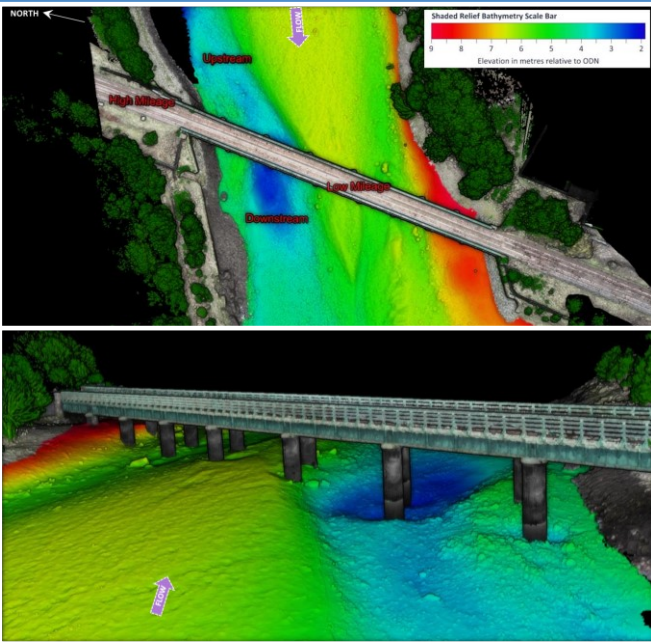
Summary

- Fully geo-referenced, high density, 3D point cloud surveys. Above and below water at Network Rail and National Highways bridge structures.
- Laser acquired above the waterline. Multibeam Echosounder Bathymetry acquired beneath the waterline.
- Often used by Network Rail to provide the underwater measurements within UWE's.
- Can be used to provide rapid response, post flood event data on riverbed scour.
- Over 150 structures surveyed over the last 3 years.
- Typical cost: £Please refer to associated email comms* per structure (all inclusive mob, operations, demob, processing and reporting).

**Note, all structures are costed on a case-by-case basis, dependant upon structure size and days required to survey. Vast majority of structures are surveyed within 1 day. Some very large estuarine crossings may require 2 days.*

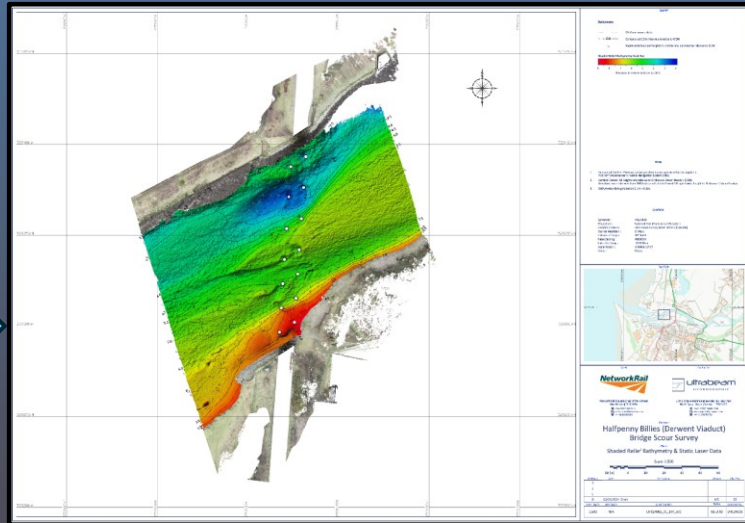


Some Possible Survey Outputs

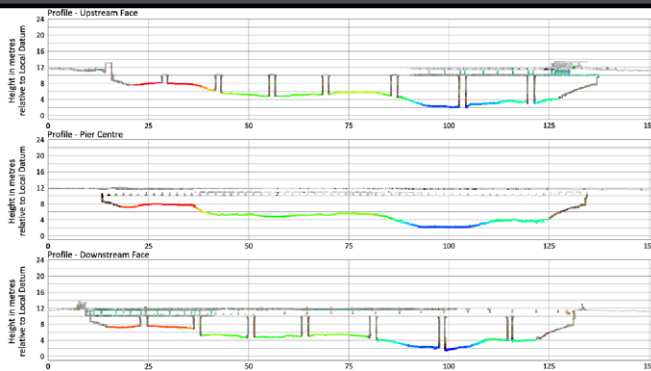


← Fully geo-referenced, high density, 3D point cloud model.

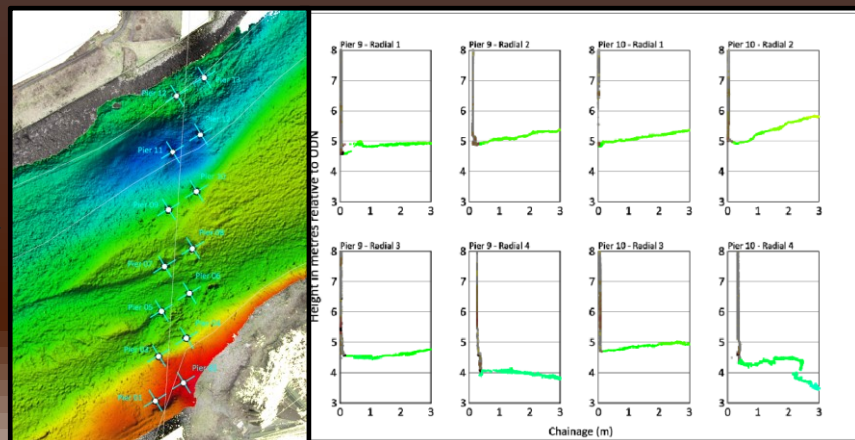
Riverbed levels charting. →



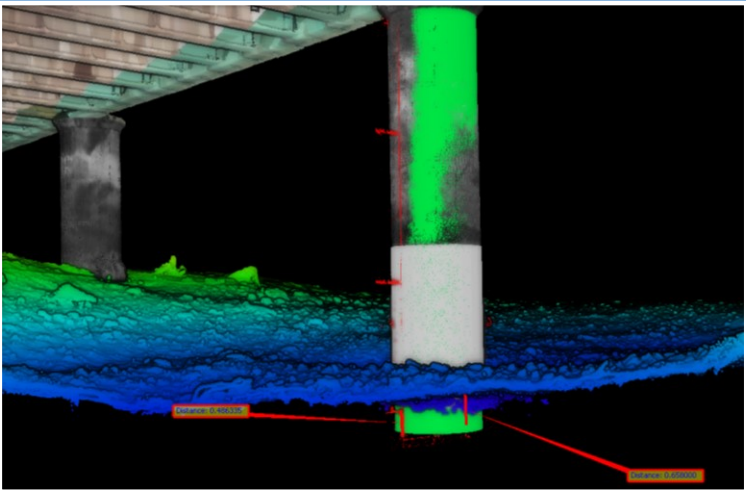
← Riverbed cross sectional profiles.



Pier Radial profiles. →



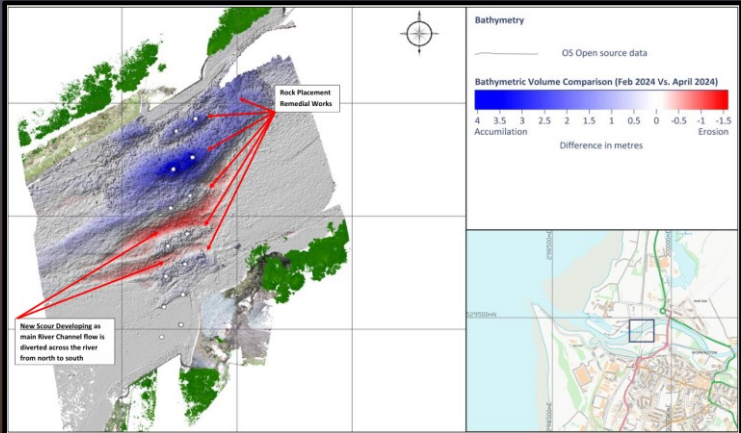
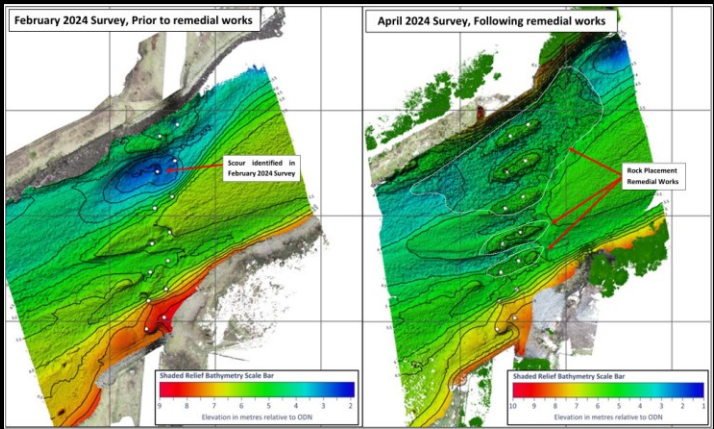
Some Possible Survey Outputs (continued.....)



Inclusion of the as-built drawings of the bridge structure into the 3D model, in order to understand pier foundation depth.



Direct comparison of successive surveys.



Riverbed change analysis. (showing erosion in red, deposition in blue.)



Direct comparison of successive profiles.

