

UAV Survey and Inspection

LandScope Engineering offers a comprehensive aerial survey service through the use of Unmanned Aerial Vehicles (UAVs).

As the use of UAVs / drones accelerates in all manner of applications, LandScope considers employment of basic survey principles as the critical success factor in ensuring survey deliverables meet accuracy and quality objectives.

Depending on the survey objective and size of acquisition area, LandScope utilises both fixed wing - with built in RTK / PPK functionality - and multi-rotor UAV's to produce highly accurate, high resolution imagery and data.



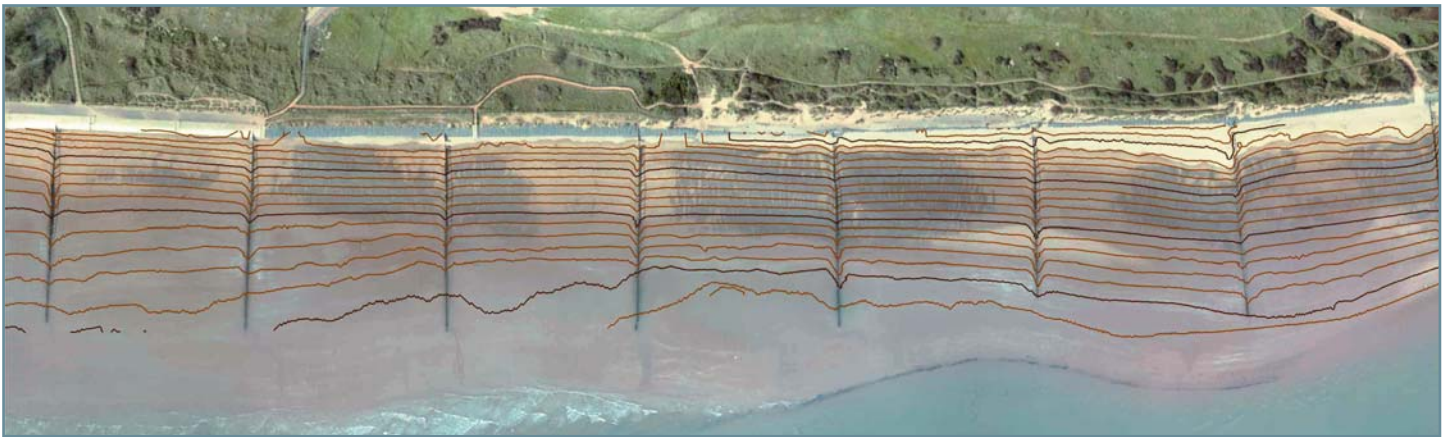
UAV Survey

A UAV survey may be commissioned rapidly and safely. Our UAV partners are Civil Aviation Authority (CAA) approved, insured and licensed.

The UAV field survey incorporates a predefined flight plan and an appropriately planned ground control campaign. Depending on the survey objective and type of UAV deployed, the ground control campaign consists of a series of permanent and temporary reference plates which are accurately fixed and measured on the ground. These plates are used to constrain any positional distortion caused by factors such as UAV aircraft rotation or camera position - ensuring the best possible accuracies are achieved.

UAV survey campaigns are referenced to established survey control networks - working from whole to part - to constrain and validate the imagery and subsequent derivative data sets.

Other factors taken into consideration are optimal weather conditions and, in any *soft* areas, field cover (vegetation density and height).



There are far ranging benefits of employing a UAV survey:

- ✓ Non-contact measurement allowing full coverage in often highly inaccessible locations
- ✓ Provision of high resolution ortho-rectified and aerial photography
- ✓ Creation of high resolution Digital Surface Models, Digital Terrain Models, LiDAR, TIN and BIM Models
- ✓ Single campaign allows for the creation of visualisations, volume calculations, analysis, monitoring and inspection
- ✓ Rapid data acquisition capable of mapping large areas, both urban and rural

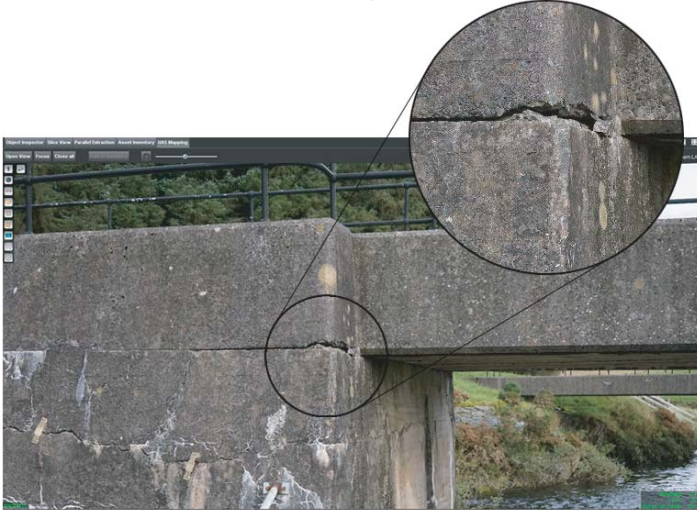


In order to maintain our market leading position in UAV survey and inspection, LandScope has a strong focus on deployment of the latest UAV services, working closely with established UAV partners - Blades Aerial Surveys and DM&S.

UAV Inspection

LandScope has developed a bespoke UAV solution specially tailored to address survey inspection and visualisation needs on structures located in challenging and often inaccessible locations.

These UAV solutions may be readily customised with a top mounted camera for close range, high resolution image capture and photogrammetric techniques. This is ideally suited for the underside of bridges, particularly where flood damage has caused instability, and dam faces where the use of this technology provides a detailed, cost-effective and safe alternative to extensive scaffolding, work platforms and rope access. Adopting these innovative approaches ensures essential condition monitoring and defect inspection programmes are carried out efficiently.



Additionally the survey platform may be fitted with a number of camera sensors i.e. Natural Red, Green and Blue (RGB), Near Infrared (NIR), thermal and multi-spectral.

Integrated UAV Solution

LandScope are well placed to serve UAV derived data as an integrated solution to augment traditional topographical and mobile mapping projects, particularly where efficiencies may be obtained over large areas.

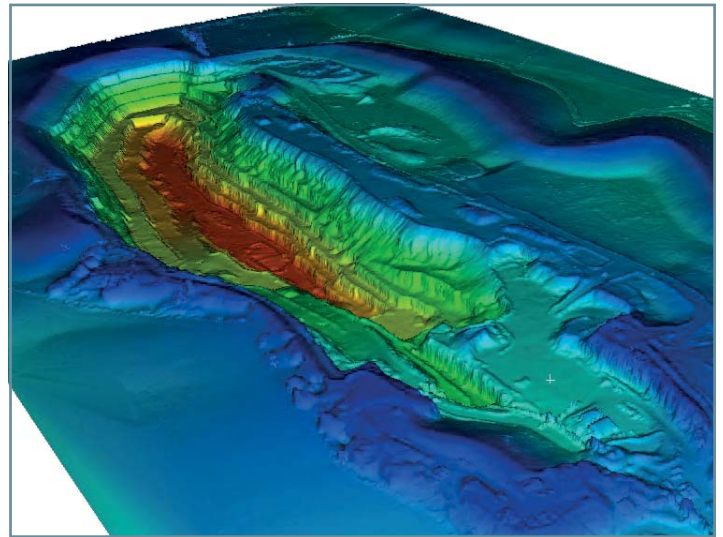
Integrating terrestrial mobile LiDAR / photogrammetric campaigns with ortho-rectified and aerial photography produces seamless models capable of importing into existing CAD systems and other powerful mapping systems such as Orbit Geospatial UAS. Using such applications will provide the opportunity for further analysis and interpretation.



LandScope has developed the UAV service as a tool to aid bridge and dam inspections and visualisations with the ability to integrate datasets from above and below the waterline providing compelling 3D models.

Applications Include:

- Large scale routing projects - pipeline, overhead cable, highway feasibility, rising main
- Quarry and Stockpile Surveys
- Bridge, Dam and Flare and Stacks Inspections
- Windfarm and Marine Renewable Energy
- Flood Risk Assessment and Modelling
- River and Coastal Modelling
- Vegetation Management Programmes (VMPs)
- Electronic Airport Layout Plans (eALPs)



Related Inserts Available

3D Scanning and Modelling



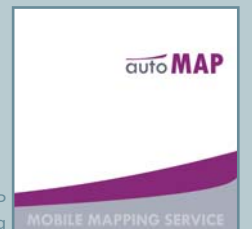
Bridge Survey and Inspection



Hydrographic Survey



autoMAP Mobile Mapping



Midlands & Northern Office
Shrewsbury

Southern Office
Romford

South West Office
Plymouth

01694 731930 www.land-scope.com enquiries@land-scope.com