



# TEXO TALK

MAY 2021



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What We Do

## TEXO DSI



TEXO's survey division, TEXO DSI, is a UK leader in aerial survey and inspection. Our multi-disciplinary survey team is at the forefront of innovation, blending traditional surveying skills with state-of-the-art technology and remote sensing techniques.

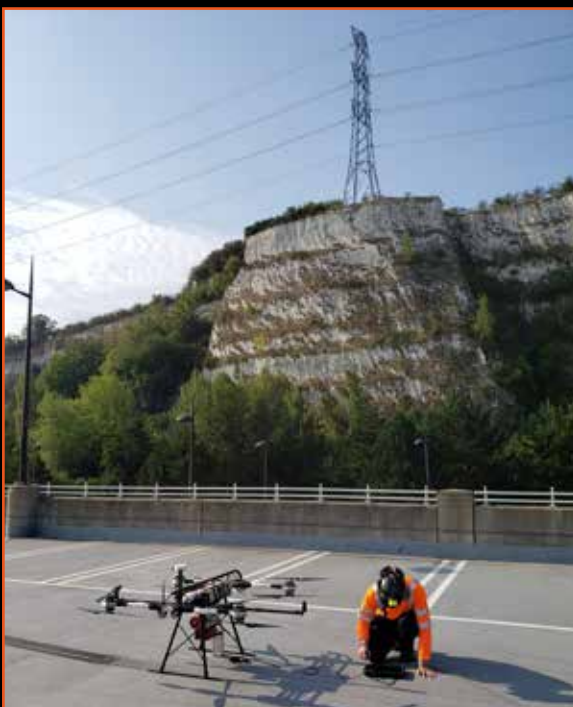
TEXO DSI captures precise survey data by integrating the latest survey and inspection technologies, with our advanced fleet of unmanned aerial platforms and ground-based equipment, reducing health and safety risks and avoiding project downtime.

We offer a wide range of ground-based and Remote UAV Survey techniques and solutions. Our experienced engineers work closely with clients, selecting the right technologies and tailoring surveys to deliver exactly what is required.

Due to rigorous safe operating procedures and training, TEXO DSI have secured some of the most expansive permissions for operating drones in the UK. Our dedication to safety allows our CAA-approved surveyors to fly up to 2m from the public, 2000m away from the pilot and even drones weighing up to 55kg.

TEXO DSI operate across every sector imaginable, including oil and gas, nuclear, rail, highways, construction, utilities, mining and many more. Our team are constantly working on new solutions, keeping us at the forefront of technology and service delivery.

- ◀ Over head line LiDAR scanning
- ▼ Acid Mine Drainage mapping with Hyperspectral camera



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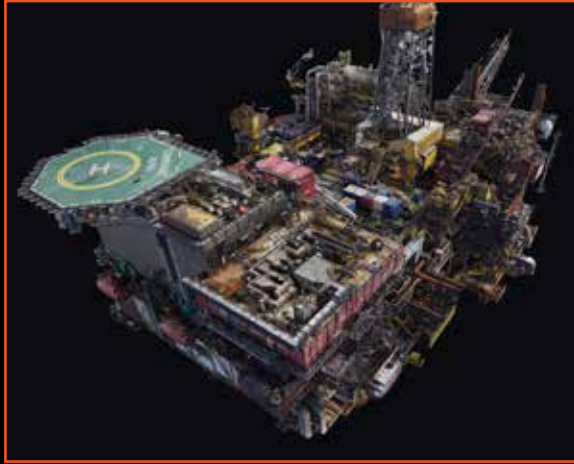
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## Examples of TEXO DSI projects

Offshore Turbine Jacket inspections



3D Model of Offshore asset



Night work in central London for thermal survey



Team onsite inspecting power transmission towers



Inspecting the oldest gas storage tank in the UK built in 1829



## TEXO DSI

### Case Study: Hastings Castle

The project involved the inspection and survey of the historically significant Hastings Castle. The castle was initially sited at the location in 1066 by William the Conqueror and is a key turning point in the history of the British Isles.

Hastings Council has been ahead of the game when it comes to adopting new technologies to help them plan. We had previously worked with this client, surveying cliff faces for erosion planning. This latest project involved multiple stages of delivery, starting with documenting the existing castle walls.

The castle had been suffering from undermining of the historical structure from wildlife, as well as the identification of potential cave systems which the council had no information as to their extent and the condition of them. TEXO DSI were approached to supply a solution to tackle all these issues, and supply information to shape the councils plans with this historical landmark.



### THE SOLUTION

The team initially conducted laser scans and photogrammetry of the castle walls to develop an interactive point cloud and 3D model of the structure. The use of drones enabled all areas to be captured both within the grounds at height and the faces of the wall atop sheer cliff faces.

From here, the larger scale cliff structure was captured to understand the geotechnical factors the castle was resting on. To do this, we deployed our survey grade LiDAR system to map the site. This enabled the cliff surface to be captured under vegetation, as opposed to traditional scanning technology and photogrammetry. With the vast amount of data captured, the model allowed for small geological features to be observed and all the supporting brickwork that had been installed to prevent weathering to cliff face in key areas.

The final issue for the team to tackle was the interlinked undermining of the castle walls, and the unexplored cave systems present in the 45m high sheer cliff face. The team deployed an inspection UAV to conduct visual inspections of the undermining occurring atop the sheer cliff walls, to enable the client in identifying its extent, severity and aid in installation of any required remediation.

The caves presented the greatest challenge. Aided by rope access teams, a small opening was created 20m down the cliff within the protective walls. The team then deployed an internal UAV and flew into the opening to explore the cave system. As part of the scope, the team needed to model the visual data initially and assess the extent of the cave. From this, the decision could be made if it was safe for manned entry.

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## THE RESULT

The internal footage was reviewed and then used to generate a 3D model. The cave was deemed safe, and the client could see exactly what the spaces looked like – precise sizes of the internal areas, crawl spaces and entrance points.

Returning to site, the team safely scanned the entire cave system with SLAM technology.

This led to the team being able to pair the internal scan with the external scan of the whole cliff area. This gave the client an accurate model so that they can see where the cave system is in relation to the surface. This information, along with the detailed visual images, allowed Hastings Council and Historic England to plan for conservation of this historically significant site.



## TEXO Team Player Of The Month



### Patrick Rowe

TEXO DSI – Survey Technician  
& UAV Pilot

Patrick has been a key team member of site and processing activities for almost two years within our survey division - TEXO DSI.

He holds expertise in BIM model production, laser scanning, topographic survey and UAV photogrammetry. Patrick has successfully worked on LOD300 Revit Model's of listed heritage structures, scanning of nuclear facilities, and mobile mapping of carriageways using our world leading LiDAR system to name but a few.



*Pat's expertise in REVIT modelling and Laser scanning have helped drive our services towards the standard of excellence our clients now expect. His work ethic and drive to learn is clear to see and he is a valuable asset to any project that he is involved with. We are looking forward to helping Pat expand his skillset, especially in the UAV sector, with so many exciting projects on the horizon"*

– **Jonathan McDaid**, Operations Manager





WORKSPACE  
SOLUTIONS



ENGINEERING  
& FABRICATION



ASSET  
INTEGRITY

**TEXO**

TOGETHER WE ARE ONE



RECRUITMENT



LAND & AERIAL  
SURVEYS



PORT  
SERVICES