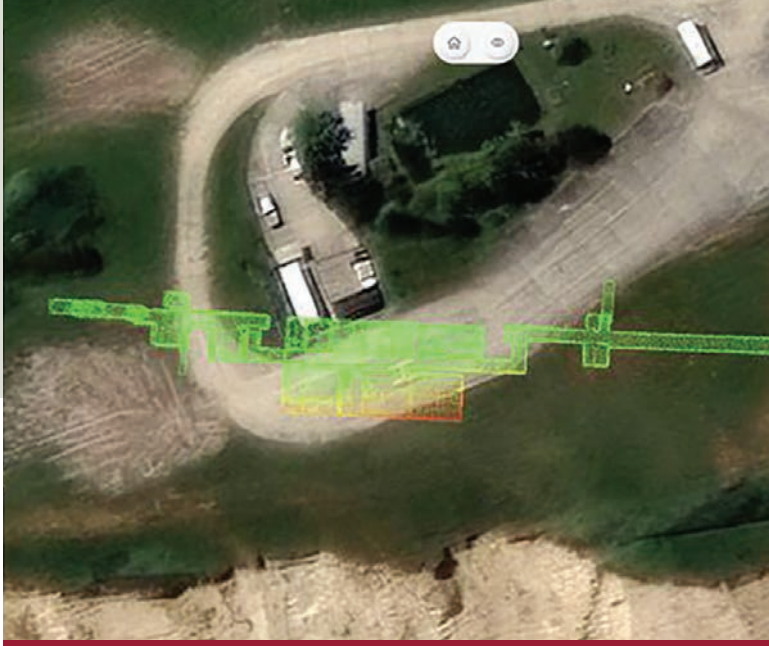
KOREC™

CUSTOMER
Norfolk land owner / Departure Lounge Media Group

PROJECT
Placing an underground bunker in context

SOLUTION
Soarvo software and data from a range of geospatial sensors



Bunker classified and colourised by distance to cliff in Soarvo

When context is everything

How GeoDrone Survey helped a landowner pinpoint the exact proximity of an underground bunker to the Norfolk coastline thanks to Soarvo, a powerful cloud-based platform for managing and visualising geospatial data.

During the Second World War, many bunkers were built across England, often underground, to serve a range of purposes from coastal defence and civilian protection to housing early-warning radar systems. One such structure lies beneath a private garden on the Norfolk coast.

As a responsible landowner keen to look after his assets and align with local council planning updates, the property's owner set out to answer a pressing question: "Where exactly does the bunker lie and how close is it to the eroding cliff edge?"

Fortunately, this wasn't your average landowner. As the founder of Departure Lounge Media Group, a company specialising in videography, photography, 360° virtual tours, long-term timelapse solutions for construction and crucially, drone services, he was uniquely equipped to tackle the task.

Technologically savvy and well connected, he was able to draw on the expertise of two partners from previous projects:

FlyThru – specialists in manned and unmanned aerial data collection, FlyThru was responsible for all the survey work, above and below the ground. This included an underground survey of the bunker which had never been accurately mapped due to collapsed sections. To take on this demanding task, a confined-space drone, protected by a cage, was used to navigate the semi-blocked areas safely.

At ground level, a baseline survey was conducted to establish control points. 3D laser scans were also undertaken, with particular reference to the tunnel entrance, to help tie together the above and below ground data. Ground Control Points (GCPs) were also established for traditional photogrammetry and to ensure accuracy across the datasets.

GeoDrone – a company that offers a variety of solutions spanning the data acquisition, processing and analysis sectors backed up by expertise in processing data to extract information tailored to their clients' requirements. On this project, GeoDrone would be responsible for combining the datasets in a way that would allow far more effective interpretation than the originally planned deliverable of a PDF.

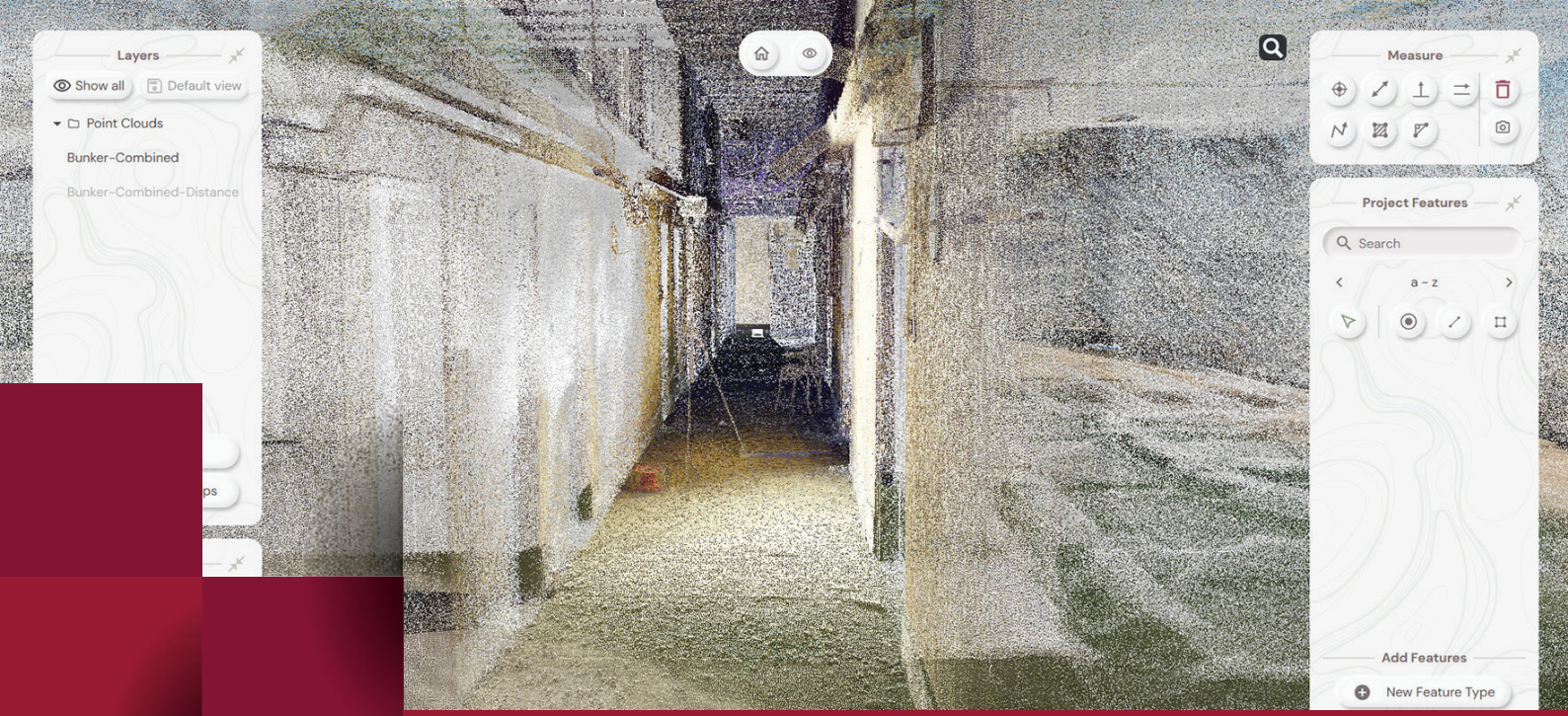
Combining data sets and providing answers

For GeoDrone Director Jason Hagon, the challenge was to transform the various datasets into a clear, accessible deliverable – one that not only showcased the detailed survey work but also placed it in geographical context and addressed the landowner's key concerns.

Stand out benefits of Soarvo on this project:

- Easy manipulation and sharing of high-density point cloud data
- Integration of background maps for context
- Built-in measurement tools
- Super fast loading, drawing and tiling
- Ease of use
- Impressive visualisation of the combined data sets

Historical image of the bunker's construction



Point cloud data inside the bunker in Soarvo

Importantly, Jason recognised that the value of the dense point cloud data lay not just in its quality, but in how easily it could be viewed and understood, particularly by third parties, without the need to invest in software licenses or costly hardware.

As a KOREC customer, Jason was already familiar with Soarvo, a platform developed by a KOREC sister company. Its tagline "Liberate your geospatial data" reflected exactly what he needed, a simple, cloud-based solution to visualise and share complex geospatial information without adding technical barriers.

Soarvo allows data from a range of sensors to be uploaded, processed, visualised, and shared in one platform and for this project, it was the clear choice. After receiving the processed data from FlyThru, Jason was able to upload it in minutes using a straightforward drag-and-drop procedure and begin work on it immediately thanks to the intuitive Soarvo interface.

Soarvo benefits - what Jason rated on this project

Easy manipulation and sharing of high-density point cloud data: being able to load a very dense point cloud and have clients able to visualise it without any proprietary software or additional costly hardware, just a secure link via the cloud, is something that Jason feels is often overlooked but an 'amazing' benefit.

Integration of background maps for context: the ability to bring data into the real world and onto a background map of choice was key to this project with Jason selecting satellite imagery in this instance.

Fast loading, drawing and tiling: whether on a laptop, tablet or phone, Jason reports that the integration with the base map was extremely robust and fast with no stuttering or crashing, especially when zooming in and out.

Measurement tools: key to this project was the ability to show measurements including the bunker's exact

"It was a simple question to ask but potentially a complex one to answer. Soarvo made it easy to communicate detailed findings in a clear, accessible way – and it did the job extremely well.

"Soarvo contributed to this project massively! Being able to load a very dense point cloud and have clients able to visualise it so easily without any proprietary software is amazing."

Jason. Hagon, GeoDrone Survey Ltd

> "Being able to do so much with such a simple interface is unique."
>
> **Jason. Hagon Co-Director and GIS Analyst, GeoDrone Survey Ltd**

location in relation to the cliff along with the height of the cliff. Cross sections will also be used to add further detail and analysis.

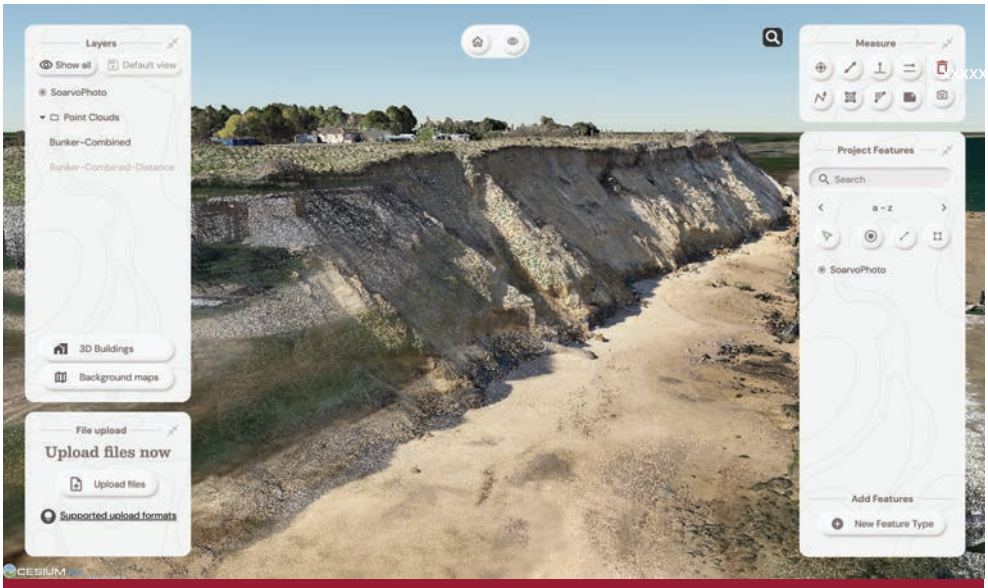
Ease of use: Jason found the software very intuitive and required little additional support thanks to its simple layout.

Visualisation of the combined data sets: for the landowner, the ability to view the underground bunker in its entirety and in context, manipulate the dense point cloud data to take a closer look at the interior condition and above all take accurate measurements has been groundbreaking.

With the project now complete, Jason reports that the survey not only confirmed how close the bunker lies to the cliff edge, but also revealed inaccuracies in earlier surveys, which had misrepresented the bunker's size and scale.

Reflecting on the process, Jason concluded:

> *"It was a simple question to ask but potentially a complex one to answer. Soarvo made it easy to communicate detailed findings in a clear, accessible way – and it did the job extremely well."*



Drone data of the site showing the cliff

Showing the walkway in the bunker in context

CONTACT US

Please do get in touch for further information on any of the products or services mentioned in this case study, a demonstration, support or just a chat about your requirements.

(UK) 0345 603 1214
(IRE) 01 456 4702

info@korecgroup.com
www.korecgroup.com

KOREC™

Trimble. Authorised Dealer

Measured Solutions
Construction | Surveying | Mapping