

THE WORLD'S MOST TRUSTED SOURCE FOR 3D MEASUREMENT TECHNOLOGY



FARO[®]



About the Company

FARO is world's most trusted source for 3D measurement technology. The Company develops and markets computer-aided measurement and imaging devices and software.

Technology from Faro permits high-precision 3D measurement, imaging and comparison of parts and compound structures within production and quality assurance processes. The devices are used for inspecting components and assemblies, production planning, documenting large volume spaces or structures in 3D, surveying and construction, as well as for investigation and reconstruction of accident sites or crime scenes.

With global headquarters in Lake Mary, the Company also has a European head office in Stuttgart, an Asia/

Pacific head office in Singapore and branches across the globe including its United Kingdom office.

The software provided by FARO performs a vital role, as surveying, construction, civil engineering and BIM are dependent on reliable, fast and accurate data.

Spatial awareness and the information that can be collected and shared have become essential through all phases of surveying and construction projects. Therefore, FARO's scanners can help companies deal with challenging situations and save an enormous amount of time.



3D Measurement Technology from FARO

3D modelling has become hugely important with the advent of BIM but also of great significance is the ability to use the point cloud as a reference.

This means that a room can be scanned and the point cloud data collected. If new plant is introduced into the room, the need to model all the walls or windows to conduct a clash detection check may not be necessary. The data from the point cloud and the model of the new plant would suffice.

The demand for laser scanning has increased significantly over the past few years, with many of the large software manufacturers putting features in their products that allow users to utilise raw scanning data. The ability to input data directly into software applications has had a huge impact on the industry.

Also of great significance was the introduction of FARO's focus scanner, which weighing in at 5kg, is the Company's smallest. This easy to use product's purchase price is less than half the cost of its nearest competitor, putting laser scanning within the reach of those who couldn't previously afford to do it.

This uptake in usage has seen the demand for laser scanning increase dramatically.

Another of FARO's products is WebShare Cloud, which allows data to be hosted on a cloud-based server. This powerful tool, in conjunction with clear laser scanning, can allow somebody to virtually explore a site and take measurements all without leaving the office. The data can then be shared securely with a project team, allowing for notes and measurements to be taken through an Internet browser.

Not only will it save companies a huge amount of time and resources by negating the need for numerous site visits but the environmental impact will see huge reductions in CO² emissions.

Looking into the future, laser scanning is set to play an even more pivotal role within the construction industry as its usage becomes much more commonplace and desirable. With FARO at the forefront, laser scanning, 3D modelling and data sharing are set to become even easier to use and access.

Geospatial Survey Solutions Ltd / Deri Jones & Associates Ltd

GSS/DJA are two companies that work together to provide a broad range of 3D survey, laser scanning, photography and CAD solutions for clients. They have over 50 years of experience in recording, modeling and producing accurate CAD data and have worked on engineering projects as diverse as Type 45 naval ships, superyachts, the RAF's large aircraft fleet, Kings Cross station entrance plaza and abandoned lead/copper mines.

Following the work the two companies had carried out on recording abandoned lead mines in Mid Wales, they succeeded in tendering for a survey project at the Tankardstown mine in Bunmahon, Co. Waterford, Ireland.

Underneath the workings, there is a labyrinth of tunnels and shafts, extending some 300, under the shaft head and 12.5km in extent. The majority of the workings are now inaccessible due to flooding and cave-ins, but some 500M of the tunnels can still be entered by experienced mine explorers.

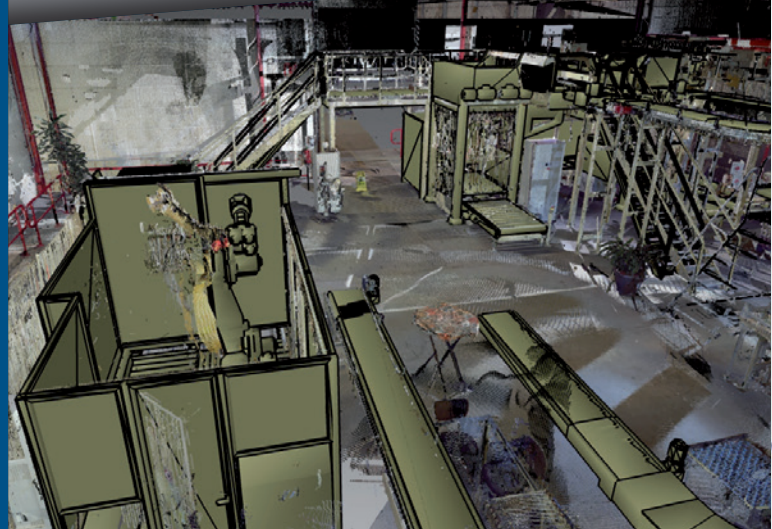
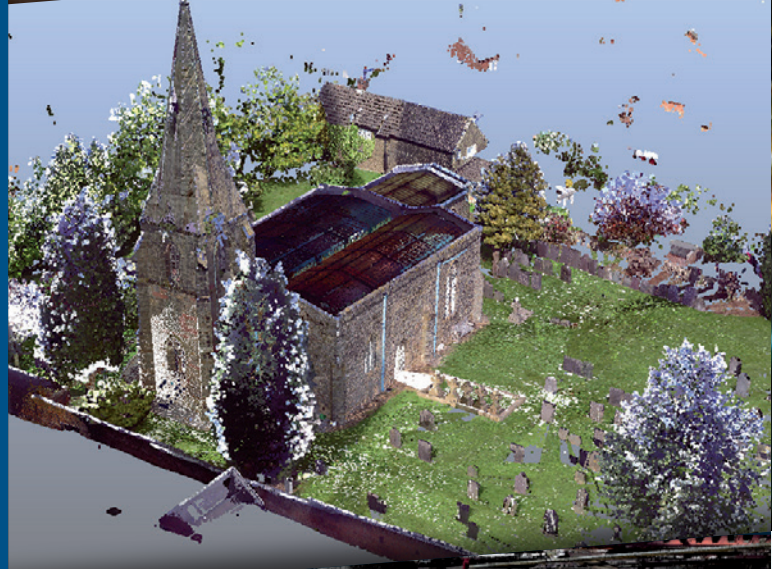
GSS / DJA put together a team that included an experienced mine explorer, a photographer and a local group who could get the team and equipment down the mine and back to the surface safely.

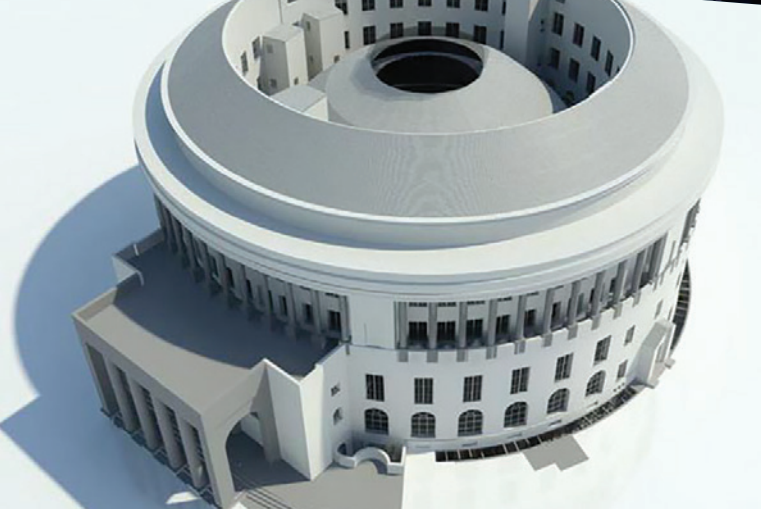
Opti-Cal Survey Equipment provided a FARO Laser Scanner Focus3D and the total survey work was tied together finally by a total station.

For the surface works, GSS/DJA carried out 26 scans, which provided excellent coverage of the buildings and was close enough to counteract the difficulty of fog lying on the site, vital for the colour overlay data and panoramic photography. For the underground, the FARO Laser Scanner Focus3D was used to perform 56 scans, reference the total station traverse using spherical targets, which was tied into the OSI grid using the RTK GPS.

In terms of the photography, over a thousand images were taken for the panoramic aspect of the project and used to create the panoramic tours of the surface works and underground.

Mr Deri Jones, Director of Deri Jones & Associates Ltd commented: "In addition to the scan data and photos, we also received a set of mine plans from the team at Copper Coast. These were modeled up in 3D and tied into the survey data to give a true 3D representation of the site and the workings below. Two short animated flythroughs were created by using the scanned data from the surface and the underground working. The created panoramic tours of the site are made available online at www.coppercoastgeopark.com/geology/tankardstown-3d-tours.html."





HR Wallingford

Starting life as the Hydraulics Research Station of the UK Government in 1947, HR Wallingford became a private entity in 1982. From this point, the Company has operated as an independent, non-profit distributing organisation committed to building knowledge and solving problems expertly and appropriately.

The Company boasts an international track record of achievement in applied coastal research and consultancy and fundamental to this work is their state-of-the-art modelling facility in Wallingford.

Housed in a purpose built modelling hole at the facility are six wave basins ranging in plan size from 25m x 32m to 75m x 32m and three wave flumes ranging from 45m to 100m in length. The basins are used to investigate how breakwaters and other coastal structures behave to both frequent and storm conditions.

Waves can be modelled up to 0.25 (model scale) in height to allow HR Wallingford's engineers to assess each structure's ability to withstand damage and provide sufficient shelter.

In order to test these criteria, a scaled model of the structure in question is created and waves run at it under frequent and storm conditions, with the outcome accurately measured.

To achieve this, HR Wallingford uses a Faro Focus3D Laser Scanner to take before and after millimetre-accurate scans of the model, allowing the movement of elements of coastal structures or the mobile bed material to be monitored.

Andrew Steele, Coastal Engineer at HR Wallingford said:

"When KOREC first showed us the FARO Focus3D, it was obvious that it was going to be 100 times faster than our old style manual methods and at least ten times faster than our existing scanner."

"On top of the Focus3D's phenomenal speed, it is compact and lightweight making it easy to move around our large modelling area. We tend to use the scanner at its highest resolution because generally we are looking for movements of the order 2-3mm. This movement would translate to the movements of the order 60-180mm in the real world."



Choose the FARO solution to simplify
and speed-up your whole workflow!

www.faro.com

FARO[®]