

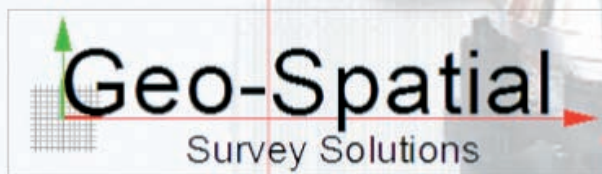
LS880 Scanning Solutions

Geo-Spatial Survey Solutions Ltd (GSS) and Deri Jones and Associates Ltd (DJA) supply a comprehensive 3D capture, modelling and visualisation service, based around the FARO LS880 scanner. With a varied background in the surveying, CAD and 3D visualisation industries, we can supply clean and useable data for downstream customers as diverse as shipbuilding, archaeology and the film industry.

LS880 Laser Scanner

Capable of accuracies of up to $\pm 3\text{mm}$ with a range of 70m, the LS880 provides a $360^\circ \times 320^\circ$ spherical scan, collecting large quantities of 3D data in a short time. Coupled with a digital SLR system, the scanner provides a colour record of the area of interest, with high resolution texture information being picked up in 6 Megapixel tiles. Rapid feedback via Ethernet to a laptop gives onsite viewing of the 3D point data and allows clients to "zero in" on areas of interest for higher resolution scanning, giving the best use of time during a scanning session. Mains free operation and a robust construction allows the system to be operated in remote locations.

History



Geo-Spatial Survey Solutions Ltd provide dimensional control survey services. The founders of the company have 20 years experience surveying in the offshore fabrication and petrochemical industries prior to its inception in 2000. Our scope of work covers dimensional surveys of major structures down to in-situ pipe work and individual pipe spools. Since 2001 we have supplied our services to VT Shipbuilding, Portsmouth during which time they have fabricated 3 River Class OPV (offshore protection vessels), 2 HydraCruiser ferries, The Mirabella V the worlds largest single mast sloop, and presently one OPV(H) offshore protection vessel with heli deck and the Type 45 destroyers for the Royal Navy.

Our survey data is presented in a variety

of ways from 3D CAD modelling of proposed pipe routes, clash detection and the generation of pipe spool fabrication isometrics to part inspection against existing 3D CAD models. We also assemble and compare component to component in a virtual world in order to identify problems and to derive the removal of any excess material prior to their real life assembly. We have experience of traditional survey techniques, close range industrial photogrammetry, articulated arm CMM's (co-ordinate measuring machines) and Laser Scanning, each having its place and role to play.

Deri Jones & Associates Ltd

Engineering Design | Marine Structures | 3D CAD | 3D Visualisation



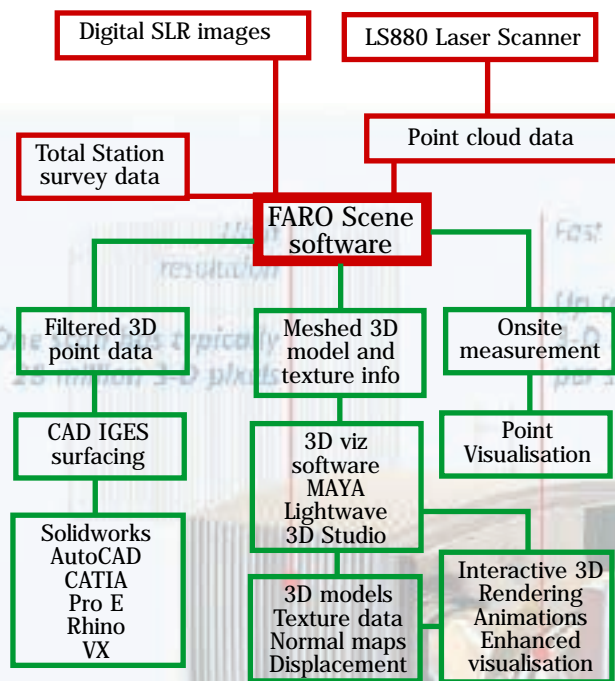
Deri Jones & Associates Ltd supply 3D CAD engineering and visualisation services. Working with a variety of software packages, we provide the skills and experience to enable projects to go from 2D sketches to 3D components ready for manufacture. As the leading designers of steel and aluminium assembly systems for boats in the UK, we have 7 years experience in the heavy fabrication industry, supplying some 70% of the steelwork for new build fishing vessels in the UK. We are used to working with complex curved surfaces, having worked on projects as diverse as 4m Rigid Inflatables (RIB's) and 300' sailing vessels for the Caribbean. We also supply 3D rendering and animation services, either working from 2D architects drawings or our 3D engineering CAD models. Combined with the information from the laser scanner, this allows us to produce and work with a seamless flow of information, combining data from existing 3D structures, 2D sketches, 3D CAD models and photography. This provides an integrated system to produce both engineering information (IGES surfaces, 3D CAD models) and visualisation resources (textured polygon models suitable for rendering and animation).

T: +44 (0)870 762 0089
F: +44 (0)870 762 0089
M: +44 (0)777 385 3237
E: info@djaweb.co.uk
W: www.djaweb.co.uk

A: Llwyngwyn, Forge, Machynlleth, SY20 8RR

LS880 Scanning Solutions

Processing and analysis



We offer a suite of CAD and visualisation software to enable the transformation of the point cloud data to a variety of end formats:

Onsite visualisation of point data: viewing of the raw data as it arrives on the laptop allows us to discuss with the client the key areas of interest, taking higher resolution scans of the main areas within a site, carry out approximate measurements and verify that we are recording suitably accurate data.

Initial cleaning and preparation of scan data: Multiple scans around a site can be compiled to provide a comprehensive model, noise and false reflection points can be removed to make the data set as efficient as possible for further processing. For basic site documentation and archiving, this is sufficient as we can supply a free viewing application for the point data, from which measurements can be made.

Previewing of scan model: The point cloud data can be turned in to an initial mesh, digital SLR images applied as textures and a 3D VRML model of the area generated. These models are ideal for viewing with free web software such as Cortona viewer.

Preparation of smoothed mesh model for export: For visualisation purposes, the mesh model can be exported to a variety of modelling packages for further work.

More complex sites with many millions of polygons can be post processed to create efficient models, reducing the polygon count without losing the detail.

Creation of animations and renders: We can supply a full service of animation and rendering of the model - working with photoshop artists to transform the existing textures, apply new lighting systems, digitally alter existing sites for planning proposals, create walk through animations of re modelled workshops, animate cross section cuts of archaeological sites or historic monuments.

Creation of Engineering surfaces: Working from the pre processed polygon mesh, coupled with the total station measurements captured on site, we can provide surface models of large and complex geometry. Supplied in either IGES or STEP format, suitable for importing to the majority of 3D CAD programmes, the surface data would be presented with a report on accuracy and fairness of the geometry to the point data. Ideal for capturing large moulds, ship plating, existing civil engineering structures and compound curved surfaces in modern architectural design.

Reporting of surface fit and tolerances: We can supply reports on the relative fit of a physical surface to a CAD model, using a graphical map of tolerances.

Engineering design: DJA have a proven track record in the production of assembly systems for steel and aluminium workboats, fishing boats and yachts. We can create 3D models of complex structures, break them down in to components and organise the cutting, machining and forming of plate and supply them in a coherent fashion to allow the fastest method of assembly.

For further information, please contact either Deri Jones on 0870 762 0089 or Roger Davies on 07713 160041, or via email at the following address: deri@djaweb.co.uk roger.davies@geo-spatial.co.uk