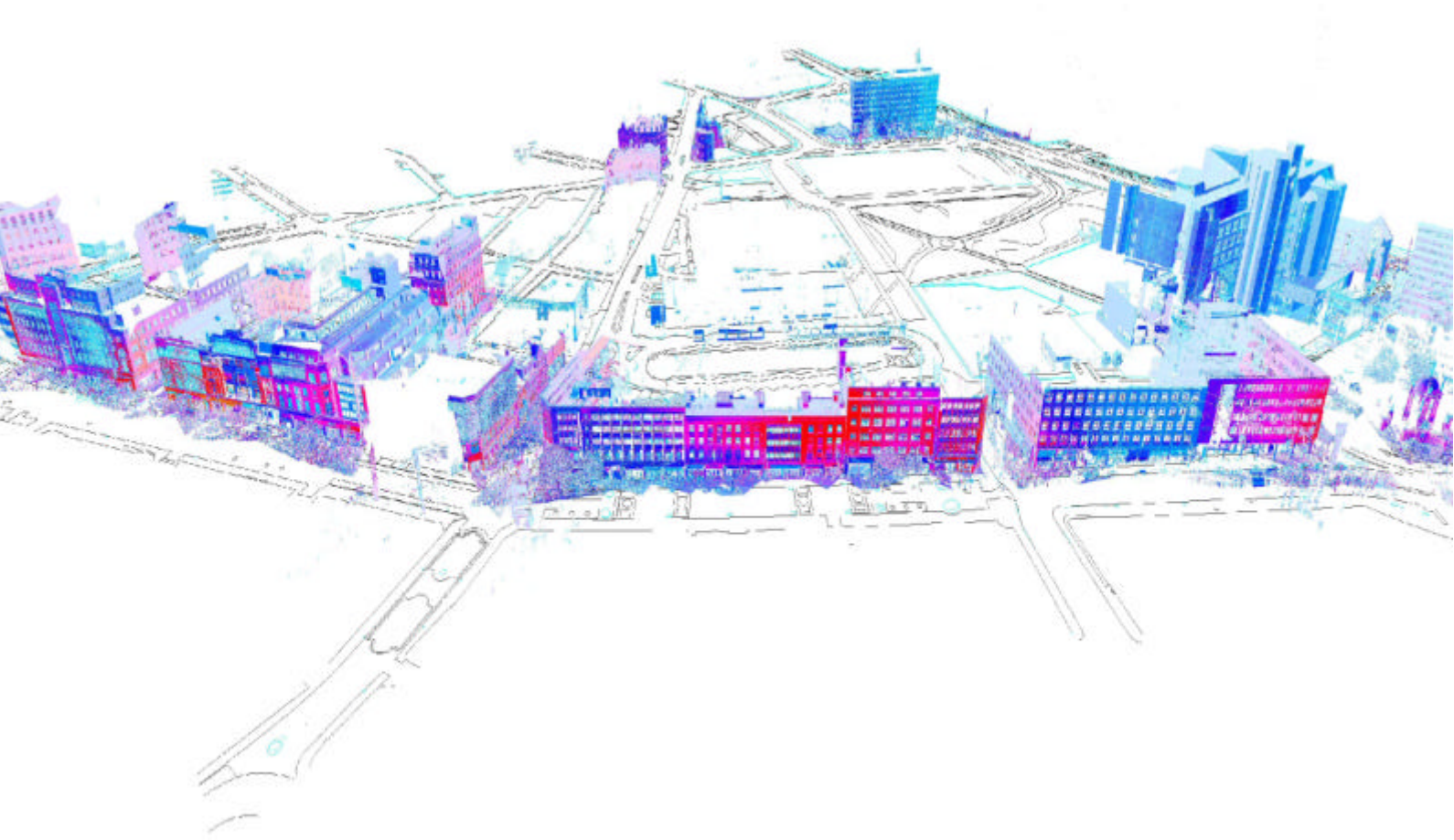
Leica Geosystems Reference

# Early Adopters Scan Liverpool with Leica GPS, TPS and HDS



**3D laser scans from the HDS scanner placed on top of plans for Liverpool regeneration project.**

**As one of the top ten survey companies in the UK, Survey Operations are pleased to be involved in many major projects in Northern England. Projects which they win through being innovative and early adopters of the latest technology available in the marketplace.**

Having purchased Leica Geosystems equipment since their formation in 1986, they now have an enviable fleet of the best surveying equipment available estimated at more than half a million pounds. Having purchased Leica System1200 (both TPS and GPS), Survey Operations see the benefits of continuing the upgrade of all their instruments and will soon have a complete fleet of System1200. With 26 total stations, 12 GPS receivers and a 3D laser scanner in constant use, the business is growing rapidly with turnover increased by £0.5million last year.

- when it has to be right

Leica Geosystems

**Capturing Survey Data on River Mersey, Widnes project.**

“In the past there was a need for specialist GPS teams but now with the introduction of Leica System1200 and the common user interface on TPS and GPS it is easy for all of our 21 survey teams to utilise any instrument needed for the job” said Ian Smith, Operations Manager.

“With the introduction of Leica TPS1200 with the R300 distance feature, we quickly realised that you can now actually sight buildings way past the original building you would have been originally looking at”, said Steve Popely, Director. “This increases our productivity and accuracy greatly and enables us to undertake projects with much greater ease”.

**Success through innovation**

Having been the first company to fit a Leica Disto onto the top of a Leica T1000 theodolite, many years ago Survey Operations asked “When will you put a reflectorless EDM inside a total station?” This shows their forward thinking and commitment to the industry, which make Leica Geosystems and Survey Operations a perfect partnership.

With over 3500 regular clients, they have had to be diverse in their offerings: topographical surveying, hydrographical surveying, building surveys, utilities surveys, 3D laser scanning. The benefits of using Leica Geosystems equipment have been seen and utilised on many of their projects and implications passed onto their customers.

Survey Operations have always been early adopters of new technology and were amongst the first to purchase Leica GPS200, the new generation of GPS technology being offered by Leica Geosystems in 1992. GPS had previously only been used for long distance measuring and modeling, but Survey Operations put the new technology through it paces and mounted it on the back of a quad bike for the collection of precise measuring and modeling on Southport beach. They now complete over 300 km of coastline monitoring annually.

**Surveying with jet ski and hovercraft**

One of their recent innovations consisted of the purchase of Leica GPS1200 for use on a new 110 bhp, 4 stroke Yamaha jet ski. Utilising the two together, Steve Popely advises that this has speeded up their data collection by 20 percent. The entire 'rig' includes a road registered quad bike which will happily tow the jet ski to even the most inaccessible reservoir or river. Onboard the JetSki is a Leica GPS1200 instrument linked to the Ohmex SonarLite which enables Survey Operations to use a DXF background of the required survey lines in real time, removing the need for any other onboard computer or display. Ongoing monitoring work in connection with the proposed New Mersey Crossing was carried out on the banks of the River Mersey at Widnes.

The most recent acquisition consisted of a 'HovPod'. A three seater hovercraft vehicle which is used to survey heavily silted regions of beach and estuary shoreline together with exposed sand banks. As with the JetSki, the hovercraft is equipped with 1200 series GPS. In addition to general survey use, a number of their clients are showing interest in using this vehicle for inspection purposes due to its speed and access capabilities combined with the ability to accurately record specific details at inhospitable locations.

**Phenomenally quick surveying**

Three Leica GPS1200 were purchased for use on a large pipeline project that Survey Operations were awarded. A route survey of 95 km of pipeline was required. The GPS - which has the ability to be programmed with centre lines and offset lines - was perfect for

the job allowing three surveyors to survey each section by walking down the three middle lines of the pipeline route with two returning along the outer offset lines whilst the third recorded other general survey detail. For each section a base reference station was attached to the van, which enabled the team to work within a local co-ordinate system. A separate TPS1200 team was used to survey the numerous road crossings. “With these pieces of new Leica System1200 equipment the project was completed in phenomenally quick time. Working with the new technology and graphics on board the System1200, it was so easy : the team could effectively just follow the instructions and graphics on screen”, convincing Steve Popely of the advantages of this solution.


**Newest innovation : Survey Operations’ System1200 HovPod.**

### Leica HDS3000 scans Manchester and Liverpool

As early adopters of 3D laser scanning also, Survey Operations have the Leica HDS scanner in constant use. More recent jobs include scanning inside lift shafts and the addition of a 360 degree scan with the Leica HDS3000 model has made this job a much easier and quicker one.

The Leica HDS3000 laser scanner also helped Survey Operations to easily produce a detailed elevation survey of an area measuring 94m wide and 56m high in Central Manchester. The area to be scanned was St James Building in Oxford Road, which is a very busy street in the middle of Manchester shopping area. The Leica HDS3000 was a perfect tool for the job due to the minimal number of set-ups required (four in total), the quickness of the instrument was perfect due to the busy location and the amount of information collected showing finite detail.


**Survey Operations Jet Ski fully equipped with Leica GPS1200**

Survey Operations are proud to be involved in the development projects surrounding Liverpool City Centre and it’s readiness for being European Capital of Culture in 2008. The Liverpool Paradise Street Development Area is, in total, a £900 million regeneration project covering 42 acres in the heart of the city, due for completion by 2008. This project combines GPS, TPS and HDS. 6.5 km of elevations have already been scanned. Survey Operations started scanning streetscapes 18 months ago; This has been continuous as certain buildings are demolished - they then return back to the site as they can now scan the buildings that had previously been obscured behind them. The scanned length stretches from the Tower buildings (where Titanic sailed from) along and opposite the famous Liver buildings then up into shopping and development areas.

Other more diverse projects are also undertaken using the Leica TDM5000 – for example, this precision measuring instrument has proven to be invaluable during ongoing structural monitoring surveys at Thelwell Viaduct on the M6.

### A strong partnership

When asked about their commitment and loyalty towards Leica Geosystems and its products and services over the last 20 years, Dave Orritt, Director, said “It’s the whole package that you get with Leica Geosystems, including reliability, development (which includes input from users), advanced technology, etc. They are the perfect equipment partner for us.”

Survey Operations based in Skelmersdale, Lancashire in the UK employs 70 staff, consisting of 45 surveyors and 20 CAD & IT personnel. The company specialises in the areas of topographical surveying, hydrographical surveying, building surveys, utilities surveys and 3D laser scanning. Their client base of over 3500 ranges from small one-person companies to large multinational companies and governmental agencies.

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Those who use Leica Geosystems products and solutions every day trust them for their reliability and the value they deliver, and trust in the superior support network.

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