

Ordnance Survey builds bright future with Leica GPS



Above: Phil Harris (left), the OS Surveyor responsible for London and Ian Wilson from OS Head office in Southampton, use GPS to survey the whole of Great Britain, and in all weather conditions.



Above: Tim Hall, from Ordnance Survey measures at the Eden Project – an immense greenhouse landscape under geometrical domes. He uses a Leica GPS with RTK corrections delivered by GSM phone link from his Truro office some 27 kilometres away to revise 1:2500 mapping.

Following the start of the new millennium, Leica Geosystems was able to announce in March 2001, a multimillion pound GPS contract, combined with a partnership agreement with Ordnance Survey (OS) – one of the most internationally-renowned surveying and mapping authorities. With first-class technological performance and the evidence of many advantages in reliability and accuracy following demanding testing procedures in harsh environments, the Leica GPS Systems 500 ranked first amongst the tested GPS products available on the market. Using state-of-the-art Global Positioning System (GPS) equipment, Ordnance Survey will revolutionise map making.



Vanessa Lawrence, General Director of Ordnance Survey and Hans Hess, CEO of Leica Geosystems with a Leica GPS500 in the Royal Astronomic Observatory, Greenwich.

"This is one of the most important strategic agreements that has been signed in the long tradition of British surveying and mapping," said Mark Concannon, Marketing Manager Europe within Leica Geosystems' Surveying and Engineering Division. An appropriate place to sign the agreement proved to be the historic Royal Observatory, Greenwich. Ian Wilson, OS-GPS Manager said: "This is a perfect venue to bring together a history of astronomy with the latest space satellite technology." The Observatory is also the home of the 0° Greenwich Meridian, where the basis of all modern navigation and positioning was first calculated. "Initial testing of the equipment has been successful in nine offices within four trial areas – Droitwich, Harlow, Rotherham and Perth," said Vanessa Lawrence, Ordnance Survey's Director General and Chief Executive. Following initial equipment testing and trials, the project was due to roll out to all of Ordnance Survey's seventy field offices, from Inverness to Truro, from the Summer of 2001. Now hundreds of GPS Systems 500 are in use by Ordnance Survey all over the British Isles for the survey of map detail and several projects have been initiated to introduce GPS into the map revision process.



The pioneering team of Ordnance Survey and Leica Geosystems will compile solutions of the future by means of this partnership.



With the completion of the second Severn crossing, Wales now has a second gateway to the national road system. To complete this task, Senior Surveyor Stewart Voyle from the Cardiff Office, used the latest GPS equipment from Leica.

'The Armadillo' is the name given to the Sir Norman Foster-designed Scottish Exhibition Centre in Glasgow. With such an important addition to the banks of the River Clyde, OS-Surveyor Mike Hunter sets about updating 1:1250 mapping with the Leica GPS500.



Work in numerous locations has proved that the very best is required to be able to cope with every situation in the field and that Leica Geosystems has the experience to provide a consistent range of GPS products and convincing solutions in all situations and environment conditions. This is true not only for all aspects of accuracy, reliability, ease-of-use, compatibility, and cutting-edge technology but also for customer support and fast technical service.



Before deciding on Leica Geosystems, OS surveyors examined the manufacturing plants of their potential partners, here with Leica Geosystems in Heerbrugg.

Winner of a demanding international tender

"The decision to partner Leica Geosystems follows a rigorous assessment procedure, including the extensive testing of equipment by Ordnance Survey along with fact-finding visits to various production sites in Europe and the United States," said Vanessa Lawrence, Ordnance Survey's Director General and Chief Executive.

Hans Hess, CEO Leica Geosystems, said: "This collaboration confirms our ability to provide not just the best equipment, but also the ability to provide the best solutions. We have moved away from a purely customer-supplier relationship and now have a partnership."

Vanessa Lawrence complemented: "The agreement means we can improve efficiency and accuracy, increase the speed at which we can update our database, and produce enhanced data for all our customers. Our data is so vital to both the public and private sectors that a recent independent study calculated that around £100 billion worth of economic activity in Britain is dependent on it. It is essential that our information is of the highest quality and as a foundation for this we need to use the most accurate techniques available. GPS equipment and computerised mapping techniques allow us to do this."



Representatives of the international press, science, and Survey professionals discuss the future of GPS and GIS.

In order to measure the "London Eye" – the 130 metres high ferris wheel – OS-Surveyor Ian Baldwin from the Harlow Office, uses a Leica GPS500 with RTK-Technology with a Fujitsu pen computer.



Wind force as the future's pollution-free energy! Here, Tim Hall makes checks with a Leica GPS500 on Bears Down Wind Farm in Cornwall. The 16 wind turbines can generate enough energy to supply 7500 local homes.



Most modern national topographic database

All GPS information collected is added to the National Topographic Database (NTD). This is held on computer at Ordnance Survey's Southampton head office, featuring details as fine as pavements and the exact location of public telephone boxes. The result is a vast electronic map covering the whole of Britain, replacing around 230,000 of its most detailed maps. The whole project is establishing a new seamless information base and will offer definitive, consistent and maintained referencing of around 400 million man-made and natural landscape features in Britain. They include everything from forests, roads and rivers down to individual houses, garden plots, and even phone-cells. Data, Ordnance Survey already used by a wide range of public bodies and users in the private sector, from controlling the flow of urban traffic to managing property portfolios.



They know the British Isles in detail and keep the NTD map for their customers current around the clock with GPS: regionally responsible Chief Surveyors Steve Eyre, Ian Hughes and Bob Scott.

High productivity gains with Leica GPS

The system implemented is allowing all surveyors of Ordnance Survey to use GPS to update maps on the spot. The equipment delivered by Leica Geosystems proves to be highly productive. One person alone is able to measure all points and to check the data directly on the hand-held computer. Remote, inaccessible points close to the GPS are defined reflector-less with a DISTO™ or a Leica Reflectorless Total Station (TCR). "By using Leica Geosystems' GPS equipment we will be able to update our national digital topographic database more efficiently, more accurately and faster and will be in a position to offer our customers better products," said Vanessa Lawrence. The twenty-first century has just begun!

Finland and Ordnance Survey Ireland also define Leica GPS500 as "their" preferred systems.

Within the last few months, both Finnish and the Irish surveying and mapping authorities have made the decision in favour of Leica GPS500. In addition, OSi will manage its database with Leica Geosystems' GeoVault Data Manager. It provides an automated, cost-efficient and secure management and documentation system of digital image data and geospatial information.