Tvilum Landinspektørfirma invests in System 1200

Summary

Investment in three total stations and four GPSs from Leica Geosystems' new System 1200 range.

Customer

Tvilum Landinspektørfirma, Denmark

Increased demands on efficiency and flexibility. That is the main reason why Tvilum Landinspektørfirma - one of Denmark's leading companies of chartered surveyors - has chosen to invest in three total stations and four GPS from Leica Geosystems' new System 1200 range. In future, the company expects to be using Leica as a total supplier of measuring equipment.

(Above): Tvilum has conducted a number of measurements in the baroque garden at Frederiksborg *Castle.*

A glance through the portfolio of assignments that Tvilum Landinspektørfirma has behind it will quickly confirm that this is a high-calibre company of chartered surveyors. The portfolio includes the measurement and plotting out of Terminal 3 at Copenhagen Airport, Parken and Østerbro Stadion at Københavns Idrætspark, Fisketorvet by Kalvebod Brygge, the new opera house on Holmen, DR BYEN - Danish Radio's new radio house in Ørestaden, Kronborg Castle and the baroque garden at Frederiksborg Castle.

The list of major technical and surveying assignments is a long one, spanning a large number of different kinds of tasks. The company was founded in 1984, and currently employs 30 people at offices in Hillerød, Kastrup and Frederiksværk.

"Our business strategy is to compete on quality and service. This means that at all times we are very aware of our quality assurance, in terms of both work methods and the precision and performance of our instruments. Leica has always delivered engineering of the highest quality, and now we feel that the software in their total stations and GPS has also reached a corresponding level. There are also a number of functions that will improve the efficiency of our work processes without compromising on quality," said Børge Tvilum, owner of Tvilum Landinspektørfirma.

Reflectorless measurement

One of the functions of great significance in Tvilum's choice of the Leica TPS1200 total station is the facility to perform laser-based, reflectorless measurement of distances above 500 metres. Reflectorless measurement makes it far easier for Tvilum's employees to measure particularly inaccessible points. The laser in the Leica TPS1200 also has a small footprint, which increases the level of precision.

"You might say that reflectorless measurement enables us to perform certain kinds of difficult tasks more quickly. And as it's our time that we sell, a reduction in time consumption is a competitive advantage. One example might be if we had to measure points on a high façade. It's difficult to place a prism 15 metres up a façade that has neither windows nor other openings. Now we can do it from ground level without risking life and limb," said Jesper Holm, surveyor and Technical Manager at Tvilum.

All prisms can be used

With the Leica TPS1200, Tvilum's employees now have greater flexibility in their choice of which prisms they want to use when measuring. Before the System 1200, the company used auto-tracking technology, which meant that only certain active prisms could be used with certain instruments. But the new Leica instruments have changed all that. Now all the intelligence is in the actual total station, which needs nothing more from the prism than a reflection of the signal transmitted.

"We can now choose any prism, because all passive prisms can be used. On screen in the new total stations you can see a small icon at all times, showing which prism and thus which addition constant you have decided to use. This means one less potential source of error," explained Jesper Holm.

One man - one task

Another important feature of Tvilum's new Leica instruments is that they are more suitable for one-man operation than the instruments that the company previously owned. This means that in many instances Tvilum only needs to staff assignments with one single employee. Search functions such as PowerSearch and Automatic Target Recognition (ATR) ensure that the Leica TPS1200 can find the prism or prisms that have been established in the measurement area.

"Obviously we prefer to send out only one man if possible. But then we have to be totally certain that he can actually do the job on his own. Otherwise the expected saving can quickly turn into an extra cost. This level of safety is reinforced with the functions in the new instruments," said Børge Tvilum.

The automatic search functions can also be an advantage in connection with measurements in poor light conditions or fog. For example, Tvilum has conducted a number of measurements in and around Kronborg Castle, including the catacombs under the castle itself, where the poor light conditions could easily cause problems. But the new total stations make light work of this, as they can find the prisms themselves easily, regardless of the light conditions.

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(Below): Børge Tvilum, owner of Tvilum Landinspektørfirma..

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(Right): When surveyors from Tvilum have been out in the field and more work has to be done using the data collected, the company can also benefit from the Leica instruments' facilities for user-configured data export. This means that in many cases a work process can be saved, as the data does not have to undergo conversion between instrument and CAD program.

User-friendliness is the way forward

The software in Tvilum's new total stations and GPS has been developed with a view to logical, uniform operation. This means that you can transfer a large amount of your knowledge of the total station over to the GPS, and vice versa. In Jesper Holm's view, this will create a better learning curve for employees during the conversion process to the new instruments. This is true of both newly-qualified employees and those with several years' experience.

"It's clear that uniform interfaces are an advantage for new employees, who can settle into their jobs more quickly if the GPS and total station share a lot of logic and functionality. But I actually believe that it's an even bigger advantage for employees with several years' experience. After all, they're having to wave goodbye to a number of habits and routines. The quicker and easier it is for them to use the new instruments' functions, the quicker they'll accept them," said Jesper Holm.

The close integration between total stations and GPS also means that it is less complicated to switch between the two types of instruments during measurement. So no matter what kind of obstacles Tvilum's surveyors encounter when they arrive at a measurement area, they will be better equipped to do the job quickly and efficiently.

The right format

When surveyors from Tvilum have been out in the field and more work has to be done using the data collected, the company can also benefit from the Leica instruments' facilities for user-configured data export. This means that in many cases a work process can be saved, as the data does not have to undergo conversion between instrument and CAD program.

(Right): Surveyor and Technical Manager of Tvilum, Jesper Holm says that reflectorless measurement enables them to perform certain kinds of difficult tasks more quickly.

"It's practical that the data is entered in the right format from the outset. In our company we mainly use Microstation, and when we come back to base, the data can be sent to the next stage in the process right away. This creates a simple, smooth work process, in which the instruments are adapted to our needs rather than the other way round," said Jesper Holm.

Instruments with a birth certificate

As an element of their thorough quality assurance process, Tvilum asked for individual "birth certificates" for their new Leica instruments. This means that each instrument has undergone a particularly comprehensive production test and thus been certified according to precision requirements that are even stricter than Leica's standard specifications. This covers both angle and distance measurement. When pre-qualifying for major technical assignments, Tvilum can thus attach documentary material that provides the person inviting tenders with a high degree of reassurance that the company satisfies the specified quality requirements.

Good service is a high priority

Besides the instruments' function and quality, the underlying service is an important factor in Tvilum's choice of instrument supplier. Here too, Børge Tvilum and Jesper Holm are extremely satisfied with their choice of Leica.

"We've quite simply had brilliant service. Leica are really willing to help us get started quickly. We noticed this first a few months ago, when we bought a laser scanner together with Landinspektørfirmaet Vektor. It was a major investment and a new kind of instrument, so we needed help to integrate it into our business, and we got that help. Leica actually performed a real assignment for us, giving us the opportunity to acquire a lot of knowledge from the sidelines. I feel that Leica has a great understanding of its role as a supplier of complex hi-tech products, and they don't just leave a box on the table and disappear. They've helped us a lot in creating added value with the new laser scanner, and if we need similar help with the new total stations and GPS I don't doubt for a second that we'll get it," said Børge Tvilum.

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