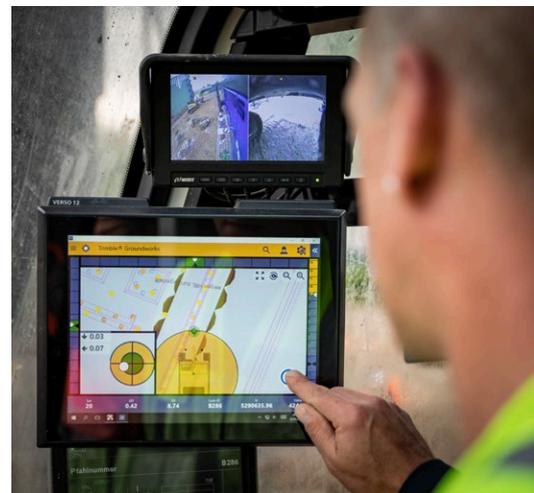
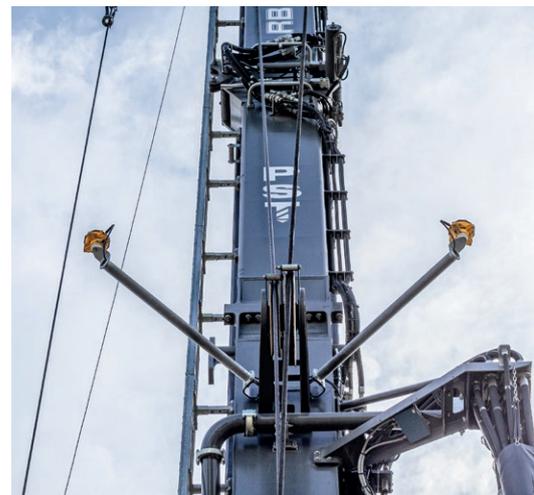
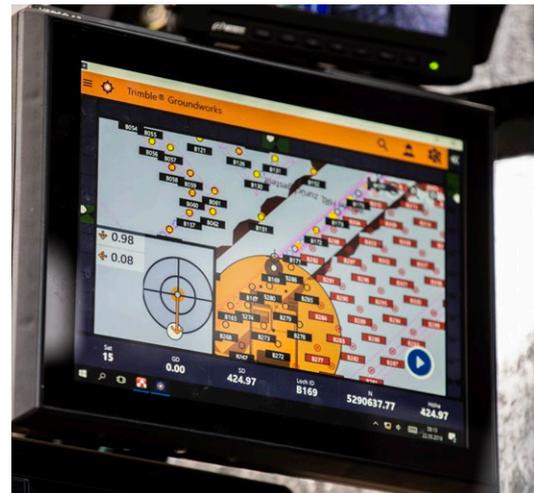


Job Report - Digitalisation on the Construction Site

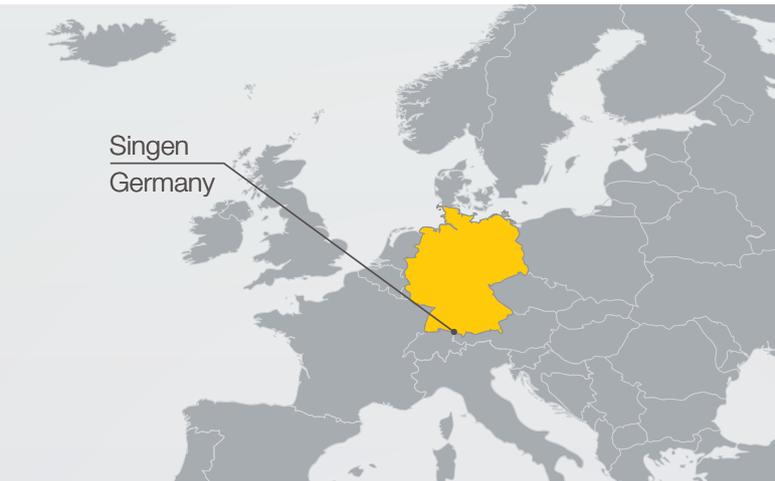
The Positioning System LIPOS® Supports Double Rotary Drilling

“Personally, I expect the LIPOS system to take the pressure off the foreman on the jobsite since the machine operator has more certainty and clarity regarding the pile numbers and drilling depths.”

Philipp Müller
Project Manager
PST Spezialtiefbau Süd GmbH



LIEBHERR



Singen
Germany



Situation

A new logistic centre with high bay warehouse is being built on an industrial estate in Singen, Lake Constance. Amongst others, a 34-metre high building shall be built on an area of 3,200 m². However, the soil conditions on site are anything but ideal for such a large building. The ground consists of several different layers: approximately one metre of back-fill,

Task

The company PST Spezialtiefbau Süd was awarded the contract to install 320 piles with lengths between 7.7 and 22 metres, and a diameter of 880 mm. For this purpose they are using the Liebherr piling and drilling rig LRB 355 in double rotary drilling operation. The challenge lies in the high num-

Solution

After measuring the building ground and creating a drilling plan, all data for each individual pile are transferred to the positioning system and therefore directly to the LRB 355, in no time at all. The machine operator can manoeuvre the LRB 355 exactly to the drilling point with the aid of an additional navigation system in the cab. The digital drilling plan can then be executed. The latest satellite navigation enables centimetre-precision. Linked with the PDE recordings (process data recording), which records all details of the drilling, concreting and extraction processes, each individual pile can be exactly documented using the PDR2 (process data reporting software). Furthermore, you are permanently informed of the whole process and know about the progress of the construction work at all times. In other words, a perfor-

then between two and eight metres of sand, and underneath up to twelve metres of clay before the building ground of gravel is finally reached. In order to avoid subsequent settlement more than 300 piles must be installed as part of the foundation work.

ber of piles that have to be installed in the given time by only one drilling rig and, on the other hand, in the strict compliance with the positioning and quality requirements. Furthermore, it is essential to keep track of which pile is already completed and which is not.

mance record and compliance with recording obligations at the press of a button. The team from PST require approx. 30 minutes for the positioning, drilling, concreting and insertion of the reinforcement of a 22-metre long pile, under ideal circumstances. A perfect symbiosis of skilled personnel, high performance machines and digital assistants enable this extremely productive work. According to Philipp Müller from PST Spezialtiefbau Süd, all construction sites where the LRB 355 is in use shall be processed with the support of LIPOS in future, "The site personnel have the reassurance that no serious mistakes have been made in the measurements and also the visual control of which piles have already been completed."

Technical data: LRB 355 - Double Rotary Drilling

Operating weight:	95,3 t
Max. torque:	300 kNm
Max. pull force:	900 kN

Engine power:	750 kW
Max. drilling depth:	26 m
Max. drilling diameter:	900 mm

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