Johann Bunte Bauunternehmung with model-based working methods in underground construction

Strategic partnership with RIB Software

So as to be prepared as well as possible for future changes in infrastructure construction, Johann Bunte Bauunternehmung GmbH & Co. KG is engaging intensively with model-oriented working methods. The company, successful across the country and abroad, is relying here on a strategic partnership with the Stuttgart company RIB Software AG. Bunte GmbH was looking for a thoroughgoing set of software all from the same provider. The construction company struck gold with RIB, finding the system solution consisting of the programs iTWO 5D and iTWO civil. According to the head of surveying, Klaus Hemme, the RIB software is very easy to understand and allows closer and thus more productive collaboration between the departments of surveying and calculation.

Requirements of BIM in underground construction

So-called public-private partnerships (PPPs), in which contractually regulated collaboration takes place between public authorities and private construction companies, are strategically very important to the construction company, founded in the sixties and headquartered in Papenburg. Because the success of these and other large-scale projects – above all where cost transparency and punctuality are concerned – is becoming a greater concern politically, Bunte, as a progressive company, wants to get to grips early on with these new, digital construction methods and be ready for anything at any moment. The topic of BIM (Building Information Modeling) is no longer limited to structural engineering. The difference in civil engineering projects: The bills of quantities are usually prescribed and the volume objects are variable and significantly more complex. This makes a model-based working approach in this area more difficult than in structural engineering.
In addition, especially in PPP projects, a much larger quantity of data must be managed: As a rule, in highway engineering measures, mobile data recording of the site takes place beforehand during a fly-over or vehicle inspection, from which an enormous point cloud is generated. In addition, great quantities of data from high-resolution aerial photography are added – sometimes up to 80 items for project, which must be brought together and assessed in the course of it. Not least, PDF tendering documents add a great quantity of data. “The use of this vast quantity of electronic information brings several advantages,” surveying manager Klaus Hemme explains. “We can very easily recognize what we have to expect and to build in each location. Whether it’s woodland to be grubbed out, bus stations to be integrated or a rainwater retention basin. The large point clouds and many aerial photographs allow us to make very exact plans for construction and support us in achieving the desired results much faster. But we first have to be able to handle these large quantities of data,” he continues.

**Consistently, big-data tested it solution**

“Big data is playing an important role right now in civil engineering”

Andreas Dieterle

The RIB programs ITWO civil and iTWO 5D were specially conceived for these “big data demands”. “Big data is playing an important role right not in civil engineering,” explains Andreas Dieterle, product manager at the software producer RIB. “And not only in big projects. Point clouds from fly-overs are becoming the standard even in very small highway engineering projects,” he adds. According to Bitkom, the big data market grew across the sector to 2016 by a yearly average of 46 \%.

The wealth of experience in the field of big data, the thoroughness of the solution – running from the offer phase through execution all the way to billing – and the successful collaboration continued over many years with the Swabian software manufacturer laid the foundations for the strategic partnership between Bunte and RIB Software AG. Already before the implementation of ITWO at Bunte, the construction company was relying on programs from the Stuttgart firm. “An important factor for us, additionally, is that billing made using RIB programs is recognized by all public authorities,” Hemme explains.

Another advantage is that the software is very compatible with machine control systems from internationally established manufacturers. At Johann Bunte, around 150 machine control systems from different manufacturers are used, a number that is noticeably increasing.
The basis for optimal collaboration

Currently, work is being carried out in parallel at Johann Bunte using the new iTWO solutions and their predecessor programs from RIB. Because several projects within the firm are very large and were thus already created in the past in the programs ARRIBA and STRATIS. The employees begin new projects and smaller construction tasks directly in the new iTWO systems.

Klaus Hemme: “Of course, we are currently in a discovery phase of the overall process. For example, a few colleagues still need training in this or that, which the manufacturer provides us yearly in house. The definition of the new working processes and templates is currently being worked on with our partner, RIB. Nevertheless, I am impressed how quickly we are beginning to work productively on both sides with the iTWO programs. Colleagues who previously worked with a different program usually find themselves at home in the world of iTWO within a day. For younger employees who are using an IT system for surveying tasks for the first time it often goes quicker,” the head of surveying says. “We in the surveying team no longer see creating routing objects in 3D to provide the basis for model-based work in iTWO as an additional expense,” he adds. “Rather the opposite! The 3D objects offer us much in the way of flexibility for evaluation and form the basis of excellent collaboration from our colleagues in calculation. We can tackle each object individually and further improve information exchange continuously. Because we are always learning more about how we can exchange, for example, background plans or aerial images optimally, as additional information,” Klaus Hemme concludes.

The company is convinced that, with its engaged teams in surveying and calculation and its modern IT solution, it is optimally equipped for the future demands of PPP projects.

Benefits for BUNTE

- High transparency in the planning process
- Improved coordination of all involved in planning
- BIM as an all-encompassing method ensures quality in the project