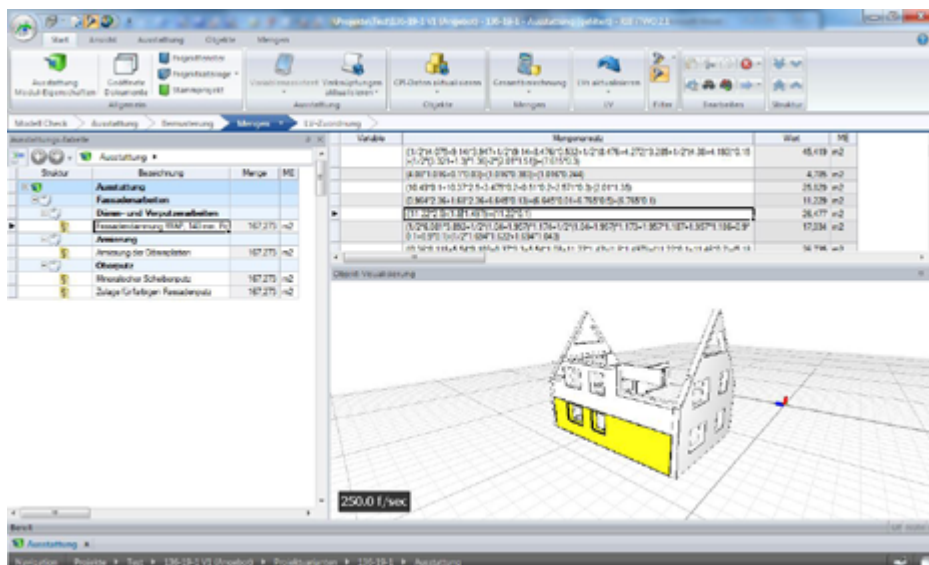


Balkon

Model-Based Engineering and Construction Processes Efficiently Implemented in Real Estate Projects

‘Better to plan in the office than on the construction site with an excavator shovel’ Dipl.-Eng. Detlev Kraneis, a construction engineer from Leverkusen, sees himself as a partner in project planning, site management and supervision, besides working as an appraiser and advising clients on buying or building their own properties. To offer his customers a top-quality, modern service, one of his main concerns is energy-efficient construction and energy consultancy. Using thermographs, he detects sources of heat loss in buildings and manufacturing defects. Throughout his career he has always been quick to embrace business trends, enlarging his portfolio of services accordingly. This is also reflected in the way he integrates the latest information technology in his daily work. End-to-end construction process and project management based on a 5D construction model helps him work particularly efficiently. In 2009, Detlev Kraneis introduced RIB’s new 5D software solution iTWO, which is becoming more and more popular among Europe’s leading construction companies as well.



5D-construction

Continuous optimisation

“As an engineer, you have to move forward at least every two years,” he explains. “Only then do you derive a practical benefit from competitive advantages.” He also stresses the importance of ongoing further training.

He has based his planning on three-dimensional geometry models ever since the nineties. At that time, Kraneis explored projects in mechanical engineering and the process industry, where the switchover to digital engineering and construction took place much sooner than in the construction industry.

'Drawing in 2D is a waste of time'

Until 2009, Detlev Kraneis waited for a similar, mature system for the construction industry. In his opinion, the 2D drawing customary in the planning environment is not only a joyless task, but a waste of time.

Defining the construction sequence in the planning stage

"When I plan an object in 3D, I can get detailed results in a very short time without a great effort," he reports. 3D planning saves him the work of processing views, sections or details separately. Detlev Kraneis edits the three-dimensional models with Autodesk Revit. Just one mouse click gives him all the quantities plus the detailed costs within iTWO Business Suite. If there are any changes to the plans, the impact on the costs can be seen immediately. This makes it easier for him to communicate with all his project partners. Tradesmen can see from the model what the job they are working on is supposed to look like, as the construction sequence is already fixed in the plan. The cooperation with the client gains transparency, as he can see the impact of any changes in detail. The engineer also plans to implement resource management and a scheduling system into the overall system in the near future in order to benefit from the full scope of the 5D functionalities.

impact on the costs

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“By reducing the workload in costing and quantity takeoff, compilation of works specifications, invoicing, and preparing tenders, the integrated solution consisting of RIB iTWO and Autodesk Revit saves about 50% of my time,” he says. And time is money in the construction industry, as everybody knows. However, switching from 2D plans to the integrated solution requires thorough routine in 3D modelling, because the fast processing of variants, which is what saves all the time later on, can only be optimally done if the models have been prepared in exact detail and are always correctly defined. This requires comprehensive training and practice and constant further development, according to the expert.

save time

Customers demand more transparency

But, as Detlev Kraneis explains, there will soon be no alternative. “Customer expectations are increasing all the time,” he reports. “This is not only the case for extremely large construction projects, which means that an integrated technical ERP system like iTWO Business Suite is essential for large construction companies. My customers in the private sector are expecting more and more transparency, too,” he adds. “They want to see why something on the construction site is not working so that they can take appropriate action if necessary.”

more transparency

Energy consultancy: Costs at a keystroke

Apart from cost estimating, Detlev Kraneis mainly uses iTWO for energy consultancy. “When I define a new heating system with a corresponding output in Revit, iTWO shows me the exact cost at the press of a key.” If a building is thoroughly restored to meet all the current energy specifications, the engineer just has to make graphic adjustments to the model to get all the quantities and costs needed to implement the project. The customer can see all the visual changes, quantities and costs entailed by an energy-saving renovation and make more informed decisions. Other ideas the engineer plans to put into practice soon include the adjustment of 3D models directly on the construction site using a Tablet PC. He also intends to log defects on site – naturally in 3D. Apart from this, he is currently defining various configuration options with construction materials of different quality grades that he can use to tailor his plans to individual customer requirements.

visual changes

The concept for success: Technology and innovation

The motto of Detlev Kraneis is: ‘Better to plan in the office than on the construction site with an excavator shovel.’ The engineer is convinced that this is only possible with a model-based working method. “Successful planning goes hand in hand with a high affinity for technology,” the engineer from Leverkusen concludes.

Captions: In 2009, Detlev Kraneis introduced RIB’s new 5D software solution iTWO. With 3D planning, the engineer can get detailed results in a very short time without a great effort. The customer can see all the visual changes, quantities and costs entailed by an energy-saving renovation and make more informed decisions.

Verena Mikeleit