

INTERGEO 2017 UPDATE

BIM: A REVOLUTION TAKES SHAPE

AN ENTIRE INDUSTRY IS IN THE GRIP OF A CULTURAL REVOLUTION THAT WILL SEE THE PLANNING, CONSTRUCTION AND OPERATION OF BUILDINGS MAPPED DIGITALLY FROM END TO END. GEODESY IS ONE DISCIPLINE THAT WILL BENEFIT FROM THIS DEVELOPMENT, SAYS DANIEL KATZER



BIM provides a collaborative working environment for all involved in the design, construction and maintenance of the built infrastructure. Photo: Hinte GmbH

Let's imagine that the planning, building and operation of buildings and infrastructure is going digital: Geodata from surveyors is fed into a huge database that everyone involved in the lifecycle of a building, highway or railroad adds to, updates and uses. The architect, civil engineer, structural engineer, developer, foreman - even the landlord and facility manager - click through the project's digital twin for their particular content.

Construction starts only when the digital model has been used to simulate how many retail units are on the ground floor or, in the case of a new-build hospital, how beds are to be managed efficiently on a day-to-day basis. The model ensures that the developer always has an accurate overview of the project's costs and timeframe. Every fitter knows exactly what to load on their truck when they're heading to site. The digger - even without a driver in the cab - also knows how much earth it needs to shift and where. When work gets underway, the foreman has the best

3D plans near at hand on a tablet. Every switch, every wall, every turn in a planned route exists as an item on a digital plan, along with delivery and maintenance cycles, cost centres and supplier information.

BIM is coming

Does it sound like a beautiful new world? A vision of the future? Yes. Building Information Modelling or BIM in its purest form? Yes. However, we are already well on the way to this digital model-based, seamless and efficient method of building, where re-work is unnecessary. Although European countries are at different stages of implementing this digitally based approach to construction, it is no longer a question of "if". The hope is that the planning, construction and operation of structures can be mapped in one large database, thereby positioning BIM as a strategic element in building practices. The objective is to achieve a seamless database for all, and thus reduce planning errors and project delays to a minimum.

Guarantee of success

The industry is currently working hard on standards that will ensure everyone involved speaks the same language. "More and more small and mid-size companies are climbing on the BIM bandwagon," says Prof. Christian Clemen from HTW Dresden University of Applied Sciences. Gunther Wölflé from Building Smart e.V., an international association that promotes the BIM method, backs up this view. Indeed, more and more surveyors have been joining the association, which highlights the role of geodesists in the BIM process. As Clemen points out: "If you want to build digitally from start to finish, then the fundamental data supplied by surveyors becomes increasingly important."

Opportunity

Originally developed in the structural engineering sector, BIM is now growing particularly strongly in infrastructure projects. Across Europe, rail and road infrastructure operators are working on digital twins of their assets. This environment offers excellent opportunities for geodesists: "Graduates with experience in BIM are in demand," says Clemen. He also has some advice for geodesists: "Don't view BIM as a risk or some kind of technical fad - embrace it as an opportunity to tap into new fields of business. Indeed, if you can establish and maintain a GDI, you can also manage a building or infrastructure."

BIM will form a key element in the INTERGEO Conference and Exhibition, to be staged in Berlin from 26 to 28 September in Berlin.



Daniel Katzer is Director Trade Fairs and Conferences and project manager of INTERGEO with HINTE GmbH (www.hinte-messe.de).

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