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Press release

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Key theme of BAU 2017: digital design, construction and management

Building information modeling (BIM) revolutionizes the collaboration in building

The employment of digital technologies offers great potential in all lifecycle phases of a building. Correctly employed, these can increase the quality of construction and simultaneously reduce construction costs and times. A start has been made—but there's still a long way to go till the building industry is fully digitized. The latest state of technology is presented at BAU 2017, where the digitization of building is one of the key themes.

In the Scandinavian countries, Great Britain and the USA, digital planning and construction processes are already comparatively widespread. In contrast, the German building industry still has to make up ground so as not to fall behind in increasingly international competition. For it's now becoming apparent that those who do not take part in making the transition to digitization and the change of planning methods that this involves will fall behind economically. But digitization is still possible in this country too, as is already shown by the fully digitally planned pilot projects in the public sector and the construction schemes realized by the big architecture offices with BIM.

Building information modeling (BIM) as central work method

Behind the now ubiquitous abbreviation "BIM" is the idea of a digital model. The planned construction is no longer conceived by means of an unmanageable mass of plans from the different disciplines (architecture, structure planning, TGA etc.) but is represented by a multidimensional, data-based model. Investors, engineers and architects as well as project controllers and the later

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operators work together via this central platform from the beginning and are informed at an early stage about the current state of planning at the time. All project-related information (areas, costs, time scheduling etc.) is available to those involved as a basis for decision-making.

In working with BIM, the individual building components become carriers of information relevant to the project; in the form of lists, calculations, time schedules or simulations, these can be given out and linked together. So you no longer work just with "representations" of components but with "smart data"—a new level of digitization.

To make use of these advantages, a cultural change is necessary; the usual type of collaboration is altered by employing BIM. The former series of isolated individual processes or "lone activities" of the protagonists involved now makes way for a networked method of working which is characterized by a new form of teamwork and communication. This change represents a great challenge for all concerned because the cooperative method of working presupposes mutual trust and openness. But given these “soft” factors and if good organization of the process is ensured (the keyword is “BIM management”), problems can be recognized at an early stage, risks minimized and construction costs saved as a result.

How does the planning change as a result of BIM?
Model-based design, construction and management goes far beyond the step from 2D to 3D planning—the three-dimensional "subject-specific models" of the individual planners are brought together regularly and checked for their conformity (e.g. in the "collision check"). A joint matching of the planning statuses thus takes place much earlier than was usually the case.

However, this does not mean that execution planning is already carried out at the beginning of the project—a fear that is often expressed by architects with regard to BIM. By way of comparison: with a physical model made of cardboard and plastic, the level of detail grows as the planning advances. It’s exactly the

same with digital model-based planning—a wall is at first just a wall, only later is it given a multilayer structure, for instance; building materials and thus costs or key physical figures etc. are determined later.

Nor does creativity suffer on the introduction of BIM—happily, this still depends on the planners, who in future can communicate with each other and coordinate their respective planning by means of the building model.

BIM management organizes design, construction and management

Modern software works on the basis of access rights. While the one planner is doing work on a wall and relocates it, for instance, that wall is inaccessible to others involved in the project. This prevents everyone from “doing as they like” in the joint building model, a fear that’s often expressed. With good BIM management, however, the fear is groundless.

In order to determine and supervise the responsibilities, rights and obligations in the use of a joint building model, a superordinate BIM manager is designated in each project. He or she defines the requirements made on the data model, for example, and determines the access rights, consults regularly with the BIM coordinators from the planning offices involved and looks after the project even after the conclusion of the planning and construction phase. In addition, the BIM management can ensure that all planners have the same level of knowledge by means of training events.

In conclusion, digital design, construction and management will become standard

In a few years, all projects with principals from the public sector are to be planned, built and realized with BIM. All planning services will then have to be provided in digital form. Until then, it is necessary to harmonize digital planning and building with HOAI (the official German scale of architects’ and engineers’ fees), to set BIM standards and guidelines with binding force and to clarify the general legal conditions from rights of use to questions of liability. But it’s already becoming apparent now that the new model-based way of working will be the

rule in this country too—even for smaller construction projects, whether it's new building or in the existing building stock.

The future of design, construction and management plays a leading part at BAU 2017. So, for instance, the Forums in Halls A4 and C2 address the subject of BIM—on the program are lectures by well-known speakers from planning offices like ARUP, Gerkan, Marg + Partner, RKW and Herzog & de Meuron as well as from the building and software industry.

Here are the exact dates:

Forum C2 "The Future of Building"
Tuesday 17 Jan. 2017, 11:00 – 17:00: "BIM – Building Information Modeling" (link to the program PDF: http://bau-muenchen.com/media/website/dateien/pdf/programm-forum-c2-zukunft-des-bauens.pdf)

Forum A4 "Architect and Industry in Dialog"
Wednesday 18 Jan. 2017, 11:00 – 14:00: "BIM: The future of planning" (link to the program PDF: http://bau-muenchen.com/media/website/dateien/pdf/programm-forum-a4-architekt-und-industrie.pdf)

About BAU
BAU, the World's Leading Trade Fair for Architecture, Materials and Systems, is the biggest and most important event in the sector. The next BAU takes place from January 16 to 21, 2017 at the Messe München exhibition center. Around 2,000 exhibitors from more than 40 countries and approximately 250,000 visitors from all around the world are expected to take part.
On display at BAU on about 185,000 square meters of exhibition space—for years all the available space has been fully booked—are architectural solutions, materials and systems for commercial and residential construction and for interior fit-out, for both new-build and renovation and modernization. Every two years this event brings together market leaders from the sector to participate in a unique international display of competence spanning all the construction trades.
BAU is also the world´s largest trade fair for architects and construction engineers, attracting more than 60,000 design professionals. The exhibits at the fair are organized according to building material and also product and theme area.

The many attractive events in the supporting program, including high-caliber forums with experts from all over the world, round off this industry showcase.

Messe München
Messe München is one of the world's leading trade-show companies. It organizes some 40 trade shows for capital and consumer goods and key high-tech industries in Munich and abroad. Each year more than 30,000 exhibitors and some two million visitors take part in events held at the Messe München trade-fair center, the ICM – Internationales Congress Center München and the MOC Veranstaltungscenter München. In addition, Messe München organizes trade shows in China, India, Turkey, South Africa and Russia. Messe München has a global business presence with affiliates in Europe, Asia and Africa and more than 60 foreign representatives serving more than 100 countries.