

Clever use of BIM for more efficiency in buildings and integrated security

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Digital planning methods in building technology: cleverly used, they help designers, builders and operators of buildings and integrated security technology from the planning stage onwards and can keep them on an efficient path across their entire lifecycle. At the Intersec Forum on 12 and 13 March 2019 experts will be discussing how these methods can be usefully incorporated.

We asked Günther Mertz, CEO of the German Association of the Building Services and Technical Installation Industry (*Bundesverband Technische Gebäudeausstattung e.V. – BTGA*) about BIM-based methods in practice.

1. Mr. Mertz, how fully does the building services and technical-installations industry already use BIM-based methods?

G. Mertz: The BTGA is an organisation of industrially based firms building plant and equipment. They are able, both technically and commercially, to install and maintain technical building systems, even for major construction projects, and to operate them if necessary. The focus of these companies is on non-residential buildings in Germany and other European countries. These companies have their own engineering staff and facilities, and some of them also provide planning services. Given this background, we turned our attention very early to the subject of building information modelling (BIM). Digitisation took a prominent place in internal order management long ago. The mutually compatible planning tools used in these companies form the basis for this. Moreover any processing of the documentation supplied by the client is unthinkable without digital support. Digital planning methods are also used in work preparation and prefabrication. Through digital data handling the processes are being slimmed down, changes can be communicated more simply to the workshop, and the quality of the prefabricated products rises. Should the developer so wish, and should it be part of the commission, our companies are able to work with BIM on their own account or to provide the requisite digital data for use in BIM data models.

2. What does a digital planning method such as BIM bring to security technology or security-technology networking?

G. Mertz: By using the BIM method the data relating to components used in buildings is stored on a joint data platform. The IFC data-exchange protocol is used for communication between the individual

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specialist models and the building-data model. This data protocol has already been established as standard in Germany since 2017 as DIN EN ISO 16739. This joint language makes it possible to exchange information digitally between individual sectors of industry. Individual security-relevant elements, such as windows, external doors, or areas needing particular protection, such as computer rooms, can be registered rapidly and completely. Naturally the security-technology sectors benefit from this. Their planning is significantly simplified and potential gaps in the surveillance technology can already be clearly identified by visualising them in the building model at the planning stage. Add to this that management of buildings using the BIM model is possible in a significantly simpler and more effective way. Servicing, maintenance and defect removal become more transparent and simpler.

3. Which method is the really promising one? Does everything depend on IT-interface establishment or rather on the quality of joint standards and rules of play?

G. Mertz: The basis for any information exchange is a joint language. The basis for communication with the BIM data model is IFC, an open standard for the digital description of building models. IFC is set as international standard ISO 16739 and has now been adopted in many countries into their own standard regulations. Language, however, is only one factor in communication. For a common understanding it is also necessary to have rules of the game. This being so, a joint standard for data transmission is just as important as a common understanding of the contents so transmitted.

4. The call for digital planning tools has reached the operators. The latest recommendation of the German Taxpayers' Association (*Bund der Steuerzahler (BdS)*) in its Black Book for 2018-19, considering the significant cost increases in public-sector buildings, is urging that it is high time for digital planning methods to be used there. Will this development be accelerated if building operators become both operators and drivers of digital building-planning applications?

G. Mertz: Markets are determined by supply and demand. If there is no demand on the clients' part for the use of the BIM method, this will not be a part of the contract and consequently will not be used across the board. Only if a client realises what he can expect from a digital building model, and both sets and commissions this as a client-information requirement, will it be possible to use the BIM method for the benefit of all parties involved. With regard to the construction of public buildings, the wish and the reality are worlds apart: true, there is, at the political level, a substantial commitment to the inevitable BIM future, but if we look at the current disaster around the government district in Berlin, reality catches up with us quickly.

5. Where do you think digital building planning and management will ideally and shortly become compulsory?

G. Mertz: The biggest benefit to be derived from digital building planning

will come in the planning, construction and operation of large non-residential buildings. It is precisely in the coordination of work by different sectors of trade and industry, and in the clarification of complex interfaces, that the BIM method shows its strengths. Of course the digital building model brings also a high benefit in the operation of buildings. This, for instance, is something which the public sector has recognised, and it intends in future to require the BIM method when issuing tenders for construction work. In the North Rhine-Westphalia party-coalition agreement of 2017, for example, BIM has been made a compulsory requirement from 2020 in all contracts awarded by the NRW Building and Real Estate Management Authority and Road Construction Authority. The use of the BIM method is always understood as a service to be commissioned. The type and scope of the BIM data model depend on the client's requirements and are therefore not set in a general way.

6. Can and will the building-services and technical-installation industry, become a model for the construction industry in the field of BIM?

G. Mertz: The building-services and technical-installation industry will hardly be in a position to pioneer BIM in the construction sector. Rather it will be the major construction companies, building key-in-hand properties, which will become the pioneers. Starting from the time when the building is under planning, all the way to handover of the finished property to the user, many benefits offered by the BIM method will be suitable for use. This is something which the big companies have realised, which is why they are already working today with closed BIM in their own businesses. The decisive factor, however, is that we set our own benchmarks. We turned our attention to BIM early, in order not to have something just presented to us at the end and be told "take it or leave it." This being so, we have adopted the role, not of an exemplar, but of a driver.

7. The Intersec Forum will be devoting the second day of the conference (Wednesday 13 March) to the theme of "New requirements for planners and installers: BIM and building-contract law." What should the participants be sure not to leave out?

G. Mertz: Strictly speaking, the participants should leave nothing out and learn to understand the interplay between all the technical, organisational and legal aspects. That would surely be a unique selling point for the Intersec Forum. The talks will show the participants that even today the use of digital methods is essential in planning, constructing and operating buildings. To maximise its advantages, and to optimise the benefit for all those involved, requires the digital networking of all data relating to a building. All this can be provided effectively by using the BIM method.

A personal question: which installation would you definitely like to have in your own four walls or which is going to be installed there soon?

G. Mertz: I built a low-energy house no less than 12 years ago; it is heated by a local-heating network using regenerative energy. Of course

the building is fitted with central room ventilation, using heat recovery, and two years ago a humidification installation was incorporated into the ventilation system, and now I would no longer like to do without it. If I were building another house today, I would certainly invest more in home automation.

But now the acid test: where in the Mertz house is the construction plan of your own home stored and does it contain the final installations at the time the building was finished?

G. Mertz: Twelve years ago BIM had not been heard of in the residential sector. Nevertheless, the technical documentation drawn up by the general contractor is very good and – how should it be otherwise – is in a cupboard, in paper form. However, it would probably not survive a check on the original plan and the final installation.

Thank you for the interview, Mr. Mertz!

Intersec Forum 2019

The fourth Intersec Forum will be held on the second and third day (Tuesday + Wednesday, 12 and 13 March 2019) at ISH – The World's Leading Trade Fair for HVAC + Water – in Hall 10.3, directly adjacent to the product areas of plant, room and building automation, and energy management. There visitors will find talk and exhibition areas with partners from building-information modelling (BIM), building services and technical installations, property management and institutes of higher education. The programme for the Intersec Forum is available online. Participation is included in the ticket price for visiting ISH.

Additional sources of information:

www.btga.de

www.blb.nrw.de

www.strassen.nrw.de

www.planen-bauen40.de

www.buildingsmart.de

Images & press releases:



Günther Mertz, Chief Executive Officer, BTGA
Source: BTGA 2018

Intersec Forum
Conference for Connected
Security Technology
Frankfurt am Main, 12 + 13 March 2019

The portrait, conference programme and additional information at:
www.intersec-forum.com

On the internet:

www.intersec-forum.com/twitter

Background information ZVEI: the association of a high-tech industry in Germany

The German Electrical and Electronic Manufacturers' Association (*Zentralverband Elektrotechnik- und Elektronikindustrie e.V. – ZVEI*) represents the interests of 1,600 companies of the electrical industry and associated service companies in Germany. One in three of all innovations in Germany's processing trade has its origins in an impulse from the electrical industry. The sector employs 868,000 people in Germany and more than 736,000 around the world. Further information: www.zvei.org

Background information on Messe Frankfurt

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Further information is available at: www.messefrankfurt.com

* provisional figures 2018