Deutsche Bahn Brick and Tower combine masonry and plasticity in the facades as a reference to the history of the formerly industrial areas of the Europaviertel.
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Allplan in practice

ARCHITECTURAL QUALITY IN THE INTEGRATED PLANNING PROCESS

More and more buildings are being constructed without knowing who the future user will be. This requires a high degree of flexibility in design and execution, because the future building must reflect the widest possible range of conceivable uses.

The renowned Frankfurt office, Schmidt Ploecker Architects, was faced with precisely this challenge. On the site with the catchy name "Brick" and "Tower" in the Europaviertel in Frankfurt am Main, they had designed and developed – together with the owner and investor – flexible solutions in order to be able to react as broadly as possible to a future tenant, who was not initially available. Then, in 2017, an occupier was found in the form of Deutsche Bahn, who wanted to use the entire "Brick", located in the eastern part of the property, as a closed-block development. There was also great interest in the 16-storey high-rise tower that closes off the development on Europa-Allee to the west. The prerequisite: both buildings had to be completed quickly by the move-in date of summer 2020.

General view of Deutsche Bahn Campus – consisting of DB Brick and Tower along Europa-Allee, Frankfurt am Main. Where the green strip can still be seen today, a subway will provide better connections to the Europaviertel in the future.
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EFFICIENT WORK UNDER A HIGH-PRESSURE DEADLINE

For Schmidt Ploecker Architects, the major challenge was to complete the DB Tower on time. When Deutsche Bahn was announced as the tenant, a plan already existed, but it had to be completely revised due to their specific requirements. The subsequent construction period therefore quickly shrank. Less than two years elapsed between the revised planning and the move into the two buildings.

This tight schedule was made possible by a high degree of prefabrication and consistent lean construction management in the Tower area. For the design of both the Brick and the Tower, the architects relied on Allplan, which proved its worth throughout the entire project thanks to its wide range of application options. "Allplan is very powerful and requires precise preparation in advance. The benefits, especially in the collaboration with the other specialist planners involved, only come into their own if we get together in good time during the project and coordinate the requirements with each other. In the past ten years that we have been using the software, we have therefore optimised a great deal for ourselves," said Schmidt Ploecker's Managing Director, Jessica Schauer.

INTEGRATED PLANNING PROMOTES COLLABORATION BASED ON PARTNERSHIP

Integrated planning across disciplines and with common standards and requirements is one of the recurring themes in all the projects of the successful architects' office. The importance of this is increasing, which is also due to the growing complexity of the projects since the office was founded ten years ago. The interaction of ten or more planning participants is not uncommon, and therefore requires increasingly comprehensive sets of rules for collaboration. This takes the form of a common modeling quality standard, a uniform and binding Common Data Environment (CDE), and, above all, the BIM execution plan.

However, this approach applies to open BIM projects, which are always implemented with a large number of model-based specialist plans. The DB Tower was not completely BIM-based. Nevertheless, BIM had a high priority. Schmidt Ploecker Architects used their building model primarily for the calculation of areas, volumes, and quantities, the room book, or for the creation and maintenance of the window and door lists. In their own office, Little BIM came into play, so to speak. The planning partners involved worked in parallel with their own software solutions, with 3D-based building services planning and

View into the inner courtyard of the Brick, which is enclosed by the two U-shaped building sections. The old Deutsche Bahn building can be seen in the background.
© Lars Gruber, Darmstadt

structural engineering. An open BIM process took place, at least in part. The data exchange between the partners took place on the basis of 2D plan files and via the open IFC exchange format.

CONSISTENT CONTINUATION OF PLANNING – RIGHT THROUGH TO BUILDING OPERATION

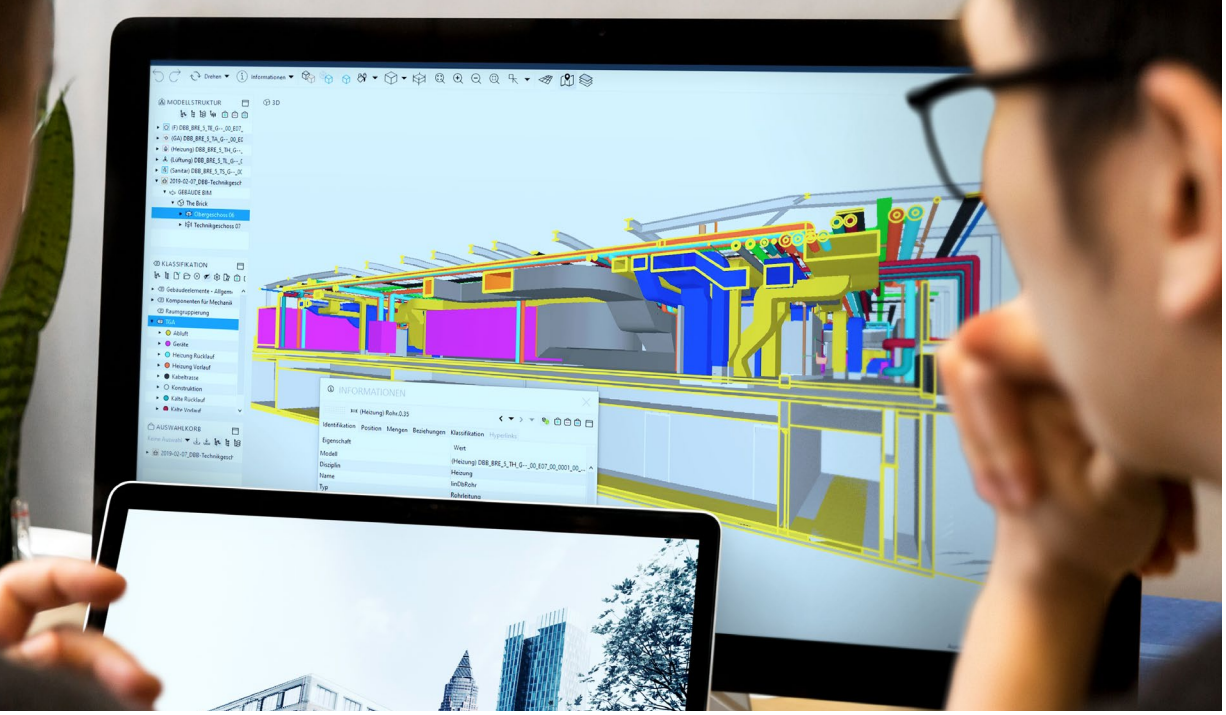
Schmidt Ploecker Architects work with digital planning methods on a daily basis. Above all, they are essential for the definition of internal office standards, the planning quality itself, and the exchange with the specialist planners in the projects. Here, the office invests a lot of time and manpower in the consistent digitalization of its own processes. Today, Schmidt Ploecker Architects are able to map the quality management of their planning completely using models. But 3D planning can also be used for other purposes. "In the case of the Brick and DB Tower, we developed an FM cadaster in which defined attributes of the individual components were consistently included. This is very important for operations, for example, for determining maintenance intervals for technical fixtures or calculating the areas in the building that need to be cleaned," said BIM professional Öner Tiryaki, who is responsible in the office for BIM implementation in the projects and the company's own processes.

PROJECT INFORMATION AT A GLANCE

- **Focus:** Architecture
- **Software used:** Allplan Architecture
- **Architect:** Schmidt Ploecker Architects PartG mbB
- **Client:** Aurelis Real Estate GmbH
- **Service phases:** 2 – 5
- **Start of construction:** December 2017
- **Construction completion:** September 2020

HIGH MODEL QUALITY FOR OPTIMAL PLANNING EXCHANGE

Christopher Mück, deputy project manager in the DB Tower project team, focuses not only on technical standards but also on cooperation and quality standards during the partnership. "We always see each project as an overall planning team. What is created is always a team effort and developed together with our partners. In the same way, we coordinate our own work with the specialist planners. We see ourselves as partners in an integral process. There were therefore no personal agendas that would have stood in the way of joint planning in the DB Brick and DB Tower project," he explains. Managing Director Jessica Schauer describes the process further. "This also applies with regards to the use of 3D planning. The façade design and its interaction with the supporting structure was a particularly important point in which our cleanly



Virtual 3D collision testing. On the screen: the Brick technology story. © Schmidt Ploecker Architects

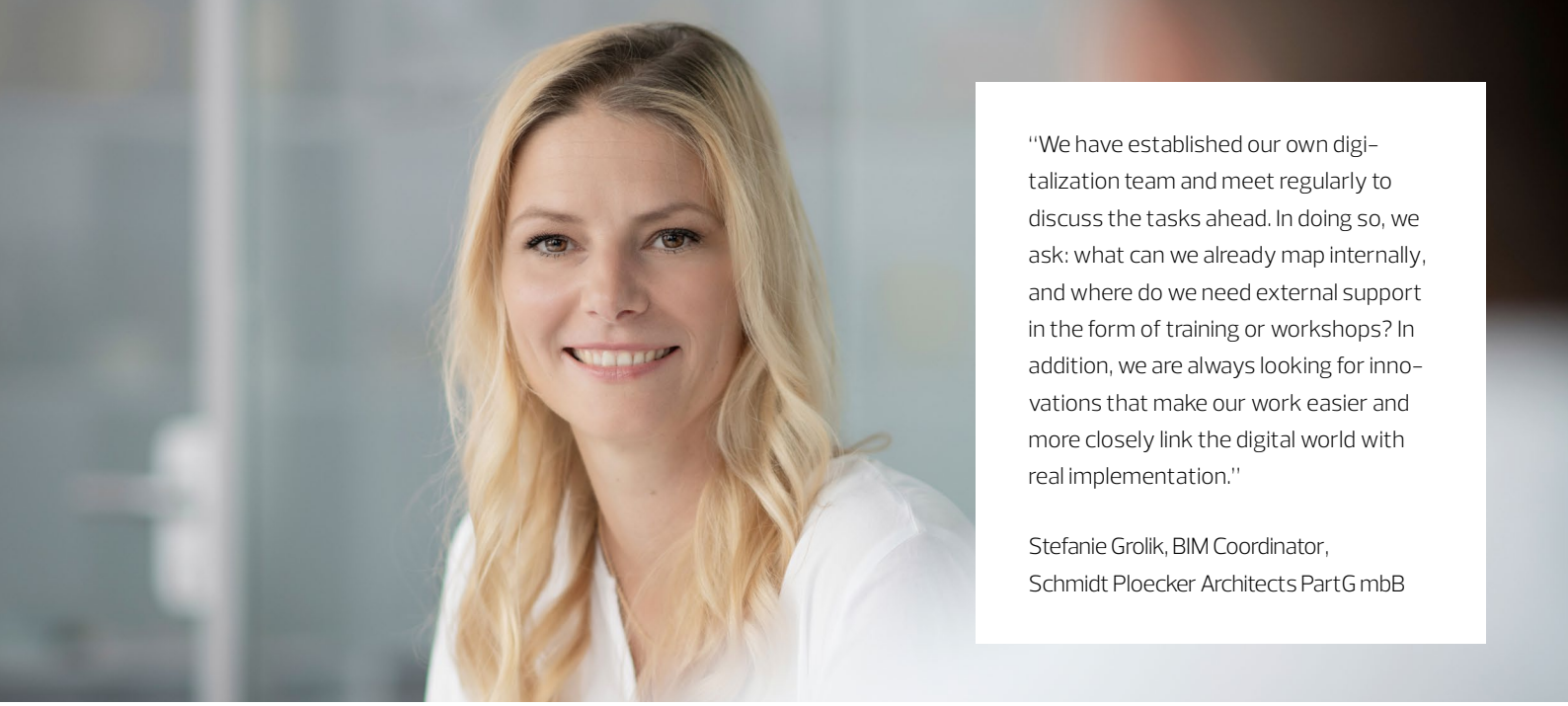
set-up architectural model became very important. We sent it to the structural engineer as an IFC file directly from Allplan. We absolutely wanted to do without supports in designated areas and therefore handed over the 3D design to him as the basis for his calculations," she adds.

INTERNAL BIM COORDINATION FACILITATES COLLABORATION ON THE PROJECT

The design checks with regards to the appropriate use of the BIM methodology – both internally and with the specialist planners – were carried out by the in-house BIM coordinator, Stefanie Grolik. She has been responsible for the gradual implementation of digital planning methods at Schmidt Ploecker Architects since 2017. Together with the project teams, she examines the options for using the BIM method in the respective project. The continual further development of the integrated way of working across the board – and being open to solutions – is the focus of her work. "We have established our own digitalization team and meet regularly to discuss the tasks ahead. In doing so, we ask: what can we already map internally, and where do we need external support in the form of training or workshops? In addition, we are always looking for innovations that make our work easier and more closely link the digital world with real implementation," says Stefanie. The projects of the past form the basis for this. The architecture firm was able to learn a lot and adapt their approach for their follow-up projects – especially when it comes to support in the important start-up phase. Schmidt Ploecker Architects are therefore in a position to offer BIM workshops for new projects, for example, in which they work out the basics with less experienced specialist planners and jointly check the exchange of data using test models.

EXPLOITING POTENTIAL AND FURTHER DIGITALIZATION

Schmidt Ploecker Architects are working extensively on further optimizing the modeling standards and work processes in the office. These must be coordinated with the software solutions that will subsequently be used, such as cost and quantity takeoff, or software-supported quality management. In addition, the teams have to be introduced to the new way of working. This works very well, as Stefanie Grolik explains. "We are a young office. The employees are already familiar with the BIM methodology through their studies and the ongoing projects in the office," she says. Nevertheless, there is additional potential that the Managing Director, Jessica Schauer, would like to exploit. "We want to make much more use of the BIM2AVA area. We see great opportunities here to define volumes and quantities with a high degree of accuracy early on in the project. Allplan can support us in this, because as the main planning tool it offers the necessary accuracy and the appropriate interfaces to our other software solutions," she states.



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Stefanie Grolik, BIM Coordinator,
Schmidt Ploecker Architects PartG mbB

THE CUSTOMER

For Schmidt Ploecker Architects from Frankfurt am Main, good architecture is modern but never fashionable. According to this credo, which is based on the lifespan of real estate, the goal of their work is architecture that confidently takes its place and stands out positively through its shape, scale, and material. In the office, 50 architects work in well-trained project teams on new buildings, revitalizations, conversions, and interior designs. The range of activities includes the architectural concept, planning, and realization of projects of different sizes and service phases, from urban design, office construction and conversion, and housing, to public buildings such as schools and hospitals.

ABOUT ALLPLAN

ALLPLAN is a global provider of BIM design software for the AEC industry. True to our "Design to Build" claim, we cover the process from the first concept to final detailed design for the construction site and for prefabrication. Allplan users create deliverables of the highest quality and level of detail thanks to lean workflows. ALLPLAN offers powerful integrated cloud technology to support interdisciplinary collaboration on building and civil engineering projects. Around the world over 500 dedicated employees continue to write the ALLPLAN success story. Headquartered in Munich, Germany, ALLPLAN is part of the Nemetschek Group which is a pioneer for digital transformation in the construction sector.

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