

High-rise Giessen Tower,  
Dübendorf (ZH),  
Switzerland

### Allplan in practice

## THE ADVANTAGES OF BIM

**“Thanks to BIM, we can achieve a very high level of cost accuracy, which we used on the Giessen Tower project for both the preliminary design and construction.”**

**Matthias Moog, atelier ww Architekten SIA**

The city of Dübendorf, located on the eastern edge of Zurich, plans to develop sustainably in the coming years. New districts will emerge, centers will be enhanced and new living space will be created. This also includes the district Im Giessen, which will be located between the city center and Überlandstraße in a disused industrial area. The project will be built in three stages. Around 300 rental apartments of varying cost and a small commercial development will be created in the first two stages by the end of 2019. The approximately 85-meter-high Giessen Tower will be a future landmark in the region.

The urban planning development of the Im Giessen district took place in close cooperation with the client — Credit Suisse Real Estate Fund Siat (CS REF Siat), a real estate investment company of Credit Suisse AG — and the project developer Implenia, as well as the Dübendorf authorities. Architecturally sophisticated yet unpretentious, the Im Giessen district forms a gateway to Dübendorf. Different types of apartments, age-appropriate living space and assisted living provide an optimal mix for the sustainable development of the district.



floor plan of 15th floor

## THE NEW DISTRICT IS BEING CREATED IN THREE STAGES

The large Im Giessen plot has been owned by Givaudan SA—who are based in Vernier, Switzerland — since 1948. The company employs around 9,400 employees in over 40 countries and is the world's largest producer of flavors and fragrances. The measures adopted in 2012 as part of Givaudan's location strategy included, among other things, a partial sale of the area in Dübendorf. In 1993, Givaudan created a master plan and project concept that were used as the basis to develop the special building requirements for the Im Giessen area by 1995. The special building requirements approved by the government council in 1997 were necessary because the property owner wanted to develop the area north of the Glatt river for future mixed use, as it was no longer needed for business operations. Since March 2014, CS REF Siat has been the owner of various parcels of the Giessen plot. Before the actual planning of the projects on the large 25,700m<sup>2</sup> plot started, a master plan was developed in cooperation with the architect, atelier ww Zürich. In coordination with the client, project developer and the Dübendorf authorities, and on the basis of the special building requirements, the planning principles were defined with this master plan. A study contract was carried out for the first construction site (M2). The winning design of A.D.P. Walter Ramseier Partner AG Zürich with the current project name „Giessenhof“ includes a perimeter

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### PROJECT INFORMATION AT A GLANCE

- > **Focus:** Building Information Modeling
- > **Software used:** Allplan Architecture, Solibri

### INVOLVED IN THE PROJECT

- > **Owner and client:** Credit Suisse Real Estate Fund Siat, a real estate investment company of Credit Suisse AG
  - > **Developer and general contractor:** Implenia AG, Zurich
  - > **Master plan:** atelier ww, Architekten SIA, Zurich
  - > **Architect of Giessen Tower:** atelier ww, Architekten SIA, Zurich
  - > **Architect of Giessenhof:** A.D.P. Walter Ramseier Partner AG, Zurich
  - > **Spatial concept:** vetschpartner Landschaftsarchitekten AG, Zurich
  - > **Room atmospheres:** PFISTER Marketing & Spacing
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block development with 166 apartments. The second project on the M1.1 construction site is called „Giessen Tower,“ which was developed by atelier ww based in Zurich. It includes the construction of an 85-meter-high apartment building on a four-story base structure.

Among other things, the range of uses includes a residential care home as well as 130 retirement and rental apartments. Additional living and commercial



Allplan 3D Model

space with around 80 apartments is planned for the M1.2 construction site. The project is complemented by an area for public and cultural use. The new district will be realized in three stages. The Giessenhof should be ready for occupancy by fall 2018. The building application for the Giessen Tower will be submitted to the relevant authorities in the coming months, with occupation planned for the end of 2019. The completion of the third stage is currently scheduled for the fall of 2021. The project should be convincing not only from an urban development perspective, but also in terms of sustainability. This is shown by the Credit Suisse greenproperty Gold seal of quality, the heat recovery from the Glatt river, and the planned social mix of the district.

### 85-METER-HIGH TOWER AS NEW LANDMARK OF THE REGION

A wide variety of urban planning options for the Giessen Tower were reviewed by atelier ww over the course of a year. In particular, the city of Dübendorf demanded a careful review of the location for the high-rise apartment building, taking into account the planning conditions. After many discussions with the urban planning personnel of the city of Dübendorf, the location proposed by atelier ww was unanimously agreed as the most suitable. The 85-meter-high building marks the interface between the commercial and industrial area and the close-knit center of this historic community. Seen from the west, the high-rise building stands as a landmark or entry gate. The tall and compactly

designed icon of urban planning—consisting of the four-story base interlocking at angles with the high-rise building—creates a strong, unmistakable identity. The exterior design is secondary to the powerful volumetric concept and supports it. The facade elements—bordered in aluminum frames on the mullion-transom structure—vary in width depending on the type of opening. They playfully weave to form an elegant, airy veneer that envelops the building as its skin. The base structure has a residential care home with 60 assisted living apartments and other associated areas. In addition to the total of 80 retirement apartments, the tower has 50 rental apartments from the 16th to the 25th floors.

### PLANNING THE GIESSEN TOWER ACROSS ALL PHASES WITH BIM

„The project is almost perfect for using BIM,“ says Matthias Moog, project manager of the Giessen Tower at atelier ww. The architect HTL used a four to five-person team on this major project, with a total investment of around 85 million francs. For atelier ww— who has around 40 employees— this project is the first construction project fully planned in BIM (Building Information Modeling). The requirement for consistent planning based on the BIM process came from the project developer Implenia, who was also the BIM manager. The client supported the decision to use BIM from the start. Matthias Moog explains why this project is virtually perfect for planning with BIM: „Due to the different



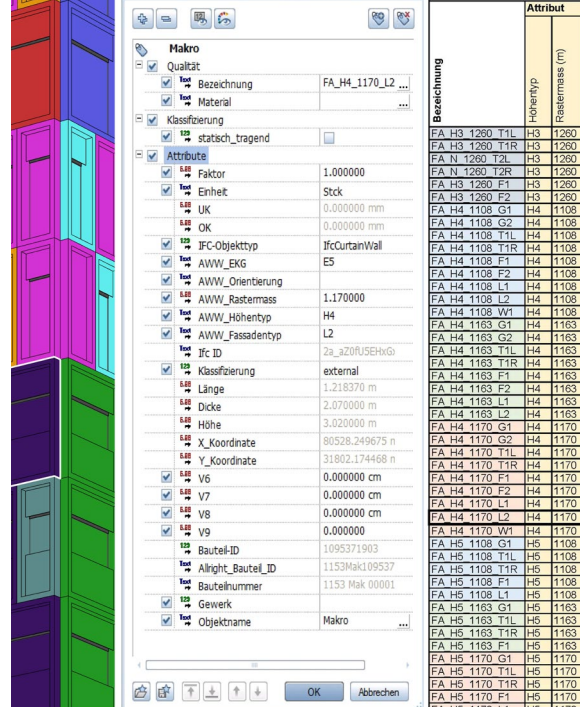


Fig. left:  
Digital information  
(identical facade elements)

Fig. right:  
Information management  
(attributes)

mix of apartments and the offset angle of the high-rise structure, neither the structural nor the building service requirements are routine and the complex exterior also required intricate planning." According to him, it would not have been possible to plan the facade other than in 3D. The planning team of atelier ww regularly participates in workshops organized by the BIM manager to determine the design interfaces and the amount of respective information in the model.

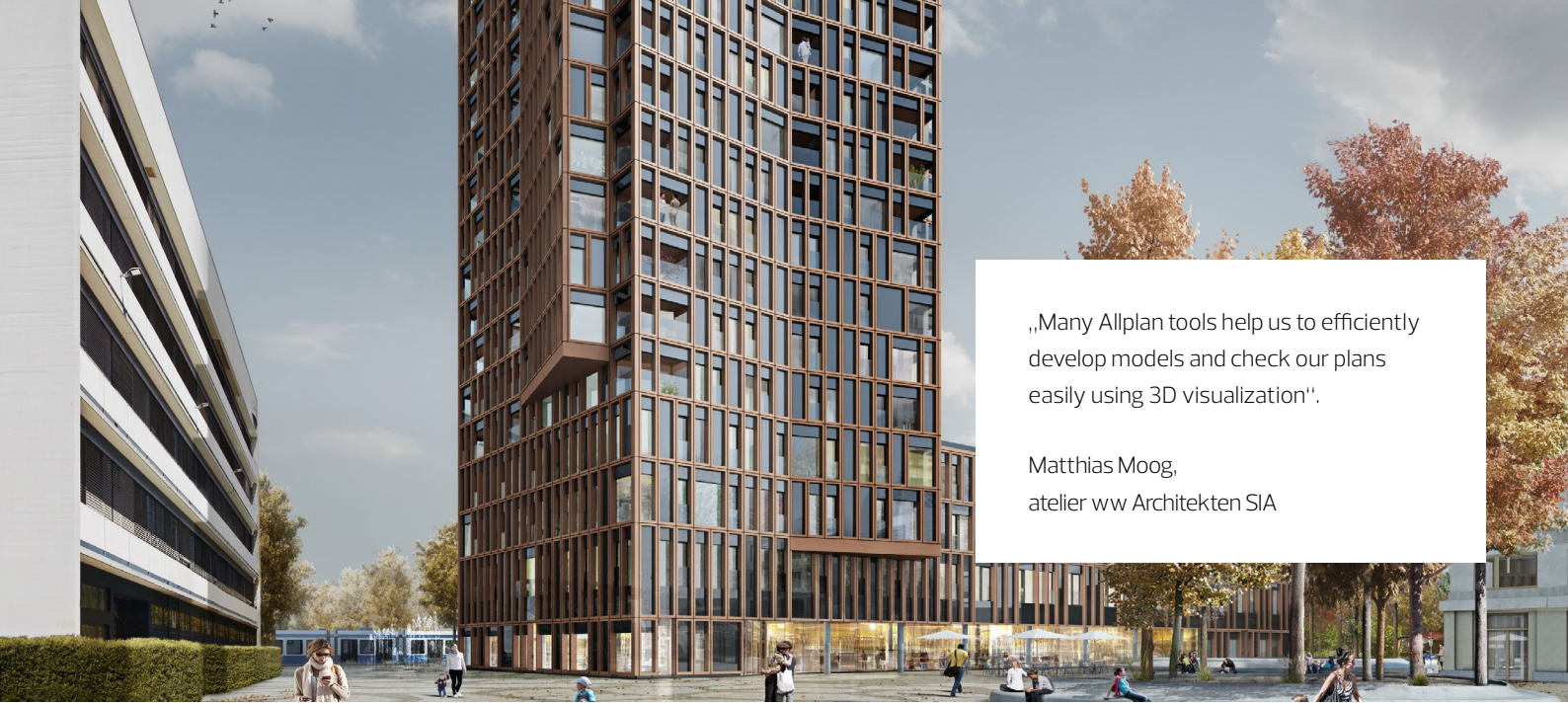
## ALLPLAN PROVIDES BIM CAPABILITY

„We have never worked on a project in 3D in so much detail as with the Giessen Tower project," says Matthias Moog. He and his team are continuously faced with new challenges, but they find solutions thanks to the BIM capability of the Allplan software. "Thanks to 3D and BIM, we are now able to take advantage of Allplan's capabilities much more comprehensively than in the past," says the architect as he reports on the experiences they have had. He also proudly refers to his team, who embrace the digitization of the planning processes wholeheartedly, even if this is sometimes extremely challenging. The models created in 3D are used for data exchange with other technical designers by using the standardized IFC interface. „This exchange via IFC actually works very well," says Matthias Moog, „even if the IFC interface is not 100% er-

ror-free." The congruence of the models with each other is checked by software provided by Implenia. BIM also forces you to fully complete the planning stages to a greater depth, which according to Matthias Moog is an advantage that is not to be underestimated, especially when it comes to exchanging information with the technical designers."However, for this to be possible, implementation decisions need to be made much sooner with BIM than with conventional planning," he adds. What other experiences has he had that he wishes to pass along? „Do not draw too much in the beginning, but rather build step-by-step. And do not specify too many attributes when exchanging via the IFC interface," answers Matthias Moog.

## THE ADVANTAGES OF BIM ON THE GIESSEN TOWER PROJECT

It still cannot be fully estimated what benefits BIM will have on the Giessen Tower project. But the expectations are clear: Fewer design errors, higher cost certainty, and accurate schedules. All areas and quantities can be determined simply and efficiently thanks to the 3D model. The cut and fill can also be determined from stored component-related information, called attributes. This is useful when determining the costs. Thanks to BIM, we can achieve a very high level of cost accuracy, which we used on the Giessen Tower project for both the preliminary design and construction,"



„Many Allplan tools help us to efficiently develop models and check our plans easily using 3D visualization“.

Matthias Moog,  
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says Matthias Moog. It is also planned to simulate the creation of the building by using 4D planning, i.e. adding the dimension of time to the 3D model. The knowledge gained from this would then be incorporated back into the planning. Based on their experience with BIM so far, Matthias Moog now asks why BIM has not found its way into planning offices sooner: „The advantages are really impressive. This is why we now recommend BIM digital planning to clients

for select properties.“ The architect is also extremely satisfied with the software from ALLPLAN as well: Many Allplan tools help us to efficiently develop models and check our plans easily using 3D visualization. The collision check and ability to very quickly filter information are very valuable tools for us. I have only listed a few points here, but there are many more.“

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## 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 entire 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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