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Allplan in Practice

SKY PARK BRATISLAVA: LIVING, WORKING, SPORT AND RELAXATION

A unique city park is being created in Bratislava. A number of well-known names such as Zaha Hadid Architects, the London studio Townshend and the urban planner Igor Marko are involved in its design.

In addition to residential, office and commercial space, the new complex also offers thousands of square meters for sports and relaxation, all integrated into the newly designed, hilly landscape. The first phase of Sky Park is scheduled for completion in summer 2020.

The panorama of the Sky Park complex is dominated by four high-rise buildings – identical residential towers. The project also includes two office buildings, with commercial use planned on the first floor of the towers. The project includes jogging tracks, a number of sports and playgrounds, a dog run, water areas, small cafés and stores. The designers aim to create a diverse natural habitat by combining large green areas with smaller gardens.



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THE JURKOVIČ HEATING PLANT

The new residential and commercial building complex will be built in close connection with the surrounding city. The complex also includes the historical building of the Jurkovič heating plant, a Slovak cultural monument. After its completion, the heating plant will find a new use – the industrial building will house coworking offices, a café and a restaurant.

SKY PARK RESIDENCE

The first three of the four towers designed by Zaha Hadid Architects are currently under construction. These are three identical towers with 31 above-ground floors and a height of 104 meters, comprising almost 800 apartments, 1,100 parking spaces in the basements and public facilities. The planners have designed the location and orientation of the towers so that the apartments offer a far-reaching view of the panorama of the city center.

CONSTRUCTION AND STATICS

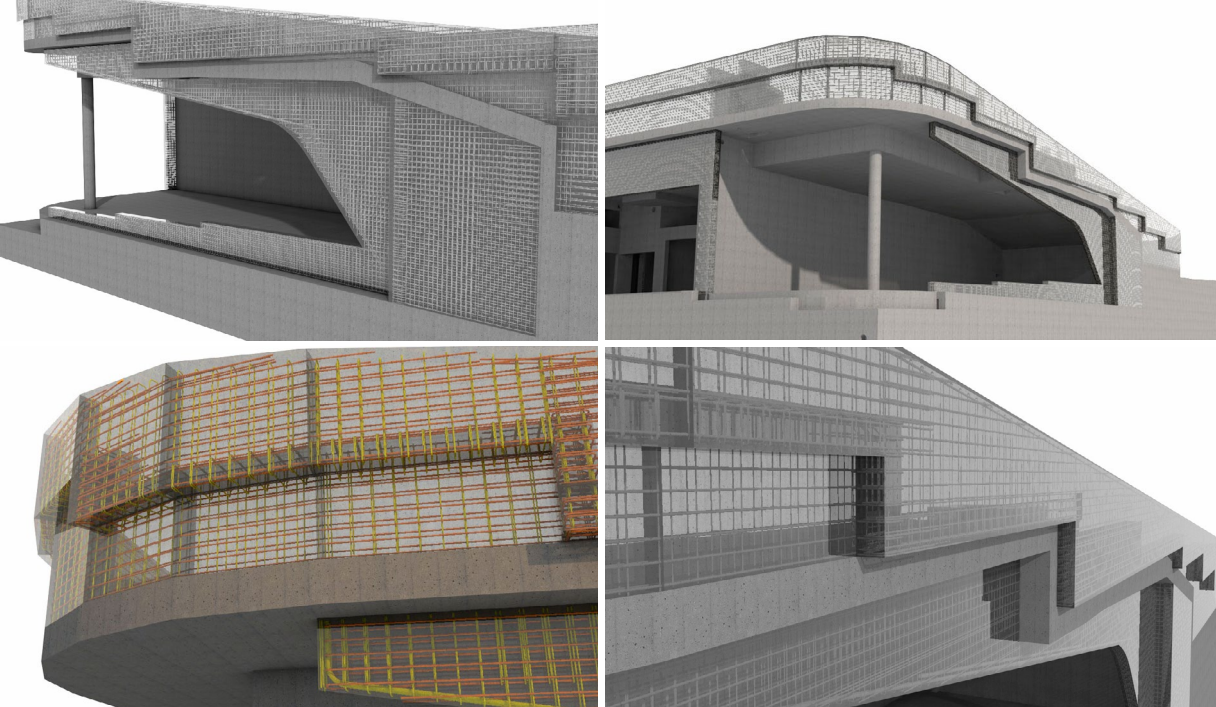
The towers are connected underground. When designing the foundation, it was therefore crucial to reduce the uneven subsidence of the building structure and the surrounding base, which was achieved by a pile-plate foundation. For the slab

without a substructure of the first basement level under the park, which is loaded with layers of substrate, the planners proposed a local reinforcement with a two-stage head section.

The residential towers have an elliptical ground plan, which gradually widens from the first floor in a transverse and longitudinal direction and then gradually tapers from the center up to the roof. On the first floor of the buildings, an open column skeleton is used, which then enters the wall system on the residential floors through reinforced transition beams. The roof of the building has a steel structure in the form of an elliptical dome, the framework of which forms the upper part of the outer skeleton of the façade.

APPLICATION OF THE BIM METHOD

In the Sky Park Residence construction project, the Prodis project team applied the BIM method with a central building model that allowed the exchange of information and ongoing adjustments by architects and building engineers in real time. The structural analysis of the load-bearing structures was carried out with the structural analysis software SCIA Engineer from Nemetschek. The BIM solution Allplan played an important role,



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especially in the structural design. During the reinforcement itself, the designers learned to appreciate many functions, such as the modeling of variable elements, arch elements, reinforcement along path, etc. With countless complicated shape details, Allplan provided a comprehensive 3D view of the reinforcement in the formwork, enabling the reinforcement arrangement to be solved efficiently and without collisions.

PROJECT INFORMATION AT A GLANCE

- > **Focus:** BIM
 - > **Software used:** Allplan Engineering, SCIA Engineer
 - > **Architect:** Zaha Hadid Architects
 - > **Responsible Design Engineer:** GFI, a.s., PRODIS plus s.r.o.
 - > **Country:** Slovakia
 - > **Town:** Bratislava
 - > **Project start:** 2018
 - > **Implementation:** 2019
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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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