BEHIND THE CONSTRUCTION FENCES | CONSTRUCTION DETAILS | TECHNOLOGY

River Park Modřany II, Buildings C+E

02.03.2021 / Česko / Karel Koehler

Building construction

Factbox

Client: Horizon Holding (Shikun & Binui Holding, Israel)

Contractor: PORR a.s. NL Prag

Architect: PORR a.s. design department

Contract Type: Generalunternehmer & Planung

Project Type: Building construction . Residential building

Scope: Planning and constructing two 13-storey residential buildings

Contract Volume: EUR 25m

Construction Start: 04/2020

Construction End: 06/2022

Location: Prague

PORR is responsible for two 13-storey towers in the River Park Modřany II project. The towers will contain 236 flats.

At the beginning of 2020, as construction prices continued to rise, project developers Horizon Holding (subsidiary of Shikun & Binui Holding) faced uncertainty about the future of the residential project River Park Modřany II. Would it be economically viable? PORR's project planning department stepped in and gave the plans a comprehensive makeover. The systematic use of building information modelling, or BIM, was key to the results: a cost-optimised execution variant for the client.

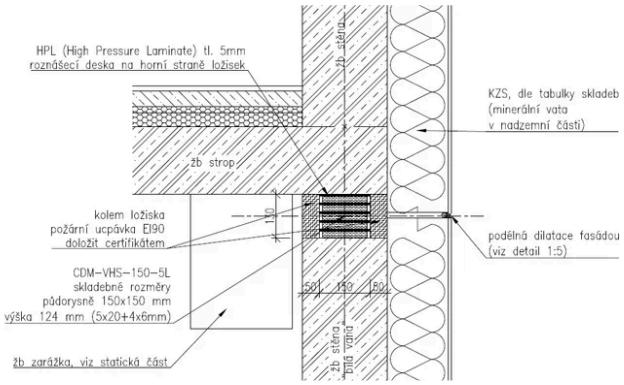
River Park Modřany II in Prague will be a residential complex with 800 flats, located by the River Vltava, next to the Hodkovičky golf club and Prague's main cycle route. The site is currently being transformed into an attractive residential neighbourhood with in environmentally friendly buildings. The area, a popular part of Prague, will be given a boost by the 800 new residences, which will offer an attractive lifestyle in a user-friendly complex with a very small environmental footprint. The building contract for two 13-storey buildings with 236 flats was awarded to PORR in spring 2020. Not long before that, the project had still been hanging in the balance, as the steady rise of construction prices called its economic feasibility into question. Faced with this uncertainty, project developer Horizon Holding concluded that the project could only go ahead if building costs did not exceed a certain upper limit. Then PORR's recently established project planning department stepped in. Using the original plans as their basis, the team systematically revised the project using building information modelling, or BIM, and managed to reach this ambitious goal. Autodesk Revit was used for the plans and Autodesk BIM 360 for execution, a system that enables PORR to distribute the project costs efficiently. PORR proposed a number of revisions, such as optimising the shafts, stairwells and utility conduits, which (among other things) increased the saleable living space. The team also revised the plans for the building technology, structure and structural engineering. In all, PORR's work saved the client 3 million euros.

> Using a BIM model and with various revisions to the plan, we were able to save the client 3 million euros.
>
> **Karel Koehler**

Systematic use of BIM

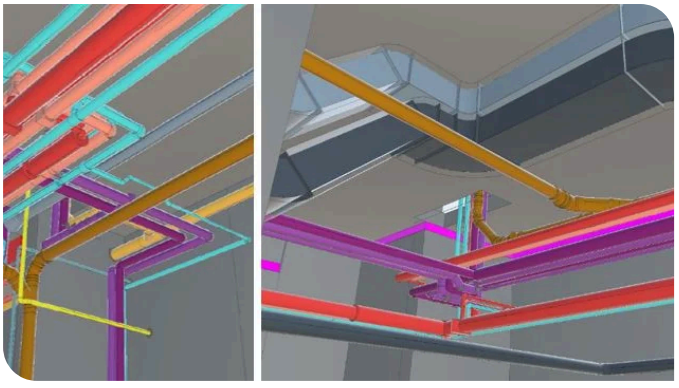
PORR managed to combine considerable cost savings with an increase in living space, despite being limited by having to use existing approvals and plans – for example, the distribution of flats across the storeys, the height of the underground parking and the building locations on the site were fixed according the client's assignment and could no longer be changed. Since this was the first BIM project for PORR's subsidiary in the Czech Republic, the team drew on the groupwide BIM expertise to develop the BIM-based project management plan. The client's documents were in 2D, so the first step was to create a 3D model using Autodesk Revit. This was the model subsequently used by all the project participants. PORR used Autodesk BIM 360 for project planning and Autodesk BIM 360 Coordinate for troubleshooting.

Rising to the challenges in high style



The contract was for the second stage of the River Park Modřany II residential project, which would start concurrently with completion of the first stage. One of the big challenges came from the structurally connected building elements that would be for shared use, such as the underground parking. These had to be taken into account from the very start of the planning stage. Another issue was that one of the residential towers were being built close to a railway. To avoid transmitting vibrations from the trains into the residences, they were constructed on vibration absorbers, which meant stringent requirements for the quality of the in-situ concrete structures – however, these presented no problems for PORR's internal department for in-situ concrete construction.

As well as building the two towers, PORR is responsible for implementing special requirements for the future owners of the flats. The direct communication link means that numerous problems and misunderstandings can be sidestepped at an early stage. Nonetheless, managing negotiations with 236 parties is a huge logistical and organisational challenge for PORR's customer service department.



Summary

By making extensive use of BIM, the PORR experts succeeded in developing a viable solution to allay the client's fears that the project might not be economically viable. Close collaboration between PORR departments is an important factor in keeping the project on schedule for completion on time and to the satisfaction of the future flat owners.

Technische Daten

Gross floor area	15,500 m²
Balcony area	3,290 m²
Retail area	945 m²
Storeys above ground	13
Underground levels	3
Parking spaces	216
Paved areas	1,500 m²
Green space	6,600 m²

Gallery