References

Refurbishment of a prefabricated building

Uponor involvement

- Uponor Minitec underfloor heating | Comfort Port manifold stations

Refurbishment of a prefabricated building

During the renovation of a prefabricated building in Zwickau, Robinienweg, a low installation height stood in contrast to the desire for more energy efficiency and comfort through underfloor heating. The solution: a slimline combination of Minitec underfloor heating from Uponor and N 440 leveling screed from Knauf.

Project Facts:

Location	Completion
Zwickau, Germany	2020

Building Type
Multifamily homes

Address	Website	Project Type
Robinienweg 8-16	https://www.wewobau.de/wohnen/neue-projekte/quartier-robinienweg/	Renovation

Partners

Builder:

Westsächsische Wohn- und
Baugenossenschaft eG, Zwickau

Planer:

Ingenieurbüro Rothe, Zwickau

Plumber:

Reischl Gebäude & Energietechnik
GmbH, Zwickau

Planning Screed:

Knauf Gips KG, Iphofen

Lean solution for more convenience

Retrofitting modern comfort in older buildings can pose challenges for planners and installers. This is why the following applies: in order to supplement and improve the technical equipment of existing buildings as part of a complete refurbishment, it is necessary to adapt to the conditions on site. This was also the case in Robinienweg in Zwickau, where the Westsächsische Wohn- und Baugenossenschaft eG (WeWo) planned to renovate one of its properties, a prefabricated building from 1965, and equip the 31 apartments on five floors with underfloor heating. The aim was to make the property fit for the future and enhance its value in the long term. Underfloor heating was also chosen for this reason: thanks to lower flow temperatures and more effective heat distribution, heating energy costs can be saved, ancillary costs reduced and living comfort increased.

Tailor-made and lean renovation solution

The main challenge in planning and installing the underfloor heating was the low construction height of the old slab building of just five centimetres. Normally, however, screed layers plan a nominal screed thickness of around 45 millimetres above the heating pipe alone, depending on the load requirements. This was not possible in Robinienweg - but the Minitec low installation system is ideal for precisely such cases because it is very flat with an element height of just twelve millimetres. If required, the system can even be laid over existing screed or flooring. Uponor Minitec Comfort Pipe pipes are designed for decades of operation: With their small dimensions, the PE-Xa pipes measuring 9.9 by 1.1 millimetres are optimized for use in renovations.

The project in Robinienweg, a ten-millimetre-thick WF wood fiber insulation board from Knauf forms the basis for the panel heating system. Together with the edge insulation strip from Uponor, the board provides good impact sound insulation in the apartment building - compared to before, the impact sound was improved by a total of 20 decibels. To protect the insulation

from moisture from the leveling compound and to ensure perfect strength development, a protective layer of soda kraft paper from Knauf is laid on top of the wood fiber insulation board. The basis of the Minitec system are the pipe support elements, the so-called foil elements, which can be quickly and easily attached to the floor thanks to their self-adhesive backing and connected to each other via triangular studs. A 20 millimeter thick layer of N 440 levelling screed from Knauf rounds off the construction in Robinienweg.

Rapid construction progress with prefabricated distribution stations

Uponor's renovation system in Robinienweg now ensures a pleasant room temperature across a total of 2,295 square meters of living space. To ensure particularly rapid construction progress, prefabricated Comfort Port distribution stations were also used in the slab construction, which were delivered directly to the construction site ready for connection, so that they only had to be connected there. This saved around 2.5 hours of installation and set-up time per distribution station - quite a lot with a total of 31 Comfort Ports installed.

Conclusion

The combination of the low installation system and levelling screed proved to be the ideal solution for the low installation height in Robinienweg: Together, the impact sound insulation, underfloor heating and screed are only 42 millimetres high - a particularly slim design, as Andreas Reischl, Managing Director of Zwickau-based Reischl Gebäude & Energietechnik GmbH, which was responsible for installing the underfloor heating, emphasizes: "The conditions on site were special, but the overall solution from Uponor and Knauf convinced us in terms of execution."

Robinienweg, Zwickau