References

Living at Walkstrom, Erfurt



Uponor involvement

- 56 Manifold stations Uponor Combi Port Pro for underfloor heating | 2 Buffer storage each with 1,500 liter | Filter systems and prefabricated pump groups with control systems

Living in Erfurt, Walkstrom

New living space on a historic site
The "Walkstrom", which forms a branch of the River Gera, flows through the western part of Erfurt. It was named after the fulling mill, where leather was tanned and cloth was refined since the Middle Ages. In the 20th century, the mill ceased operations and the building was converted for residential, commercial and storage purposes until the mill stood empty since the 1990s, fell into disrepair and was demolished in 2015 after a roof fire. New living space has now been created on the historic site.

Project Facts:

Location	Completion
Erfurt, Germany	2021

Building Type

Multifamily homes

Partners

Planer:
Ingenieurbüro HIRSCH GmbH
99085 Erfurt
https://ibh-erfurt.de/

Plumber:
Silvio Deutsch GmbH
99955 Bad Tennstedt
https://www.meisterbetrieb-deutsch.de/

New living space on historic site on the Walkstrom, Erfurt

The new residential complex, which was built on the site of the old Walkmühle mill, borders the center of Erfurt to the south and is surrounded by apartment and commercial buildings in the Wilhelminian style. Espach Park is located not far from the complex.

Five apartment buildings in three structures with a total of 56 residential units were built on the 4,468 m2 plot on the Walkstrom. An underground garage with 56 parking spaces has been built below the residential buildings, which functionally connects the three building sections. Access to the garage is via Straße des Friedens.

Energy efficiency and drinking water hygiene - everything from a single source

The building services planners Anne Kilz and Heike Mandler from Ingenieurbüro Hirsch GmbH paid particular attention to energy efficiency and drinking water hygiene. For heat distribution, they opted for the concept of decentralized fresh water heating from Uponor GmbH. The advantage: the dimensioning and design calculation of the various system components is determined individually for each project and represents a sound planning basis for the specialist heating/sanitary planners. This ensures optimum performance in terms of energy saving, drinking water hygiene and heating and hot water comfort.

Decentralized heat interface units for domestic hot water and heat distribution

Uponor's "Combi Port Pro" series of decentralized dwelling stations guarantee unlimited availability of domestic hot water and a year-round supply of space heating. In contrast to conventional heating and hot water supply systems, the installation work required on site up to the transfer point is reduced to a minimum with decentralized home stations. The heating water is transported from the central heating system to the Combi-Port Pro station in the apartment, where the water is then heated as required using a plate heat exchanger.

The home station also supplies the underfloor heating through separate, distinct water circuits. The buffer cylinder thus supplies the energy for domestic hot water preparation and room heating. Another major advantage: neither a central hot water pipe, a circulation pipe and the associated fire protection elements and insulation nor the central domestic hot water heating systems need to be planned. As fewer pipes are installed, the installation shafts are smaller and there is more space for living space. The installation time is also significantly reduced.

Each apartment has a Combi Port Pro station for supplying heating and drinking water; each station is equipped with a separate heating distributor including a mixing station and its own consumption recording with heat and water meters. The decentralized Combi Port Pro home station can also supply two bathrooms.

2-pipe network

The central pipe network distribution is located in the underground garage below the ceiling. The risers to the individual floors are routed in drywalls. Due to the extensive network of pipes in the unheated underground car park, a traditional installation with a central water supply would result in high heat losses. However, as a 2-pipe network was chosen, these heat losses do not occur - the distribution is much more energy-efficient.

The decentralized home stations are supplied with an Uponor SPG50 system pump group. This is factory-equipped with an Uponor Combi Control controller and fully wired. The efficiency of the system is optimized by the controller, which enables the lowest possible return temperatures and is also able to regulate the dynamics of the pipe network to ensure a high level of supply reliability.

The energy supply for the heating buffer storage tanks in the heating center is provided by a combined heat and power unit (32 kW, room air-dependent operation) in combination with a peak load boiler as a gas condensing boiler (150 kW, room air-independent operation).

Uponor GmbH supplied the entire solution consisting of 56 home stations, two buffer storage tanks with 1,500 liters each, filter systems and a prefabricated pump group including control technology. "A solution from a single source - that offers security, because all the system components are coordinated with each other," agree the TGA planners Anne Kilz and Heike Mandler.

Duration and quality of execution

The time aspect was important to the specialist trades company Silvio Deutsch GmbH: the concealed boxes are supplied prefabricated ex works with connection rails, heating circuit manifolds and actuators and with the Uponor Raummatic control manifold. "Rapid progress on the construction site is worth its weight in gold," says Marcel Roth, project manager at Silvio Deutsch GmbH.

In addition to ease of installation, great importance was also attached to an attractive appearance - both in terms of planning and the quality of the finish. The flush-mounted boxes all have a clean finish. A mounting plate was used instead of a screed bumper strip. This meant that the skirting board could be laid without interruption. In addition, the end frames are flush with the wall thanks to flush-mounted boxes - they nestle elegantly and beautifully into the wall. Dust and other dirt traps are not visible.

> "This project went really well in every respect," say the two MEP planners from Ingenieurbüro Hirsch GmbH. "It shows that energy efficiency, hygiene and comfort are by no means conflicting objectives. On the contrary, careful consideration and planning of all components can make a valuable contribution to the creation of new living space."