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Taconova Reference Property | Living East, Germany

TIME SAVINGS DURING INSTALLATION

«Living East» is a new property development in Erlangen DE. 28 consisting of apartments with living spaces of between 30 and 134 m². The luxuriously appointed, light-flooded apartments fitted with wellness bathrooms are each supplied by a combined heat transfer and fresh hot water station.

Initial situation

A hygienic and demand-driven supply of hot water and heating energy was to be ensured for the 28 newly constructed luxury apartments in accordance with the requirements of the drinking water ordinance. Residents were also to have the option to adjust the heating supply of the apartment individually and be provided with usage-based billing.

Solution

The requirements of the drinking water ordinance and the technical requirements for domestic hot water preparation systems were the critical factors in the choice of system for the Living East properties. The TacoTherm Dual Piko is a cleverly combined heat transfer and fresh hot water station. This technology for heat distribution and decentralized preparation of domestic hot water not only offers advantages in terms of installation, rather also provides comfort features for users in addition to cost advantages for investors and residential housing construction companies.

Implementation

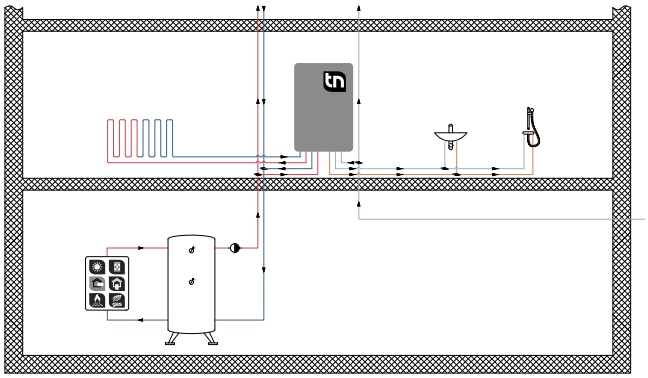
The new Living East construction project is supplied monovalently from the district heating network of the city of Erlangen, which provides heat output of 150 kW.
A 1,000 liter storage tank is interconnected at the district heat transfer point to optimize the heat withdrawal and to cover peak loads. Both the heating circuits and the preparation of hot water are supplied with the available flow temperature of 70 °C; the heating system is designed for a system temperature of 70/55 °C.
The stations regulate the flow temperature downwards to the system temperature for the underfloor heating by means of

an integrated three-way mixing valve. Only three pipes are therefore needed in each case to connect the heat interface units, thus reducing the space required in the installation shafts. A pair of pipes for the heating supply and return lines and a pipe for cold drinking water branch above the installation shafts in the individual building sections as heat and water veins to the heat interface units in the apartments.
The system unit is installed unobtrusively within the apartment in a narrow 110 mm built-in distribution cabinet.

Use

This system technology offers the occupiers of a residential unit the benefit of demand-driven hot water comfort and an individually adjustable heat supply. Domestic hot water is prepared in accordance with the continuous flow principle directly upon dispensing – and therefore only in the required quantity and at the desired temperature. Reliable protection against Legionella bacteria is therefore assured as well as anti-scald protection, because the drinking water only has to be heated to the selected dispensing temperature.
A differential pressure regulator on the heating side in the TacoTherm Dual stations ensures a constant hot water dispensing temperature, even if the pressure fluctuates in the heating distribution. The heating flow temperature can be adapted to individual user requirements in each apartment to enable personalized heat supply.

System / basic diagram



Exceptions

It is not only the visual appearance that benefits from the fact that no flush-mounted, built-in meters are required to measure the drinking water consumption. The pre-shutoff and metering for heating and drinking water are integrated in the heat interface units. Heat and cold water meters of a suitable installation length and depth can be used in the designated fittings, regardless of the specific brand.
Using heat interface units means that neither planners nor installers need to worry about the appropriate arrangement of meters within the residential unit. A further simplification for housing administrations is that hot water meters are no longer required. Only the amount of cold drinking water consumed is metered by the decentralized preparation of domestic hot water, because the thermal heat consumed in the preparation is recorded by the heat meter.

Summary / testimonial

«As the implementing HVAC company, the heat interface units initially offer clear time savings during installation. At the same time, we can ensure perfect hygienic preparation of hot water, because the drinking water is heated on demand in the apartments in accordance with the continuous flow principle,» reports Peter Wagner, co-owner of the HVAC specialist Sanitär-Team GmbH from Langenzenn, a company that has been active in the installation of plumbing and heating systems for 20 years in the larger Nuremberg area with a workforce of 12 employees. He found out about the heat interface units used in the Living East development at the booth at the IFH-Intherm trade fair in 2014 and decided there and then in favor of this system technology. And the reason: centralized supply of hot water with circulation involves significant expenditure for properties of this magnitude – especially in case of long or branched pipe runs, as explained by Peter Wagner.
Precise calculation and exact adjustment are required in order to ensure compliance with the maximum permitted temperature drop in the circulation sections in accordance with DVGW Worksheet W 551 for high-duty hot water systems. From practical experience, however, several readjustments are generally needed until the system accurately maintains the required temperature values.
One criterion for the required measures under DVGW W 551 is eliminated from the outset by preparing the domestic hot water decentrally in accordance with the continuous flow principle, since there is no storage-based preparation of the domestic hot water.

Facts & Figures

Property developer:	BAUHAUS. Liebe & Partner
HVAC specialist:	Sanitär-Team GmbH
Buildings:	Apartment complex with a total of 28 fully fitted apartments
Products:	TacoTherm Dual Piko

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