

ENGINEERING  
TOMORROW

*Danfoss*

Case Story | Havelterrassen Werder

In multi-family  
buildings, flat stations  
are nowadays  
**state-of-the-art**

EvoFlat™ flat stations

## The project:

Located in the vicinity of Berlin, the city of Werder is harmoniously embedded in river and lake landscape with abundant water, which stretches along the course of the Havel river („a hint of Tuscany in Brandenburg“). The „Havelterrassen am Zernsee“ project, with more than 100 apartments and numerous shops, is located in the heart of this area, where untamed nature, peace and water prevail. The investor is Antan Recona Objektgesellschaft Havelterrassen mbH & Co. KG.

The first construction phase, which has already been completed, consists of six houses with 104 apartments arranged in a square. The buildings satisfy the high local environmental standards. An external block heating system supplies the buildings with electric energy and feeds heat energy into a local heating network.

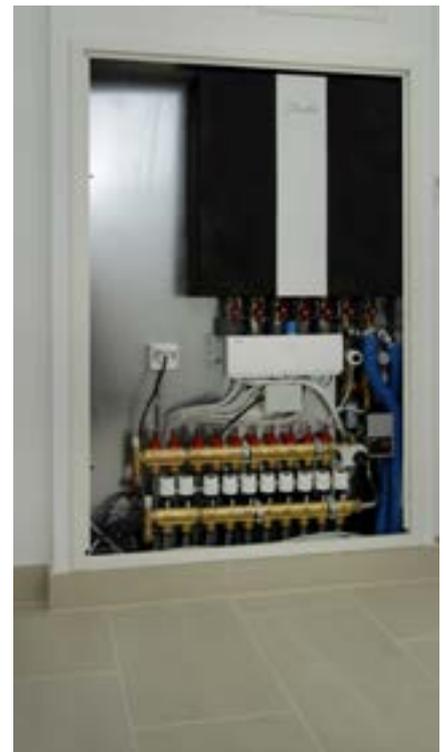
## The challenge:

How to transport the local heat to the individual apartments? This function is carried out by the heating substations - they are the (indirect) link between the supplier and the recipient. The „brain“ of the substations are controllers configured accordingly; among other things, they ensure a constant flow temperature for each domestic heating system.

In principle there are two ways to supply the apartments with heating and domestic hot water: the conventional concept using central heating and heating for drinking water or using decentralised flat stations.

## The solution:

Danfoss flat stations of type EvoFlat FSS are installed in conjunction with GTZC underfloor distributors. For the architects Rehwinkel & Partners, the main considerations were of a hygienic nature: "The aim has been to avoid stocking larger volumes of domestic hot water - it is of course by now a well-established fact that legionella bacteria may occur and spread there and in the associated circulation lines. Decentralised flat stations with an integrated freshwater system to heat domestic water in the flow prevent the legionella issue. At the same time, the building manager does not have to worry about potable water regulations and inspection duties in regard to legionella bacteria," says Eric Rehwinkel.



*View of the first construction phase of the Havelterrassen residential development in Werder (Havel) with 104 apartments. The project developer and builder is Antan Recona Investment GmbH & Co. KG.*

## The benefits:

Of course there are also purely technical features that convinced the planners of the Havelterrassen. For example, some of the apartments are quite large, which requires correspondingly large underfloor distributors - Danfoss flat stations are equipped for this need with underfloor distributors of type GTZC with 3 to 14 outflows. A flow meter allocates a pre-defined quantity of water. The GTZC variant also offers an admixture circuit with a circulation pump as well as a self-acting FTC thermostatic sensor to control the flow temperature. An electronically connected safety temperature actuator in combination with a zone valve and an actuator prevents excessive temperatures in the underfloor heating circuit. The built-in zone valve, in combination with the thermal actuator and an optional room thermostat enables individualised, comfortable and energy-optimised control of heating times.

Eric Rehwinkel: "In my view, decentralised flat stations are nowadays state-of-the-art in modern multi-family buildings!"

The general contractor for the Havelterrassen project is RTLL Generalbau GmbH, headquartered in Kirchberg. What does Thomas Schleif, project manager for building systems,



think of the choice of this system? „For most buyers this concept of decentralised energy supply was quite novel, but in fact, the benefits, especially as far as hygiene and the issue of legionella bacteria are concerned, very quickly persuaded everyone."

And what about the costs? That is often a bone of contention, especially when cheaper alternatives are available. Thomas Schleif calculated the exact costs for the decentralised solution for one building, as well as the costs for a conventional centralised solution. "Flat stations are not cheap, but dispensing with the need for two pipe systems within the overall building quickly

compensated for the higher costs." In doing so, he took into account not only the actual technical construction costs for the additional pipelines, but also the consideration that no insulation works were required and the reduced costs and effort for laying the floor, because fewer lines have to be installed crosswise. According to Schleif, "At the end of the day, the investment costs more or less balance out. But the decentralised solution has the decisive hygienic benefit!"

And furthermore: "In particular, the quality and speed of the control system is in my view a persuasive argument in favour of the Danfoss system."





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*(Eric Rehwinkel, architect).*

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*(Thomas Schleif, Project Manager Building Services, RTLL-Generalbau GmbH).*



### EvoFlat FSS

EvoFlat FSS is a compact and easy-to-use flat station with integrated freshwater and drinking water flow heater. It is especially designed for two-pipe systems in residential buildings supplied with hot water from a central heat source (district heating, boiler, CHP or solar system) or via a central buffer accumulator. A key element of the flat station is the TPC-M controller. It combines several perfectly coordinated features in a single component.

### Conclusion:

Architects, developers, contractors and last, but not least, buyers of apartments were persuaded by the hygienic benefits of decentralised flat stations in particular. Technical features, such as a reliable and rapidly responsive control system, as well as the split version for easy installation thoroughly weighed the scales in favour of the Danfoss system. The second construction phase, which started in April 2016, will also be equipped with the Danfoss flat station.

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