

Taconova Property | Bellikon Primary School, Switzerland

## 15 SHOWERS SIMULTANEOUSLY

The school building and sports facilities at the Bellikon primary school in Switzerland were renovated in 2013 and have since been heated with renewable energy. The hot water supply was also upgraded in the course of the modernization.



### Initial situation

The school buildings include a sports hall with 15 showers to be supplied with hot water. Other outlets include wash-basins in the restrooms as well as sinks in the catering area. The hot water supply for a school building with sports hall has to fulfill tough requirements, because dispensing frequently switches between high levels of simultaneity and longer idle periods. The hot water supply has to satisfy peak demand on one day each week when the local sports club uses the sports hall. The hot water consumption on other weekdays operates normally with smaller dispensing quantities in the kitchen and in the restrooms.

This means that either a large storage volume or a high continuous flow output is needed.

### Solution

A new system for preparing domestic hot water is replacing the previous 1,000 liter hot water storage tank and simultaneously supplying all 15 showers in the sports hall as well as the other hot water dispensing points throughout the building in accordance with the continuous flow principle.

### Implementation

Two storage tanks each with a capacity of 1,500 liters store the heat supplied by the pellet boilers and the solar thermal system. The TacoTherm Fresh Exa hot water station with a rated output of up to 125 l/min supplies the necessary continuous hot water output.



## Use

Two high-efficiency pumps with different delivery capacities form an internal cascade and allow small draw-off volume ranges to be covered also. So for example whether it is children washing their hands in between lessons or the local sports club using the 15 showers at the same time – the constant dispensing temperature is assured.

## Exceptions

«The greatest challenge in terms of implementation was posed by the seasonal use of the school with no water being dispensed over a longer period during the summer holidays combined with the fact that the risk of Legionella bacteria being transferred is highest in showers (after air-conditioning systems and ventilation),» says Axel Heinlein, Planning Consultant with Taconova Group AG.

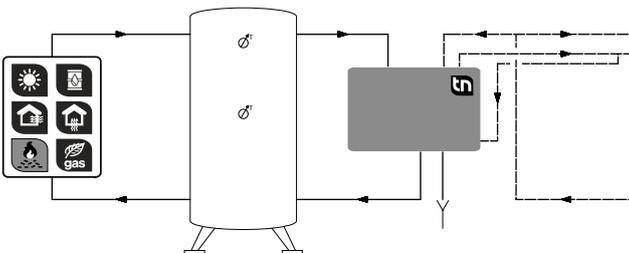
«Traditional storage-based domestic hot water heaters either have to be emptied before the holidays and then refilled afterwards or kept in operation at high temperatures to kill the Legionella. This costs unnecessary energy and leads to increased lime residues. This challenge has been overcome optimally with the TacoTherm Fresh Exa fresh hot water station.»

## Summary / testimonial

«The primary argument in favor of fresh hot water stations is that fresh hot water is always available exactly as the name suggests. Another argument is the increased energy efficiency compared with a storage system,» says Ernst Braunschweiler, who as owner of a sales subsidiary for wood pellet boilers has the necessary product expertise and was able to convince both the planning office and the system operator as to the benefits of fresh hot water technology. Using fresh hot water technology eliminates the need to store hot water, thus reliably counteracting the risk of microbial contamination with Legionella. Moreover, a constant dispensing temperature is assured even when draw-off rates fluctuate. The planning officials found such a fresh hot water station designed for this output range with the Zurich-based provider Taconova Group AG.

«The fresh hot water station has already impressed in operation. The system operator has expressed satisfaction, among other reasons also because of the self-explanatory regulation,» sums up Ernst Braunschweiler.

## System / basic diagram



## Facts & Figures

### Constructor (Owner):

Municipality of Bellikon

### Planning office: Mettau AG, Mellinger AG

### Buildings:

School building with sports hall (incl dressing room with 15 showers) as well as a kitchen and washbasins

### Products:

Taconova TacoTherm Fresh Exa in conjunction with «ÖkoFEN» wood pellet boilers