

BUILDINGCONNECT ØSTERGAARDS HOTEL CASE STORY

GRUNDFOS iSOLUTIONS



HOW GRUNDFOS BUILDINGCONNECT HELPED A DANISH HOTEL INCREASE COMFORT FOR THEIR GUESTS WHILE SAVING ENERGY AND HEATING

When Østergaards Hotel in Herning, Denmark, needed to refurbish their pumps and equipment, Grundfos presented them with the opportunity to install Grundfos BuildingConnect for heating. The result was almost 75,000 kWh of heating saved in the first seven months and total savings of almost DKK 50,000 in the same period.

Grundfos BuildingConnect for heating is an approach to understanding a building's heating system as a whole and to thereby provide intelligent solutions that achieve a higher level of performance, energy savings and guest comfort.

Østergaards Hotel has 80 rooms and caters for all manner of guests, from conferences and golf holidays to regular hotel stays



and mini holidays for families. They are a part of Danish Hotels, who have a strong focus on sustainability in their hotels, for example by reducing CO2 emissions and energy use.

“It helps controlling the heat, the floor heat and utility water and ensures that the water always has the right temperature. And that works really well”

Kaj Hansen, Facility Manager, Østergaards Hotel.

THE SITUATION:

When heating specialists from Grundfos visited Østergaards Hotel and inspected the heating system in the pump rooms, they found out that the systems were unbalanced, motor-valves were broken, and counter-valves were missing. This was partly a result of pump maintenance not being prioritised, and the old circulation pumps were too small for the purpose.

The energy and heat consumption at Østergaards Hotel confirmed that the pumps were running inefficiently. The old system was circulating too much warm water, which wasn't being properly utilised, resulting in very high energy and heat consumption. This resulted in low Delta T syndrome, where average Delta T was too low or inadequate in the kitchen, ventilation system and basement. The result was poor performance of all systems and there was a lot of room for improvement.

The recommendation was a complete refurbishment with the replacement of old valves with new motorised valves controlled by Grundfos BuildingConnect, a new heat control system, new energy efficient pumps and system balancing. Pipes also needed to be better insulated in the basement and ventilation system.

set points and get detailed information on heat, flow and return temperatures, and DeltaT.

Grundfos offered Østergaards Hotel a performance-based contract so that there was no need for them to invest upfront. The Grundfos Energy Earnings model means that the customer gets a free energy refurbishment of their plant in return for sharing the value of realised energy savings. After seven years, the customer can buy the equipment for DKK 1. In this way, Grundfos needs to deliver these savings, as payment is directly affected by the savings achieved. This is where the ability of Grundfos BuildingConnect to document, report and benchmark energy consumption really made a difference.

"In the ... hallway where the rooms are located, we have had some problems with the floor heating being too hot. The supply temperature was way too high. But after we have got new controlling on the system it now runs smoothly. It is not nearly as hot and that is also because it is now matched with the outdoor temperature," explains Kaj Hansen, Facility Manager, Østergaards Hotel.

THE GRUNDFOS SOLUTION – BUILDINGCONNECT FOR HEATING

To meet requirements from Østergaards Hotel to reduce their energy consumption, increase comfort levels in the hotel and improve the hotel's sustainability profile, Grundfos put together a total package with the following elements:

- Grundfos BuildingConnect installed to save energy, increase comfort, and for them to monitor, control and optimise the system
- Performance-based contract offered so the hotel doesn't have to invest upfront
- All equipment to be changed and the system balanced for greater energy efficiency

Grundfos BuildingConnect is the Grundfos approach to understanding buildings as a whole and to thereby provide intelligent solutions that achieve a higher level of performance in HVAC systems. It is a customised, yet affordable solution targeted towards smaller commercial buildings. When things need the customer's attention, for example with faults in the system, insights and remedies are explained in clear and understandable language.

For Østergaards Hotel, Grundfos BuildingConnect enabled easy commissioning and setup, complete overview of key performance indicators on the go, reduced energy consumption and proactive management of the installation. Specifically, this meant that the hotel could see real-time trend curves for specific time periods and use that data to improve efficiency levels and, crucially, change



THE OUTCOME:

The estimated yearly savings for Østergaards Hotel following the refurbishment were DKK 53,000, as follows:

- Heat savings of DKK 18,000 were from the optimisation of the heat consumption, thereby lowering the heating cost
- Transport savings of DKK 32,000 came from the optimisation of the Delta T of the supplied hot water to lower the amount of water required for heating, lowering the transport cost
- Electricity savings of DKK 3,000 from reduced power consumption of the energy efficient pumps lowers the electrical cost of running the pumps

However, following the first seven months of operation, savings already total almost DKK 50,000.

The system surveillance provided by Grundfos BuildingConnect for heating achieves the highest energy savings without compromising the guest comfort through monitoring and constant optimisation.

To sum up, Østergaards Hotel benefits with new and modern equipment, where the newest pump technology replaces the old worn out pumps, maximising energy efficiency and reliability. And Grundfos will perform preventive maintenance of the system to keep system reliability and efficiency as high as possible.

Finally, the solution with new circulator pumps and Grundfos BuildingConnect for heating enables Østergaards Hotel to document the savings, increasing their profile for sustainability. Heating saved at Østergaards Hotel was almost 75,000 kWh in the first seven months, equal to the yearly consumption of four Danish households.

“This is an advantage, because our heating bill is reduced while reducing CO2 emissions to the environment,” says Ove Jørgensen, General Manager, Østergaards Hotel & Regional Manager, Danish Hotels, and concludes:

“In Danish Hotels, we have 23 hotels and I believe that in 90% of the cases we will be able to find huge savings in a partnership with Grundfos. And within our line of business we would always prefer to make investments that are visible to our guests. But in this case, they can feel it and that is for sure an advantage too. Being able to provide a high level of comfort to our guests makes it a pleasure for me to go to work every day. And the guests are satisfied as well. It feels great to be able to serve people who are satisfied and happy with staying here.”

[See video](#)