

Østergaards Hotel & Grundfos Energy Earnings case story:

Offering Grundfos Energy Earnings enables a Danish hotel to increase guest comfort while saving energy and heating



When Østergaards Hotel in Herning, Denmark, needed to refurbish their pumps and equipment, Grundfos presented them with an opportunity to increase their energy efficiency even further while improving guest comfort and increasing their sustainability profile with substantial savings. 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.

The key was to offer Grundfos Energy Earnings, whereby efficiency and cost gains paid the installation costs of the refurbished system through a performance-based contract. This was made possible due to highly efficient pumps and innovative solutions, including Grundfos BuildingConnect.

“It’s a win-win situation for us, as we do not have to invest any money ourselves, but we make money instead. And meanwhile, we are reducing CO2 emissions to the environment,”

Ove Jørgensen, General Manager, Østergaards Hotel &
Regional Manager, Danish Hotels.

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.



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 been 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. They 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.

GRUNDFOS ENERGY EARNINGS

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:

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

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. 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.

Grundfos also replaced the old circulator pumps with MAGNA3 circulator pumps, which are supplied with a permanent magnet motor, an integrated frequency converter and intelligent controls that mean no throttling valves are required, making system balancing easier.





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 performance-based contract provides the customer with the comfort of not carrying any initial investment costs; these are borne by Grundfos. And in this way, the customer understands that Grundfos intends to deliver the energy savings. On the other hand, the customer commits to a period of seven years with collaboration on saving energy and a service agreement for the entire period as well as additional pump sales. Any energy saving improvements along the way are shared.

“We have made a service agreement where Grundfos installs the system and then we split the annual savings equally over a

period of seven years. When the seven years have passed, we will inherit the system, but the service agreement is that Grundfos handles all operating and maintenance costs for these seven years,” explains Ove Jørgensen.

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.

“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. It is very important for us, as our CSR policy is a focus point for us. We are putting a lot of effort into finding savings within heating,” concludes Ove Jørgensen.

[See video](#)