

COMMERCIAL BUILDINGS

Office Building

Cooling capacity: 3 200 kW

Savings: 83 800 EUR / year

ROI: 4 years

Aim: Energy saving and peak performance management



Design parameters

Aim of HeatTank: Energy saving and peak performance management

Cooling capacity: 3 200 kW

Cooling period: 15 April – 15 October

Cooling cost: 453 000 EUR/year

Free-cooling performance: 800 kW

Desired inner temperature: 24,5°C (+-1 °C)

Cooling temperature level: 7/12°C

Location: Budapest, Hungary

Electricity price: 0,11 EUR/kWh

Solution

90 pieces of HeatTank 50-1

Cover the needs for 2-4 hours

Cover the peak needs for 8-10 hours

Decrease the peak load by 30%

Total cost of the system: 1 420 000 EUR

HeatTank

Type: HeatTank 50-1

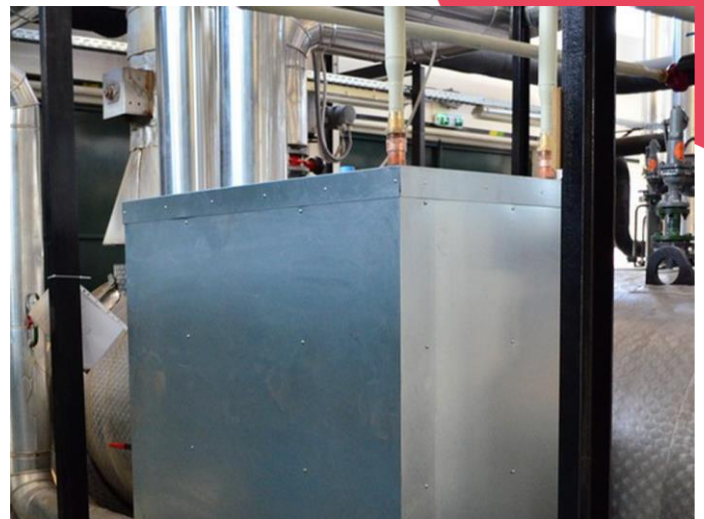
Capacity [kWh]: 50

Max. performance [kW]: 200

External Volume [m³]: 1,84

Connections [DN]: 42

Total weight [kg]: 1516



Benefits



Electricity saving

Free-cooling: 0%
Free-cooling at night: 5%
Chiller optimization: 7,4%
Total savings: 12,4%, 56 000 EUR/year



Remote control & Energy reports

Remote control and visualized energy reports on monthly base to follow the energy saving.



Higher certification

Higher certification due to higher comfort during summer and as innovative product was used: 5000 EUR/year



Peak performance

30% size reduction in the cooling system, because the peaks are covered by HeatTank. 960 000 EUR initial cost reduction and 1 900 EUR/month reduction from the maximum demand cost.

Additional savings, which are not calculated: close to flat electricity consumption per day means lower electricity price from the system operator. Also, demand response is possible (when you get paid by the system operator for helping in the electric system compensation).

During our calculations, we did not take into account the estimated high scale electricity price increase. In Slovakia, the electricity price was doubled in 2019 and this tendency is expected in the other European countries.

83 800 EUR / year total savings
4 years total ROI