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Rolfsbukta – Heating and cooling with seawater and 2x Unitop 43/28

Client

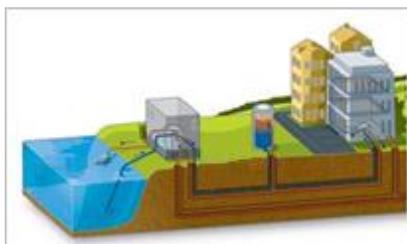
Oslofjord Varme AS
NO-1338 Sandvika / Norway

Plant location

Oslofjord Varme AS
NO-1364 Fornebu / Norway

Environment friendly, reliable and affordable energy

The heat central in Rolfsbukta is located in the second basement floor of the Scandic hotel, in an independent containment of 60 x 12 meters, with access to this room through the hotel's parking garage. In the room two heat pumps are installed, each with capacities of 8 MW heating and 10 MW cooling. Adjacent to the heat pump facility two boilers with a capacity of 20 MW are mounted to cover peak demand and for spare purposes. They are built to burn bio fuel oil. In total the facility can supply 36 MW



heat and up to 20 MW cooling. The heat source for the heat pumps is sea water extracted in 30 meters depth approximately 400 meters out in the fjord. By relying on sea water for both,

heating and cooling, as well as by utilising a low GWP refrigerant the customers get green, reliable and affordable energy.

Main technical data

Operating Seasons:	Summer/cooling		Winter/heat+cool	
Units operating in:	single unit	parallel	single unit	series
Heating capacity:	12'105kW	24'116kW	8286kW	16'249kW
Cooling Capacity:	10'000kW	20'000kW	5264kW	10'350kW
Hot water in/out:	20/31.5°C	18/34°C	58/81°C	65/80°C
Cold water in/out:	7/2.5°C	7/2.5°C	4.9/2.5°C	4.9/2.5°C
COP	4.56	4.71	4.42	4.42

2 Unitop 43/28 BPY heat pumps from Friotherm

To cope with the requirement of our client regarding the very high flexibility of the heat pumps, both units are designed to allow single stage or double stage operation. Moreover, the entire units can be operated in parallel or in line. Heating or cooling can take the operational lead, depending on the prevalent requirement. Of course, all this takes place in fully automatic mode. The ever increasing demand for green refrigerants led to the decision of using the refrigerant Solstice 1234ze with a GWP <1.



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