ALBERTSLUND MUNICIPALITY IN TRANSITION TO LOW TEMPERATURE DISTRICT HEATING

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Albertslund South
Albertslund South

› The district Albertslund South was built in 1963-68
› BO-VEST (local Housing association)
› Approximately 2,000 homes are constructed around a canal
› On both sides of the main streets are residential areas with either single storey atrium houses or two storey townhouses.
The Energy Goals in Albertslund South

› Energy renovation of buildings reduce heating demand by 60%
› The energy frame met with "insulation" and not through "individual energy production"
› New district heating network
› Low temperature District Heating: 55/30 C
Why low temperature

› Less conduction losses
› Larger CHP benefit (more electricity on the same amount of fuel)
› Better utilization of waste heat from process, solar, geothermal and heat pumps
› Less capital cost to the district heating network
End User Installation

› Functional requirements for instantaneous water heaters (Heat Exchanger Units)
  › Direct plant with mixing valve for underfloor heating and outlets for radiators
  › Primary side: hot water 55/25 C
  › Primary side: Heating 55/32 C (for Floor heating)
  › The secondary hot water 50 C
  › Production of 25 kW hot water during normal operation: 25 kW v. 55/25 C
    with a pressure drop across the heat exchanger at max. 0.1 bar (10 kPa)
  › Legionella security:
    › Water content in the exchanger must be max. 0.5 l
    › The exchanger should be cold/closed when not dispensing hot water

› The location of the H.E. Unit:
  › Short distance to the taps for hot water max. 3 l line to the farthest tap location
  › Short response times and low water waste
Optimization of Flow Temperature

- Optimizing the flow temperature using TERMIS - FTO
  - Weather forecast
  - Heat forecast based on historical data
  - Real time hydraulic analysis

- Remote reading of meters and monitoring / energy consultancy

Lowest possible Temperature that meets all user Requirements
Results - The terrace houses

› 550 houses
› Start October 2012
› Finished Marts 2015
› Heating demand reduced by 57 %
› Heat loss in the pipe network reduced to 1/2 of normal DH.
Reduction of CO₂ emissions

- Reduced demand
- Reduced heat loss in the piping system
- Biomass conversions
Next steps...

› Finishing the project
› Albertslund West
› Alternative heat sources:
  › Waste heat from waste incineration and industrial processes, Solar, biomass, geothermal energy, heat pumps, etc.
› Low temperature district heating in the entire municipality by 2026
Thanks for listening

Questions?

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