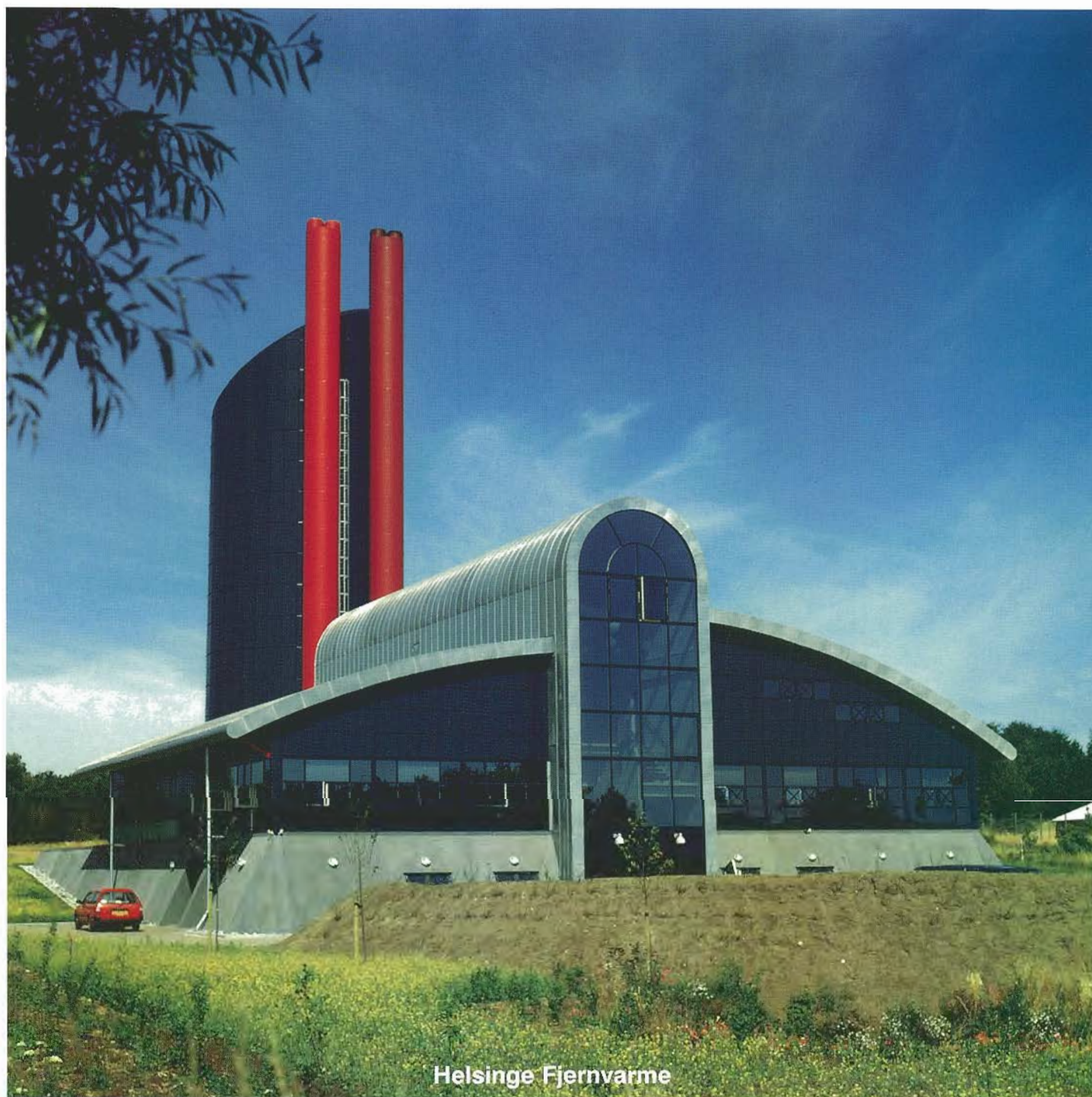


*For the future!*

## **Combined Heat and Power plant (CHP)**



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# HELINGE FJERNVARME

## **Combined Heat and Power plant (CHP)**

### **Background**

In order to fulfil the Danish government's directives for decentralized energy production and still be able to offer lowest possible prices of district heating, the management of the Helsingør District Heating Company decided, in the Autumn of 1993, to exchange the existing gas-fired boiler installation with a natural gas-fired engine-based combined heat and power plant, including new peak load and back-up boilers.

The heating company is a non-profit consumer owned cooperation with the purpose of producing reliable supply of hot water for heating of mainly private houses.

### **Consultants**

COWIconsult, Consulting Engineers A/S, was the consultant and the civil engineer for the plant.

### **Main Contractor**

Burmeister & Wain Scandinavian Contractor A/S was the main contractor for the CHP plant.

### **Engine Specification**

The plant is based upon 2 Ulstein Bergen lean-burn gas engines of a total of 6.1 MW<sub>e</sub>. Mains voltage is 10 kV.

The heat production is 7.5 MW<sub>heat</sub> (MJ/s).

### **Installation Supplied**

The plant is designed with a view to obtain the lowest possible net price of heating as well as the shortest period of depreciation together with high reliability for the consumers. The plant is connected to the existing district heating system via a new pipeline.

Heat accumulation will ensure that the engines are only operated during hours when the electricity produced can be sold at the premium rate. The plant is controlled, regulated and supervised automatically by a PLC-based system.

Control includes automatic start-up and optimized electricity production based upon graduated tariffs and current heating requirements. The plant building has a striking architecture with a futuristic appearance.

### **Delivery**

The delivery time for the complete CHP plant was 12 months from the date of signing the contract in December 1993 so that the plant was ready for commercial operation in January 1995.



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