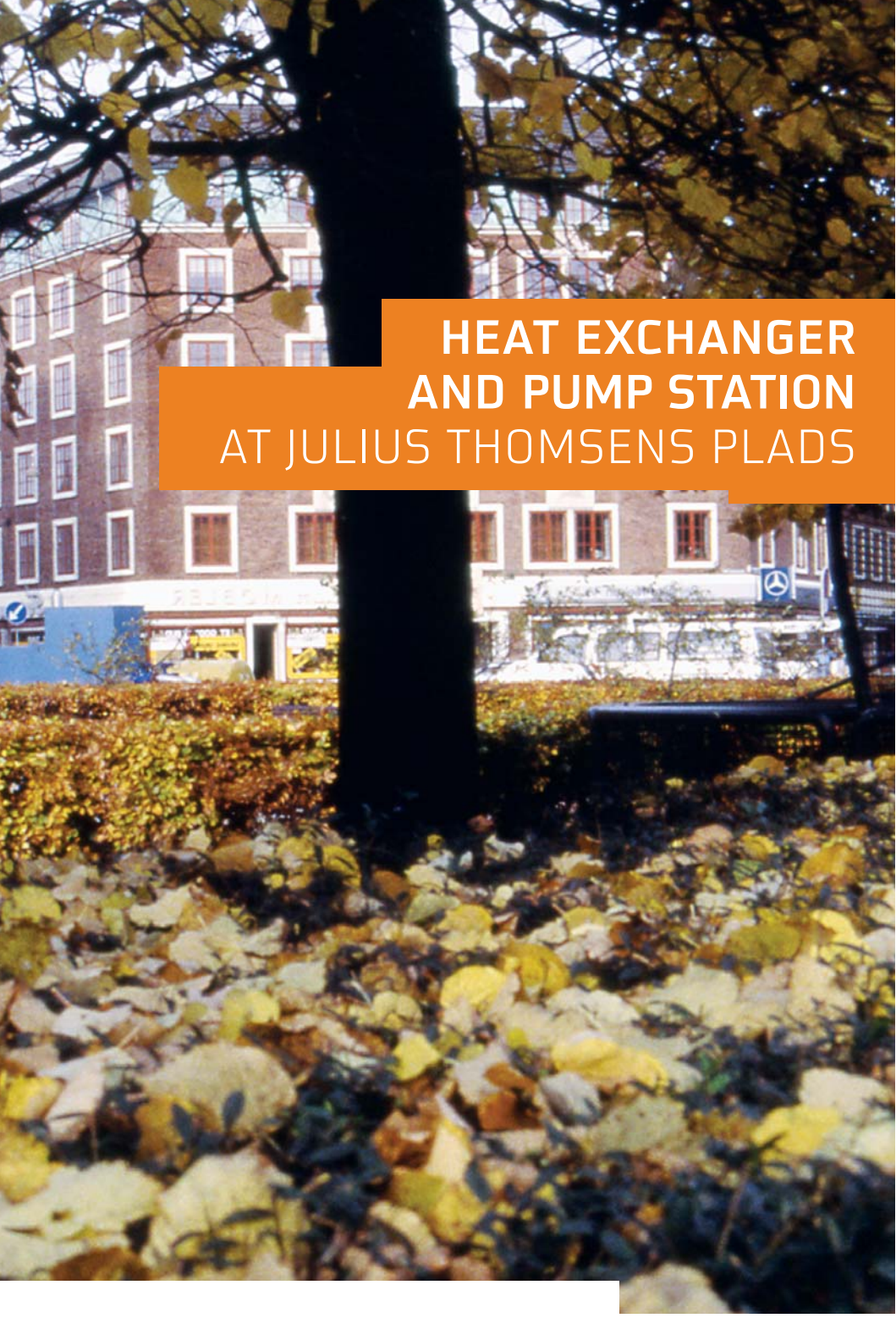


HEAT EXCHANGER AND PUMP STATION AT JULIUS THOMSENS PLADS

CTR

HEAT EXCHANGER AND PUMP STATION AT JULIUS THOMSENS PLADS

JTW is one of CTR's 26 heat exchanger stations and JTP is one of CTR's 3 pump stations. Both facilities are monitored and controlled round the clock at CTR's control room on Stæhr Johansens Vej.

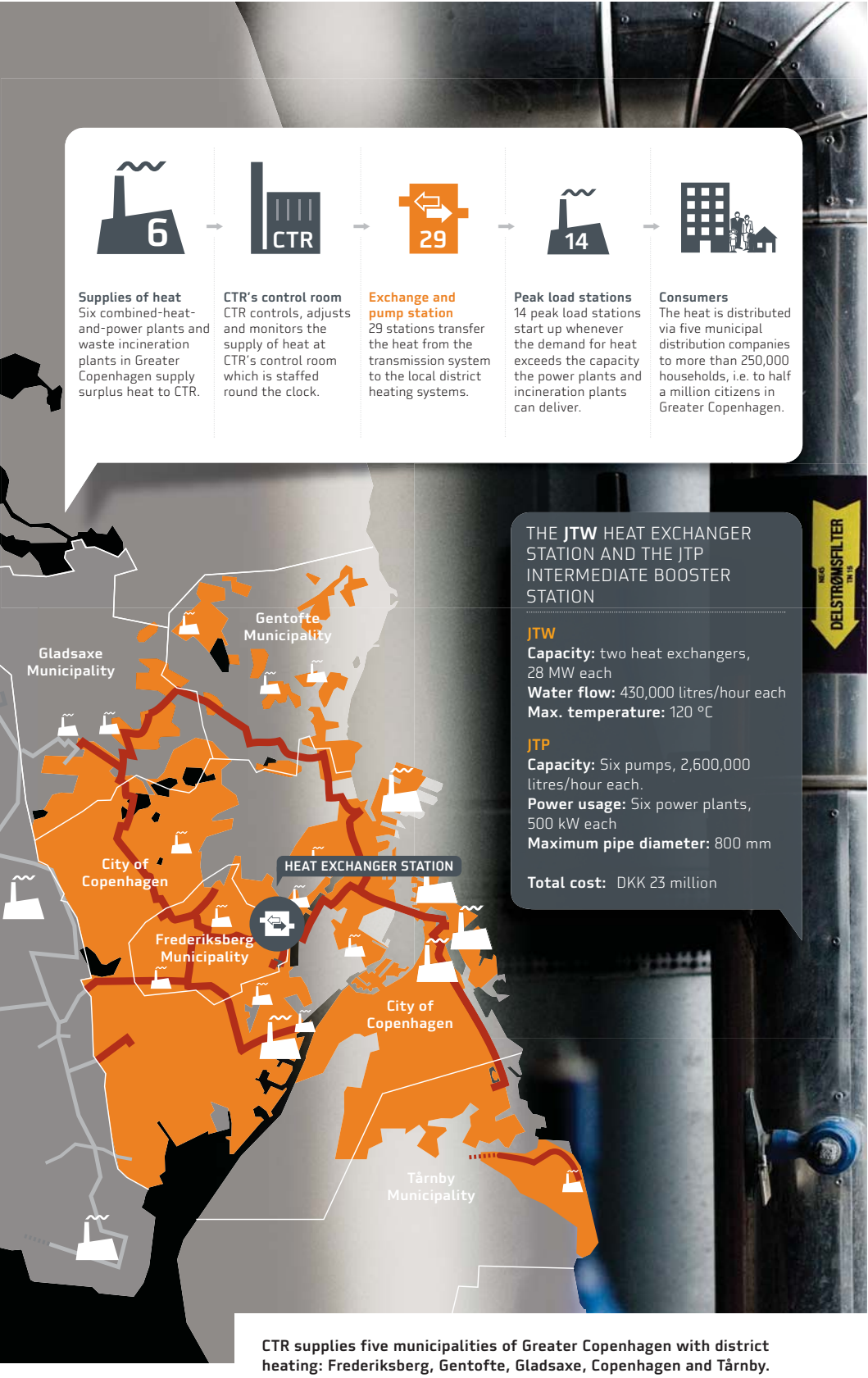
The JTW heat exchanger station
The JTW heat exchanger station supplies heat from the transmission system directly to the local distribution grid of Frederiksberg Forsyning. The actual supply of heat takes place in the heat exchangers, which are relatively small compared to the rest of the equipment, i.e. valves, meters, etc., and which are necessary for ensuring that the entire system is fully automated and that the supply of heat can be rearanged if a fault occurs somewhere in the system. JTW supplies heat to some 10,000 households.

The JTP Pump station
The JTP Pump station pumps heat from the power stations on to the transmission system and to wherever it is most needed. As even the biggest pumps at the power stations have a limited range, it is necessary to supplement them with pumps at three locations in the grid – one of them is JTP.

The physical facility
In addition to CTR's equipment, the building also houses pumps and other equipment used by Frederiksberg Forsyning for controlling the distribution system. Even the gardener has been given a little space for the watering facility used in the green area on top of the station which conceals this large technical installation and which superbly illustrates that this is an eco-friendly facility.

The total volume below Julius Thomsens Plads: 875 m^2 over 5 metres in height.

***JTW** is an abbreviation for Julius Thomsens Plads Heat Exchanger Station*
***JTP** is an abbreviation for Julius Thomsens Plads Pumping Station*



Supplies of heat
Six combined-heat-and-power plants and waste incineration plants in Greater Copenhagen supply surplus heat to CTR.

CTR's control room
CTR controls, adjusts and monitors the supply of heat at CTR's control room which is staffed round the clock.

Exchange and pump station
29 stations transfer the heat from the transmission system to the local district heating systems.

Peak load stations
14 peak load stations start up whenever the demand for heat exceeds the capacity the power plants and incineration plants can deliver.

Consumers
The heat is distributed via five municipal distribution companies to more than 250,000 households, i.e. to half a million citizens in Greater Copenhagen.

THE **JTW** HEAT EXCHANGER STATION AND THE JTP INTERMEDIATE BOOSTER STATION

JTW
Capacity: two heat exchangers, 28 MW each
Water flow: 430,000 litres/hour each
Max. temperature: 120 °C

JTP
Capacity: Six pumps, 2,600,000 litres/hour each.
Power usage: Six power plants, 500 kW each
Maximum pipe diameter: 800 mm

Total cost: DKK 23 million

CTR supplies five municipalities of Greater Copenhagen with district heating: Frederiksberg, Gentofte, Gladsaxe, Copenhagen and Tårnby.
CTR's transmission system comprises a 54-km distribution grid with 3 pump stations, 14 peak load stations and, finally, 26 heat exchanger stations that transfer the heat to the local district heating systems.

PROVIDING INEXPENSIVE, CONVENIENT, RELIABLE AND ECO-FRIENDLY HEAT TO THE CAPITAL

CTR is the heating transmission company for its five member municipalities in Greater Copenhagen: Frederiksberg, Gentofte, Gladsaxe, Copenhagen and Tårnby. CTR supplies about 250,000 households in Greater Copenhagen with district heating based on surplus heat.

As the transmission system makes it possible to optimise heat production within the region, it helps the municipalities to offer their citizens inexpensive, convenient, reliable and eco-friendly heat. Surplus heat from power stations and waste incineration plants comprises 97–99% of the annual production. Utilizing this heat prevents 1,000,000 tonnes of carbon a year being released into the environment, compared to heat produced by individual oil-fired heating systems, a figure that increases year by year concurrent with the increase in the proportion of biomass used.

CTR is responsible for purchasing heat from the production units, for transporting it through the transmission grid, for selling the heat to the five member municipalities and to VEKS, which oversees a similar task for the municipalities in the western area of Greater Copenhagen.

In addition, CTR generates heat at its own peak-load and reserve-load facilities when needed and is also responsible for maintaining the entire system.

The heat is supplied through a 54-km distribution grid with three pump stations, 14 peak load stations and 26 heat exchanger stations.

CTR manages, adjusts and monitors the supply of heat round the clock at the central control room in Frederiksberg via signals emitted by more than 10,000 points distributed throughout the system.

CTR - Stæhr Johansens Vej 38 - DK-2000 Frederiksberg
tel.: 38 18 57 77 - fax: 38 18 57 99 - e-mail: ctr@ctr.dk - **www.ctr.dk**