

# Bindselev Old Hydroelectric Station



Bindselev Old Hydroelectric Station was built in 1919 after three years use of an oil-powered generator in a house in town.

They wanted now to use the water in the stream "Uggerby Aa" as a power source, and the power station was erected at a place where two loops of the river were close to each other. A deep channel was dug under the station, and a dam across the stream was built. The dam created a head of three meters. This would lead more water under the house and into the two vertical-axis Francis-turbines, which are located in the bottom of the building.

The turbine shaft is led up to the gearbox in the dynamo room on the first floor. The gearbox converts turbine 135 rpm to 1000 rpm used in the subsequent direct current dynamo. When the dynamo rotor with its copper windings is rotated in the dynamo magnetic field, electricity is generated and distributed to the users in the city via the switchboard.

Since the station is water-powered, it was not in times of war, as other small power stations, bothered by oil shortages, or when coal was rationed. On the other hand, the amount of water in Uggerby Aa has been the decisive factor for electricity generation.

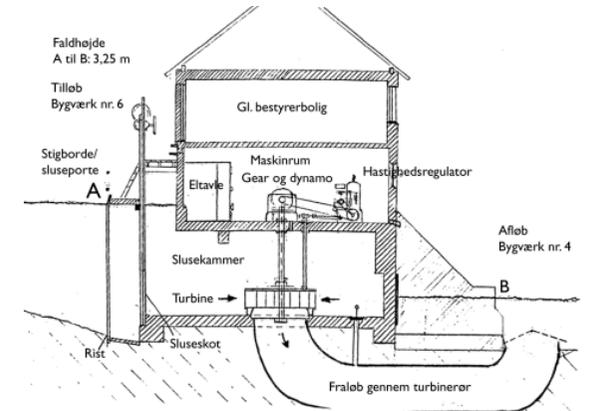
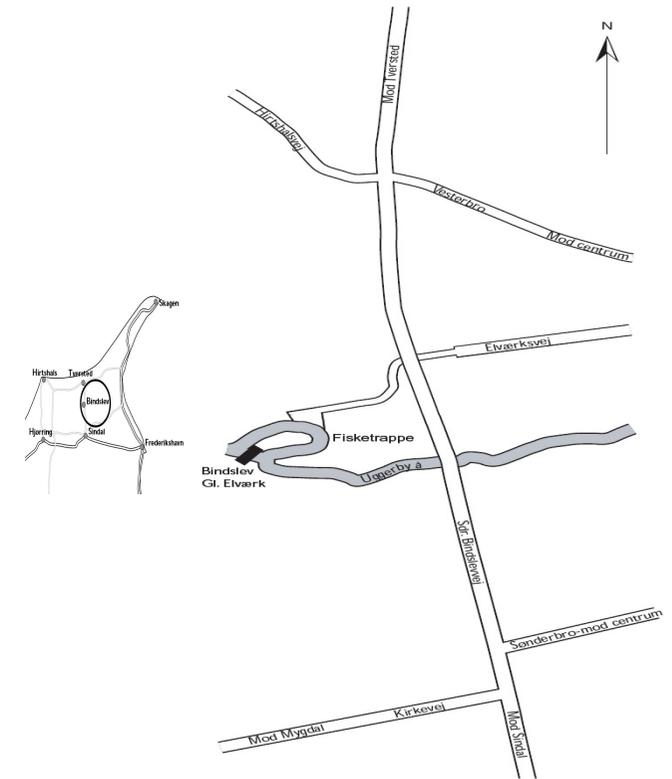
During prolonged drought came too little water for the turbines. An even bigger problem was when the water froze, and worst when the river froze completely to the bottom. So the station was dependent on buying power from the fuel-fired plants, as happened during ice winters and during the second World War. To enable this a mercury rectifier unit was acquired and installed in 1934. This made it possible to receive alternating current from Hjørring and convert to direct current for use in the city network.

For many years the station could cope with the power requirements of the local area. But as they used more and larger machinery on farms, and as businesses in the city was dependent on a steady and increasing supply of energy, time was running out for a facility like this, and therefore the station closed in 1968.

In the seventies we saw the energy crisis here in Denmark. This situation resulted in increased focus on other forms of energy such as wind, hydro, solar, biogas etc. The machines were therefore again set in motion, but the direct current could not be used in the ordinary ac network. Instead a cable was led to the city's district heating plant. The cable ended in a large immersion heater, which heated the water sent out to the houses. Due to wear of turbines and generators the production again ceased in the late nineties.

Because Bindselev Old Hydroelectric Station is the last waterpowered DC power plant in Denmark, possibly in Europe, a group of volunteer enthusiasts began to refurbish the station. After very extensive work the station again began to produce electricity in January 2004. Through a newly installed inverter, that converts direct current into alternating current, the production is led to the public electricity grid. The station is very maintenance intensive and continuously work is in progress to repair and refurbish machinery and installations.

The station is open to visitors year round, there is free access, but contributions given in the collection box in the station are welcomed.



Find more information on website: [www.bindselevglel.dk](http://www.bindselevglel.dk)

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