

## Lysebotn 1

The owners of Lysebotn1, a water power facility, is constructing a new facility, Lysebotn2, which will take over and increase the production. Lysebotn 1 and its halls carved out of mountain will then close down.

I consider these halls to be highly interesting, and want to open them for public.

Info

**Starting year:** 1953, expanded in 1964

**Architect:** Gustav Helland

**Region:** Forsand Municipality, Rogaland

**Watercourses:** Lysevassdraget

**Reservoirs:** Strandvatnet (619-636 masl.)  
Breiavatnet (683-658 masl.)  
Nilsebuvatnet (731-717 masl.)  
Lyngsvatnet (686-636 masl.)

**Catchment:** 316 km<sup>2</sup>

**Fall height:** 610 meter

**Operator:** Lyse Energi

**Implanted effect:** 210 MW (6 Pelton turbiner)

**Annual production:** 1242 GWh

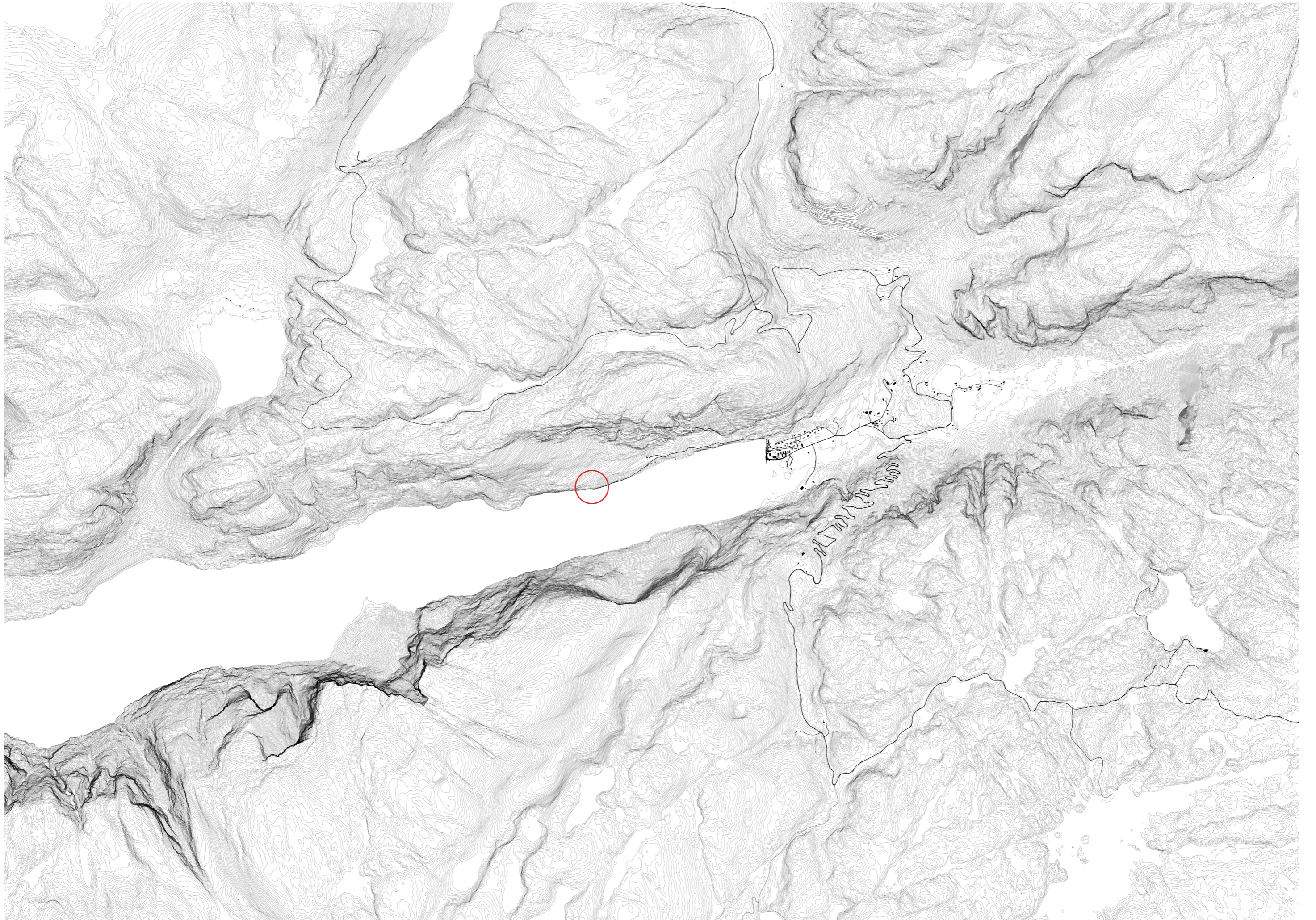
**Turbine:** Pelton

**Status:** Building a new power station, Lysebotn 2, which will replace Lysebotn 1.

## Site

Lysebotn 1 is located near Lysebotn, a remote village with 13 permanent residents at the end of Lysefjorden, a 42 kilometer (26 mi) long fjord that lies in the Ryfylke area in southwest of Norway, a 3.5 hour drive from the city Stavanger, Norway's third biggest city.

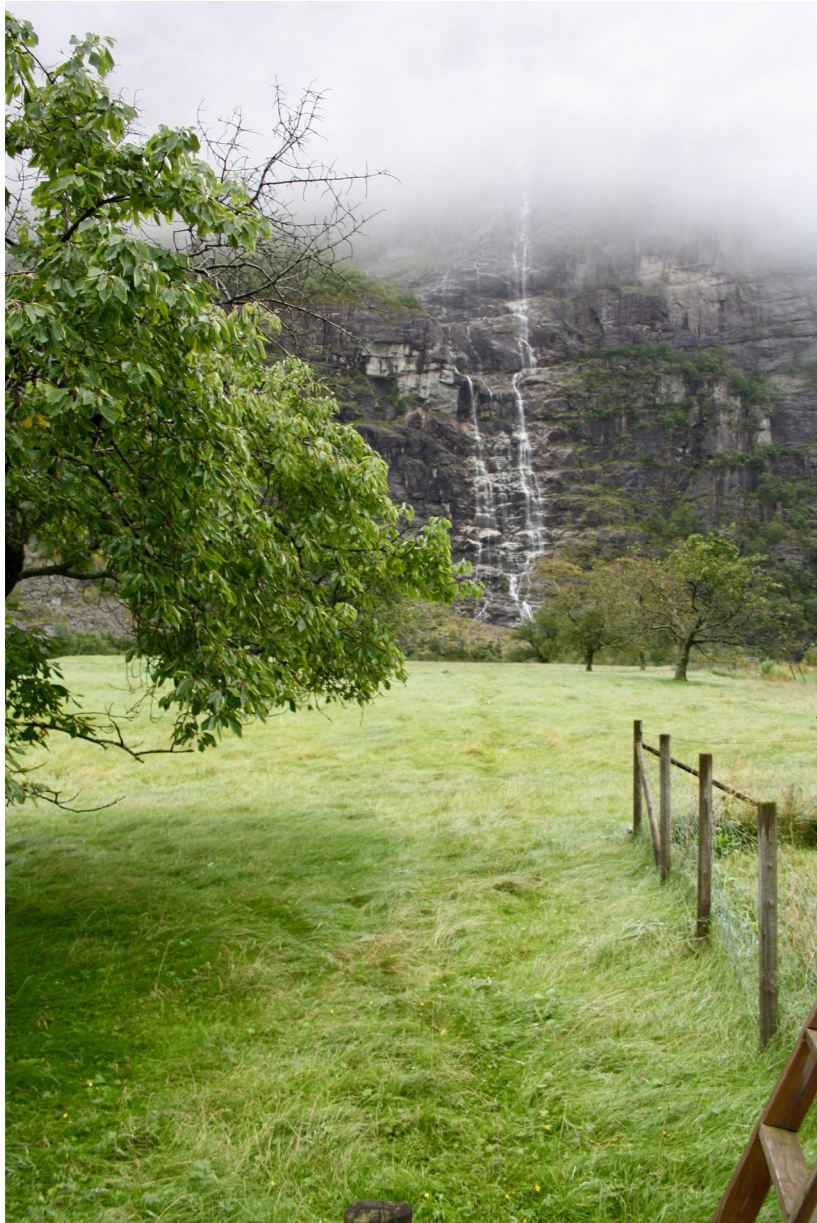
There is only one road to Lysebotn that takes you over the mountain. This road is closed in the winter due to high levels of snow. The most usual route to Lysebotn is the ferry that takes you from the beginning of Lysefjorden in the west. This is considered a very beautiful tour where you get to see the majestic mountains with the Pulpit rock, Kjerrag and Flørli power station with its 4444 steps as main attractions. Today, it departs two to three times a day all year long and stretches 41 km. In particular cold winters the fjord freezes to ice and prevents the boat from reaching the piers. Lysebotn becomes temporarily isolated.



## Scenery

The surrounding scenery of Lysebotn gives the village a dramatic identity, with high mountains on two sides and water falling down the 90 degrees mountain-walls, giving a clue on why this location was established as a center for power extraction. At times a thick fog lies as a roof over the village.

Because of its beautiful and mysterious nature it is a destination for over 100 000 tourists a year, mainly hikers, camping tourists, mountain climbers and base-jumpers that take advantage of the extreme conditions surrounding the village.



## Rock

The name means light-fjord, a name said to be derived from the lightly colored granite rocks along its sides. Lysefjorden is long and narrow, with rocky walls falling nearly vertically from up to 1000 meters into the water that has a depth of over 400 meters at its deepest. It consists mainly of Migmatite, a rock that is a mixture of metamorphic rock and igneous rock.





## Light and weather

The surrounding mountains affect the weather in Lysebotn. Due to the height the sun does not reach Lysebotn approximately four months in the winter. It is also twice as much rain as in Stavanger, giving the good conditions to create electric power from water.

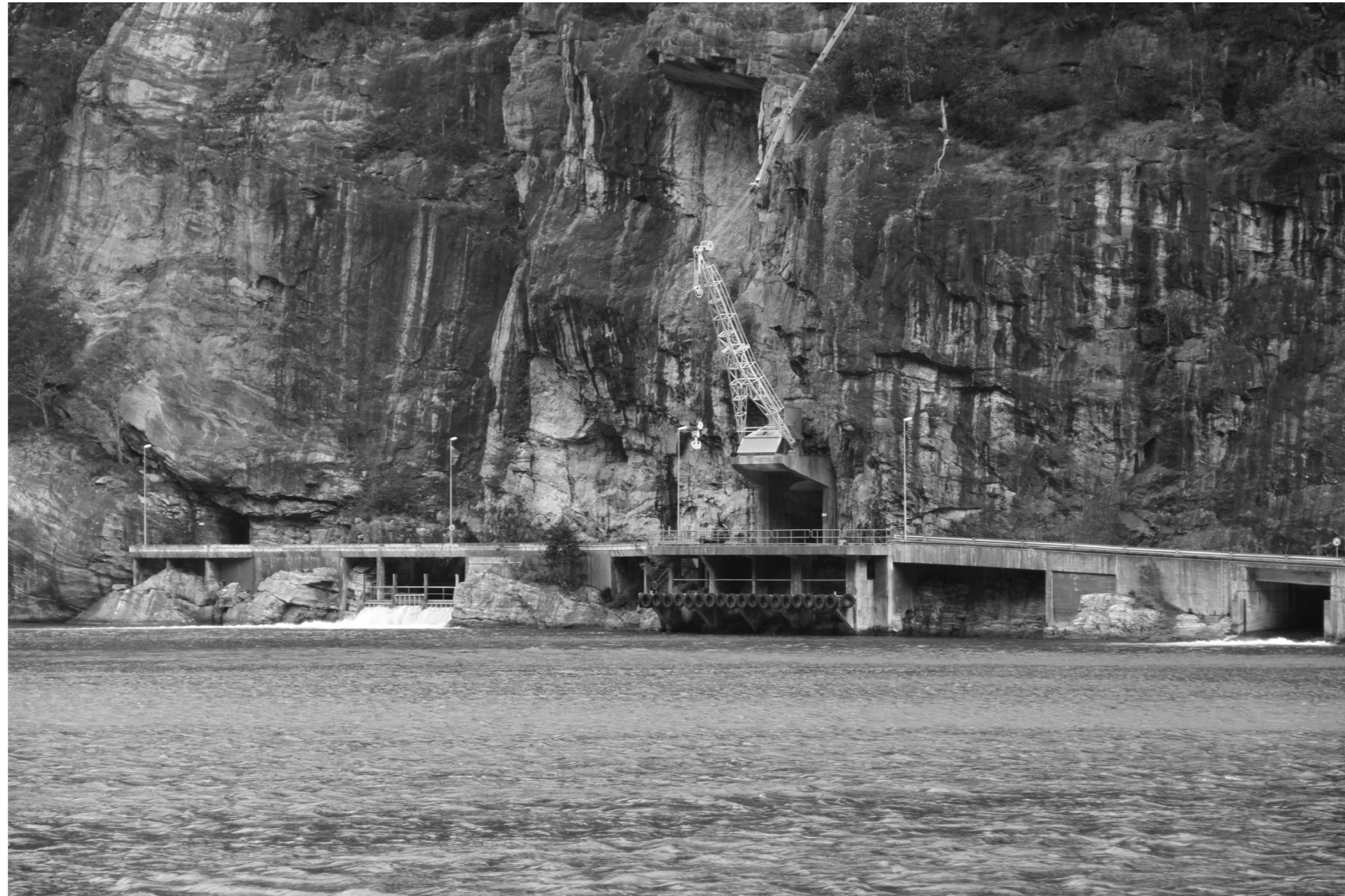


## Facility

Lysebotn1 water power facility began construction in 1947, with an aim to supply the county of Rogaland in the south-west Norway with power in a time when society had an ever-increasing consumption of electricity. Due to post-war politics and restraints, the facility was constructed 50 meters inside a mountain. Both to secure this important facility from bomb-raids and to save cost in materials. It was constructed next to a natural mountain shelf in the beautiful Lysefjorden.

Before the power plant was established, the village consisted of only a few farmers who carried out their work with no electricity. During the construction, a small community rose in Lysebotn, with their own cinema, church and community-house. These buildings is in use today, and works as different functions for the company who own the power plant.

The facility is built on the north side of the fjord with the entrance facing south.



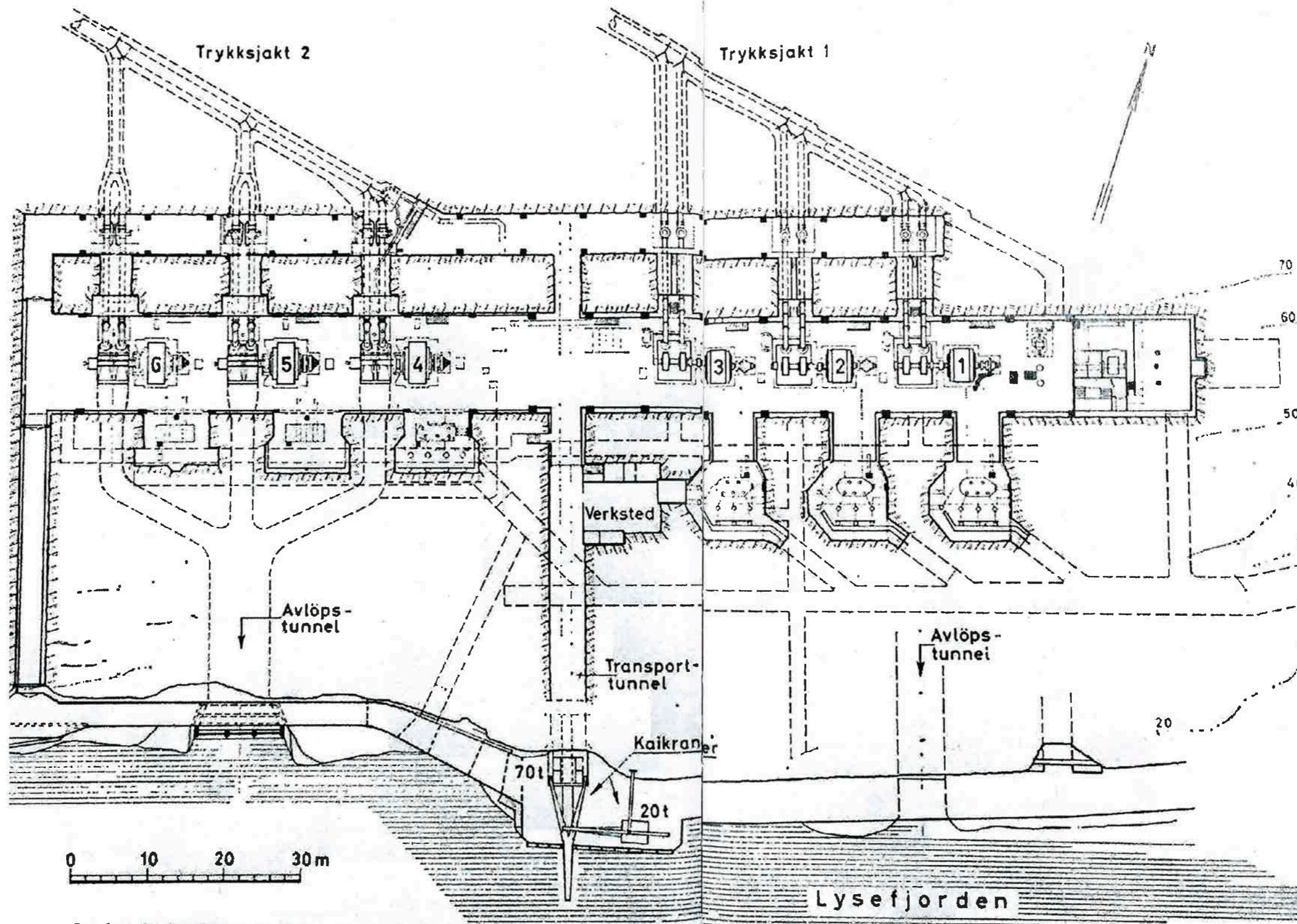
## Construction

The main hall is 160m long and 13,5m wide, with a concrete vault 15 meters over the lowest level. The picture below is taken during construction, and is what inspired this task.



Original plan





Lysebotn kraftstasjon med 6 aggregater.

Pictures of current state

