



Generator 5,49 MVA

Kaupanger 3 Power Plant Kaupanger in Sogndal Norway

Client:
Kaupanger Energi AS

Owners:
75 % Kaupanger Hovedgaard,
25 % Tyngdekraft AS,



Key Figures:

- Head 390 m bto
- Qm 0,644 m³/s
- Qt : 0,966 m³/s
- Power: 5.000 KW
- Enerky: 12 GWh
- Cost: 40 mkr or 5 mill €
- Specific cost 2,63 Kr/GWh

Construction time:
16 months

Year:
06/2009 – 10/2010

Commissioning:
10/2010

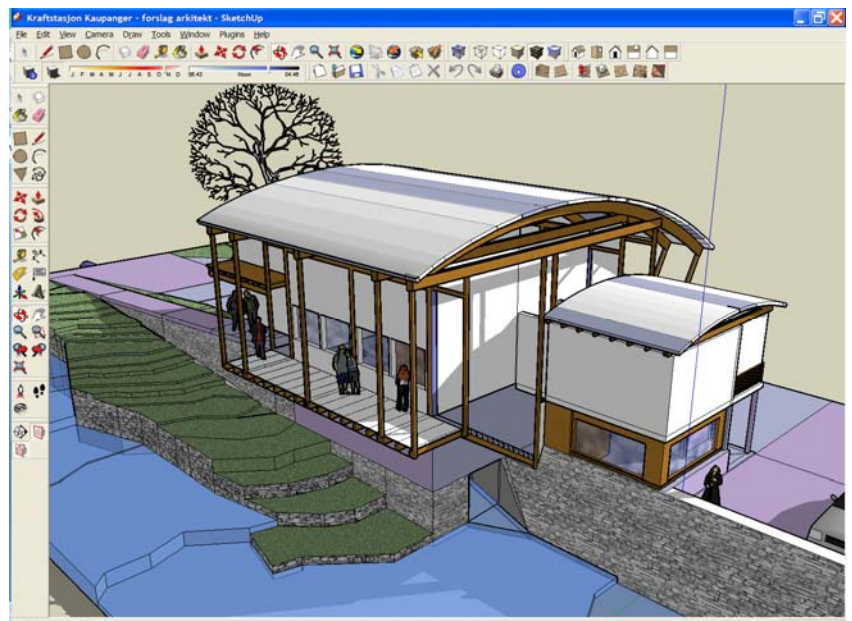
Financing:
Sparebanken Møre (local bank)



Dam and intake structure



Pelton turbine with 6 nozzels



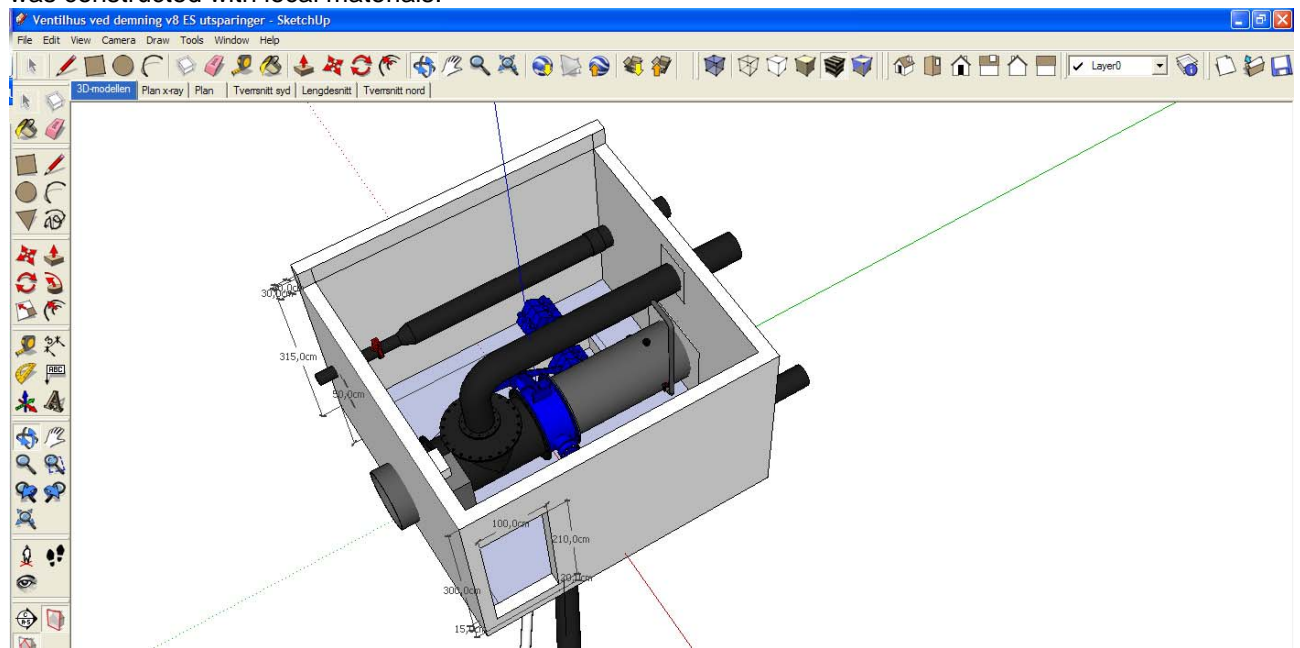
Power house

Brief project description

Sofienlund Tyngdekraft is assisting Kaupanger Energi as responsible engineer for the whole project comprising the following main key design elements: initial planning and concession application, conceptual design, detail design of intake dam and intake structure, penstock, powerhouse, tailrace channel, complete electro-mechanical works and high voltage 6,6/22kV transformer. We will also be responsible for the commissioning.

The project will be a storage reservoir project located on the western part of Norway. The small creek of Kaupangselvi has an average water flow of about 0,64 m³/sec. The turbine scaling will be $Qt=2 * Qm$. There is a limited storage reservoir but the project is regarded as a run-of.-the-river type project.

The dam site will be on a rock bed with a rock fill dam with shotcrete water tightening at the front. The dam was constructed with local materials.



The new intake will be a concrete structure constructed as an integrated part of the new dam downstream the present dam. The volume of the intake reservoir is estimated to about 1,5 mill m³. The valve house is outlined above.

The waterways from intake will be through a 3300 m long penstock with DN 900/800 pipes of ductile cast iron. The total gross head will be 390 m. The slope is quite moderate and at an average of 1:8. The penstock will be buried with a minimum of 1 meter overburden.

The powerhouse was founded on solid rock, and the power house construction will be with solid concrete.

The power grid is only at a 25 meters distance and a 22 kV high voltage power cable will connect with the power grid.

Project team

Project manager	Einar Sofienlund,
Hydrology	Einar Sofienlund,
Civil engineer	Jann Biedilae,
Mechanical engineer	Bjorn Undrum,
Electrical engineer	Einar Sofienlund,