



Vamma 12 Hydropower Project Norway

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OAITES Chuzhou-Nanjing 7th November 2018





PROJECT

Glomma and Lågen river catchment:

- 620 km from source to sea
- 42 000 km2

The largest river in

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Vamma Hydropower Station – 1st turbine commissioned in 1915 – "still going strong"



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VIRTUAL DESIGN AND CONSTRUCTION APPROACH

- **Fully integrated BIM** (building information model) without production of 2D drawings.
- The "digital twin" (BIM) as basis for all processes
- All construction and operation critical meta data integrated in the model
- Geometry and data from BIM transferred into construction equipment (jumbo etc.)
- Data collected from construction equipment shared in the BIM for design optimization and documentation (geometry, geology etc.)

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LARGE DIMENSIONS CLOSE TO EXISTING INFRASTRUCTURE







- 15-20 m overburden
- 100 m² face excavation
- 5 m round length
- 1300 kg Bulk emolusion explosives
- VIBRATION LIMIT: V_f < 10 mm/s
- SOLUTION: Electronic Blasting System (from Orica)
- RESULT: low vibrations, good contour and less blasting induced damage to the rock mass

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TECHNOLOGY AND METHODOLOGY TAKE YOU FURTHER, BUT AT THE END COOPERATION IS THE MOST IMPORTANT FACTOR TO SUCCEED

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