

E39 Sulafjorden

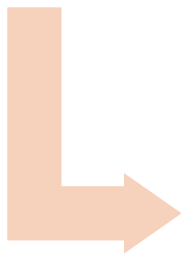
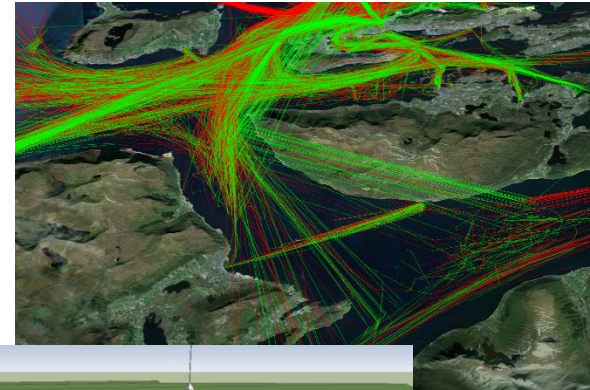
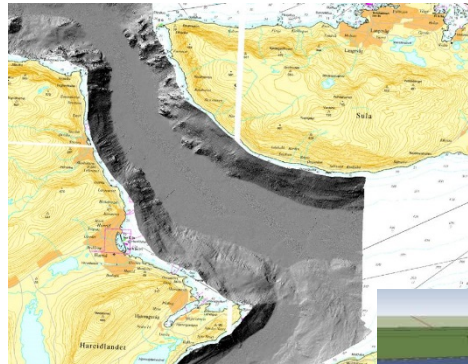
Multispan suspension bridge om GBS

Feasibility studies

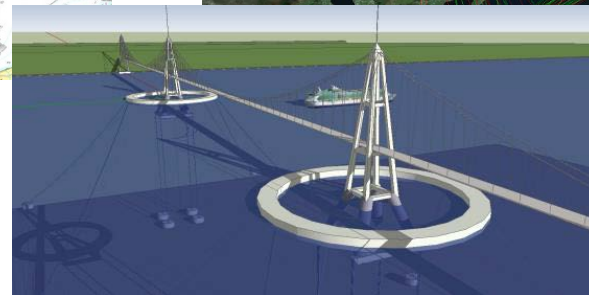


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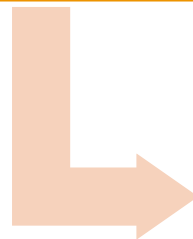
A. Feasibility studies



B. Concept studies



Jørn Arve Hasselø
Project Manager



C. Preliminary project

Magne Gausen
Engineering Manager

Statens vegvesen Region midt





Sulafjorden

- With: 3200 – 5000 meter
- Depth: 420 meter





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E39 Sulafjorden

Aerial photography – to the north



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Aerial photography – to the south

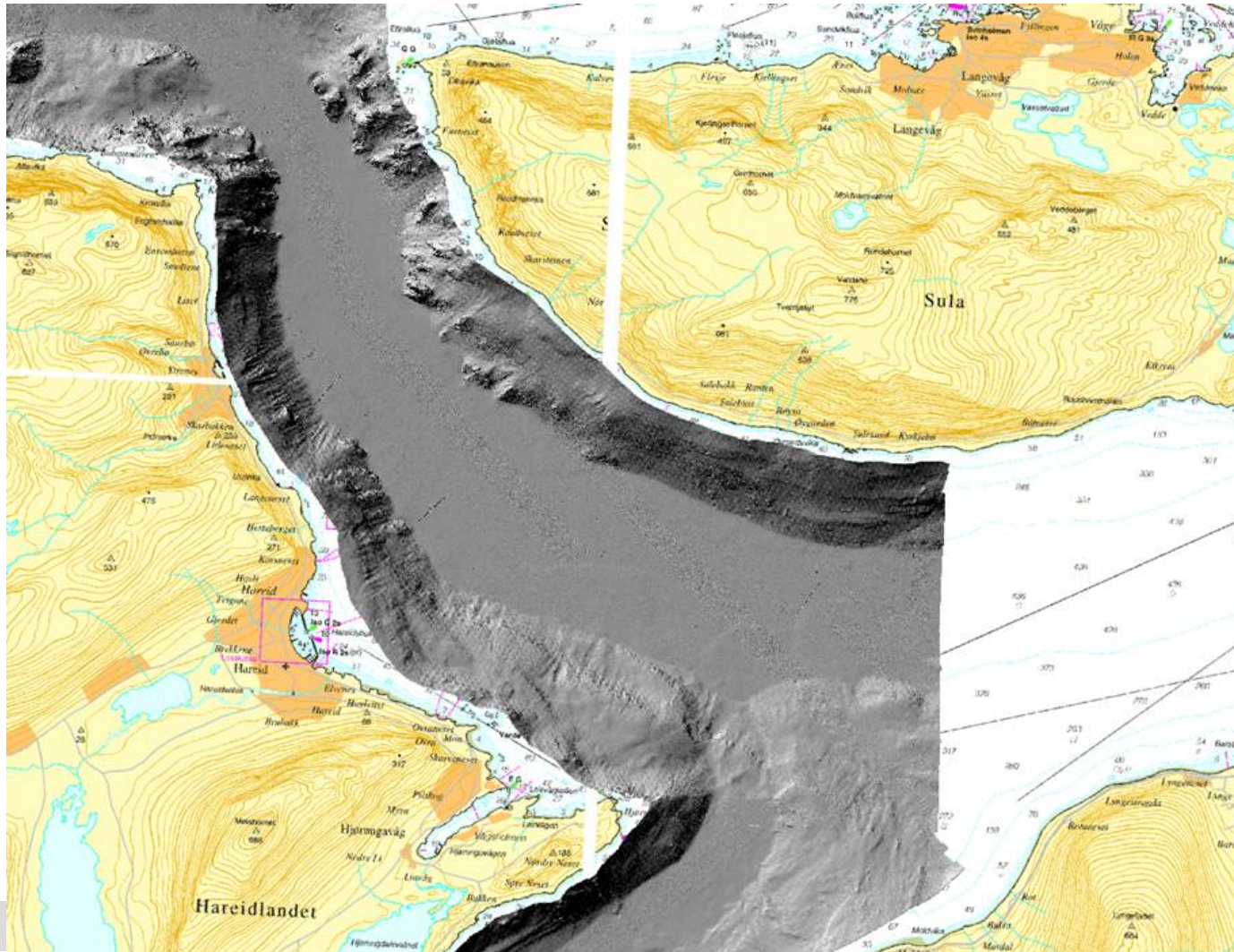


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Feasibility studies – Sulafjorden Bathymetry



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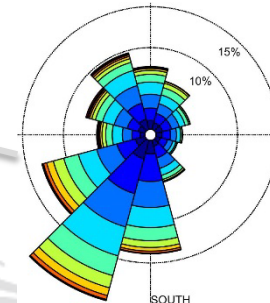
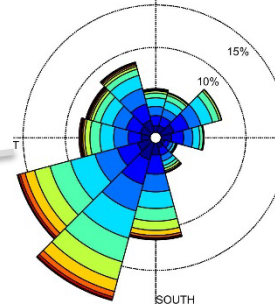
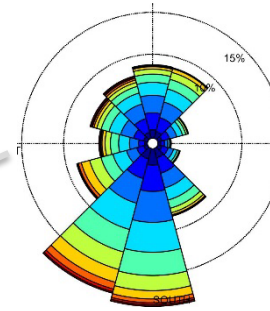
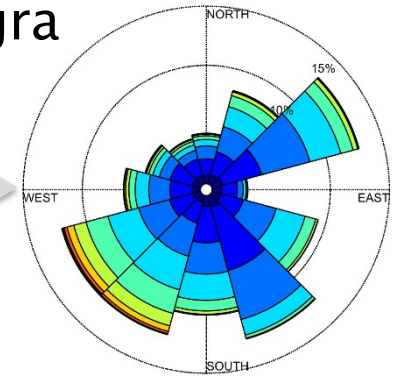


Feasibility studies – Sulafjorden

Wind – Simulation 57 years data from Vigra



esen

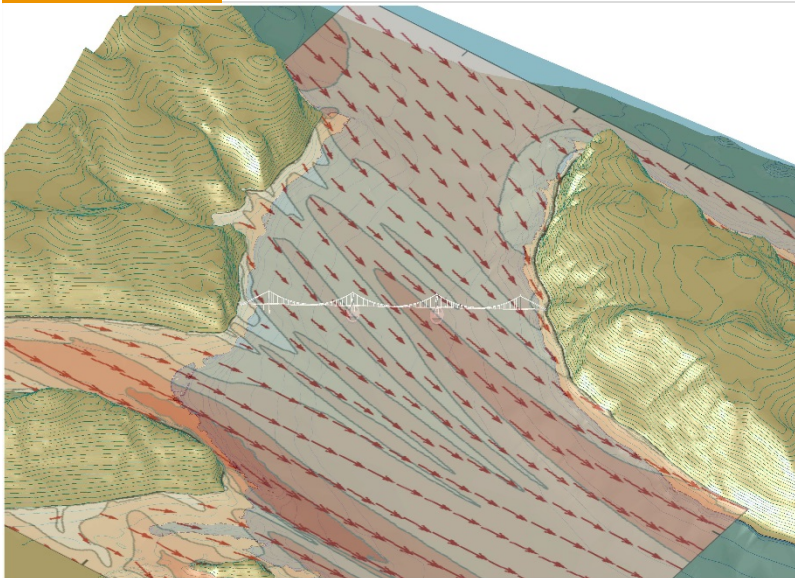


Feasibility studies – Sulafjorden

Metocean – Design Basis



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Simulation
wind

Simulation
ocean waves

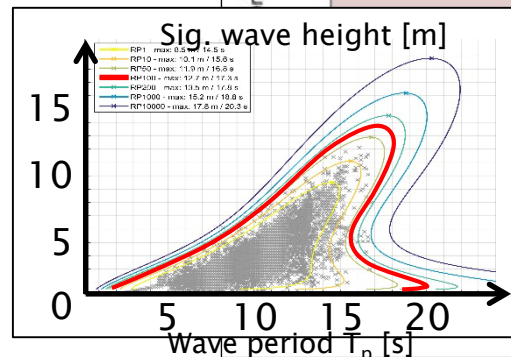
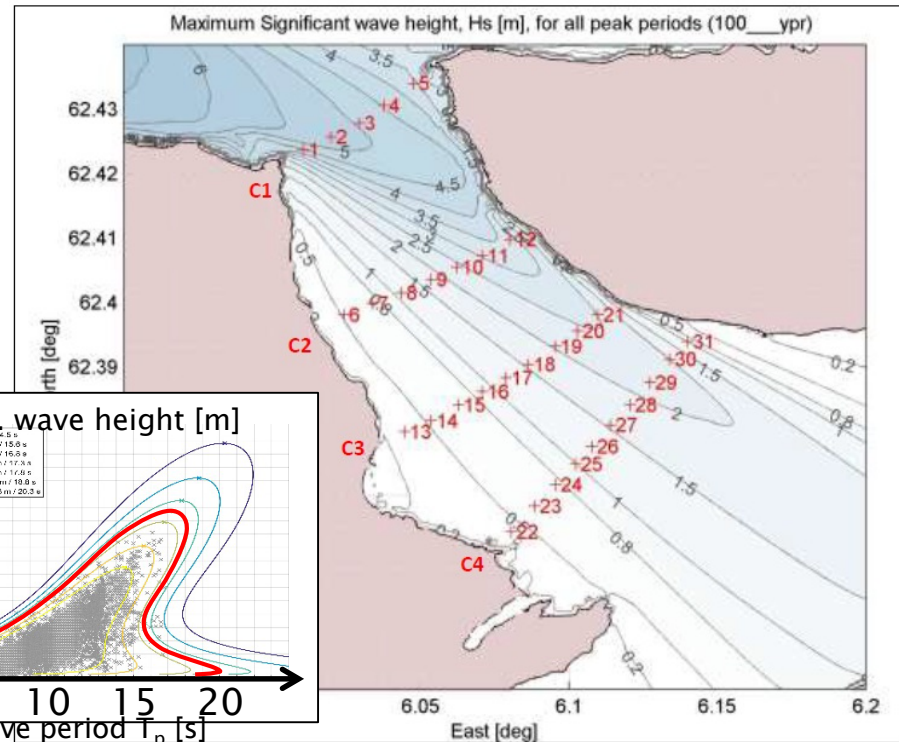
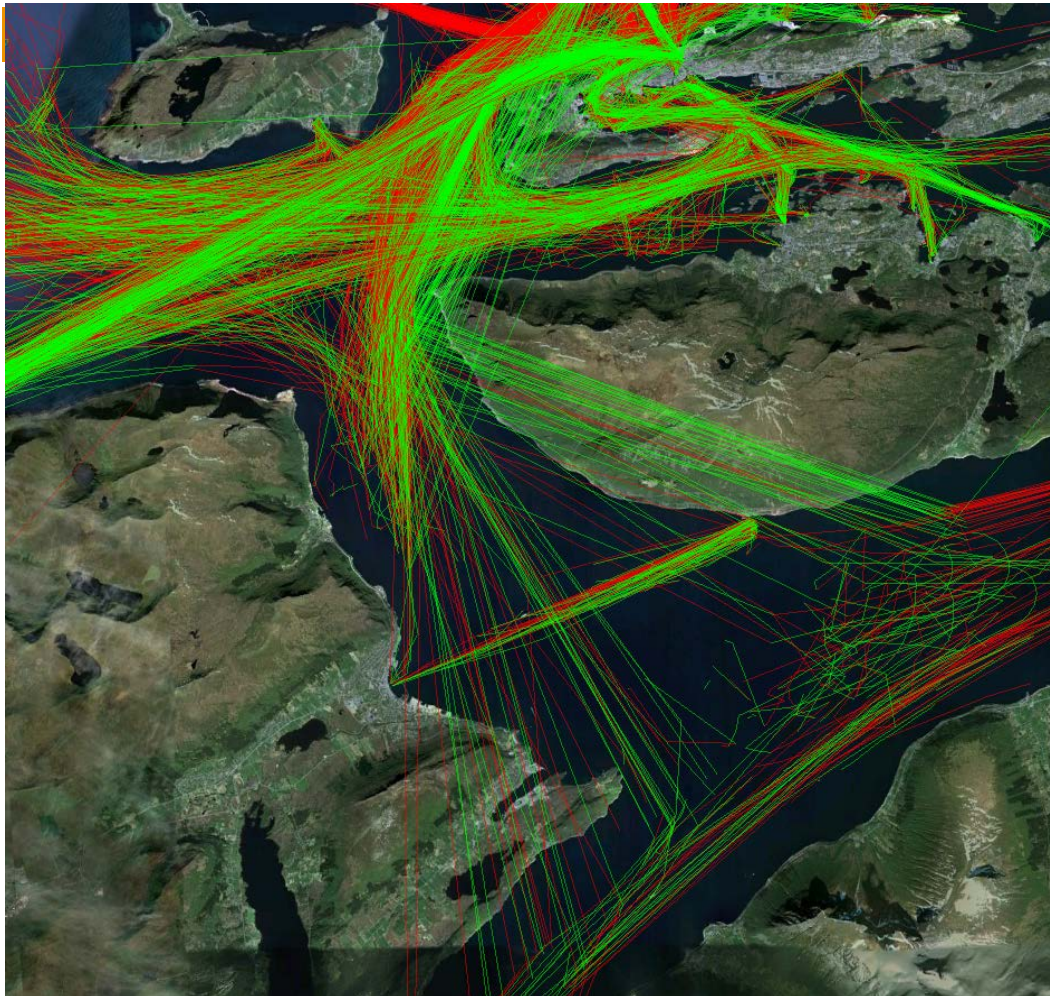


Figure 1-3 Maximum significant wave height of ocean swell with RP100 for all peak periods and all directions

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Ships passing in the fjord



- AIS-data from ships

Feasibility studies – Sulafjorden – Design ship

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Navigation channel :

H= 70m

W= 300m

Design ship:

Length [m] 300

With [m] 35

Deplacement [tonn] 51000

Speed [knots] 18

Drifting [knots] 2.2

Depth ship [m] 8.9

Table 15 Design ship for the bridge

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Potential bridge designs



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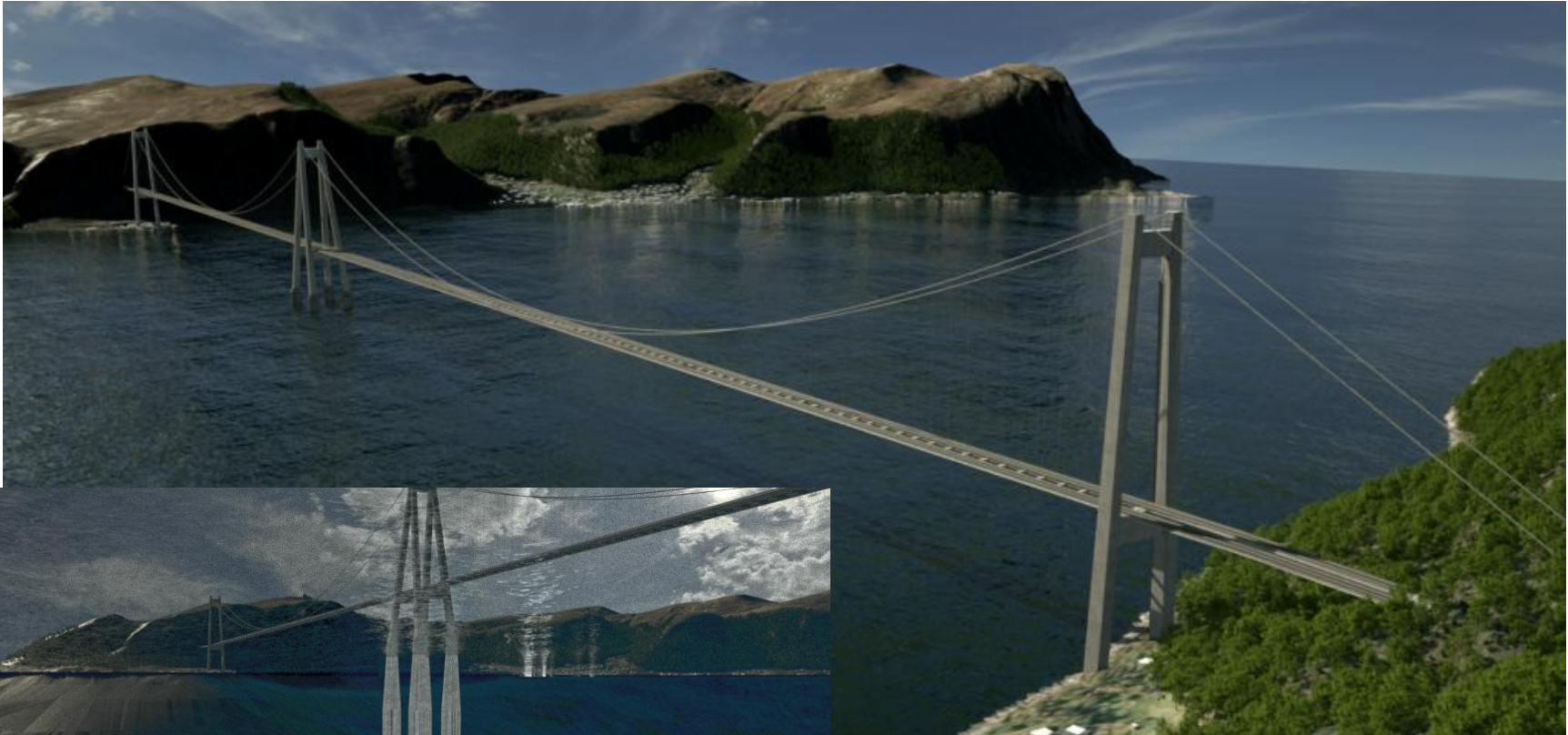


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Corridor 2 – Suspension bridge on a solid foundation (GBS),
two span, length 4000m

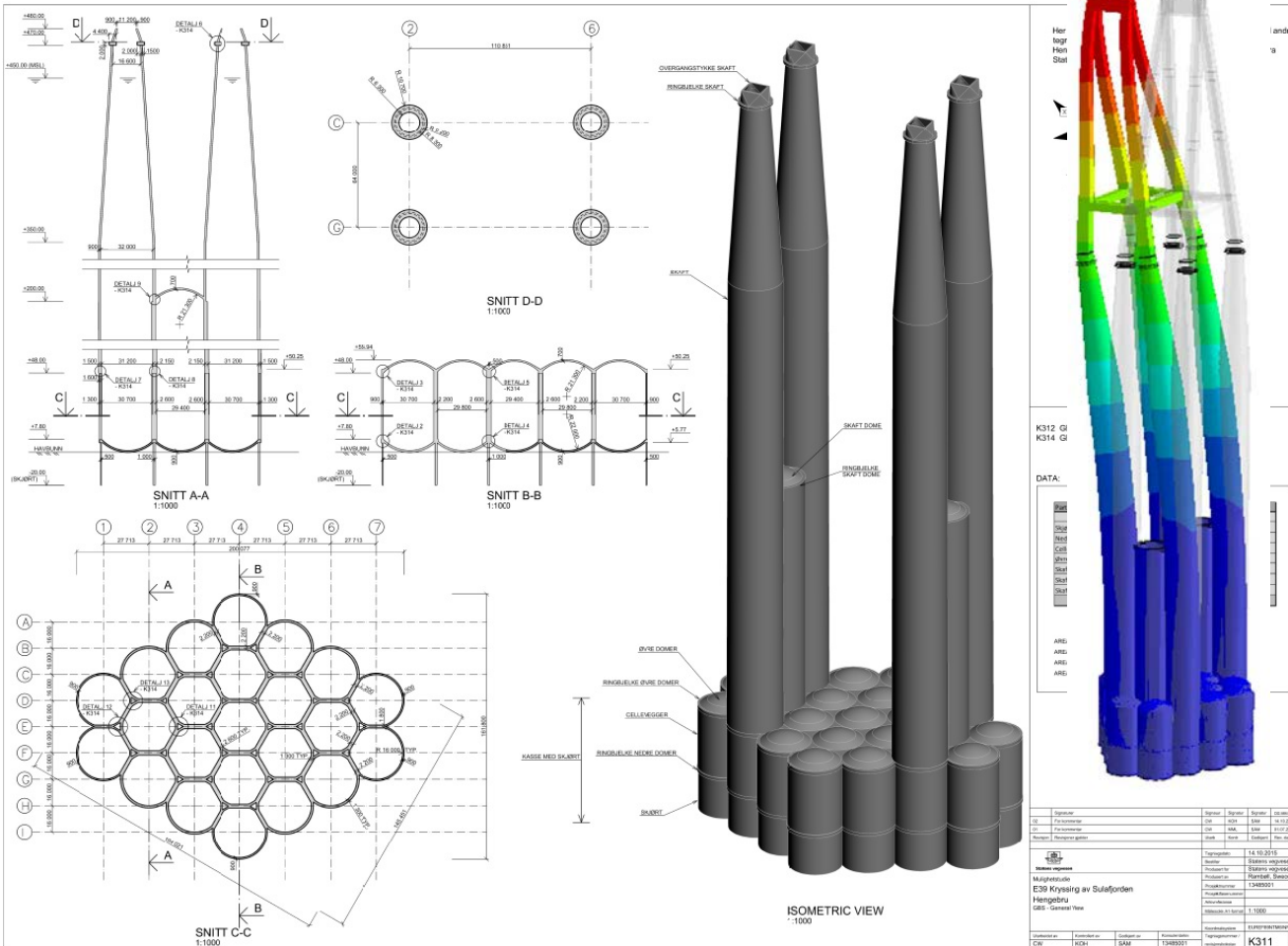


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Data for GBS



Water Depth: 450m
Height: 480 m
Area: 20600m²

Concrete: B75

Cells:
Ø=32m og t=1,3m

Shafts: Ø=32m
t= 1,3m -> 0,8m.

Gravity Based Structures

- Norwegian technology
 - Design
 - Construction
 - Marine operations



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History Condeep – GBS



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Building site for Hebron in Canada

