

RD pile wall in hard ground conditions at Ocean Space Center Trondheim, Steel Pile Day, Helsinki 18.01.24



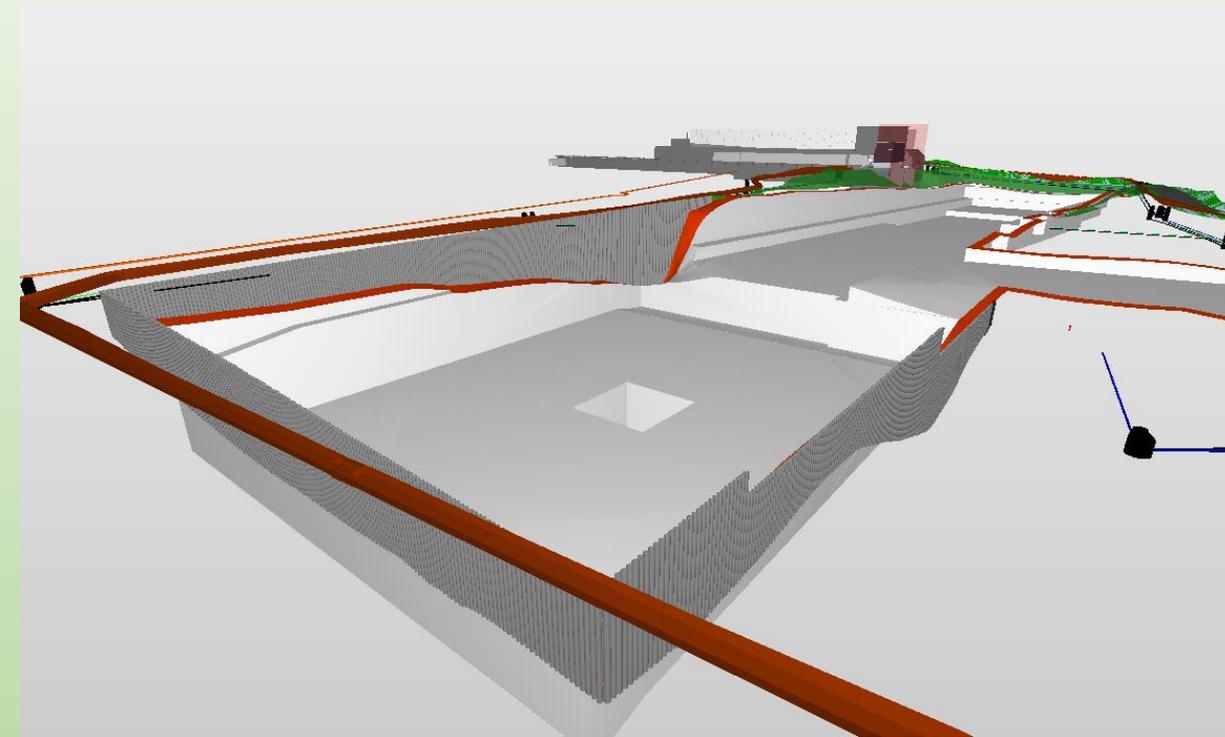
Runar Stjern, Fundamentering AS

Project information – Ocean space center.

- Client: Statsbygg
- Main Contractor: Trym Anlegg AS
- Sub Contractor: Fundamentering AS
- Engineers: Sweco for Trym.
- Contract: 37,5 mill NOK
- Duration: Jan23 – Juni24
- In total 45.000m² – 850 Million Euro.



Illustrations



Fundamentering AS



Forutsigbare Ansvarsbevisste Solide

Quantities – RDw

| RDw | Stålkvalitet | Meters | Pcs |
|-----------------|--------------|--------|-----|
| Ø323x10m m | S440 | 612 | 68 |
| Ø323x12,5 mm | S440 | 1248 | 132 |
| Ø406x12,5 mm | S440 | 6559 | 509 |
| Ø508x14,2 mm | S440 | 1149 | 49 |
| Sum | | 9568 | 758 |



Quantities - Anchors and Beams

- HEB inside RDw wall : 2500 m
- 2 x UNP 320 : 700 m
- Hollow bar anchors 1500 kN : 170 stk
- Strand anchors 900-2500 kN: 130 stk
- 750 m³ concrete
- Injection RDw interlocks: 120.000 kg
- Cement perm. Ischebeck : 250.000 kg

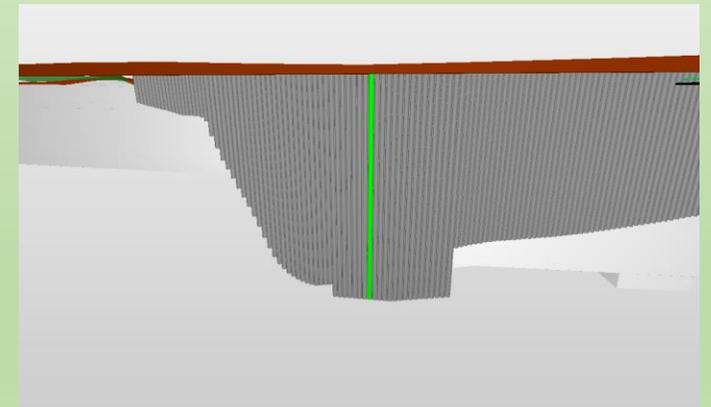


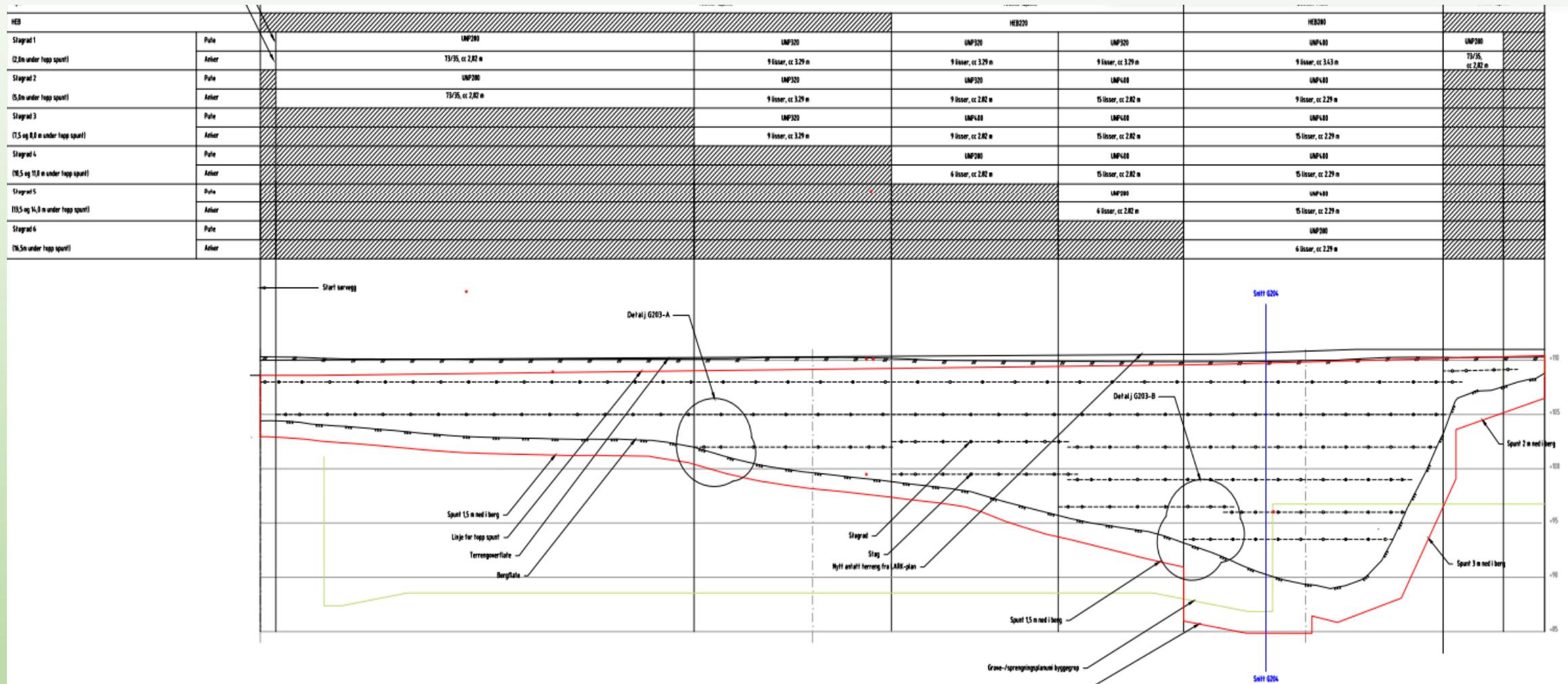
Why Rdw Wall in OSC?

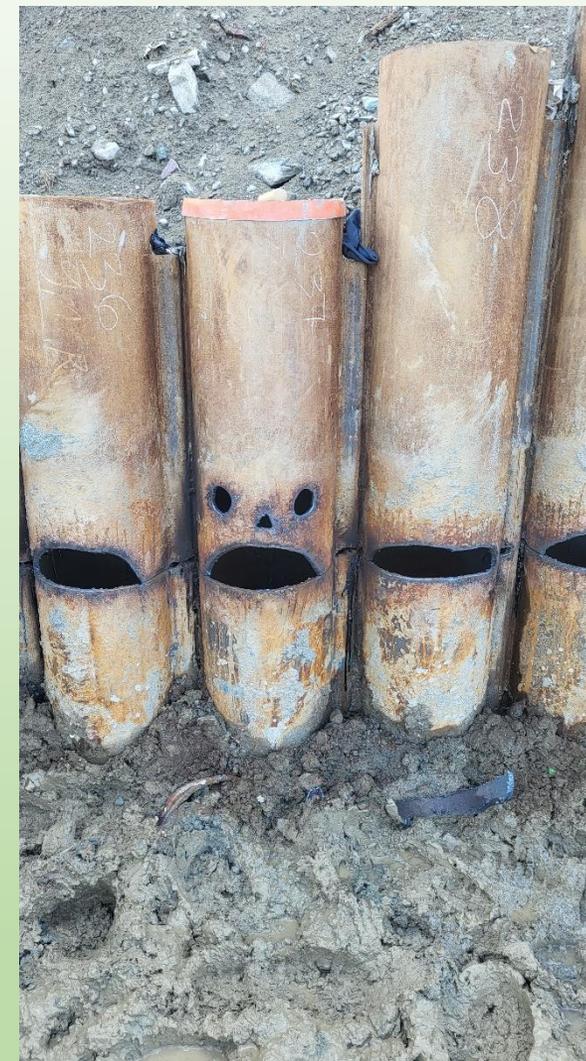
- A safe solution for the client. Always doable. The solution was presented at the right time.
- Too hard clay for normal Sheet Piling.
- Uneven bedrock. From 0-22 m.
- Solution is sturdy and flexible.
- Good experiences from other jobs. As; Fornebubanen, Fiskumfoss powerplant.
- Additional grouting in the interlocks.

Project Status

- Construction was changed to permanent wall.
 - Welding demands, EXC3
 - Concrete quality as Bridgeworks.
 - Anchors made permanent. DC/Strands
- Surrounding neighbours. 60 dB (07:00-19:00)
 - Measures to decrease sound. Sound barriers.
 - Work from 5-12 hours a day, pending sound parameters.
 - Very hard clay. A lot of noise the first 2-3 meters.
- Planning and delivery of materials.
 - On the drawing board as we drill
 - Bedrock was deeper than expected.
 - Piles up to 26m long.
 - 6 anchorlevels.
 - The ground inquiries is not accurate.







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Thank you for listening.