

## Seasons Greetings from Norway!

Dear client, cooperation partner, business associate and friend of OO!

2021 will be a record year for us with regards to projects, recruitment, and financial result. All this based upon high competence, agility, initiative and proactivism throughout the organization. We are lucky to be in a position where we can contribute strongly to the development of our clients, our clients' clients and to society in general. It is very motivating to see tangible results of our work in the form of buildings, infrastructure, and facilities on land and at sea!

As part of Artelia Group and in cooperation with our sister company MOE in Denmark we are positioning ourselves for taking on increasingly more complex projects with a broader scope of engineering disciplines. Below you can find a sample of the many exciting projects that we have performed in 2021. You can find more information on our home page – and by following us on Facebook and LinkedIn.



I wish you all a joyous holiday season and a prosperous new year!

Best regards  
Olav Weider  
CEO



### PORTS AND INDUSTRY

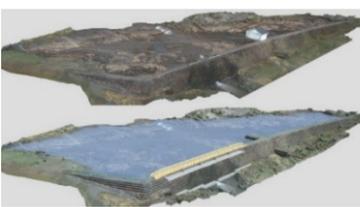


Foto: Stadion Laks AS

Throughout 2021, we have had a varied portfolio of exciting projects. We have had several industrial projects within aquaculture, including detailed design of the world's largest hatchery at Tjuin, currently under construction.

We have also continued our work within floating closed fish farms in reinforced concrete and are now working with the FEED phase of the Stadionbasseng-concept, which is to be built in 2022 and put into operation in 2023. In another ongoing project we are utilizing our own OO concept to design navigation aids that ensure safe sailing in Norwegian waters. In this project realistic calculations of waves and ice loads are key elements. This year, we have completed the design of optimized antenna masts that will ensure mobile coverage all over the country, and these will be put into production at the beginning of next year.

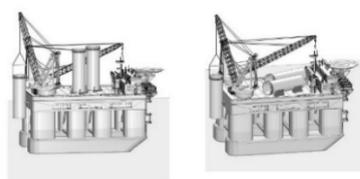
### DAM SAFETY AND WATER RESOURCES



During 2021, we have continued our growth with several new employees and new NVE-approvals in different professional disciplines. We have further developed the collaboration

with our partners in Artelia Group, this includes both international and Norwegian projects. We thereby have a wide-ranging and competent working environment that we can draw on in various projects. Tasks in 2021 have been varied and includes: Reassessment, technical plans, and detailed design for several larger dams, both embankment dams, concrete dams, and masonry dams. Independent third-party control of the execution on dams for several clients. 2D dam break wave analyses in Hec-Ras for several dams. This is especially useful in waterways with densely populated areas. Flood calculations and CFD analyses to optimize flood diversion. One of the projects we have worked on is dam Munkebotvatn for Bergen municipality, where we have done complete follow-up with technical plans for dam and auxiliary works, detailed design, construction site follow-up, plan for water management, flood calculations and CFD calculations for the spillway capacity.

### OFFSHORE OIL AND GAS



The activities this year have focused mainly on platforms in operation and decommissioning. We have performed yearly maintenance on the SRS-models for Troll A and B,

updated the Troll B model to include a new module for Troll West Electrification, a project which included documentation of the hull capacity for this project. Lifetime extension of several platforms have also been a focus this year.

On the decommissioning side, we've performed a large multi-discipline study of decommissioning of two platforms, an exciting and challenging project which will continue into 2022.

All of these projects are well aligned with our strategic focus on ensuring safe operations and decommissioning of oil & gas facilities.

### GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING



The business area has grown from 6 to 12 employees and expanded its business with environmental technical services in addition to the geotechnical services. Currently 10 geotechnicians and 2 environmental

geologists are working on our various projects. The project portfolio is constantly expanding including both small projects and large and more complex projects. A number of these projects are linked to Dr.techn. Olav Olsen's activities within other business areas. The business area provides geotechnical and environmental ground investigations and assessments, as well as consultancy within all phases of the various projects.

Projects in which the business area has been involved in 2021 are e.g., bridge crossings E39, Nye Veier's road developments in Trøndelag, Cissi Klein VGS, Øvre Nyhavna, Overvik, Saupstadbrua, Ulven and many other projects.

### INFRASTRUCTURE



2021 has been a good year for the business area Infrastructure. A large volume of workhours has been carried out within the three design & build contracts: UDK01 and -02 at IC Drammen and SMS2A at IC Moss. Design works in the tender phase on E18 Strand – Ramstadsletta (ill. NPR) is ongoing. This year we won 3 mini competitions for pre-design of various crossing solutions for Sulafjorden and Halsafjorden at the west coast of Norway. These assignments are ongoing and will be completed during spring 2022. We have continued to work on detailed design of the Espern bridge and the new pedestrian and bicycle bridge at the UiO (University of Oslo) Life Sciences Building. We had the great pleasure of following the overpass bridge at Reinsvoll station and Husdal bridge from sketch stage to completion in 2021. We are optimistic on behalf of our business area for next year with several exciting opportunities coming up.

### RENEWABLE ENERGY



In alignment with the sustainable development goals, we are continuing our efforts in designing innovative foundations for renewable energy solutions. During 2021, we have focused our efforts

on the Flagship project, in which the OO-Star Wind Floater will be demonstrated in full scale off the west coast of Norway. This will be the largest floating wind turbine in the world. We are also supporting our clients in many projects, ranging from structures being build this year and projects planned around the world from 2025 and onwards.

After Utsira Nord and Sørilige Nordsjø II were opened, we have seen a tremendous interest in offshore wind within the Norwegian industry. We see great opportunities both in Norway and in the coming floating wind projects being developed internationally.

### BUILDINGS



With regards to sustainability, rehabilitation is often preferred solutions over demolition and rebuilding. Together with Vedal we have worked on rehabilitation

of a 30.000m2 quarter in Oslo city center. The project includes added stories, floor replacements, a new atrium, and a new glass roof. The existing building consists of at least seven construction stages from the 1890s to year 2000, making the structural design extra challenging. In conjunction with our frame agreement with Undervisningsbygg (Oslo municipality school builder) we have also worked on detailed zoning plans for Haugerud and Trosterud. A new elementary school, high school, culture center, sports arena and common public facilities are planned. Olav Olsen has contributed with engineering management, structural design, and geotechnical design. The schools are expected to open i 2028.

### SOCIAL AND R&D ACTIVITIES



Participation in several R&D projects including the use of recycled aluminum in concrete structures, the use of aluminum in load-bearing structures and fiber-reinforced concrete structures. These are

material solutions we believe can contribute to a more sustainable construction industry in the future, and we therefore want to be part of this development. Despite the difficult situation with covid and the fact that there have been limited opportunities to meet physically, we have carried out several social and professional activities for our employees. Various sports activities, other outdoor activities, hiking in the mountains, professional lunches, and meetings digitally have been held, but we have also conducted gatherings by physical presence. During fall we visited NTNU, for the students work fair and company presentation, and we have performed several other presentations and participation at several conferences, trade fairs, and gatherings for the industry.