Best available technology

American Aquafarms is cooperating with leading world partners providing the best possible solutions for the different aspects of the operation.

All equipment intended for use at FB01 and FB02, is sourced from industry leading solutions that have been developed and utilized for a number of years in Norway to great success, and are considered best available technology in the industry.

All services intended for use at FB01 and FB02, is sourced from industry leading solutions that have been developed and utilized for a number of years in US to great success, and are considered best available technology in the industry.

Below is a list and a brief description of the companies that are and have been providing technology and expertise to American Aquafarms. Our partners are representing the best of world leading solutions and cutting-edge technology and expertise for the aquaculture industry.

Equipment for farm operations: Feed barge, Feeding systems, Lightings systems, Control systems, Other equipment.

Scale Aquaculture

ScaleAQ is a world leading international aquaculture company that delivers innovation, technology and equipment to customers globally [1]. They have 27 offices in 11 countries with approximately 900 employees covering both land-based and sea-based farming, service and advice. In addition to Norway, they have offices in Chile, Canada, Tasmania and production in Vietnam.

The company was established on 1 August 2019 and is a merger of the equipment suppliers Steinsvik, Aqualine and AquaOptima who together have 40 years of experience [2]. They are behind the world’s first RAS (Recirculating aquaculture system) for ready-to-slaughter salmon [3] and the world’s first escape-proof cage system [4].

https://scaleaq.com/about-us/

Nets and ropes:

Mørenot

For more than a century our nets and long lines have helped fishermen bring food to people across the globe. Now we are raising the bar even further through innovations such as our net-cleaning robots and offshore fish-farming technology to promote healthy ocean life. We are rooted in the local communities we serve, but also have a global perspective. Since our start as a small fishing gear supplier in Norway, we have expanded to a growing number of markets – from Iceland to Spain to North America, Chile and South Korea. Almost a third of the world’s large fishing nets are made by us. And with service stations along the world’s coasts, we are right where our customers need us. At a time of rapid climate change and
growing populations, we are setting new industry standards to sustainably harvest food from the sea. From catching fish in the sea to cultivating them in clean ocean environments, our solutions ensure safe and efficient operations. We offer new research, ideas and data systems to give fresh insight and control over technical processes. Extending our reach, we also provide seismic towing solutions for the wider marine industry. Our story springs from an abiding love and respect for the oceans and the millions of people they support every day. That’s why we will always keep challenging ourselves to do even more to sustain the oceans as vital food sources for future generations. Today Mørenot is driving the development of fishing and aquaculture solutions that will help ensure the oceans can feed generations to come.

https://www.morenot.com/morenot/about-morenot/

Closed pen technology and production planning

Ecomerden

- Established in 2011 Ecomerden is already a pioneer in closed cage technology. With over 30 years of experience in marine constructions we have constructed the most heavy duty closed cage. Ecomerden is a leading supplier of closed pen technology.
- The development of Ecomerden started 17 years ago in Chile. The tests showed good fish welfare with less mortality and improved environment conditions on the farm site.
- The founder and CEO of Ecomerden Jan Erik Kyrkjebø is an experienced entrepreneur and engineer who has been involved the fishfarming industry since 1984, and has been a pioneer and technological leader in developing Feed Systems, Feed barges, Steel Cages and Closed pen systems.
- Since the beginning this has resulted in over 600 successfully installations in 32 different countries.

Fiizk

About the companies that forms FiizK:

Infront–X
Industry-leading software and experience within software for planning, optimization, budgeting, analysis and digitization of production management.

Botngaard
Leading supplier of technical tarpaulins, tarpaulin products and closed cage solutions. Brings more than 140 years of industrial production experience into FiizK.

SHM Enabling Technologies
Develops pioneering digital integration platform for the aquaculture industry.

FiizK ensures continuous development and optimal operation of our products and services by combining our employees’ specialised competencies with our clients’ broad experience. As a partner of FiizK you have access to a unique experience within our areas of expertise. At FiizK we combine craftsmanship gained through more than 150 years of proud industry
history with expertise in technology, computer science, economics and biology. This combination enables us to offer our clients industry specific solutions and premium products. Your needs as a client is our focus. At FiiZK, we are confident that our skilled teams of economists, engineers, cybernetics, project managers, tailors, marine biologists and customer advisors have your requirements covered. By working with FiiZK you will experience that together we can contribute to increased production and quality by using novel technological solutions. We encourage you to use our web page to get better acquainted with our staff, products and services. And hope that you will contact us with any enquiries.

https://fiizk.com/en/frontpage/about/

MCS group

MCS group is an industry leading Norwegian company with over 250 employees, that supplies the following services to the ship and offshore industry: Aall kinds of steel and piping prefabrication from own facilities at Laksevåg, Bergen. We also have a hall for complete surface protection. MCS group is also supplier to all major shipyards in Norway where we installed prefabricated items from own facilities and service in relation to SPD and general maintenance work for various clients.

http://www.mcs-group.no/

Oxygen and oxygen control, delivery and distribution systems:

Linde

Linde is a leading industrial gas and engineering company. Linde is a leading global industrial gases and engineering company with 2019 sales of $28 billion (€25 billion). We live our mission of making our world more productive every day by providing high-quality solutions, technologies and services which are making our customers more successful and helping to sustain and protect our planet. The company serves a variety of end markets including chemicals & refining, food & beverage, electronics, healthcare, manufacturing and primary metals. Linde’s industrial gases are used in countless applications, from life-saving oxygen for hospitals to high-purity & specialty gases for electronics manufacturing, hydrogen for clean fuels and much more. Linde also delivers state-of-the-art gas processing solutions to support customer expansion, efficiency improvements and emissions reductions.


Feed for production of Atlantic Salmon

American Aquafarms has not yet decided on feed supplier, but is exploring cooperation with some of the world’s leading suppliers of feed for Atlantic salmon production.
Skretting is a world leading supplier of feed to the aquaculture industry. Skretting is the Nutreco business responsible for aquaculture activities. The main Business Unit is Global Salmon & Fish Feed Southern Europe. Skretting is also represented in three other Nutreco business units: Americas, Asia and Africa. Research & Development is conducted by Skretting Aquaculture Research Centre (ARC).

Employees: 3500 world wide
Products: Fish and shrimp feed for more than 60 species
Production: 2.5 million tonnes annually (2017)
Production facilities: Australia, Brazil, Canada, Chile, China, Ecuador, Egypt, France, Honduras (JV), Italy, India (JV), Japan, Norway, Nigeria (JV), Turkey, Spain, UK, USA, Vietnam, Zambia


Cargill

Nourishing the world

Our team of 155,000 professionals in 70 countries draws together the worlds of food, agriculture, nutrition and risk management. For more than 155 years, we have helped farmers grow more, connecting them to broader markets. We are continuously developing products that give consumers just what they’re seeking, advancing nutrition, food safety and sustainability. And we help all of our partners innovate and manage risk, so they can nourish the world again tomorrow. https://www.cargill.com/about

Waste handling

Blue ocean technology

We provide effective waste handling facilities with lowered power consumption. We have combined over 10 years of experience from the offshore oil industry, with experience from aquaculture, and pioneered a new generation of waste handling systems based on innovative thinking and efficient solutions. Our systems are specially designed to be used in aquaculture and our customers are primarily juvenile fish and post smolt facilities as well as both land and sea based fish farms for food production. Our products are marketed under the registered trademarks blue “house systems” and “blue house”

https://www.blueoceantechology.no/om-blue-ocean.html

Wai Environmental solutions

WAI Environmental Solutions AS provides innovative solutions to improve sustainability of the high carbon emission companies and the waste management industry. We develop and
implement environmental technologies for organic waste valorisation, renewable energy and biochar production, hazardous waste treatment and wastewater treatment. We truly believe great opportunities lie in closing the circular economy gaps. Our solutions are based on low temperature belt dryer, pyrolysis, anaerobic digestion, and biofilm-based wastewater treatment technologies.

https://waies.no/

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- **Ecomerden:**

  Ecomerden have designed and developed several cutting edge solutions for more environmentally friendly fish rearing equipment and is a market leader in waste management and collection equipment for closed pen systems.

**Pen maintenance, cleaning and inspection:**

**Ocein**

Ocein AS (Ocein Innovation) develops technology and smart solutions for seawater fish farming. The company was established in 2018, but utilize 20 years of experience from diving, ROV, maritime operations in aquaculture, oil and gas, and the construction industry.

https://www.ocein.no/en/about-
ocein

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**Aquarobotics**

Aquarobotics is a Norwegian company developing cutting edge net cleaning solutions for the aquaculture industry. The people behind Aquarobotics have over 20 years experience from developing technology for aquaculture as well as other industries.

https://aquarobotics.no/om-oss/

**Vessels, logistics, transport, equipment specifications, design, engineering and marine construction.**

**Amar group**

Amar group was established in 2004 By Bjorn Apeland. Apeland was the entrepreneur developing Steinvik (now a part of ScaleAQ) to one of the leading suppliers of aquaculture technology and solutions in the world. After Apelands acquisition in 2004 stein's week
became the driving force behind industries technology development - starting in Norway, but now represented in all major aquaculture markets. Steinsvik has delivered the equipment to more than one third of all the salmon farms in the world. Apeland divested Steinsvik in 2017. Amar group builds on the vast accumulated technological and aquaculture experience to become the preferred supplier of aquaculture infrastructure and state of the art technology. Today Amar group is a long term investment/holding company for companies operating in shipping, technology, robotics and services and equipment bases for the aquaculture industry in several countries. Amar group have several large investments in aquaculture and research in Canada. Amar Shipping is supplier of efficient vessels for the growing aquaculture industry worldwide. We can deliver a range of vessels for the fish and aquaculture industry such as Fishfarm support vessels, Feed carriers, Thermolicer vessels and Fishfarm AHTS.

Mooring systems and technical drawings

Aquaknowledge

Aquaknowledge is a subsidiary of Mørenot, and a world leader in providing technical services to the aquaculture services to the aquaculture industry world wide.

Our employees have various backgrounds with both theoretical engineering and practical experience from aquaculture industry. This gives us the best insight in industry challenges and the ability and willingness to find the best solutions for our customers.

Aquaknowledge contributes in a wide range of technical projects – involving traditional marine fish farming and exiting new technical concepts for fish farming.

Our Services

TECHNICAL ANALYSIS

- Mooring analysis for fish farms and feed barges.
- Design and dimensioning of components and complete fish farms.
- Design, technical analysis and dimensioning of nets.

DATABASES

Component database Aquacom for operation and maintenance of all technical equipment on a fish farm. Addresses all requirements relating to inspections and maintenance.

SITE PLANNING

Planning of new sites in cooperation with the customer.

R & D PROJECTS

Aquaknowledge contributes in several important research projects that will lead to a safer and more sustainable aquaculture industry.

https://aquaknowledge.no/:

Aquaknowledge AS (founded 2015) was formerly a department in the Norwegian based Mørenot Group. The company was among the first to work professionally with project planning and structural analysis of sea-based fish farms and has since then accumulated a considerable experience global wide. Aquaknowledge is now specialized in engineering of sea based fish farms with clients both in
Europe, North America and Asia, and have successfully designed over 500 facilities worldwide. Our 26 employees have a various background and education, and we have a clear goal that our participation in any project shall lead to a safer and more environmental friendly production of seafood.