



# Rauma Cleantech

Cutting-edge cleantech innovation, combined with abundant natural resources, offers great opportunities to diversify and green the economy



Rauma is a lively and friendly industrial and cultural city with two UNESCO World Heritage sites, the Bronze Age burial site of Sarmallahdenmäki and old Rauma - an old Nordic wooden town.

The logistic position of Rauma in South-West Finland is unique - it is a gateway for trade between east and west and a crossing point for road, railway, boat and air traffic. The area is a gateway between EU and Asian markets - Five ports and two airports - Deep channel for ocean-going ships - Direct rail and road access all the way to Russian border

South-West Finland`s specific areas of expertise in cleantech include bioenergy and bio-fuels, bio refining, water and soil remediation technology. The region is at the forefront of the circular economy. Resource efficiency and waste-to-energy solutions are world leaders. The South West Coast is the most energetic region in Finland. About 40 % of all the country`s energy is produced there by different methods from hydroelectric to nuclear power. In the region you will find the most energy-efficient and favourable solution for energy consumption.

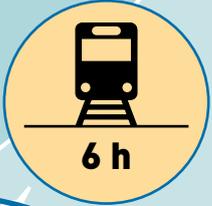


- Wind power
- Nuclear power
- Recycling and energy efficiency
- Seven universities and higher education institutes with over 50,000 students provide skilled employees for every trade.



This catalogue has been produced by Growth, Development and New Business project which is financed by Centre for Economic Development, Transport and the Environment and city of Rauma. Printed in December 2017.

# Introduction



St. Petersburg

RUSSIA

This catalogue of Cleantech companies in Rauma reveals the vast amount of versatile expertise on environmental business that can be found in the area. Here we introduce some of these companies which either manage their production in an environmentally friendly manner or market their products for Cleantech up to an international scale.

In Cleantech, Rauma's assets are in efficient handling of materials, energy efficiency and renewable energy. There is a growing demand for all of those all around the world, and this catalogue provides many excellent examples on how they are achieved.

Industrial internet will also open new business opportunities for Rauma-based companies; e.g. smart energy systems and smart devices which improve production processes by efficiently reducing environmental strain. Service companies, which are also represented in this catalogue, can develop new, eco-friendly services, which increases their value for their customers.

Another point of interest introduced here is Rauma's environmentally friendly industrial parks. They will be testing grounds for new energy solutions and advancing industrial symbioses, and they are logistically well situated.

We welcome you to explore eco-friendly Rauma and its Cleantech companies!

# Rauma exemplifies an eco-friendly town

**T**he town of Rauma has made active progress in reducing its carbon dioxide emissions since 2014, when it joined in with the carbon-neutral HINKU municipalities. To meet the HINKU criteria, districts must reduce the greenhouse gas emissions from their operations. The end goal is to reduce emissions by 80% by the year 2030.

In Rauma, HINKU has been profiled towards businesses. Companies play the most significant part by far because they consume large amounts of energy and materials. The town itself consumes just around ten per cent of the total energy. The measures which the town of Rauma has taken towards carbon neutrality include new LED lights for the training ice rink, energy

efficient solutions for properties, renovation of the street lighting, experimenting with compost in recycling biodegradable waste and disseminating information on the matter.

In Rauma, diverse measures are taken to improve business environments and facilitate the reduction in the carbon footprint. One of the town's goals is to improve logistics at the port and maritime industry area. The number of heavy transports by road could be reduced if the port were to offer premises for final composition. This collaborative reform would result in less carbon dioxide emissions, better material efficiency and savings in costs.

Rauma excels at forest industry and the use of forest-based energy. 96% of its district heating is produced with wood-based fuels. Many progressive companies work in the forest business in Rauma. A surprising number of Cleantech companies are also found in the region, as can be seen in this catalogue. Here we have small businesses still in their growing stages, as well as large companies which already operate on a global scale.

**Kari Koski**  
Mayor of Rauma

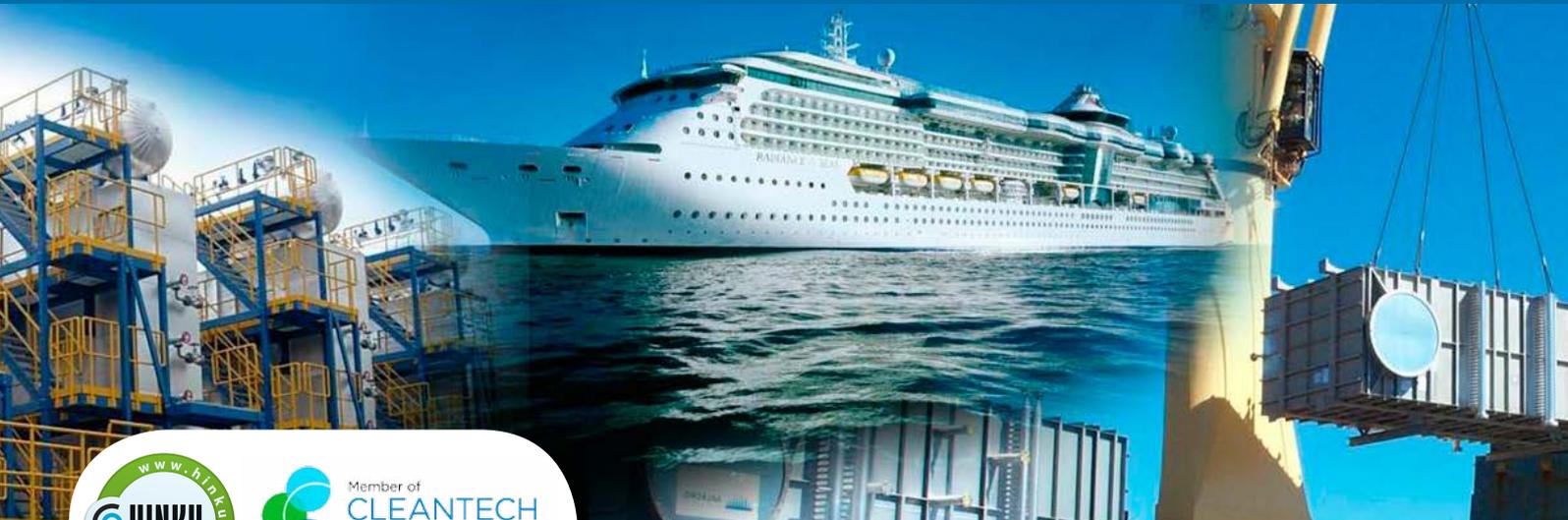


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Energy efficiency,  
resource efficiency



Alfa Laval Aalborg Oy supplies exhaust gas waste heat recovery (WHR) boiler systems and fired boilers for ships, engine power plants and process industry applications worldwide. The company employs 65 in total.

The history of Alfa Laval Aalborg Oy dates back to 1964, when the company was originally established by Uusikaupunki Shipyard Ltd. Through various phases, in 2011 the present company was formed and has operated as part of Alfa Laval group since then. The group is market leader in marine boilers and engine power plants with Aalborg™ products.

## Specialty

Exhaust gas waste heat is very valuable free source of energy, which can be utilized in hot water heating or steam production for various applications, such as industrial processes, district heating or even steam turbine and electricity generation.

Our innovative solutions for heat recovery systems and fired boilers in cruise vessels and industrial applications improve customers' energy efficiency and emissions reductions, as well as savings in fuel costs.

## Products and services

Alfa Laval Aalborg Oy supplies complete systems with heat recovery boilers, including needed main auxiliary components.

*Release the power with Aalborg™ boilers.*

## References

- 50 years in boiler business
- 4000 boilers sold
- 100 final site destinations

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency



Aqvakomp Oy manufactures a new kind of biocomposite which utilises cellulose fibres from the forest to strengthen plastic materials. Its location next to the cellulose factory facilitates raw material logistics and saves energy; the biocomposite factory can benefit from the electricity and heat produced by the cellulose factory.

## Specialty

A biocomposite which looks and feels like wood and is an ecological option for oil-based plastics. The patented technology used by Aquvacomp employs cellulose fibre as reinforcement without breaking its texture. This is the reason for the Aquvacomp composite's excellent technical qualities and its great process ability in e.g. technical application objects. In addition to technical objects, acoustic products especially are an end market for the Aquvacomp composite. The biocomposite's

carbon footprint is considerably smaller than in plastics reinforced with fibreglass.

## Products and Services

The Aquvacomp technology is applicable with many different polymers. The properties of the composite can also be meticulously tailored according to the requirements of the end product. Hence, the Aquvacomp composite is available in hundreds of different types to match the needs of the end product.

## References

LG Soundbar SJ9 speakers,  
Flaxwood Oy guitars.

## Notable recognition and awards

Aqvakomp and Flaxwood, manufacturer of composite-made musical instruments, won third prize in a distinguished, international competition of biomaterial innovation in Cologne, Germany.

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Production, transfer and distribution of renewable energy

Recycling of material, value out of waste



**BMH Technology is a technology-driven cleantech company turning waste and biomass into energy opportunities. We are specialized in turnkey deliveries of SRF (Solid Recovered Fuel) production plants and solid fuel handling systems for power plants and cement kilns.**

**Our head office is located in Rauma and is supported by sales offices in China, Sweden and Poland. The company employs 150 professionals.**

## Special know-how

### Core expertise in demanding waste management

BMH Technology's core expertise lies in designing demanding waste management systems for the needs of waste management companies, energy production companies and process industry as well as solid biomass fuel preparation and handling systems for power plants.

Our company flagship, the TYRANNOSAURUS® process turns any combustible waste into high-quality SRF (Solid Recovered Fuel). The process also separates recyclable materials such as metals. BMH solutions are designed to replace fossil fuels, and they have saved the Earth approx. 399 million tons of fossil CO<sub>2</sub> emissions since 1980.

In Västerås, Sweden there are three gigantic TYRANNOSAURUS® lines operating side-by-side in Europe's largest power plant using recycled fuel. In China our largest plant has a capacity of 700 000 tons of waste per year, which enables the refining of 1.5M people's annual MSW into recycled fuel.

## Products

We have five main concept solutions: Waste to Flame, Waste to Electricity, Waste to Fuel, Biomass fuel handling and Bioflame®. In addition, our Service department provides spare parts, maintenance and modernizations. <http://www.bmh.fi/entire-solutions>

## References

To this day BMH Technology has delivered over 50 TYRANNOSAURUS® systems and more than 150 biomass fuel handling systems all over the world. The company has an established position as an industrial scale system supplier in Scandinavia and Europe, with a growing market in Asia

[bmh.fi/success-stories](http://bmh.fi/success-stories)

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Energy efficiency,  
resource efficiency

Waste  
management

Recycling of material,  
value out of waste

Measurement  
and analysis



## References

- <https://www.delete.fi/en/references/process-cleaning-of-metsa-fibre-factories/>
- <https://www.delete.fi/en/references/cleaning-work-and-water-jet-cutting-during-major-stoppage-at-neste-oil/>
- <https://www.delete.fi/en/references/demolition-of-koverhar-steel-factory/>
- <https://www.delete.fi/en/references/demolition-of-haapaniemenkatu-4-helsinki/>
- <https://www.delete.fi/en/references/demolition-work-at-the-olympic-stadium/>

Delete is a leading full-service environmental service company in the Nordic countries. We provide industrial process cleaning, shut-down maintenance, demolition, recycling and waste processing for different industries, construction companies and property developers.

We work in minimising the environmental burden from both carbon dioxide emissions and waste as well as energy efficiency maximisation perspectives.

Delete has a 96%+ reutilisation rate of the materials we demolish and receive. The materials are reused, recycled or used as recovered fuel.

**Bang & Clean – an industrial environmentally sustainable industrial cleaning method** which provides significantly shorter shutdown periods and optimized energy efficiency.

Bang & Clean is a gas mix-based method for removing impurities from industrial boilers. Cleaning can be carried out even when the plant is in full operation. The method is suitable for cleaning various boilers, such as waste incineration boilers, soda recovery and biodegradable waste boilers, electric filters and different silos.

Bang & Clean cleaning supplements industrial cleaning tasks that are normally carried out during maintenance stoppages. As separate shutdown is not needed, the method makes it possible to achieve significant cost savings.

Bang & Clean also allows to observe the condition of the boiler in its different sections in real time camera mode from a large screen, which makes the planning of the stoppage and cleaning needs easier. The method produces energy efficiency for the boiler, minimizes production stoppages, makes incineration more efficient and advances the heat transfer.

**Carbon footprint calculation and evaluations for demolition sites** – an evaluation that enables us to implement sustainable development, improve working methods and support our customers' sustainable development and environmental strategies.

For carbon footprint minimization, we offer carbon footprint calculation and evaluations for demolition sites. The carbon footprint calculator is used to measure the climate impact, or the carbon footprint (CO<sub>2</sub>) of demolition work and the reuse of construction waste. Our carbon footprint calculator enables us

## Notable recognition and awards

- Winner of 600Minutes B-to-B Service Business Award 2015 (Management Events)
- The Safest Service Provider Award 2015 (Metsä Fibre factories)

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to implement sustainable development, improve demolition working methods and support our customers' sustainable development and environmental strategies.

## Products and Services

Delete provides industrial process cleaning, shut down maintenance, demolition, recycling and waste processing services.

Energy efficiency,  
resource efficiency

Recycling of material,  
value out of waste

Measurement  
and analysis

Consultation and  
counselling services



**Experimentis is a world leader in performing laboratory scale reactor experiments for biomass-based industry. The company is privately owned and has been active in the field for 25 years.**

The company traces its roots to the development of new kraft cooking technologies in the early 1990s when the laboratory was used for developing new industrial processes by machinery manufacturers. Since then the company has served both the paper pulp industry as well as other biobased industries in their process development needs.

Central to Experimentis (and the company's parent SciTech-Service) is to work as a complementary resource to the R&D departments of the customers. Customers big and small, in projects of all types have come to depend on Experimentis in the most demanding biorefinery development.

### Specialty

- Biorefinery Technologies
- Biomass conversion
- New technologies for the pulp and paper industry
- Biobased materials
- Cellulose, Hemicellulose and Lignin technologies

### Products and Services

Experimentis Oy Inc is a private and independent provider of laboratory research. Our core business focuses on research and development work in chemical pulping, but we also provide development and laboratory services in bio-refining.

#### Typical services:

- pulping studies for paper pulp (kraft, soda-AQ, sulfite)
- pulp bleaching studies
- dissolving pulp studies
- non-wood resource utilization (e.g. straw, bagasse)
- lignin separation research
- hemicellulose extraction tests

The central feature of Experimentis work is an ability to flexibly perform reactor experiments in order to accurately simulate the customer's processes

### References

During the last 5 years, Experimentis has performed tests for pulp and paper and other biomass utilization companies from all continents excluding Antarctica

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Management of water  
supplies and sewage

Industrial Internet, resource-  
saving web solutions

Green  
building



Finnchain Oy represents a strong capability in the chain field, its specialty being applications for environmental technology. Its products are chain scraper systems used in water and sewage treatment. The company is known for its sludge scraper systems used in water treatment processes, these products being recognised as unique in their field. The systems are used in over 50 countries worldwide. The sludge scraper systems are tailored to suit each client's individual requirements and environment.

### Strong expertise in environmental technology

Finnchain Oy signifies a strong capability in the chain field, for the special support of environmental technology applications. Our main products are chain scraper systems used for waste water and water treatment processes.

Our whole operation, from the design of the product to its service-free operation is reflective of our strict way of realizing our clients' hopes and requirements professionally, reliably, persistently and broadly.

### References

Athens Wastewater Treatment Plant  
Barcelona Wastewater Treatment Plant  
Turku Wastewater Treatment Plant  
Kunming Wastewater Treatment Plant, China  
Kuala Lumpur (Puchong, Pantai, Punus Wastewater Treatment Plant), Malaysia  
Yekaterinburg, Russia

### Notable recognition and awards

INNO Finland Award (granted by the President) 2008  
Satakunta Entrepreneur of the Year Award, 2010

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency



The chemical industry sector in which Forchem is active uses 100% renewable and sustainable raw material, which is a co-product of the pulping industry. Forchem uses the best technology available in all its operations, and more than 95% of the total energy needed for manufacturing its products comes from renewable sources.

## Introduction

An independent innovative company, Forchem supplies industry-leading products to global players across a wide range of markets, including coatings, lubricants, soaps, paper size, ink resins, and adhesives.

Since the establishment of Forchem in 2002, all of the company's operations have been guided by green values. All of its production processes have been designed according to the principles of sustainable development, resulting in a minimal ecological footprint.

The Rauma production unit is also located close to raw material sources, the pulp mills which produce crude tall oil. This enables efficient logistic chains and thereby reduces overall emissions.

## Special Technology

In the distillation process, Forchem uses 99% renewable energy, derived from its raw material and other wood-based biofuels. Wood-based bioenergy is carbon-neutral, as growing trees absorb the emitted carbon dioxide from the atmosphere. Thus, the carbon footprint of the relatively energy-intensive tall oil distillation process is, in fact, very small.

The raw material for Forchem's chemical products – crude tall oil – is a natural co-product, originally derived from pine trees. This provides a clear advantage in the carbon footprint assessment compared to fossil-based alternatives.

To demonstrate company's environmental sustainability and corporate responsibility, Forchem calculates carbon footprints for each individual product line.

## References

[www.forchem.com](http://www.forchem.com)

## Certificates and Prizes

Forchem was named as one of the most promising Cleantech companies in the world in 2012 by the Global Cleantech Cluster Association (GCCA 2012 Later Stage Award).

One part of Forchem's quality-driven operational environment is the annually audited and certified quality system, including ISO 9001-2015; ISO 14001-2015; ISO 50001; OHSAS 18001 and GMP+ certificates.

In 2016, Forchem was assessed by EcoVadis which resulted in a score of 76 points.

Forchem has also been accepted as a feed producing site, demanding that operations are controlled and audited by EVIRA for feed safety.

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Clean processes,  
materials, products



We produce high-quality home and professional kitchen products cleared for contact with food. The best products in the business to create the best flavours. Thanks to decades of experience in smooth production and logistics processes, we are able to combine agility with ingenuity and a superior customer experience with impeccable delivery reliability.

Our ongoing goal is to reduce the environmental impact of our operations, and we try to reuse all of our production waste. For example, our coffee filter production process doesn't produce any waste, because principles of circular economy guide the process.

The Finnish National Waste Plan specifies a goal of less than 20% municipal waste taken to landfills. As of now, we recycle over 95 percent of our production waste. Only 0.05 percent of the waste in our factory is taken to a landfill.

## Products and Services

We are responsible for Fredman Group's own production, purchases, quality and logistics. Our production lines handle thousands of tons of high-quality ingredients every year, which we turn into products loved by our customers: Eskimo Elmukelmu cling film, foils, Carita fibre cloths and Comple containers. All of our products meet the high requirements professionals have of quality, so our value promise can be summed up with "Professional food contact". The newest addition to our product family is the paper-based, biodegradable, Eko Roasting Bag suitable for ovens.

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Energy efficiency,  
resource efficiency



HallaWorks is a Finnish machine shop which manufactures machine parts. We produce components from customer specifications using modern CNC technology. We maintain the same quality and flexibility regardless of the size of the part or series.

### Special know-how

We strongly believe in development and professionalism. Every single member of our staff plays a part in affecting the quality of the end product. Machinists are involved in the project right from the start. This minimizes the risk of errors during manufacturing and streamlines the production process. We have had the privilege of working with large, quality-conscious export companies which value expert craftsmanship and

promptness. Our business is built upon long customer relationships, which allows us to understand the special needs of our customers. Flexible, swift and effective manufacturing process guarantees our ability to supply parts quickly even in today's fast-paced environment. Our modern machinery and professional staff allow us to cater to your every need.

Our production is directed by our quality system, which is based on SFS-EN ISO 9001:2008 standard and which has been audited by our customers.

### References

Andritz, ABB, Rolls-Royce, Vahterus, Konecranes, UPM, Santasalo, Steerprop, Terässaari

### Certificate

SFS-EN ISO 9001:2008 standard and which has been audited by our customers.

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency



**HKScan is a leading Nordic food corporation. We sell, market and produce high-quality and responsibly produced pork, beef, poultry and mutton, derived products and convenience foods with strong trademarks. Our clients are in the retail, food service, industry and export sectors. Our home market covers Finland, Sweden, Denmark and the Baltic countries. We export to almost 50 countries. In 2016, HKScan's sales were almost 1.9 billion euros and it employed approx. 7,300 staff.**

## Specialty

The most notable investment in the history of HKScan – a poultry-oriented unit in Lakari, Rauma – was inaugurated in August 2017. The most modern poultry unit in Europe paid special attention to animal welfare and environment efficiency in planning and execution. As to environmental responsibility, the Rauma unit takes into account the aspects of material, energy and environment efficiency in all of its purchases. Energy efficiency has been increased with the aid of heat recovery systems which utilise the processes' waste heat. One of the base lines for the development of the facility has been the minimisation of total emissions. This is achieved with the help of new technology and energy-efficient production lines. The primary heat source of the production facility is district heat.

It is produced with 90 per cent renewable biofuel.

Circular economy aims have also played a significant part in the investments in Rauma. More efficient recovery and utilisation of derived currents advances the business and improves environment efficiency. The parts which are suitable for foodstuffs (such as chicken entrails and toes) go to export, especially to Asia.

Energy efficiency and minimising atmospheric emissions

- Use of 100% renewable district energy (out of biofuels)
- Production of heat energy in a separate thermal power plant (liquid gas)
- Waste heat recovery system

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- Energy classifications of appliances
- Opportunity to partially recycle packing and narcotising gases
- Efficient logistics transport planning and supervision of vehicles' emission norms

Minimising water emissions

- Wastewater treatment in two stages:
- Chemical-mechanic treatment – separated particles reused
- Biological treatment in an external wastewater treatment plant – sewage acts as a source of carbon in the nitrogen removal process

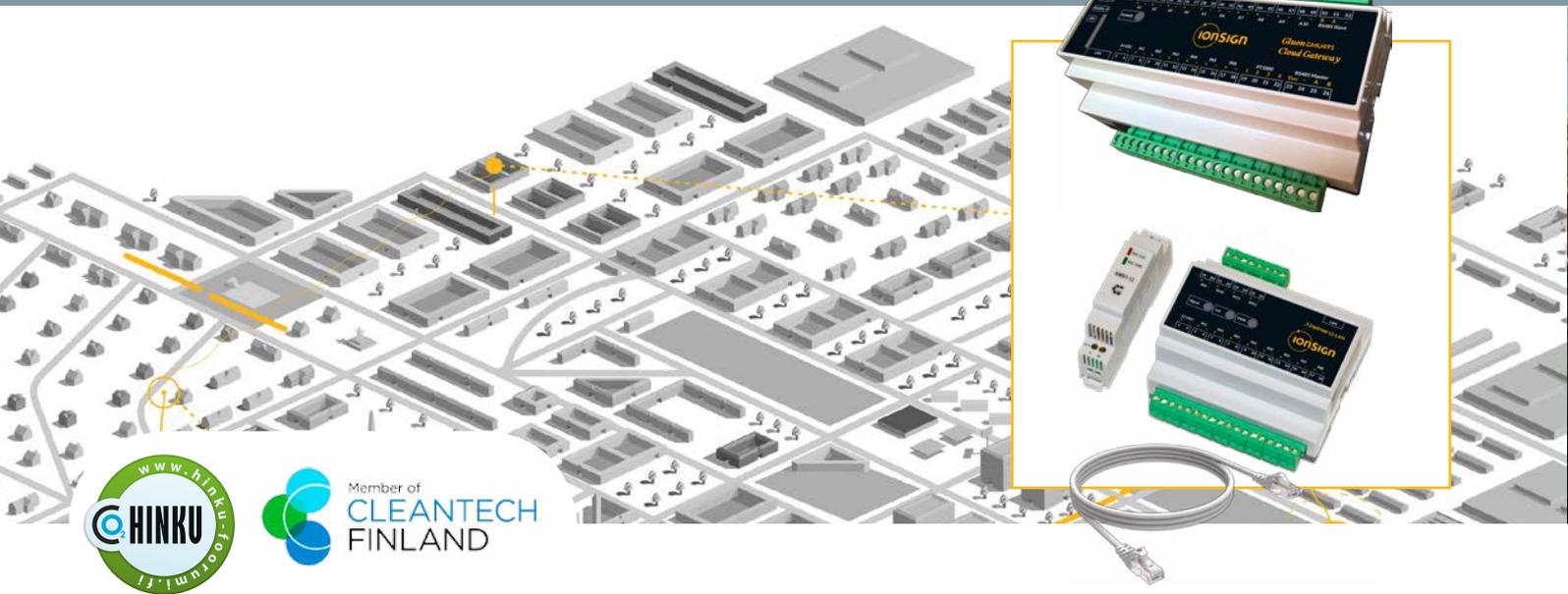
## Products

HKScan trademarks in Finland are HK and Kariniemen

Energy efficiency,  
resource efficiency

Measurement  
and analysis

Industrial Internet, resource-  
saving web solutions



ionSign has been building the Industrial Internet of Things even before the term was coined. We empower energy and resource efficiency, as well as smart, connected and efficient devices and processes by giving a voice to things. We provide data collection from dispersed meters and sensors.

ionSign is a member of Cleantech Finland.

## Products and Services

ionSign's products put the things they are mounted on, talking to their makers, users and maintainers. They're established solutions to let you know what's going on, when you're not there. They are electronics packed with smart embedded software. They utilize cellular and LAN networks, field buses and RF technologies for communication. They are used for remote data collection and reporting from various kinds of stationary and mobile objects.

ionSign's products not only fit many purposes straightaway, they also provide a versatile platform for case-specific device and application development. This gives you as a client a head start in development, translating to speed and cost efficiency. We'll have you up and running in no time and at little cost. Embrace the smart world of Industrial IoT.

## Energy Management Made Easy

Energia is a leading Finnish energy market company, offering services to efficient use of energy for enterprises, property owners, energy companies and the public sector.

"For Energia, flawless time series of reliable meter readings is an absolute necessity. It not only lets us provide a superb service, but also helps in keeping data acquisition costs in shape. ionSign's Neutron remote readers have proved to be reliable, affordable and easy to manage."

Katri Honkonen, VP ICT, Energia

## Industrial Optimisation

Energize has over 35 years' experience of providing systematic compressed air systems (CAS) energy efficiency optimisation.

## References

[www.ionsign.fi/case-studies/enegia-group](http://www.ionsign.fi/case-studies/enegia-group)  
[www.ionsign.fi/cases/energize](http://www.ionsign.fi/cases/energize)

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"Partnering with ionSign made it possible for us to efficiently provide services on a global scale. A constant flow of reliable data from the site is a necessity for us to plan and follow the optimising actions. ionSign designed us a solution, which now is a standard issue in our services."

Sami Mykkänen, CEO Energize

Clean processes, materials, products

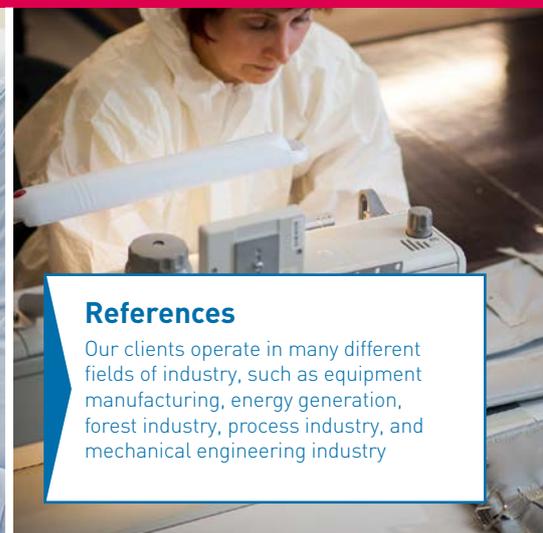
Energy efficiency, resource efficiency

Production, transfer and distribution of renewable energy

Management of water supplies and sewage

Air protection, air quality

Green building



## References

Our clients operate in many different fields of industry, such as equipment manufacturing, energy generation, forest industry, process industry, and mechanical engineering industry



**We are a Rauma-based family business which provides its clients with comprehensive, tailor-made, energy-efficient solutions that usually relate to necessities and problems in connection with heat management.**

## Specialty

We control thermal expansion, provide fire safety, dampen vibrations, improve process management and support the the cleaning process of flue gases. We insulate against heat or cold so that our customers' businesses can be even more profitable, safe and energy-efficient.

## Products and services

EXPANSION JOINT PRODUCTION, INSTALLATION AND MAINTENANCE SERVICES

For power generation and process industry maintenance uses, we provide a range of tailored expansion joint solutions, installation and maintenance services, and site surveys. Expansion joints are an integral part of flue gas cleaning systems. Some examples are electrostatic precipitators, bag filter houses and heat exchangers and reactors for desulphurisation plants. In addition to experience and expertise, we excel at pre-shut-down planning, which ensures that interruptions in use are minimal. This is also supported by site inspection visits, the ability to react to problems and manufacture products quickly – even during shut-downs.

## Engine, piping and equipment insulations and protection and insulation elements

For the purposes of the equipment and machine industry, we manufacture a range of tailor-made insulation solutions to keep emissions under control and improve energy efficiency and the function of the catalytic converters. We provide insulations that are perfectly fitted to the piping. Our services include design, engineering and manufacturing. Our insulations cover all of the piping, including the exhaust manifold, turbo, catalytic converter, DPF, SCR system and muffler.

## Planning, inspections

Our products are often used in industrial investment projects. We are heavily involved right from the engineering and offer phases. Our expertise can support our customer's product development work and help create efficient operating models. Ensuring that the project is handled in a professional and controlled manner from design to delivery and product lifecycle management is a matter of honour to us.

## Protective clothing against heat and flame

We manufacture JLX protective clothing that shields from heat radiation. The clothing is intended to be used wherever

people need protection from heat. All of our heat and flame protection clothing is designed and manufactured in Finland and approved by the Institute of Occupational Health according to standard EN ISO 11612:2008 or 407:2004.

## Heat and fire-resistant materials

Every day, a wide variety of industry professionals find the products they need in our large range of stock items. Our strengths include an extensive selection of products and extremely fast deliveries. You will certainly find match for your requirements of e.g. insulation, protection or fire safety in our range of hundreds of materials.

## Honours and prizes

Occupational safety, the quality of our products and constant improvement of our operation are important to us. Therefore, we continue to operate with even more emphasis on quality and the environment, according to the ISO 9001 and ISO 14001 standards.

## Contact Details

Teerentarhantie 4,26510 Rauma  
tel. +358 2 83769750  
info@jlx.fi  
www.jlx.fi

Clean processes,  
materials, products

Energy efficiency,  
resource efficiency



Karhuvalu Oy is a foundry specialising in one-off and minor serial production. Our clients value our ability to use diverse materials as well as our flexible and tailored delivery times. Our clientele comprises Finnish engineering businesses of all sizes, from small workshops to great public companies operating on a global scale.

### Contact Details

Hitsaajantie 38, 26820 RAUMA  
tel. +358 2634 1400  
info@karhuvalu.fi  
www.karhuvalu.fi

### Specialty

The company launched a HINKU collaboration with the municipality of Rauma in the autumn of 2016 which aims to reduce the amount of greenhouse gas emissions. In the company's foundry, all material can be recycled multiple times. In 2014, Karhuvalu enhanced its operation by investing in a technology unique to Finnish foundries; with equipment newly acquired from Italy, the sand used in casts can be cleaned and re-used.

The manufacture of casts uses a certain type of sand, which must endure extremely

high temperatures. The sand used by Karhuvalu is imported all the way from Belgium for its quality; because of its purity, the sand is of a higher quality and more resistant to fire thanks to its high quartz concentration.

### Products and services

Components of the electronics and shipbuilding industries (pumps and valves). One-way valves for the shipbuilding industry (separate product). The service also includes further processing and machining of the casts.

Waste management

Management of water supplies and sewage

Measurement and analysis

Industrial Internet, resource/saving web solutions

Consultation and counselling services



**KVVY can help you with all your needs in environmental research and monitoring. We have comprehensive modern laboratory facilities including food and indoor air quality analyses. Our five laboratories and over hundred professionals can serve a wide range of customers from industry to municipalities and even private homes.**

## Specialty

Our core area of expertise is in environmental research, especially lakes and fish populations. Our services include comprehensive analyses and monitoring of all natural water systems. We use both traditional measurement methods as well as modern automated monitoring systems with ability to produce advanced reporting.

Our highly qualified professional personnel provide wide range of services in our five laboratories. You can take the advantage of the combined skills and knowledge of our chemists, biologists and microbiologists. They help you to select the best analysis methods for your needs whether they are in the fields of basic environmental, organic or toxicology analysis.

We also have specialized food laboratory that provides chemical and microbiological analysis services as well as training in food hygiene.

## Products and services

- environmental research
- environmental sampling
- water analyses
- waste water and sludge analyses
- food analyses
- microbiological laboratory
- characterization and chemical analysis of waste materials
- eco-toxicological tests
- consulting services

## Contact Details

Head office  
 KVVY-Tampere  
 Patamäenkatu 24, 33900 TAMPERE  
 tel. +358 3 246 1208  
 laboratorio@kvvy.fi

KVVY-Raumalab  
 Lensunkatu 9, 26100 RAUMA  
 tel. +358 3 246 1276  
 raumalab@kvvy.fi  
 www.kvvy.fi

Energy efficiency,  
resource efficiency

Recycling of material,  
value out of waste



**Kuusakoski Recycling is the leading recycling service company in the Baltic Sea region. This family business was founded in Vyborg in 1914 and has operated at the core of circular economy for over a hundred years. The turnover of Kuusakoski Group Oy was 494,4 million euros in 2016 and it employed over 2,300 personnel.**

### Specialty, products

We aim to outdo our competitors in recycled material yield and thus be the best in our field in producing surplus value. We constantly develop our processes and expertise in order to achieve better material yield and overall logistics. Continuous improvement of the process requires a deep understanding of materials on the part of the entire personnel in both purchases and refinement, cost-efficient processing and recognising customer needs in the end product sales.

We co-operate long-term with our clients and collaborators and develop our products and services to ensure continuity, customer satisfaction, eco-friendliness and safety.

Responsibility is the basis of our business operation. That is to say, we always abide by the laws and regulations of our operative locations, take care of the environment and our employees, and maintain good relations with the authorities. We operate openly, confidentially and ethically.

By re-using, recycling and using material we save natural resources, reduce energy consumption and the amount of waste and reduce the stress they put on the environment.

### References

In order to identify new material flows and to recover precious metals from waste materials more efficiently, we have established a research and development centre in Lahti. Our research laboratory studies and tests new ways of sorting materials. We are also in close collaboration with universities, research institutes and companies in various development projects.

### Contact Details

Head office  
PL 25 / Metsänneidonkuja 12  
02131 Espoo  
tel. +358 20 781 781  
[www.kuusakoski.com](http://www.kuusakoski.com)

Rauma office  
Hitsaajantie 10, 26820 Rauma  
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Energy efficiency,  
resource efficiency

Recycling of material,  
value out of waste



Lassila & Tikanoja plc is a service company that cooperates with its customers in order to transform our consumer society into an efficient recycling society.

“By working sustainably we create material, energy and cost efficiency for our customers”

## Products and services

The key theme of L&T's strategy is that we want to work with our customers to transform our consumer society into an effective recycling society. We do this by creating material, energy and cost efficiency for our customers, which helps us create profitable growth for both our customers and ourselves.

Our vision is to be our customers' preferred partner in our core business areas: environmental, industrial, property, and forest services. As a service company, L&T's success is built on the wide range of skills of our personnel and our extensive service offering, which is seen by our customers as one L&T.

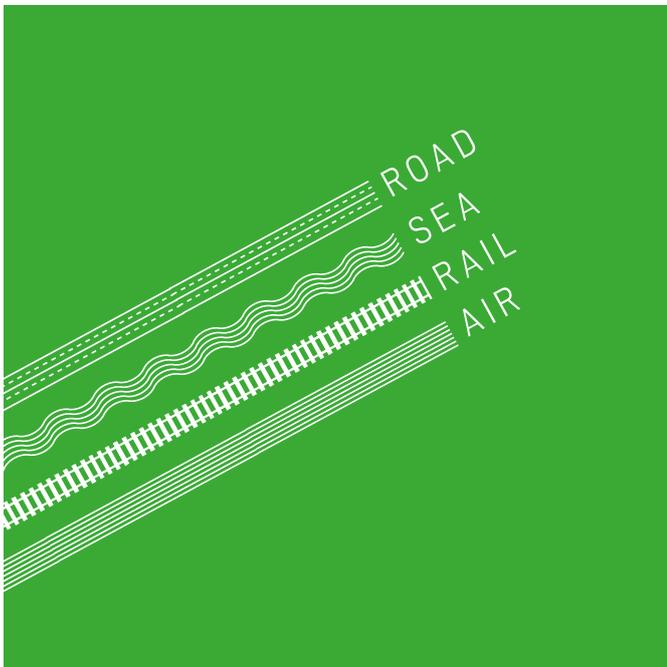
A responsible operational method is an inseparable part of our business operations and our day-to-day work. Our services play a key role in ensuring our customers' responsibility, which is why we must be uncompromising in ensuring the compliance and responsibility of our own operations.

The company has business activities in Rauma, for example in property and waste management.

## Contact Details

Head office  
Valimotie 27, 00380 Helsinki  
tel +358 10 636 111  
[www.lassila-tikanoja.fi](http://www.lassila-tikanoja.fi)

Rauma office  
Isometsäntie 18, 26100 Rauma



## Eco-friendly Lakari Industrial Park

The logistics and business area of Lakari is a growing and developing business environment in Rauma. The area has been specially designed for operators in need of space. The infrastructure is perfect for companies in the logistics and manufacturing industries and for storage. The environmentally friendly plan for the area enables unique and flexible plot solutions for various operators. The Lakari Industrial Park will be developed as a model area for the climate-neutral circular economy in Finland. Based on its strong industrial history,

Rauma is able to offer cost-effective, responsible wastewater and energy solutions and expertise to ensure reliability, for example in raw water and sewage treatment.

Lakari creates a setting where different transportation methods – vehicles as well as rail and sea traffic – can meet logistically. An area of approximately 130 hectares is available on the Lakari site itself, but more industrial sites are planned for several hundred hectares next to it.

Projects for new renewable energy solutions are planned for the area, such as solar panels.

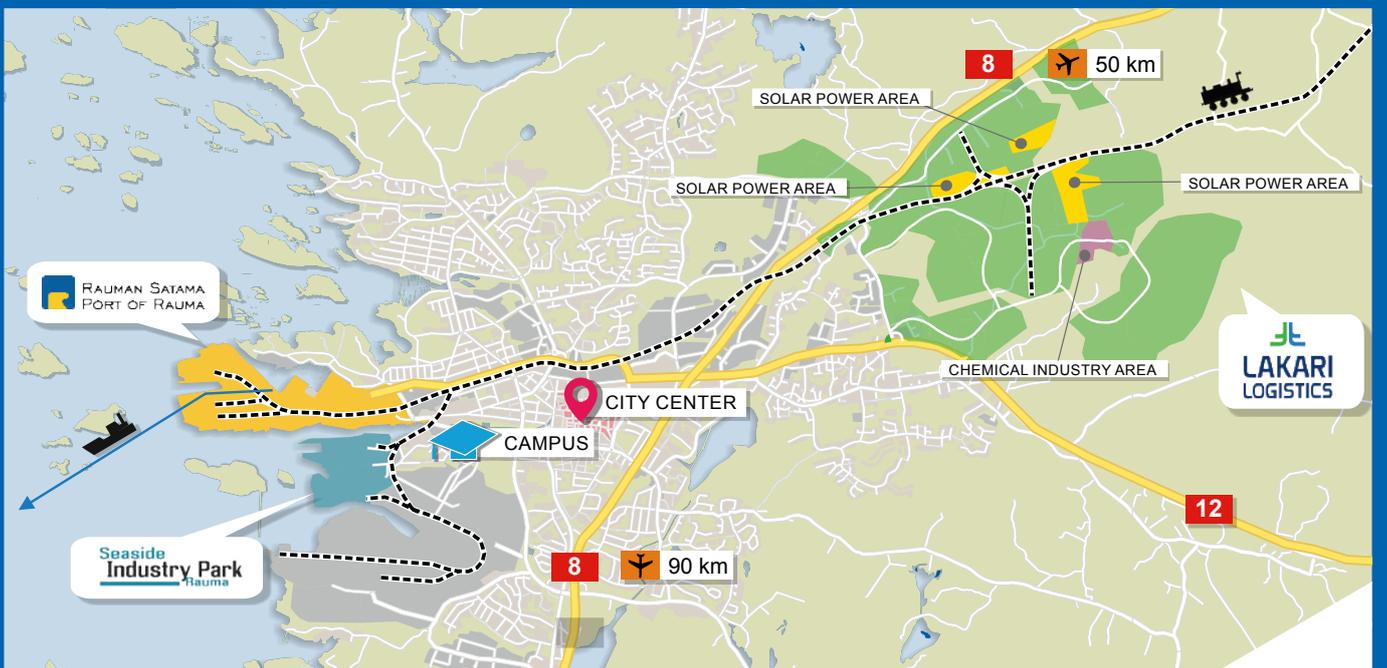


[www.lakariarea.fi](http://www.lakariarea.fi)

Contact:

Mirja Kotiranta tel. +358 50 305 0317

Heikki M. Nurmi tel. +358 50 593 2658



Energy efficiency,  
resource efficiency

Recycling of material,  
value out of waste

Smart transport/  
logistics

Consultation and  
counselling services



**Logistikas Oy is a logistics enterprise founded in 1997. The company employs about 110 professionals in the logistics field. We currently operate in seven locations, in our own logistics centres as well as on our clients' premises attending to in-house logistics. In 2016, our net revenue was 16 million euros combined with our affiliate, Logistikas Hankinta Oy.**

- Founded in 1997
- Net revenue in 2016 approx. 16 M€
- Personnel around 110
- Three private Finnish owners involved in daily operations
- 80,000 square metres of roofed storage space, of which heated about 2/3
- Profit centres in Rauma, Olkiluoto, Kankaanpää, Jyväskylä, Hämeenlinna, Nokia and Loimaa.
- 100,000 square metres of field space
- 50 forklift trucks with max 45 tonnes lifting capacity
- Modern and well-developed information system with handheld and forklift terminals

## Specialty

We provide competitive edge to our clients with comprehensive management of logistical procedures. The Logistikas service package includes the service

products of local logistics, in-house logistics and local storage. We offer our clients the chance to focus on their core business while the logistics are managed by professionals. As our clients, we promise you peace of mind as your logistical functions are in responsible hands. As our slogan says, we offer – solutions for easy management.

In addition, our packing plant is able to provide our clients with customised packing and binding solutions, so that the loaded units may be used to the best of their capacity. We always aim to pack with as much easily recyclable materials as possible.

## Products and services

Local logistics – the right components are delivered to the production lines at the right time.

Local storage – receipt, storage and picking functions of products and components.

In-house logistics – the right components and component series or part assemblies for the process at exactly the right time, ready to be installed.

Expert services – analysis of material flow, layout planning, supervision of information systems, warehouse automation, the use of tagging technology and logistics outsourcing.

## References

Teollisuuden Voima Oyj, Rauma Marine Constructions Oy, Valtra Oy, Reima Oy, IKH and Metsä Fibre

## Honours and prizes

- Certified quality system ISO9001:2015
- the HINKU seal

## Contact Details

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info@logistikas.fi  
www.logistikas.fi

Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Production, transfer and  
distribution of renewable energy

Recycling of material,  
value out of waste



**Metsä Fibre is a leading producer of bioproducts, such as pulp, renewable energy, biochemicals and sawn timber, whose pulp business brand is Botnia. The company's bleached softwood and birch pulps have been developed for the production of high-quality boards, tissue and printing papers, and specialty products.**

## Specialty

The strategic aim of Metsä Fibre is to be the most sought-after supplier of high-quality bioproducts and services. The global operational environment is evolving – the demands brought on by the biobased economy, appreciation of renewable materials, growth of developing markets and increase in population provide a sustainable platform for the products and materials of Metsä Fibre.

Along with pulp business, we are making systematic advances in the development of other bioproducts. In our Äänekoski bioproduct mill, we are introducing new processes in energy and chemical production, which improve the mill's cost efficiency and reduce environmental strain.

In addition to high-quality pulp and other bioproducts, the Metsä Fibre factory in Rauma creates economic growth and well-being in its operational environment. Aqvacomp manufactures a biomaterial based on cellulose fibre and plastic, which replaces plastic in e.g. the electronics and car industries. The production takes place next to the Metsä Fibre pulp mill in Rauma.

For Metsä Fibre, sustainable development is part of its daily operation. The company endorses the importance of efficient use of energy and natural resources and minimal environmental impact. We recycle process chemicals and water to the greatest possible extent. Wastewater is treated in active sludge plants. Odorous gases from pulp mills are combusted.

## Contact Details

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Twitter, LinkedIn, Slideshare, Youtube  
Ilkka Poikolainen  
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Clean processes, materials, products • Air protection, air quality • Measurement and analysis



Nab Labs Oy is part of Eurofins laboratory network. The company provides information services for companies, the public sector and private consumers. Nab Labs services in industrial process and product analytics include production quality control, product development and continuous service agreements. Environmental analytics and research services provide e.g. strain and impact surveillance, sampling services and environmental management. Nab Labs operates in several districts in Finland. Net sales are about 10 million euros. Nab Labs employs more than 100 information service professionals in Finland. The company strives to develop and innovate its branch of industry together with its clients.

### Products and services

Industrial services:

- Quality control and product development analyses
- Continuous service agreements
- Special analyses and problem-solving
- Service customisation
- Forest industry services
- Chemical industry services
- Workplace hygiene
- Emission measurements

Environmental analytics and research services (air, water, ground, biota):

- Sampling
- Environment air quality
- Environmental management and monitoring
- Environment and water analytics
- Strain and impact surveillance
- Fishery research
- Biological, microbiological, organic and chemical element analytics

### References

- Industrial service contracts Metsä Fibre Oy, Forchem Oy, Arizona Chemical Oy, Taminco Finland Oy, Akzo Nobel Finland Oy, Kemira Chemicals Oy
- Power plant water analytics Porin Energia Oy, Rauman Biovoima Oy, Fortum Oy
- EIA processes, environmental permits and nature reports Vapo Oy, Envor Group Oy, Kuusakoski Oy
- Liability surveillance Metsä Fibre Oy, Vapo Oy
- Statutory emission measurements in energy production Vapo Oy, Porin Energia Oy, Oulun Energia Oy

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[myynti@eurofins.fi](mailto:myynti@eurofins.fi)

Clean processes,  
materials, products

• Energy efficiency,  
resource efficiency



Out of all the major sauna heater manufacturers on the market, we are the only one who executes the entire process of design and manufacture in Finland. We employ about 55 people. A deep understanding of the sauna culture combined with innovation have marked our way to the hearts of sauna lovers. We pride ourselves on extremely durable, high-quality sauna heaters.

## Specialty

When long-lasting products meet technical innovations, such as unique pipe structures, the result may be something like sauna heaters with the world's lowest emission rates. According to VTT testing, the Narvi NC 16 sauna heater scored 0.07 % in carbon monoxide emissions, the highest rate allowed being 1 %.

## Products and services

- Wood-burning sauna heaters
- Electric sauna heaters
- Tunnel model sauna heaters
- Cauldrons
- Flues
- Sauna accessories
  
- Fireplace doors
- Baking oven doors
- Ready to be installed fireplaces
- Smokers and grills
- Iron stoves
- Kitchen stoves
- Other fireplace products

## References

Narvi has operated in the Lappi municipality in Rauma for as long as 80 years. Narvi products are widely recognised in Finland as well as abroad. We have more than our fair share of references, but one that especially deserves mention is the Aitokiuas sauna heater which served former President Urho Kaleva Kekkonen in his residence in Tamminiemi. The current Presidential residence of Mäntyniemi upholds the tradition and uses the Aitokiuas as well.

## Contact Details

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Yrittäjätie 14 27230 LAPPI  
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myynti@narvi.fi  
www.narvi.fi

Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Green  
building



Oras faucets and showers enable people to make more out of life. We design products that improve the quality of life, both at home and in public spaces. Oras faucets and shower systems are designed to function in an environmentally friendly and reliable manner for the entire duration of their long life cycles. They are timeless in both form and functionality.

## Specialty

Making the use of water easy and sustainable

Our mission is to make the use of water easy and sustainable. Oras stands for durable, high quality products. The quality of our products is based on Nordic excellence which means that they are long-lasting and timeless in function and form. We guarantee that Oras products are manufactured using superior quality raw material and components, and that our manufacturing processes are controlled by extremely accurate quality assurance; from the material choices until the product is ready for use.

Oras shows its commitment to cleantech by manufacturing products that are designed to save water and energy. We

make faucets that fulfill different user needs and offer convenient ways of experiencing water, ecologically.

### Well-being at the core

Through our products, we want to offer people an increased pleasure in using water and enjoying life, sustainably. Public spaces and the homes of our end-users are improved by our safe, hygienic and water-saving products. We also want to ensure that the water we use is safe and not contaminated by chemical substances. As a result, Oras products do not contain any materials classified as hazardous.

## Products and services

### Advanced sanitary fittings

Oras has successfully combined technology and green thinking: the

## References

<http://www.oras.com/en/professionals/references/>

## Contact Details

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26101 RAUMA, FINLAND  
tel: +358 2 83 161  
[info.finland@oras.com](mailto:info.finland@oras.com)

company introduced some of the first electronic and touchless faucets on the market over 30 years ago, and it is today the leading brand in touchless and electronic faucets.

Oras' product range covers all the faucets and showers from private homes to public spaces: washbasin faucets, kitchen faucets, thermostatic shower faucets and shower sets, touchless faucets and specialty products. Oras faucets and showers are ecological, safe and easy to use.

Oras makes living better – and greener!

Energy efficiency,  
resource efficiency

Production, transfer and  
distribution of renewable energy



Paassilta Oy is located in Rauma and was founded in 1977. The business operates with modern drilling equipment. We drill new bore wells and maintain old wells. Energy from the Earth can be used to heat and to cool. Paassilta Oy drills geothermal wells which work on solar energy. Household water wells provide clean and good-tasting water.

“Our company has great faith in the future. There are still 200 000 oil-heated houses in Finland.”

## Contact Details

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+358 500 123 072  
paassilta@elisanet.fi  
www.paassilta.fi

## Specialty

Part of our procedure is keeping the worksite as clean and neat as possible. Drill cuttings are blown into a container.

Modern drill devices are built with rubber rollers, which reduces the amount of traces left. A special feature on the drill wagons is that they roll all the way round, leaving the lawn undamaged. The equipment is constantly washed and maintained in order to minimise oil spills.

## Products

- Well drilling; bore wells and geothermal wells
- Maintenance of old bore wells
- Selling and installing bore well pumps

## Production, transfer and distribution of renewable energy



**Rauman Biovoima Oy is a company jointly owned by Pohjolan Voima and Rauman Energia. The company supplies energy to the UPM paper mill in Rauma and to the Rauman Energia power utility. The Rauman Biovoima power plant is among the top generators of green energy in Finland and Europe with its high percentage of bioenergy and recycled fuel usage in energy production.**

Rauman Biovoima promotes the recycling of ash generated during energy production, aiming for zero waste energy production. Rauman Biovoima is one of the financiers of the seven-year Circwaste project that is supported by the European Commission. The company is involved in a regional project in south-western Finland. Circwaste promotes the recycling of industrial and household waste. In a unique, award-winning field project, Rauman Biovoima uses ash when filling Sampaanalantahti Bay and constructing a field.

The use of ash offers savings in landfill and transport costs. The project's environmental impact is also significant: the fact that ash is used as a binder instead of cement clearly reduces the CO<sub>2</sub> emissions.

### Products and Services

Rauman Biovoima is an energy-efficient CHP plant that produces green electricity and heat for the UPM paper mill in Rauma and the Rauman Energia power utility. Completed in 2006, the bioenergy plant is a trailblazer in the utilisation of renewable and recycled fuel among plants of its size in Finland.

The power plant's main fuels are bark and logging waste. The plant also uses bio-sludge, recycled fuels and small amounts of peat.

The plant has an ISO14001-certified environmental system and an ETJ+ energy-efficiency system. Furthermore, Rauman Biovoima has signed the voluntary Energy Efficiency Agreement for Industries.

### Notable recognition and awards

GeoTeko award granted by the Finnish Geotechnical Society (SGY) in 2013

### Contact Details

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Timo Pitkänen  
Managing Director  
timo.pitkanen@upm.com  
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Renewable fuels, energy-efficiency, good process management, efficient purification of flue gases and the utilisation of ash guarantee environmentally friendly energy production.



Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Consultation and  
counselling services



Finnish engineering in the energy and wood processing industries is of world class quality.

Raumaster has delivered successful reference projects to hundreds of countries all around the world, from winter conditions in Russia or Canada to tropical conditions of Brazil, Philippines and South Africa. Whatever the conditions, Raumaster has the experience. Regular customers include Valmet, Amec Foster Wheeler, Andritz, Alstom, UPM, Sumitomo, Outotec, Fortum, Portucel, Metsä Fibre and local power plants.

### Customer benefits

- Low maintenance cost, high availability, reliability and efficiency
- Proven technology and experience of handling different types of materials

### Products and Services

#### Solid fuel and biomass handling

Fuel receiving, screening, crushing, storing, reclaiming & conveying systems

Fuel feeding and ash handling systems

Recovery boiler, lime kiln and smelting plant conveyor systems

#### Wood handling

Wood rooms, chip and bark storage, screening, receiving and conveying

EPC projects

Successful reference projects worldwide

#### Service

Retrofits, service audits, field services, maintenance, repairs, overhauls

### References

Examples of reference projects:

Wood, chip and bark handling EPC / Altri Group Celtejo Pulp Mill, Portugal

Chip and bark handling / Arauco Nueva Aldea Mill, Chile

Wood room / Ilim Group Bratsk Mill, Russia

Bio fuel, RPF, TDF and sludge receiving, feeding and ash handling systems / Sumitomo Heavy Industries, Nippon Pulp and Paper Asahikawa Mill, Japan

Coal, biofuel, bottom ash, sand, limestone handling systems for 4 boilers / Foster Wheeler Energia, Korea Southern Power, Samcheok, South Korea

External biofuel and coal receiving, screening, crushing and feeding systems ash conveying systems / Fortum Värme, Värtaverket, Stockholm, Sweden

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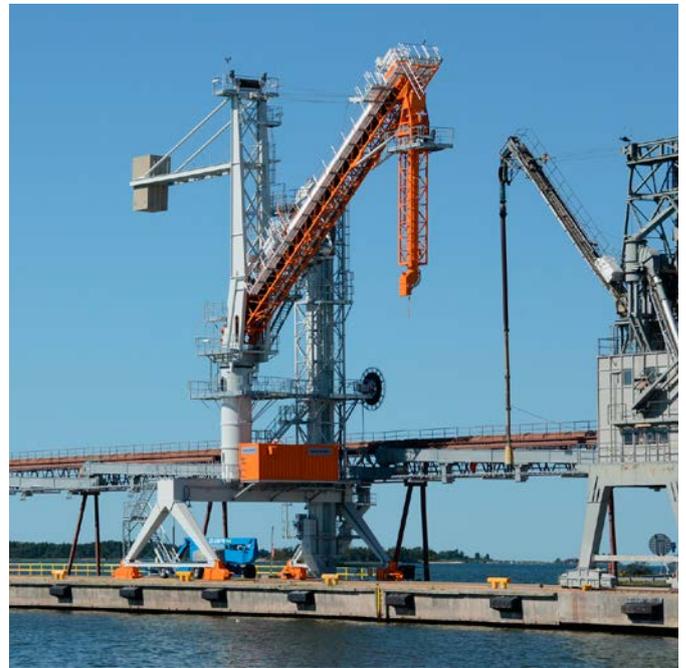
info@raumaster.fi



## RAUMAN SATAMA PORT OF RAUMA

The business philosophy of Port of Rauma is to be a partner to the business sector by providing advanced and competitive services to all the customers of the port, ensuring the smooth and efficient operation of the transport chain on the part of Rauma port. The duties of the port of Rauma also include provision of the required transport routes to attract business investments to the economic area of Rauma. The most important operations of the Port of Rauma include the construction and maintenance of the port infrastructure, renting of land and water areas, management of port traffic, authority duties as well as port safety and security arrangements.

Port of Rauma recognizes in all its operations the significance of environmental protection. The activities carried out in the port are steered by the environmental permit granted to Port of Rauma in 2007; the companies operating in the port area and all other stakeholders are required to comply with the permit. The high quality of the environmental programme of Port of Rauma is witnessed by the ISO 14100 certificate. In addition to the conditions of the environmental permit, the internal operation of Port of Rauma is based on its own Ordinance.





The evaluation of environmental aspects and risk assessment are a key part of the daily operation of Port of Rauma. Environmental programmes have been developed for each department, taking into account the basic tasks of the department and the associated environmental risks, and these programmes create the basis for all the activities carried out.

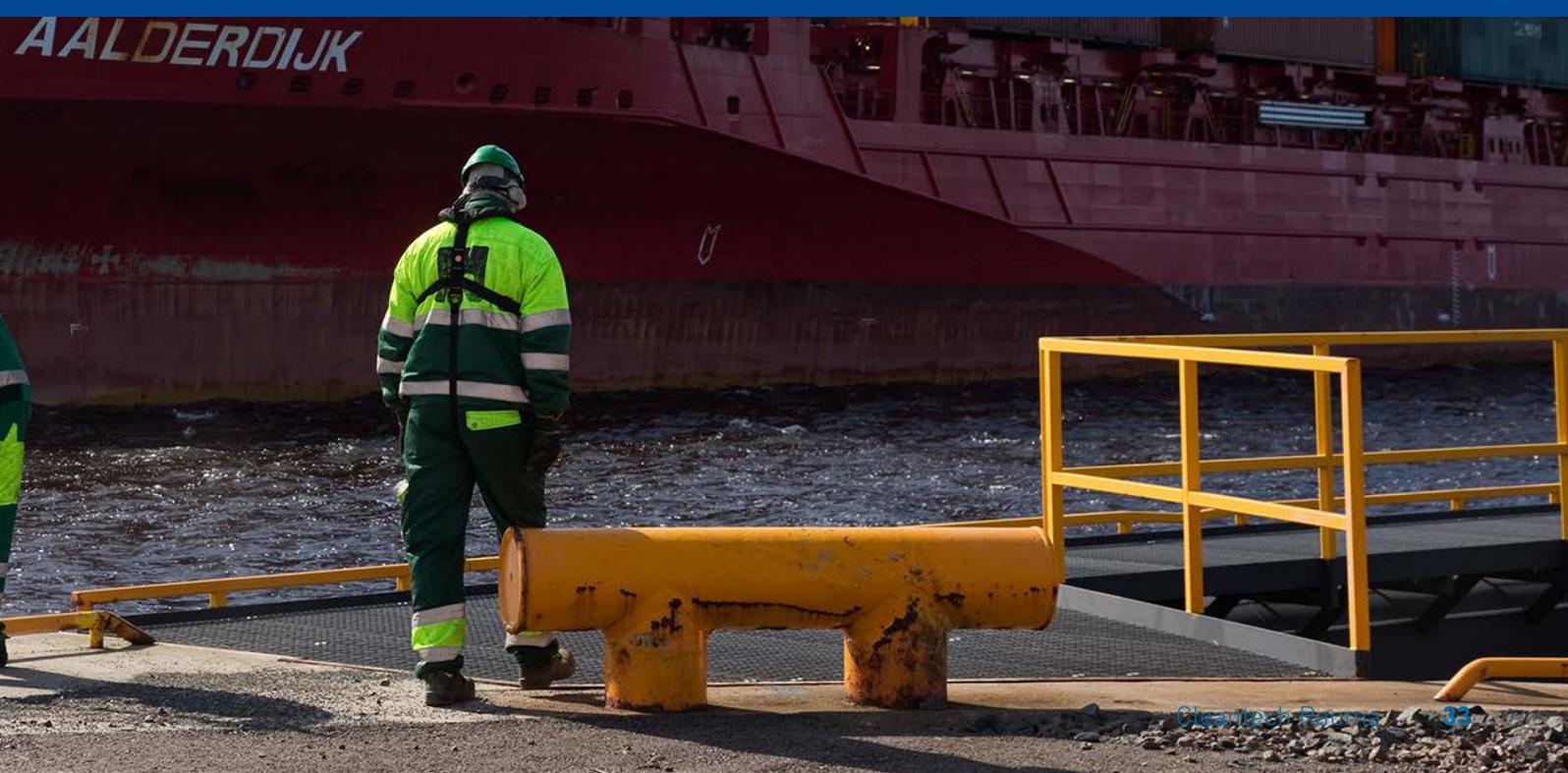
Port of Rauma is developing the port by dredging the fairway to accommodate vessels with 12 m draft and by lengthening the container berth

and creating more area for container handling. These development projects are scheduled to be completed by the end of 2017.

[www.portofrauma.com](http://www.portofrauma.com)

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Measurement  
and analysis

Industrial Internet,  
resource/saving web solutions



Rolls-Royce strives for cleaner power technologies to satisfy new environmental legislation, and the company now has the world's largest portfolio of power, propulsion, complex positioning systems and deck equipment operating to the new standards. These systems are based upon products that provide competitive vessel systems integration capability in multiple layers across ship design and operation and ship intelligence, and include electrical, automation and control systems.

The Rauma plant produces mechanical azimuth thrusters for use on a wide range of applications including semi-submersible drilling rigs and drillships, tugs, offshore vessels, icebreakers and polar research ships. Rauma also offers a wide range of deck equipment for passenger and container vessels, tankers and tugs. All these segments are supported by extensive maintenance services.

The modernization of the Rauma plant enables 100% recycling, Zero Waste to landfill.

Rolls-Royce's vision: 'better power for a changing world'

### Special know-how / core competence

Better power — helping customers do more, using less

Better future — committed to innovation, powering better, cleaner growth

Better business — investing in technology, people and ideas to improve all aspects of our performance

### Products

Maritime industry, propulsion units, winch systems, maintenance services

### References

The marine business of Rolls-Royce provides products and services to over 4,000 customers worldwide, including 70 navies, and has equipment in service on more than 30,000 vessels.

### Notable recognition and awards

Rolls-Royce in Finland won 2017 the Finnish Technology Prize for their pioneering work in building a Finnish innovation and expert ecosystem, and for their crucial role in creating a world-leading innovation centre for autonomous vessels.

Rolls-Royce has announced the demonstration of the world's first remotely operated commercial vessel in February 2017.

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rolls-royce.finland@rolls-royce.com  
www.rolls-royce.com

Waste management

Special know-how or other



RTK-Palvelu Oy is one of the most experienced operators in the field of property management in Finland. The company, originally from Rauma, provides cleaning and property maintenance services for businesses, property enterprises and clients in the public sector all across the nation.

The corporation's turnover is 114M€ and it employs 3200 expert professionals of our field.

### Contact Details

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yrittymyyni@rtkpalvelu.fi  
www.rtkpalvelu.fi

### Certified quality

RTK-Palvelu profiles itself as a responsible collaborator in the property management field and all operations work towards continuous, customer-oriented improvement of our services. The company is strong and determined in growth, and all of its operations and their development are in the nation-wide domain of the ISO 9001, ISO 14001 and OHSAS 18001 certificates.

### Comprehensive service packaging improves cost efficiency

RTK-Palvelu sustains the customers' core business and the certified service process provides the foundation to a good, cost-efficient service package. The service package is tailored to the customer's

needs and we heed their wishes and requirements when planning the services. Concentrating the services saves time for the customer and facilitates the service process.

### Expert support for industry

The company has a long-established reputation for its cleaning and property maintenance services. In addition, we offer a wide range of industrial services, including process cleaning, structure and equipment maintenance, suction cleaning and pipeline video inspections.

### For cleaner technology and environment

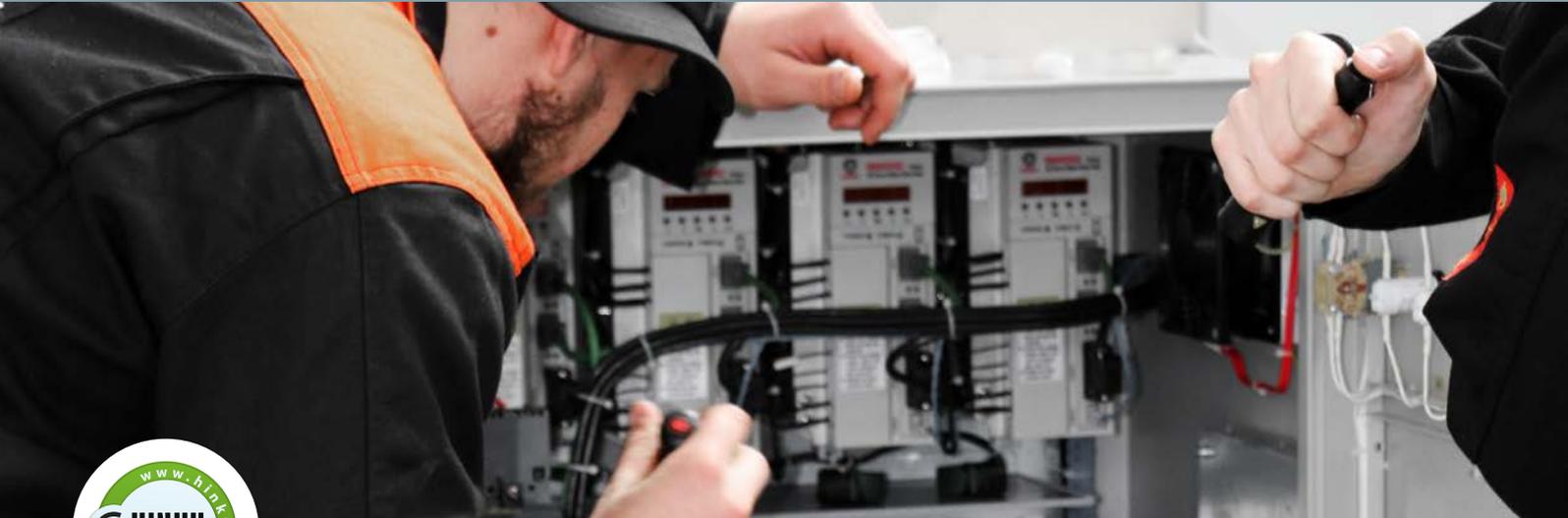
The aims of the Cleantech companies also set demands to property and industry

services. Environmental protection and sustainable use of natural resources are important values. The environmental principles of RTK-Palvelu are based on the life cycle approach in keeping with sustainable development, and regarding environmental aspects in all of our operations. We know the environmental aspects and legislation of our field. We strive to decrease environmental strain by setting objectives and goals to notable environmental aspects and by devising environmental programmes in order to achieve them.

Energy efficiency,  
resource efficiency

Measurement  
and analysis

Green  
building



The driving force behind industry maintenance is the responsibility for safety, personnel and the environment. Sataservice provides expert services for developing a workable maintenance function and increasing production efficiency. Through our broad range of expertise and genuine interest, we amplify the client company's processes sustainably.

## Specialty

The inspection and planning of different sectors and stages of production in maintenance are significant for developing durable and efficient production. Consistent technical planning of production increases production efficiency and reduces e.g. the company's energy consumption.

## Products and services

Our services range from one-off maintenance work to demanding project tasks and all the way to comprehensive factory maintenance. Our broad

expertise includes e.g. electrical automation, robotics, mechanics, HVACR, infrastructure, maintenance of cranes and lifting equipment, repair and sales of electric motors and pumps, and also condition monitoring. We aim to find solutions for enhancing production efficiency, and energy recovery is especially emphasised in solutions for HVACR. The improvement solutions strive to return energy flows and thus reduce the consumption of district heating. The intention is to support energy-saving operations.

## References

Sataservice collaborates with large companies in the food, metal and paper industries, such as HKScan, Boliden, Oras, Rolls Royce and UPM.

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Measurement  
and analysis



Satatuote is a qualified contract manufacturer offering thermoformed, customised, plastic solutions for demanding customers. Our market is in Scandinavia and Europe. Company is owned by Marva Group, a progressive and financially sound, family-owned and consolidated company.

## Specialty

Satatuote is committed to reducing the amount of both mixed and energy waste. In the thermoforming process, as much as possible out of the bi-flow of raw materials used by the company is recycled. Energy efficiency is advanced with the investment in production process solutions requiring lower electricity consumption. The amount of materials used is minimized in product design, and the use of recycled materials is suggested whenever technically possible. "In procurements we also aim to acquire optimal consignments and to achieve solutions where packaging materials can be reused.

The core processes are business development and supply chain management. Continuous improvement is our focal principle, which is monitored by key performance indicators."

## Products and services

**Medical – Smart solutions for complex devices:**

- Minimize your product losses
- Well-protected end products
- Safe and durable packaging solutions result in fewer damaged end products.

**Food – Brand supporting solutions:**

- Boost your sales
- Impact purchase decision
- Light and functional design results in outstanding in-store display, building the products' attractiveness.

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# Seaside Industry Park Rauma

## Seaside industry park

Seaside Industry Park Rauma is a heavy industrial park complex situated in a former shipyard. The park is known for its successful companies operating in the maritime sector. The park provides companies with an efficient operating environment where shared infrastructure and services can be utilised. The park is conveniently situated in a logistics hub of shipping routes, railway and highways.

The operations of Seaside Industry Park are managed, coordinated and developed by Rauman

Meriteollisuuskiinteistöt Oy. The company rents out, and maintains premises and equipment, and organizes joint services needed by the park.

Seaside Industry Park has also applied for a park-specific environmental permit. The environmental permit of the Seaside Industry Park was the first granted to an entire industrial park. The license applies to shipyard, metallization and engineering operations and covers the entire shipyard area and the companies operating in it. The companies establishing their operations in the area do not need to apply for a separate environmental license.





[www.seasideindustry.com](http://www.seasideindustry.com)

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Green  
building



## References

Baltika – Oblique icebreaking oil recovery vessel equipped with 3 x SP 60 PULL (á 2 500 kW) in RMRS Ice Class Icebreaker 6

Seven Viking – Inspection, Maintenance and Repair vessel equipped with 3 x SP 35 CRP (á 3 000 kW), 2013 Ship of Year

F.A. – Gauthier – LNG RoPax Passenger Ferry equipped with 2 x SP 120 CRP ECO (á 7 000 kW) in Ice Class 1A Super

Established in 2000 by a group of azimuth propulsion professionals with decades of experience, Steerprop Ltd. produces high quality azimuth propulsors with outstanding lifetime economy.

Steerprop Azimuth Propulsors combine proven technologies with a robust design and innovative solutions to provide superior reliability and efficiency. The propulsors are designed with a simplistic construction to minimize the number of moving parts to further enhance their reliability and service life.

Since 2000 Steerprop has delivered or been contracted to deliver over 760 azimuth propulsors worldwide, including the world's most powerful and heavily ice-classed mechanical azimuth propulsors.

Preserving the environment calls for eco-conscious choices and product development. In the maritime industry, this means increasing propulsion efficiency to reduce the vessel's fuel consumption, thus helping to reduce emissions. Improved seal solutions can be used to avoid oil leaks. Energy consumption and the recyclability of materials should be taken into account even in the manufacturing phase.

Steerprop Azimuth Propulsors are built with an advanced flush-fluid sealing system to ensure that the oil stays inside the propulsor and out of the sea. The improved efficiency of Steerprop propulsors ensures optimal performance and lower fuel consumption.

The adaptable core organization of experienced personnel works in close co-operation with a worldwide network of dedicated partners to provide clients with flexible

service focused on finding solutions together with the client.

In this way, Steerprop is able to provide the clients with expeditious support both during the ship's initial construction and commissioning as well as throughout vessel's service life. Steerprop Ltd. is certified according to ISO 9001, ISO 14001 and OHSAS 18001 -standards. Steerprop Ltd. is also a member of Cleantech Finland.

## Products and Services

Steerprop Ltd. provides Steerprop Azimuth Propulsors from 800 kW up to 25 MW for the global maritime market. All Steerprop propulsors are customized to the individual application and built to the rules of selected classification society.

Steerprop constantly works on product development projects; the latest innovations

## Notable recognition and awards

Ship of the Year 2013, Seven Viking - Main propulsion

The company of the year 2011 in Rauma

Company of the Year 2010 by Finland's largest financial group, OP-Pohjola Group and Finland's largest business newspaper Kauppalehti

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includes a New Generation of Ducted Propulsors and SP CRP LM and SP CRP ECO LM propulsors with a permanent magnet motor integrated on the propulsor.

Steerprop CRP Propulsors (contra-rotating propellers) have been extensively used in the offshore fields of the Norwegian Sea. Anecdotal evidence states that vessels with Steerprop CRP Propulsors have been found to be even as much as 25% more fuel efficient than other similar vessels.

Recycling of material,  
value out of waste



Suomen Akkukeräys is a battery collection and recycling company located in the Port of Rauma. The company's waste battery collection system covers the entire country. We have been advancing the safe and ecological recycling of batteries for several decades.

## Specialty

Suomen Akkukeräys alone in all of the Nordic countries crushes and separates batteries. Suomen Akkukeräys Oy uses processing equipment which makes battery recycling safer and more efficient. The crusher-separator operating in Rauma is the only one in the Nordic countries. In the process, the battery is separated into recyclable components.

## Products and services

Suomen Akkukeräys Oy takes meticulous care of environmental issues and is a responsible employer. The most important component in a lead battery is lead, which is a heavy metal. Dumping a dead battery in nature is harmful to the environment because lead doesn't decompose naturally and instead ends up in the food chain.

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Clean processes,  
materials, products

Energy efficiency,  
resource efficiency

Production, transfer and  
distribution of renewable energy

Green  
building



UPM Paper ENA Oy's Rauma paper mill is located by the sea on the west coast of Finland, near Rauma city centre, Metsä Fibre Oy's pulp mill, Rauma Harbour and Seaside Industry Park Rauma. Forchem Oy's tall oil distillation plant and Rauman Biovoima Oy's biofuel power plant are also based at the mill site. There are good traffic connections from highway 8 and 12.

## Products and Services

The Rauma mill has three paper machine lines, a fluff pulp line, a twin-line debarking plant, two GW plants, two TMP plants, a fresh water treatment plant, a biological effluent treatment plant and a landfill site for industrial waste. The paper machines manufacture magazine papers - one of the machines produces uncoated, supercalendered (SC) paper, while the other two produce lightweight coated (LWC) paper. In addition to paper, the mill produces fluff pulp for the production of hygiene products and tabletop products.

## Cooperation

UPM Paper ENA Oy produces the raw and chemically treated water used at the site, and is responsible for the treatment of the site's industrial and municipal wastewaters. The companies collaborate closely in energy production, and Rauman Biovoima supplies the district heating used by the city of Rauma.

## Opportunities

The UPM Paper ENA Oy mill area is guarded and fenced and covers approximately 200 hectares. The area includes plenty of rental facilities for storage, industrial and office use, as well as unbuilt land areas specified as industrial areas in the statutory land use plan. There are several facility management, design and maintenance companies working in the area, offering opportunities for cooperation for new businesses. UPM Paper ENA Oy provides energy in the form of electricity and steam and offers effluent treatment services. There is a landfill for industrial waste within 10 kilometres, offering the possibility of processing various recycled materials. The landfill complies with the latest requirements and has an environmental permit with sufficient disposal capacity remaining.

## References

<http://www.raumatehdasopas.upm.com/Pages/default.aspx>  
<http://www.upmkiinteistot.fi/Yritysalueet/rauman-tehdasalue/Pages/default.aspx>

## Contact Details

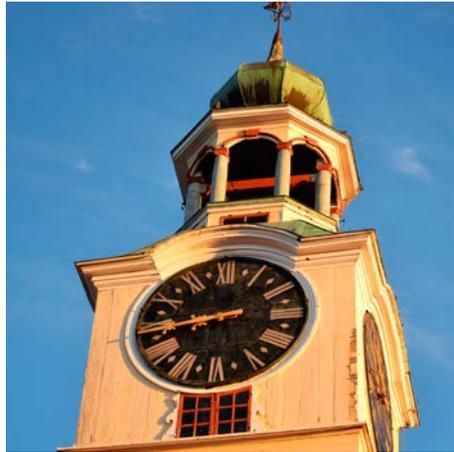
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# Elaborately decorated wooden houses, idyllic street views



Old Rauma is an old city district comprising ancient wooden houses. It is the largest, most complete and best preserved old wooden city area in the Nordic countries, with a city plan that dates back to the Middle Ages. Enchanting Old Rauma was chosen for the UNESCO World Heritage list in 1991 as a unique example of a living and well-maintained old Nordic wooden town.

This vivid neighbourhood is a well-preserved and living entity, the heart of the city, where people live and work year-round. Idyllic cafés with their cosy summer terraces and numerous versatile boutiques attract visitors to the area. The newly renovated market place is an important representation of the lively everyday life of the area. Old Rauma has been largely developed during the past few years.



[visitrauma.fi/en/](http://visitrauma.fi/en/)



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