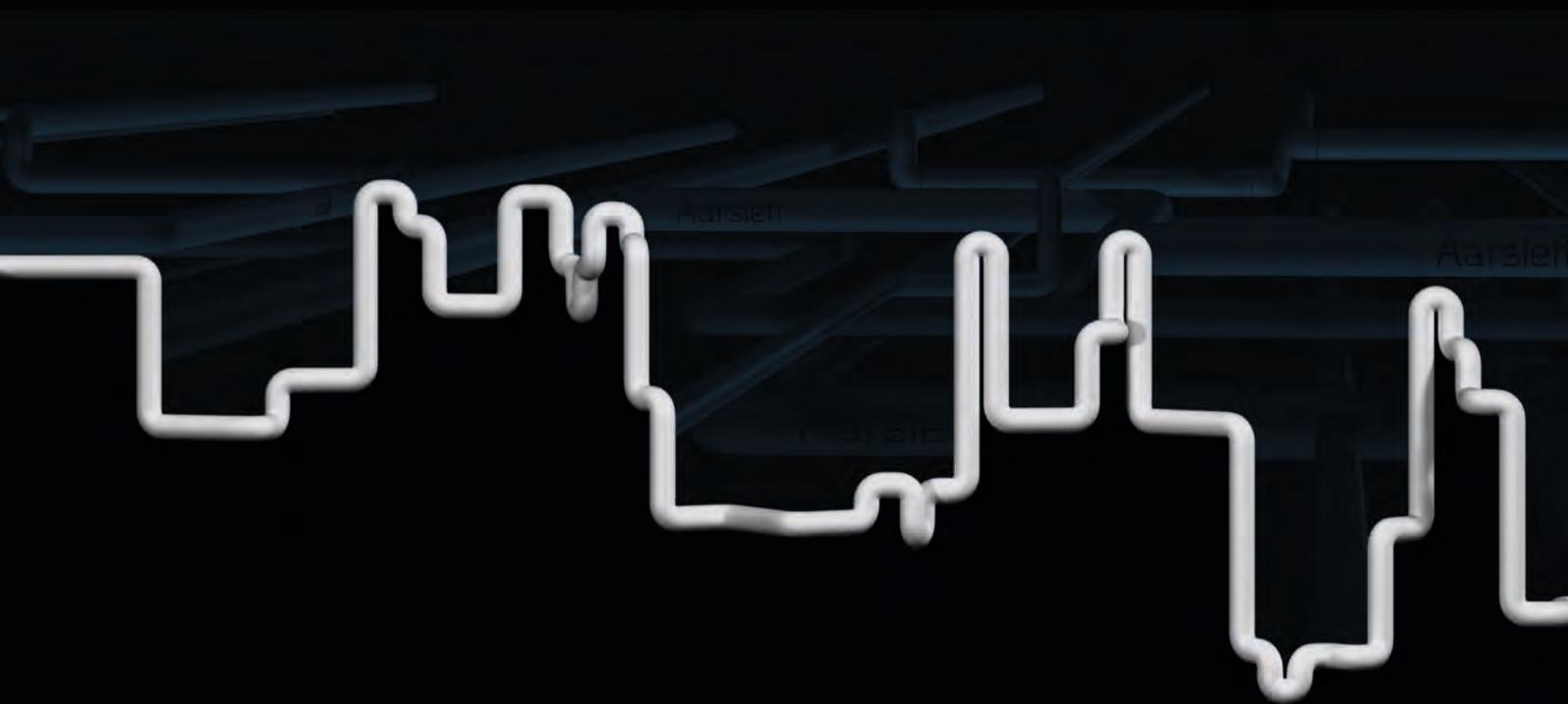




AARSLEFF

BEHIND EVERY GREAT CITY IS
GREAT INFRASTRUCTURE



WATER AND PIPE TECHNOLOGIES

Water treatment Trenchless solutions Wastewater treatment Pumping stations

www.aarsleff.com

Only by using the best methods, can we ensure efficient handling of the water cycle.



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WASTEWATER TREATMENT

BUILDING A SUSTAINABLE WORLD

Innovative water projects are essential to solve the serious, global climate and environmental challenges. Aarsleff has the expertise and the experience to devise, develop and operate large infrastructure projects which contribute to a more sustainable world.

The world is facing serious climate and environmental challenges which, among other things, lead to lack of clean drinking water and flooding caused by large amounts of rainwater. This means that there is a need for infrastructure which is adapted to local conditions and which contributes intelligent and sustainable solutions to the global challenges. These solutions are important in order to build a sustainable world.

The water cycle

Aarsleff is an internationally positioned civil engineering contractor. We have the expertise, the experience and the employees to devise, plan and implement large projects within infrastructure, climate

change adaptation, the environment, energy and construction in most of the world.

The water cycle illustrates how water goes through a process – and how Aarsleff's different solutions are included in this process. Typically, the first step is to collect the surface water or the groundwater before it is treated and used as drinking water. Then, the water is led to the consumers via pipe networks by the utility companies. The consumers discharge wastewater which is treated before it is returned to the environment.

Unifying our expertise

Aarsleff contributes to a sustainable water environment through our leading exper-

tise and considerable experience within the entire water cycle – this includes e.g. construction and operation of pumping stations, water treatment, wastewater treatment, pipe renewal and collection of rainwater and wastewater.

By compiling the extensive projects in turnkey contracts, the clients are able to save both time and money, because there is only one contact person. Aarsleff has the overview and handles the project management of all suppliers – both locally and internationally.



The UN estimates that in 2030 about 50% of the world population will be living in areas which will be short of clean drinking water.



TAILORING THE WORLD'S WATER TREATMENT PLANTS

Water treatment plants tailored to local environmental conditions are crucial to the access to clean drinking water. Aarsleff builds water treatment plants in most of the world – and they are always tailored to the local conditions, preferably in close collaboration with local expertise.

Aarsleff designs and builds water treatment plants all over the world. All treatment plants are subject to different conditions and terms, so we tailor unique, up-to-date solutions in close collaboration with our customers.

Efficient water treatment plants are crucial to secure the access to clean drinking water. Some areas suffer from drought, while others experience flooding or pollution. Aarsleff's water treatment plants are tailored to the local conditions by collecting and treating raw water. The raw water usually comes from the groundwater, but it may also come from lakes, streams, or rivers. No matter where the raw water comes from, it should be cleaned before being distributed as drinking water to the local community.

Close collaboration is a guarantee for success

At Aarsleff, we prefer to develop our projects in collaboration with the customer, and we have good experience working together with local contractors. Aarsleff is



Colombo, Sri Lanka

also responsible for training of the local workers which are to handle the subsequent operation of the plant.

By carrying out projects in turnkey contracts in Aarsleff, the clients will have one overall project manager and thus one contact person.

The required resources in-house

Aarsleff's water treatment plants are of a market leading quality, and the price level is competitive. All our employees are ded-

icated, quality-conscious and have extensive qualifications within the water cycle. We offer professional skills within process design, mechanical and electrical engineering, SCADA, building design, installation and commissioning – or when assisting with the final operation of the plant.

We handle large projects as well as small projects. This means that we can assist you no matter whether you need supply of equipment for small projects or execution of turnkey plants in design-build contracts.

Leaking pipes can be a serious threat to health, safety and the environment.





TRENCHLESS
SOLUTIONS

PIONEERING NO-DIG PIPE RENEWAL

Thanks to innovative renewal technology, it is possible to renew virtually any pipe system with a minimum of disturbance, without excavation – and at a much lower price.

Rijswijk, Netherlands



Leaking sewage pipes pose a significant environmental risk because untreated wastewater can infiltrate directly into the soil and the groundwater. In other cases, the groundwater may enter into the leaking sewage pipes, resulting in increased amounts of wastewater. So it is very important to renew the pipe systems in time – and preferably before the pipe starts to leak or is damaged. Aarsleff Pipe Technologies is a market leader within trenchless pipe renewal and carries out even the most difficult renewal projects in most of the world.

No-Dig, no trouble

By using No-Dig methods and Aarsleff's own technology, we can completely renew pipe systems without disruption and time-consuming excavation – no matter whether the pipes are beneath roads or buildings.

With the No-Dig method, it is possible to restore piping systems of any size and scope and at a far lower overall cost than by traditional excavation and replacement of existing pipes.

CIPP Lining the future

Aarsleff is the innovator of Cured-In-Place Pipe Lining, or CIPP, which is a highly effective No-Dig method for pipe renewal with an expected lifetime of at least 100 years. CIPP Lining securely fits a robust lining inside a damaged pipe. When a liner is cured, it forms a structural and abrasion-resistant pipe within the old pipe.

Uniquely adaptable to a wide variety of applications, CIPP Lining is often used to renew sewage pipes, drinking water pipes, industrial process pipes, vertical pipes and ducts in buildings. Aarsleff CIPP Lining makes it possible to renew several hundred metres of pipe in the course of a day without any excavation.



Copenhagen, Denmark



Wastewater treatment offers many advantages for the local environment and helps improve the living conditions of the future generations.



WASTEWATER
TREATMENT

MAKING WASTEWATER ENVIRONMENTALLY FRIENDLY

An efficient wastewater treatment plant ensures environmentally friendly treatment of wastewater. Based on innovative technology and extensive experience, Aarsleff builds energy-efficient treatment plants tailored to the customer's unique requirements.

Untreated wastewater harms the environment and poses a health risk. A wastewater treatment plant purifies the wastewater, so it complies with the discharge requirements of the local authorities – resulting in a much healthier and more sustainable environment. Aarsleff's experience covers construction and enlargement of more than 40 wastewater treatment plants in Asia, Central America and Eastern Europe, and we are thus a well-proven contractor. We build completely new plants and carry out enlargements and renovation of existing plants which must be in operation during the construction phase.

Tailoring the projects

We rely on our extensive experience when we develop a new project in collaboration with the customer. Aarsleff is not bound by any specific process, so each project is tailored to the customer's requests and the specific requirements which apply in the country in question.

Aarsleff carries out projects which already have a design basis as well as pro-



Pasvalys, Lithuania

jects which already have a functional description prepared by the client. We are responsible for the design, execution and subsequent commissioning of the plant in a turnkey contract.

As we possess the expertise to design wastewater treatment plants, we are able to optimise the execution and provide the basis for an efficient maintenance and operation of the plant. This is done e.g. by transferring the technological expertise to the customer's technicians and by training them in the operation in order to make them confident with the treatment plant.

From waste to resource

At Aarsleff, we consider wastewater as a resource, and by tailoring the solutions of the projects we are able to ensure the performance of the wastewater treatment plants many years ahead. The operation of our wastewater treatment plants is very energy efficient and thus economically responsible – e.g. because we use the energy from the wastewater sludge. Moreover, all wastewater treatment plants are designed so that they can be enlarged by very little future intervention.

The world's energy resources are limited in supply, and by optimising energy consumption we improve living conditions and minimise emission of CO₂.





SAVING THE ENERGY – OPTIMISING PERFORMANCE

Old pumping stations which are not energy efficient are both expensive and have an adverse environmental impact. Aarsleff builds and optimises pumping stations while focusing on minimising the energy consumption and maximising the performance.

Alytus, Lithuania



Many pumping stations used for drinking water supply and wastewater transport are built at a time when energy consumption was not an issue. However, in recent years the technological development with energy-efficient systems has accelerated – which means that many old pumping stations do not comply with the current requirements.

Optimising new systems and old systems

No matter whether the requirement is a completely new pumping system or an

upgrade of an existing one, Aarsleff has the right employees and the right expertise.

We have detailed knowledge of replacing existing pumping equipment with energy-efficient pumping systems that optimise pump performance and minimise CO₂ emission. This can be done, while the pumping station is still in operation.

Moreover, we have extensive experience in the design and construction of completely new stations; by combining the right components and focusing on the pump's duty

Jelgava, Latvia



point, we optimise the energy consumption providing a good opportunity to control the operation of the pump.

Quick payoff

Our skilled engineers and technicians focus on the energy consumption of the pump through the whole process from design to operation, so the investment in a new system or the upgrade of an existing one will pay off quickly. Based on specific experience, a correctly dimensioned pumping station using the right equipment is able to break even in just three years.



AARSLEFF

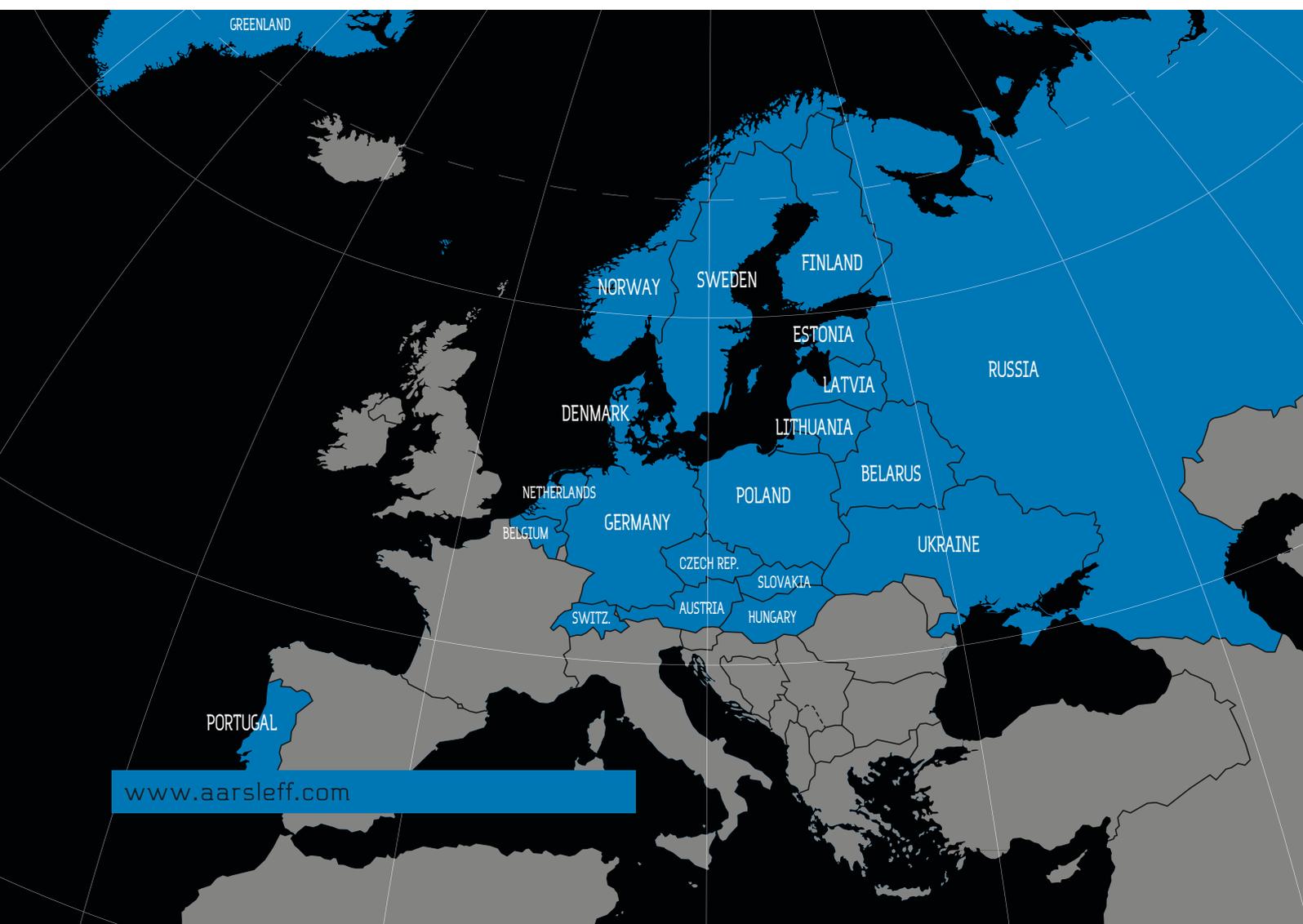
The Aarsleff Group is a leading civil engineering contractor in Denmark. Our expertise is to devise, plan and implement large projects within infrastructure, climate change adaptation, the environment, energy etc. – from design to handing-over. We have a strong position in Denmark and the Baltic Sea region, and we solve projects in most parts of the world.

Aarsleff is certified in accordance with ISO 9001. We carry out the preliminary investigations and design as a basis for our projects. Moreover, we offer financing of infrastructure projects.

Aarsleff has an annual revenue of more than EUR 1 billion – of which one third comes from abroad.

The Aarsleff Group has 4,500 employees.

AARSLEFF LOCATIONS



www.aarsleff.com