

We protect the coasts of Schleswig-Holstein



Schleswig-Holstein Agency
for Coastal Protection, National Park
and Marine Conservation



Schleswig-Holstein Agency for Coastal Protection, National Park and Marine Conservation (LKN.SH)

Our state is characterized by over 1,100 km of coastline (Baltic Sea 541 km, North Sea 466 km, and 103 km of the tidal Elbe), as well as more than 300 lakes and 30,000 km of rivers. This is a highly attractive place to live and relax for us locals and for our guests. But it also obliges us to take precautions because 333,000 people live in potentially flood-prone coastal lowlands, which make up a quarter of our country.

We also have to deal responsibly with the unique nature. Wadden Sea National Park, which has been declared a World Heritage Site, stands out. But Schleswig-Holstein also has great natural values in many other places that need to be protected and preserved.

Schleswig-Holstein Agency for Coastal Protection, National Park and Marine Protection (in German: Landesbetrieb für Küstenschutz, Nationalpark und Meeresschutz Schleswig-Holstein, LKN.SH) successfully protects our land between the seas: we implement legal regulations and strive for the best solutions in each case – for people and nature.



We protect Schleswig-Holstein's coasts
for people and nature.

Birgit Matelski | Director



Headquarters in Husum, oil spill response ships during an exercise, a beach on the Baltic Sea – just a few facets of the State Agency.



We are Schleswig-Holstein's service provider

- for coastal protection on the North Sea and Baltic Sea,
- for flood protection along the rivers,
- for nature conservation and sustainable development in Schleswig-Holstein Wadden Sea National Park and the Wadden Sea and Hallig Islands of Schleswig-Holstein Biosphere Reserve,
- for protection against threats from shipping accidents,
- for the protection of groundwater, rivers, lakes, and coastal waters,
- for the state-owned lakes and hydrological measurement service,
- for the storm surge and flood warning service,
- for the operation of state-owned harbours,
- for the maintenance of naval ports,
- for sustainable tourism in the National Park and World Heritage Site.



Our team

About 750 employees, including

- 290 coastal protection workers,
- Dozens of engineers, technicians, administrative staff members, geographers, craftsmen, biologists, sailors, craftsmen.

Our organization

- State agency of the Ministry for Energy Transition, Climate Protection, Environment and Nature (MEKUN),
- 28 sites with headquarters in Husum,
- Annual turnover of around 135 million Euro.

Our mission

We safeguard the lives and property of people in the coastal areas influenced by the North Sea and Baltic Sea. And we preserve the Wadden Sea with its natural dynamics.





Service and Business Administration | Department 1 | ABOUT 65 EMPLOYEES

We provide the operational infrastructure: Department 1 fulfils the cross-sectoral tasks for the entire LKN.SH. This includes, for example, building management at all locations, business premises and workplaces. This applies to all office and workshop buildings, building yards and depots as well as the lighthouse keeper's houses in Westerhever.

This internal service also includes the legal department for legal matters, the contracting authority for all construction projects in the area of state construction, the IT control centre for the entire office, and back office infrastructure of information and communication technology for the entire state operation.



Innovative and service-oriented, we ensure the digital transformation at LKN.SH. We also cover the entire personnel, financial and material requirements of the company.

Rosmarin Raudies | Head of Department



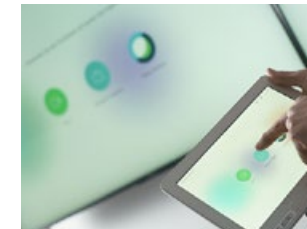
Organizational tasks of Department 1 are also the coordination of the occupational health and safety management system and the design of the Agency's health management.

The human resources department looks after and advises our 750 employees. Personnel development and qualification are of great importance.



Attracting qualified workers is just as important as training junior staff. In this way, we ensure continuity in the completion of tasks for the future.

The LKN.SH has an annual budget of around 135 million Euro. It is business-oriented and posts income and expenditure according to the rules of commercial accounting.



Tested connections secure modern communication channels.



There are a business plan, the profit and loss account, and the annual accounts that are audited annually by an independent auditor. Important instruments of operational control are target agreements and budgeting.

Property assets comprise several thousand hectares of land and water. Dyke and foreland areas, state-owned lakes, and areas in the state's ports are subject to

user-oriented area management. The focus is on leases for sheep grazing on the dykes, land acquisition for coastal protection construction measures and the provision of commercial space in the harbours.



Hydrology, Principles of Coastel Protection | Department 2 | ABOUT 65 EMPLOYEES

We measure water levels in Schleswig-Holstein's water bodies: the water levels are recorded at 54 tidal gauges in the North and Baltic Seas, at more than 400 gauges on lakes and rivers and at more than 3,000 groundwater monitoring stations. In addition, the discharge regime is determined at 146 stations inland, and sea state and currents are constantly recorded at 28 measuring points in the North and Baltic Seas.

This data is held in information systems, analysed and made available for further use. With this information it is possible to provide timely and reliable warnings of storm surges and floods. Long-term changes in sea level or in storm surge frequency can be identified and documented. This data is fundamental for the evaluation of safe dyke heights.

The flood and storm surge information system (Hochwasser- und Sturmflutinformationssystem; HSI) provides information on current water levels at the North and Baltic Seas as well as inland on quarter-hourly basis.

→ www.hsi.schleswig-holstein.de



Hydrology is fundamental work. We document and analyse changes on the coasts, inland waters and groundwater, so that we can then act sustainably.
Dr. Thomas Hirschhäuser | Head of Department



Measuring sensors are used to determine water levels in ground- and surface waters, and mobile ultrasonic measuring devices are employed to record the flow velocity in a body of water. Wave buoys continuously record the height of sea waves.



Above and below the water we survey 400 km² of shallow water areas in the North and Baltic Seas every year, using laser scanning technology and aerial photographs supplemented with echo sounder measurements in the deeper areas.

This data forms the basis for digital elevation models from which morphological changes are derived. This is of great importance in the Wadden Sea, on Sylt or on the Baltic Sea



The elevations on land, in the sea, or on other bodies of water are measured regularly. State-of-the-art technology is used, whether from the air with airplanes or by three survey teams that are on the water with ships or on land on foot.

coast. Such information is published in the coastal protection sectoral plans.

→ www.schleswig-holstein.de/kuestenschutz-fachplaene

We cooperate with many state and federal agencies, research centres and universities.





National Park and Marine Conservation | Department 3 | ABOUT 90 EMPLOYEES

Schleswig-Holstein Wadden Sea is one of 16 national parks in Germany. Here the seabed meets the horizon. Every year, about 2 million overnight visitors and 13 million day trippers experience the attractive offers of the National Park. The National Park is not only an ecological figurehead, but also a tourism flagship and an important economic factor for Schleswig-Holstein.



The national park idea can be summed up in four words: let nature be nature.

Michael Kruse | Head of Department and Deputy Director

Schleswig-Holstein Wadden Sea National Park is

- the largest national park between the North Cape and Sicily,
- a hub of bird migration for millions of waders and shorebirds,
- a habitat for hundreds of plant and animal species that occur only in the Wadden Sea salt marshes,
- a UNESCO World Heritage Site, together with Wadden Sea in Denmark, Germany, and the Netherlands,
- a UNESCO Biosphere Reserve together with the Halligen; further areas would like to be added.



The Wadden Sea is an attraction: for migrating and breeding birds – as well as for the guests who visit our National Park Centre Multimar Wattforum in Tönning.



We protect the National Park and

- carry out national and international environmental monitoring programmes and research projects together with research partners,
- our rangers monitor and look after the area with the support of nature conservation associations
- balance interests and decide on uses,
- promote sustainable tourism, supported by our National Park Partners,
- inform the public and promote the experience of nature,
- operate National Park Houses and a large National Park Centre at the Multimar Wattforum in Tönning.

Our goals are

- undisturbed evolution of natural processes,
- preservation of natural biodiversity,
- sustainable development of the region,
- preservation of the UNESCO World Natural Heritage
- further development of the UNESCO Biosphere Reserve.



The National Park in figures

Size	4,380 km ²
Extent	127 km north-south, 46 km east-west (excluding islands and inhabited Halligen)
Habitats	62% shallow sea, 34% mudflats (intertidal zone), 2% salt marshes, 1% sands, 0.04% Halligen, 0.01% dunes
Protection zones	Zone 1: 36% (public access/shipping only permitted in certain areas) Zone 2: 64% (public access/shipping permitted)
Number of species	About 2,300 plant and 4,200 animal species
Visitors	Annually around 2 million overnight stays and 13 million day-trippers
Partners	Around 200 companies, individuals, organisations, municipalities, and associations

www.nationalpark-wattenmeer.de

www.nationalpark-partner-sh.de

www.waddensea-worldheritage.org/de



Water Management, Coordination, Combating Marine Pollution Response | [Department 4](#) |

ABOUT 50 EMPLOYEES

In order to improve the ecological status of inland and coastal waters, and to maintain groundwater as a drinking water resource, the EU passed the Water Framework Directive (WFD) in 2000; it obliges all member states to bring their waters up to a good condition. Nutrient and pollutant inputs should be reduced and developed or canalised water bodies should be renaturalized.



Our goal is to improve the condition of water bodies. We are also active as a coastal protection and harbour authority as well as in hazard prevention.
Heiko Tessenow | Head of Department

As a coastal protection authority, we are responsible for the supervision and approval of construction and utilisation of the coasts of the North Sea and Baltic Sea, as well as along the Elbe. We are also the harbour authority for the harbours of Husum, Tönning, Friedrichstadt, Büsum, and Glückstadt.

Schleswig-Holstein's coasts lie on major shipping lanes of the North Sea and Baltic Sea, as well as the Elbe and the Kiel Canal. Over 150,000 ships and countless renaturalized boats pass through these waterways every year, with over 100 accidents and major incidents occurring. We organize the response to oil or other pollutants that get into the water.

We are improving the status of inland waters and groundwater

- In 33 areas, water and soil associations, farmers, fishermen, anglers, nature conservationists, municipalities, and authorities are jointly planning and implementing practical measures.
- We coordinate processes, provide professional assistance, and provide resources from the state, federal government, and the EU.



We are prepared for floods ...

- We have drawn up hazard and risk maps for flood protection. Management plans are being drawn up.
- We can reduce the risk of flooding by controlling barrages and locks.

... and other threats

- Procedures and activities are defined in emergency plans, in which over 600 institutions and individuals can be involved.
- An operations and situation centre is operated in Husum for all hazardous situations.
- Within two hours, LKN.SH experts meet there to form the emergency response team.
- They are supported by a special information and management system.
- An on-call service is available at all times.
- More than 70 exercises and training courses are held every year.

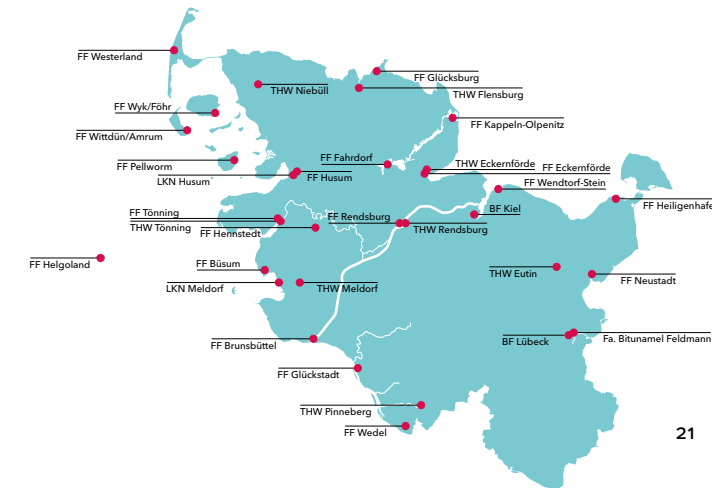
... and are well equipped for it

- 10 ships,
- 32 multipurpose boats,
- 30 containers for spilled oil,
- 5 amphibious vehicles,
- 2,600 m of long and 3,000 m of short oil barriers,
- oil absorption equipment, pumps, trailers, skips, barrels, generators, pressure washers, and other specialised equipment.



We cooperate with

- 20 volunteer fire brigades, 2 professional fire brigades, and 8 local units of the Federal Technical Relief Agency who are contractually involved in combating pollution accidents.
- the Central Command for Maritime Emergencies in Cuxhaven.
- other emergency authorities, who are advised by our experts in the event of a flood.





Coastal Protection an Harbours: A Task for Generations

333,000 residents of Schleswig-Holstein live in areas potentially at risk of flooding, in which there are property values of around 60 billion Euro. Without coastal protection measures – new construction as well as maintenance – the daily high water levels would have already made settlement here impossible.

In our northernmost federal state, dykes form resilient protection against regularly recurring storm surges and, as “climate dykes”, their latest stage of development, they provide an answer to the constantly rising sea level.

The map shows the flood-prone coastal lowlands in Schleswig-Holstein, which are protected by dykes.



Climate dyke with the option of climate upgrade and flattening of the outer embankment

- Expansion option II: dyke reinforcement with additional sea level rise of up to about 2 m
- Expansion option I: dyke crest with additional sea level rise of up to about 1.5 m
- Climate dyke (including climate upgrade and flattening of the outer embankment)
- Dyke to be strengthened

In the coming decades, this will pose completely new challenges for everyone involved in the maintenance and construction of the various coastal protection structures.

The protection of the coasts as well as the operation and planning of construction measures in the state-owned harbours are carried out in the LKN.SH by Department 5 „Coastal Protection and Harbours: Maintenance and Management“ and Department 6 „Coastal Protection and Harbours: New Construction and Repair“.



Coastal Protection and Harbours: Maintenance and Management | [Department 5](#) | ABOUT 420 EMPLOYEES

A quarter of the country lies in flood-prone coastal lowlands. To ensure that it is a safe place to live in, we have four construction teams on the North Sea and one on the Baltic Sea to ensure that dykes, sluices, revetments, coupures, embankments on the Halligen and barrages are regularly serviced and maintained. Heavy equipment is used for all the work, which is kept ready for use by specialists in our workshops in Husum, in Schwienkuhl and at the harbour of Meldorf.

Despite the use of modern machines, there is still a lot of manual work: when building a river in the mud flats, disposing of debris on the dyke or, in special cases, when salvaging animal carcasses and oil residues. Eight of our own ships support us in this work.



[We love the sea, but we also need to protect ourselves against it.](#)
Fabian Lucht | Head of Department



We maintain Schleswig-Holstein's coastal protection systems

- 360 km of state sea dykes on the North Sea,
- 70 km of state sea dykes on the Baltic Sea,
- 50 km regional sea dykes on islands and Halligen,
- 80 structures, e.g. sluices,
- 800 km of paths and roads along the dykes, as dyke defence and debris removal routes,
- 480 km of groynes,
- 15 km of mudflat dams,
- 2,400 ha dyke base drainage.



We are well equipped

- 300 vehicles (tractors, excavators, mowers, light rail locomotives, lorries, cars),
- 8 ships, 100 work boats, and 23 barges.
- The logistics operation stockpiles 10,500 items and procures 160,000 stakes, 240,000 bundles of brushwood for building groynes and 12,000 t of stones every year.



We are hands on

- 300 employees in 5 construction teams keep the coastal protection systems in good condition and are immediately ready for action in the event of a storm surge.
- 34 craftsmen and women work in our workshops (metal-working, turning, forging, painting workshop, carpentry, iron, chrome and nickel steel construction, electrical workshop, small engines).



- 25 sailors work on our ships and supply our construction sites with material and equipment, take part in surveying work, in environmental monitoring, or in combatting oil spills.
- 17 employees procure, store and transport material, vehicles or equipment.

In addition, we operate the state-owned harbours in Husum, Friedrichstadt, Tönning, Büsum and Glückstadt.



Coastal Protection and Harbours: New Construction and Repair | Department 6 | ABOUT 60 EMPLOYEES

On the basis of the „Master Plan for Coastal Risk Management“, which is updated every ten years, we invest around 35 million Euro every year in new construction, reinforcement, and repairs of coastal protection systems, that ensure, that our coasts are a safe place to live. With highly qualified construction teams, we strengthen 3-5 km of dykes every year, build coastal protection, harbour and barrage systems and allow sand nourishment to protect the islands of Sylt and Föhr.

About half of this investment is from state funds, about a third is provided by the federal government, and the other funds are provided by the European Union (EU).

We adapt our safety standards to current knowledge and develop new concepts for coastal protection in the 21st century. „Climate dykes“, for example, which have a shallower slope and a wider crest and which can be raised relatively easily with a cap when sea levels rise sharply. In this way, we use foresight to create options for action for future generations.

Coastal protections, harbours, and barrages will only do their job if they are in good structural condition. The hydraulic engineering structures are subjected to extremely high loads due to their VERY exposed location and must have the highest level of stability, functionality and traffic safety. In order to



We are constantly developing coastal protection and ports to ensure a good life and economy on our coasts.
Jorne Heinrich | Head of Department

ensure this, they are regularly checked, repaired, or renewed in accordance with current conditions and knowledge.

What are water and civil engineering structures in the LKN.SH? They include barrages, pumping stations, sluices, sheet piling, bridges, and jetties.



In numbers:

- 147 structures in dykes: 110 for drainage (barrages, sewers and drainage coupures) and 37 for traffic (piers, bridges, road coupures, etc.),
- 140 structures in the state harbours in Büsum, Husum, as well as Tönning and Glückstadt, i.e. about 16,800 m of bank protection,
- 49 structures in the canals of Friedrichstadt and
- 21 structures in/next to first order bodies of water.

In addition, the LKN.SH advises and examines port construction and tourism projects sponsored by third parties as part of funding measures.

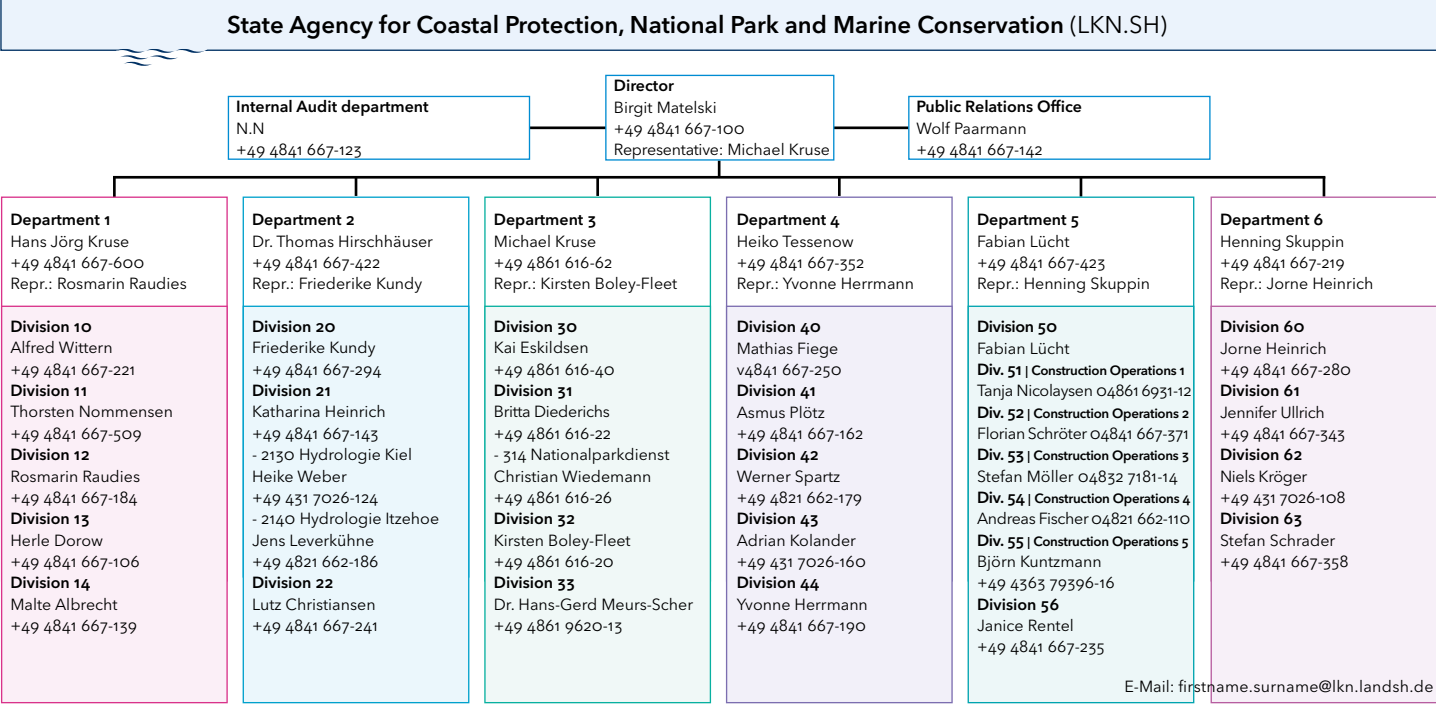
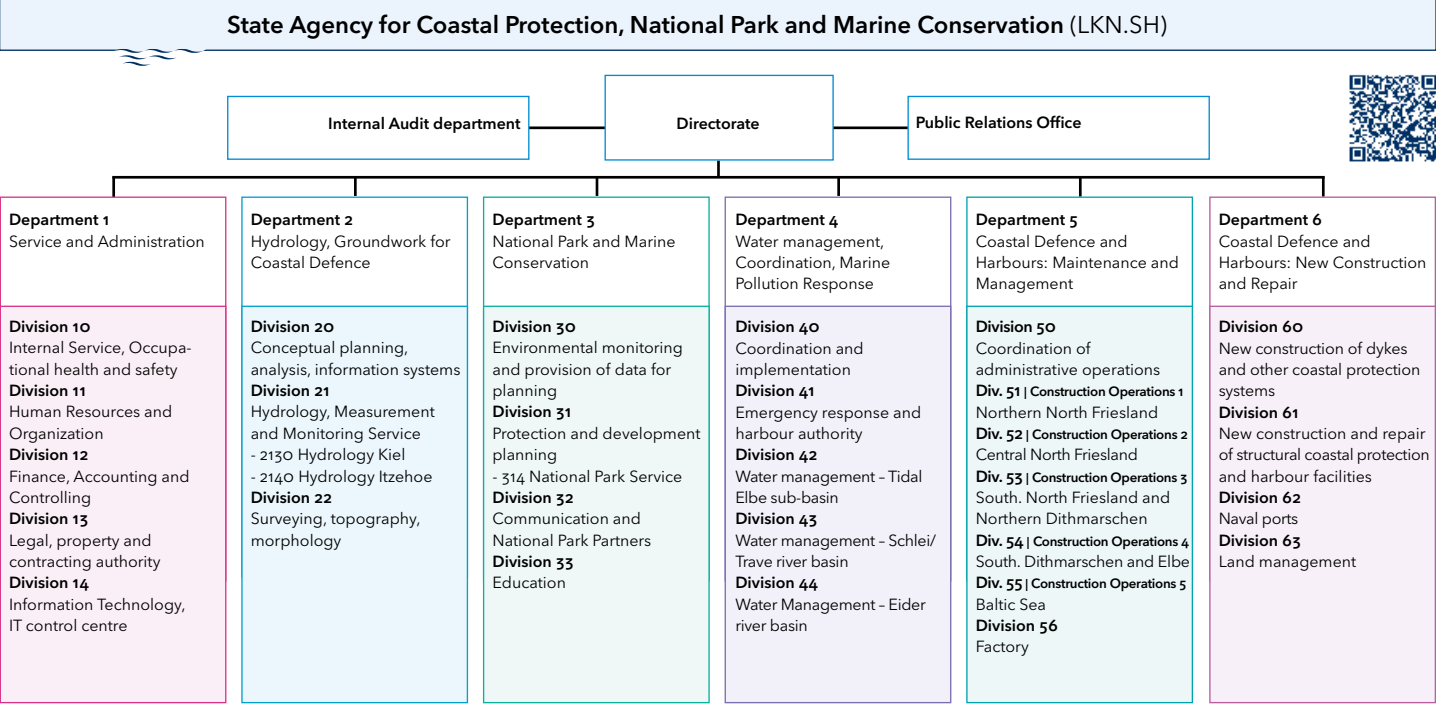
As the federal building administration for the new building and the repair of the water-side, structural systems of the federal government, 32 locations on the Baltic Sea and inland also fall within the area of responsibility of the LKN.SH. It takes care of building inspection, building maintenance,

planning and implementation of new buildings, conversions and extensions at all hydraulic engineering facilities in Schleswig-Holstein for the Bundeswehr (Federal Armed Forces), the Bundespolizei (Federal Police), Zoll (German Customs), and the Bundesanstalt für Immobilienaufgaben (BImA; Institute for Federal Real Estate), as well as technical advice for owners and users.

The number of federal hydraulic engineering structures (including moles, quays, floating bridges, revetments, piers, and slipways) is around 250.



The construction projects often take place in ecologically sensitive areas. The State Landscape Planning Division takes care of nature conservation support for new construction, repair and maintenance measures. It supports the development of construction variants, is responsible for the nature conservation part of the application documents, coordinates the approval procedures, implements the compensation measures and carries out environmental construction supervision and monitoring records. These tasks are carried out with planning and expert offices, research institutions, associations and foundations.



We train people | skilled occupations

Be sure to check it out, you can
find out everything here!



Apprenticeship at LKN.SH - versatile, important, close to nature,
with jobperspective and among nice colleagues.



Our hydraulic **engineers** work outside, in all kinds of we-
athers. Our **aquarists** take care of the breeding and acclima-
tization of new animals and maintain the technical systems.
Our **metalworkers** inspect, maintain and repair metal
constructions of all kinds. The **agricultural and construction
machinery mechatronics technicians** are our specialists
for the inspection, maintenance and repair of around 1,200
technical equipment and machines. Use this link and get in
touch with us. :-)

→ www.lkn.schleswig-holstein.de/ausbildung



It's just cool here. Thanks for that, LKN.SH.

Jerk Hansen | After successful training in 2021 as an
agricultural and construction machinery mechatronics
technician at the Husum building yard.



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● Other locations

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