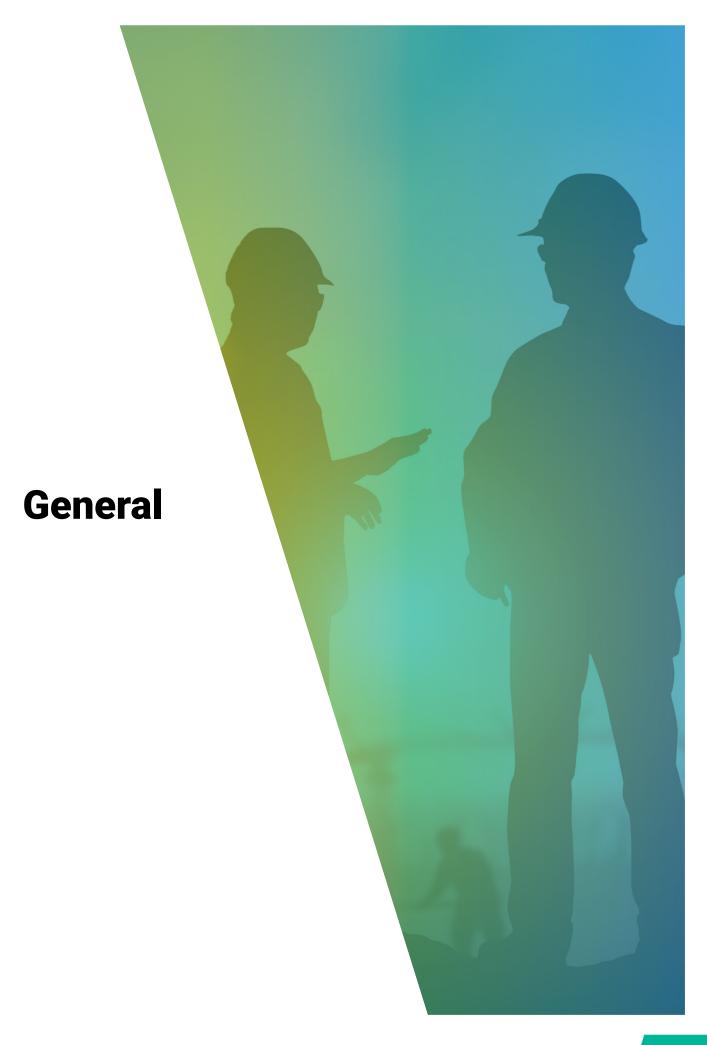


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General

Who We Are

LUDAN GROUP is proud to be a most diverse provider of integrated solutions for Industrial Development, Plant Optimization, Environmental Issues, and Industry-Specific Implementation Knowledge.

LUDAN GROUP is a unique blend of companies in the fields of Engineering, Software, Process Control, Environment, Energy and more, located in Israel, western Europe (Holland, Belgium), Eastern Europe (Romania, Bulgaria).

Ludan: Stable, Dynamic & Innovative



Stable

Cultivates a multidisciplinary approach

A public, financially stable company

Highly diversified market activity



Dynamic

Invests in continuous growth

Responds quickly to global macro changes and local micro changes

In select sectors, the company's maintenance portfolio acts as an extension of implemented projects



Innovative

fleet management software development for the public transportation market

Payment solutions: EMV, cellular and more

Cyber security: OT infrastructure solutions for industry and IT communication fields

Back office and vehicle



Top management



Arnon Aharon C.E.O



Avi LieberC.E.O of Ludan Tech



Willem PronkCEO – LudanCom



Yuval AlonV.P. Engineering
& Marketing



Dmitri Militescu C.E.O of Ludan Engineering SRL & Regional Manager Of Eastern Europe



Yehuda Drucker C.E.O of Ludan Engineering Israel



Stability and Development Milestones

2002

Establishment of Ludan Environmental Technologies 2007

Acquisition of Symcotech Ticketing & Electronics 2014

Acquisition of

asset integrity

smart

solutions

Acquisition of additional engineering entities in Benelux 2020

Initiation of energy billing services

1997

1977

Establishment

bf Ludan

Establishment of Ludan Romania Engineering Ludan listed on T.A. Stock

Exchange

2012

Equity investment in Biogas Plnts

2015

Acquisition of Ardan Control Tech. Industrial IT 2019

Establishment of Ludan Cyber Security

2021

Expansion to overseas public transportation markets Establishment of Ludan ATF (Advanced

Technologies Facilities)

Acquisition of KH Engineering

2005



Group Structure

Corporate Structure







Subsidiaries in the engineering field

Ludan Engineering Israel
Ludan Engineering SRL Romania
Ludan Engineering Ltd. Bulgaria
KH group, The Netherlands, Belgium

>>> LUDANTECH



Ludan - Tech

Subsidiaries in the systems integration field

Ludan Software & Control Systems

Symcotech, Public Transportation

Ardan Control Tech

Ludan Cyber Security





Ludan Environmental Technologies Ltd.

Subsidiaries and SPCs in the environmental and energy fields

Ludan Environmental technologies Israel

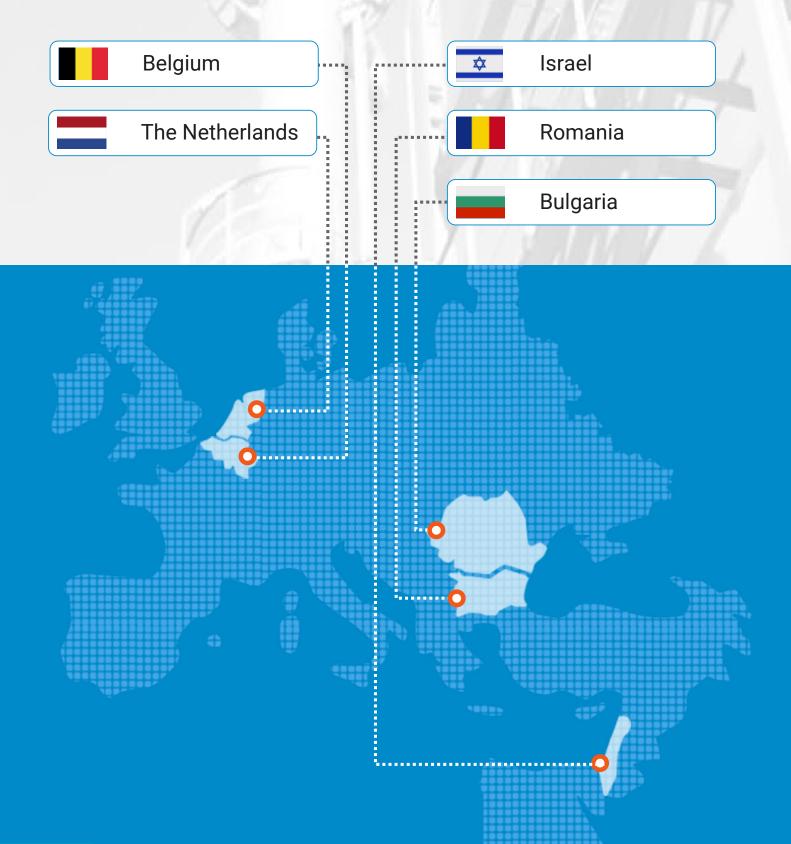
Eco Tech, Emissions measurements, Israel

Ludan Energy Overseas Israel Holland



Where to find us

Global Reach





Spectrum of Services & Clients Sectors

Engineering Sector

Over 600 active clients

Current Activity

- A significant player in the process industry
- · A widespread geographic presence

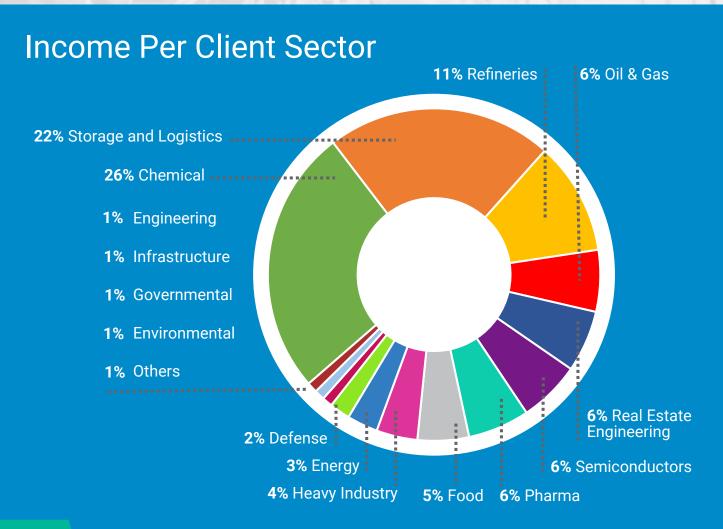
Establishing a Competitive Advantage

- Low Cost Center (LCC) operations
- EPC & Technology project implementation
- Activity center consolidation & overhead cost reduction

Services

Services are provided as engineering services in the EPCM or EPC framework, which, inter alia, include:

- Project management
- Prepatration and Control of budgets and schedules
- Permitting Authority Engineering
- Procurement and contracting
- Construction management and Supervision
- Validation (implementation of international standards, such as FDA/GMP)
- Commissioning



Tech Sector Over 550 active clients

Current Activity

- Public transportation
- Homeland Security
- Building management
- Testing equipment for the defense industries
- Software & Cyber security
- Industrial control systems implementation

Establishing a Competitive Advantage

- Product & software development for transportation market
- EMV & cellular payments
- Industry app. software portfolio expansion

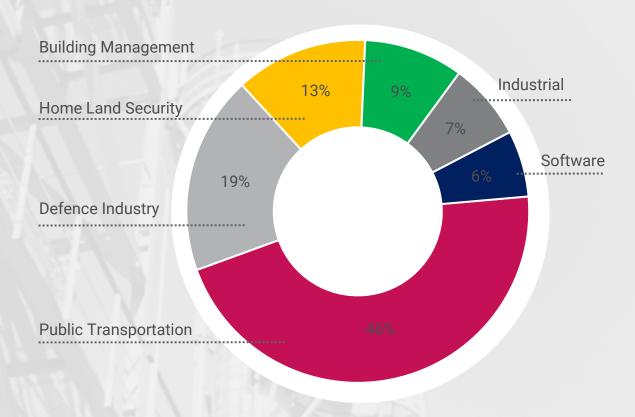
Activity Expansion

- Europe based public transportation
- Europebased cyber security
- Rapid growing maintenance portfolio

General

 External funding for realizing the above

Income Per Client Sector



Spectrum of Services & Clients Sectors

Environmental Technology Sector

Approx 100 active clients

Current Activity

- Environmental consultation for industries
 & infrastructures
- Pollutant measurements & solution implementation
- Rehabilitation project implementation

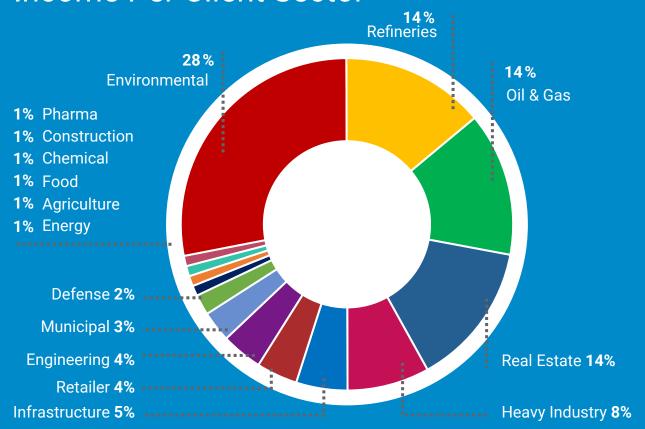
Activity Expansion

- Land rehabilitation
- EPC & technology projects
- WTE system initiation, implementation & operation

Establishing a Competitive Advantage

- · Relationships with know how providers
- Equipment & chemical commerce

Income Per Client Sector





Market Presence & Major Clients

Markets/Industries







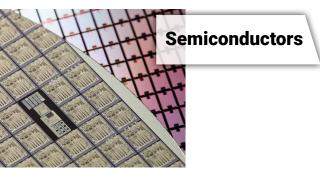














Major Clients

inovyn

























































































































Project name: construction of millhouse, refinery and utility systems Client (Confidancial)

Since early 2017 Ludan has provided EPCM services for client and its corn wet mill production plant located in Bulgaria. The project goal was the increasing plant capacity. Ludan Engineering Romania has been aside client throughout the project life cycle ensuring multidisciplinary design, technical assistance during project execution, project management professionals and certified support for permitting and authorization as per in force regulations.





East Jerusalem Public Transportation project

The project included supplying a smart card ticketing and AVLS (Automatic Vehicle Location System) in East Jerusalem seven bus operator's union.

Our new system includes supplying and installations of a back-office system and a full 300 vehicles solution. The AVLS system supports all location-based features:

- Next bus
- Electronic Signage
- · Stations announcement
- Driver's behavior
- · On-Line Alarm and monitoring

The systems support the world's most advanced public transportation features:

- Design and implement a full ticketing system
- Integrate our Fleet management system with the customer's environment
- Implement advanced location Big Data tools
- Installations of 300 vehicles in a challenging time-table







Zomet Power Plant, Kiryay Gat (Plugot Junction) 400 MW Power Plant

Project Description:

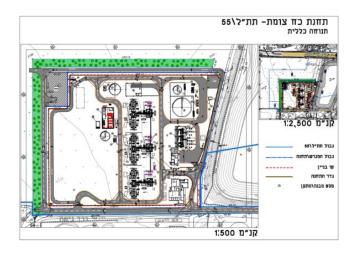
Design of new 400 MW. The power plant serves as a Peaker for the grid.

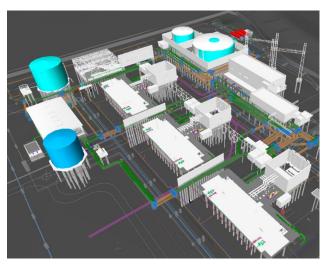
On the plant three are 6 Prat and Whitney gas turbines in open cycle configuration.

- Assistance with permitting.
- · Civil works including physical design and roads.
- Structural design
- Piping Design
- Approval of design by foreign designers (Stack, GT foundations, ...)
- Electrical: small power, lightning protection, communication, and lighting.
- UG infrastructure coordination.
- Natural Gas.









AQWISE, for ThyssenKrupp for MOL Polyolefines Plant Tiszaujvaros, Hungary Waste Water Treatment Plant

Project Description:

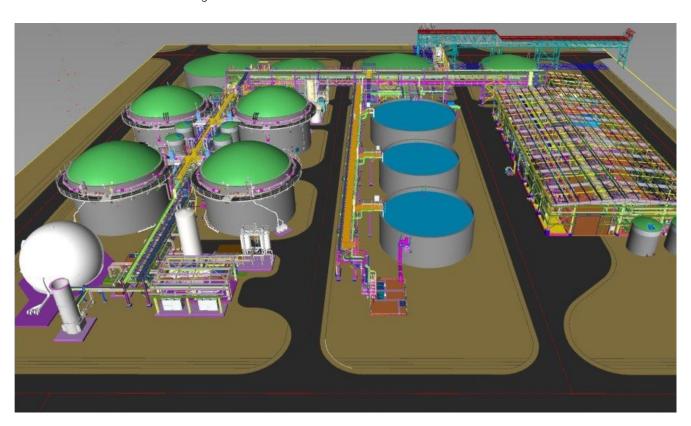
Design of a new waste water treatment plant for AQWISE Israel.

Multidisciplinary design based on AQWISE technology for the waste water treatment plant of the new Polyol complex being built for MOL Group in Tiszaujvaros, Hungary. Project started at 2018 and it is expected to start on 2021.

High level design based on ThyssenKrupp standards.
Complex 3D models coordination with Ludan Romania,
ThyssenKrupp Germany and India, WOLF Austria,
Telelettra Italy, and Steel Master Romania.



- Detailed piping and Layouts design
- Detailed Electrical Design
- Detailed Instrumentation and control Design
- Detailed steel structure Design



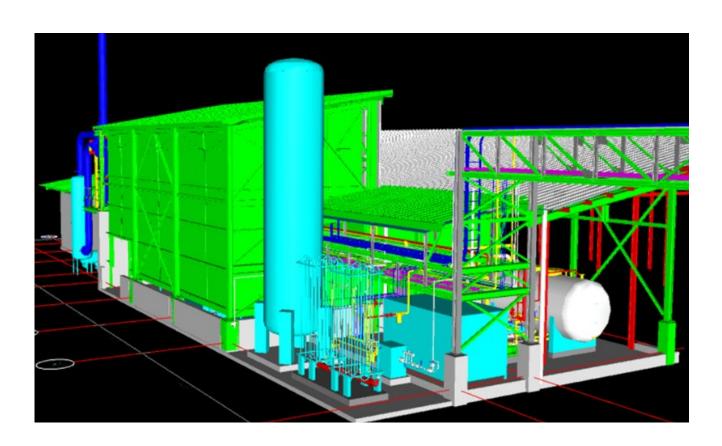
Oxygen and Argon Works Ltd. Nitrous Oxide Plant

Project Description:

New production plant for the manufacturing of Nitrous Oxide in Medical Grade - laughing gas (for dentists and Hospitals), and Ultra High Purity for semiconductor industry.

Production unit, purification unit and filling station to cylinders is supplied by LINDE company. Storage tanks are supplied by CHART company. The raw material Ammonium Nitrate is defined as explosive, the storage was designed according to the relevant regulations.

- · Overall Project Management
- Overall Project Design:
 - Process
 - Layout
 - Piping
 - Civil
 - Instrumentation & Control
 - Electrical
- Overall Construction Management



BI-Polar Chlorine Plant Confidancial Client

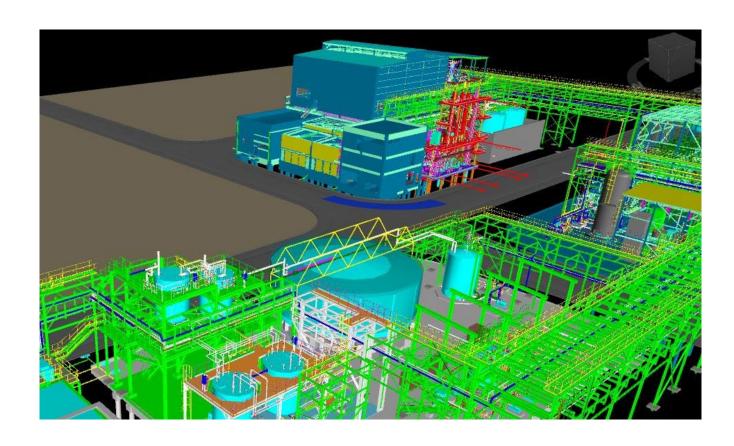
Project Description:

Design of new Chlorine Plant of 50 Kton/year.

By-products: caustic soda, hydrogen, HCL and hypochlorite solutions.

Bi-polar membrane electrolyze cell technology is supplied by thyssenkrupp (UHDENORA) company. Caustic soda is concentrated to 50%.

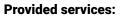
- Overall Project Management
- Process Detailed Design
- Plant Layouts
- Mechanical design
- Piping Design
- Civil Engineering
- I&C Design



Natural Gas Division Kiryat Gat – Eshel Hanasi high pressure NG pipeline Client: Israel Natural Gas Lines Ltd

Project Description:

The project includes laying of 32 km 36" high pressure natural gas line parallel to an existing 24" natural gas pipeline, construction of 3 new valve stations (Shikma, Shoval & Eshel Hanasi), 11 drills, including 9 Auger boring & 2 Micro tunneling, to enable the supply of natural gas to southern Israel, Gaza strip and Egypt at the required flow. This the first infrastructure project in Israel that is constructed according to the Envision rating system-An international system for introducing sustainability considerations into infrastructure projects.



- Project management
- Quality assurance
- Welding inspection and supervision
- Pipeline inspection and supervision
- Document control
- Mechanical work inspection and supervision
- · Cathodic protection inspection and supervision
- Civil works inspection and supervision
- Safety Supervision
- Environmental supervision and landscape restoration









28

CR-TEAM MAKES THE INDUSTRY RESILIENT TO CYBER ATTACKS

Only in recent years have asset owners become more aware that their companies can also be vulnerable to cyber threats. From ransomware to life-threatening process disruptions: anything can happen. Cyber Resilience Team helps the industry with a defence plan.

It almost went wrong: a cyber attack threatened a huge explosion in a chemical plant. The incident took place in Saudi Arabia about three years ago and was not made public until a year later. Notorious recent examples in the Netherlands are the digital attack on the Maersk transport company in the port of Rotterdam, the attack on Citrix systems, which made it impossible for many governments to work from home, and the attack on the University of Maastricht, which eventually paid tons of ransom money after a ransomware attack.

Safety Wans

In the industry, many asset owners feel safe because, according to them, the operating systems of the installations (OT) are disconnected from the internet and office automation (IT). Wanen is the right word here,' says Ewald Coenraad, 'because at many companies there is a link between the operational operating systems and the internet, sometimes unnoticed. Unfortunately, this leaves the gates open to malicious people'. Ewald works as Senior Consultant Cyber Security at Cyber Resilience Team, a sister company of KH Engineering. They work together with colleagues from our Israeli parent company Ludan, which also has a great deal of expertise in cyber security.

Apart From The Internet?

In order to get companies secure, they can call on Ewald and his colleagues for advice. It's been a very popular service lately,' says Ewald. And rightly so, because it's actually remarkable that asset owners invest so much in process security without thinking about cyber security. There's a little bit of history behind this, Ewald knows. At the time when electronic process control was introduced, the internet did not yet exist in its current form. What's more, these systems actually stood on their own, ran on UNIX and were only connected to the control room. But in the course of time, office automation, including Windows, made its entrance into the control room. As a result, process information - in the form of KPI dashboards, for example - was also made visible in the boardroom. More and more modern systems have also been built using off-the-shelf devices from the IT world, including Windows PCs. And the system supplier is also promoting the fact that it is convenient for him to be able to watch remotely in the event of malfunctions, which also creates a link to the internet. When I start my research at a customer, I find a connection to the internet in forty percent of the installations that was not yet known about'.

Weater Measures

To make the company resilient against a digital attack ("cyber resilience"), Cyber Resilience Team offers various solutions. We usually start with a "maturity check", in which we determine how cyber conscious and resilient the company actually is, explains Ewald. We also map out where the weak spots are and whether they can be prevented. And if not, what protective measures you can take. We can implement these with technical tools, such as equipment, tools, apps or an adaptation in the architecture, but there are also organisational and human aspects to it. That's why we can also train management and staff in safety awareness. After all, a serious hack does not happen in a matter of seconds, as in the film. It often takes months of preparation. During such a period,

it is also mapped out who employees are and what roles they have. You also have to be aware of that'.

Balance

In their risk inventory and advice for measures, the Cyber Resilience Team employees always try to strike a balance between being well protected, workability and an affordable price. You may want to disconnect and shut everything down, but that's often far too expensive,' says Ewald. We can give sound advice on the actions the company can take to become a lot safer without it becoming unaffordable. This can significantly reduce the risk of a cyber attack'.

Perfect Partner

As a sister company of KH Engineering, Cyber Resilience Team is the perfect partner for this type of work. From our expertise, we know how an installation is put together and we know the operational technology behind it. We also know how to work in the chemical process industry, which is of course very different from an office environment where IT is renewed every three years', says Ewald. In a factory, the installation and the controls are usually set up for about twenty years. What's more, the factory usually has to continue to produce 24/7 while in an office it's best to shut things down at night. The combination of in-depth process knowledge and cyber

Cooperation with AEB Amsterdam in the field of renewable energy 'With kh engineering we have extra expertise and project experience at the table'

Every day some 600 trucks with waste from the Amsterdam metropolitan region and far beyond report to the gate of the Afval Energie Bedrijf (AEB). Every year, the company processes almost one and a half million tonnes of waste. Valuable materials are separated and with the residual flow AEB generates sustainable energy; about 900 kWh electricity and 91 kWh heat per thousand kilos of waste. KH Engineering also plays a role in this. I've only been working at AEB for a year and a half,' says team leader Projects Nanja van der Lelie. But I already saw the name KH Engineering on documents from 1992 in our archives. So they have been known on our site for decades. We use the services of KH Engineering mainly for the many modifications we carry out; these require a lot of flexible engineering capacity'.

Possible consequences

Although these modifications or mocs (management of change) are minor adaptations to process technological and mechanical installations, they are modifications that need to be well thought out and elaborated beforehand. This is necessary in order to assess the risks and consequences of the modification. KH Engineering is particularly involved in the design and engineering part.

Enthousiasm

One of the advantages of the KH team is that we can switch quickly. They are just around the corner, so they can be on the ground in a few minutes to assess the situation on the ground. What strikes me most about the KH team is their enthusiasm. That gives me energy. They actively seek cooperation with an attitude of "come on". Furthermore, they work very carefully and meticulously. This is particularly useful when checking the PI&Ds, important tools for AEB specialists, who then implement KH Engineering's comments themselves. I get the feedback more and more often: can't KH do that for us more often? It is clear now. KH has now become an important part of our flexible shell. If we have no internal capacity, our people are increasingly suggesting that KH Engineering should be called in'.

Spin-off

Working with a party that is new to me is always a matter of probing,' says Van der Lelie. At first I sometimes thought they were too careful when they made an extensive offer and a plan of approach. We like action and I prefer that they spend those hours already busy'. Van der Lelie can see that more and more spin-off projects are being added for KH Engineering. They are more often involved in larger and more complex long-term projects. And they are involved in a large project for a water treatment plant. With KH Engineering, we have extra expertise and project experience at the table'.

Future

The city council of Amsterdam has decided to sell all shares of the AEB. Despite the fact that we are for sale, this has no influence on the cooperation in the future, thinks Van der Lelie. We are sticking to the development plans and a new owner must also continue to invest in improving this location.

Smart solutions for the energy transition

The targets for the Netherlands are clear: in 2030 we must have 49% less CO2 emissions compared to the base year 1990, and in 2050 we must have 95%. This is a major challenge for the energy-intensive process industry, as well as a butt to KH Engineering.

KH Engineering has been working on the energy transition for some time now,' says COO Paul Boeren. It started years ago, for example with process intensification and the design of the first generation of biodiesel and biogas installations. About two years ago, the transition gained momentum and the focus shifted to CO2 reduction through, for example, the use of new energy carriers and new technology. Such as electrification of processes that were previously natural gas-fired or electrolysis for the production of hydrogen and methanol. But we are also focusing on work for the future energy infrastructure: just think about distributing all electricity from wind-to-sea and wind-to-land in the right way'.

Market segment

From the Mission and Vision of KH Engineering, the focus market "New Energy & Infrastructure" has recently been defined. KH Engineering mainly focuses on projects that are necessary for the production and storage of biofuels, infrastructure for sustainable electricity, process installations for the production of green basic chemicals and bioplastics and industrial heat and power generation.

Design and implementation

According to Paul, the strength of KH Engineering lies primarily in the combination of the shared knowledge and expertise to be able to take care of a project for the client from the earliest design stage up to and including commissioning. We have in-depth knowledge of the ideal design of the process, as well as all the multidisciplinary disciplines required to carry out the project down to the last detail. That, in addition to the task that lies ahead for the Belgian and Dutch industry, makes me expect that we, as KH Engineering, will have our hands full with that in the coming decades'.

Portfolio

In recent years, KH Engineering has already built up an impressive portfolio in energy transition projects. Paul: 'Think of CO2 capture or cogeneration from industry to district heating. In addition, we took care of the recovery of raw materials and energy from existing processes. And we are currently working on converting a terminal with fossil products into biofuels. Wherever possible, we are looking beyond the customer's location; for example, this terminal for biofuel sustainability and cost savings can be achieved by sourcing residual heat from a nearby power station.

Intrinsic drive

Paul believes that such a solution fits the intrinsic drive that is present at KH Engineering. We also work on sustainability with our own company. Together with our parent company Ludan, we built biogas plants, we are working with Twinnovate on a demonstration plant that uses various organic residual flows and waste as much as possible and we are switching to LED lighting in our buildings. But fair is fair: our greatest contribution to sustainability and therefore the energy transition lies in inventing and implementing smart solutions for our clients.

Upgraded control room and new control system for Hexion plant

Introduction

HES International B.V. in Rotterdam is a private holding company of leading independent service providers in ports throughout Europe. The company has two main cornerstones: dry and wet bulk. The development plan for the Hartelstrook location in Rotterdam offers space for the development of a bulk terminal. Within HES International B.V. there is a need for further development in the field of wet bulk. The Hartelstrook location lends itself perfectly to a new terminal due to its perfect nautical outcrop and a direct connection to the open sea for faster handling of logistics activities.

Situation

The Port of Rotterdam Authority's vision is to make the best possible use of the available space within the existing port area. HES International B.V.'s business case concerns the development of a new tank terminal for the storage and transshipment of oil products and biofuels. The location of the tank terminal is planned on the Hartelstrook, which is located on the south side of the Mississippi dock on Maasvlakte 1.

BP, the internationally operating energy company and owner of a large refinery in Rotterdam, is committed to the project, which includes plans for pipeline connections between the refinery and the terminal. Fifty-two tanks with a storage capacity of approximately 1.3 million m3 are to be built on the 27-hectare site.

Solution

HES approached KH Engineering in 2017 for the value engineering of the existing design. In value engineering, various functionalities are tested in the design and the project objectives, including budget and planning, are assessed. Together with the client, the existing estimate was revised and approved after the value engineering. In March 2018, the value engineering was delivered including a report with various findings and recommendations.

After completion of the value engineering, the order was given for the basic engineering. This means that we make a complete technical design for the client in which all starting points are established. This technical design is suitable to start the detailed engineering and the construction (execution). The DCMR environmental permit was taken into account in the design. In addition, the budget has been adjusted, which further increases the accuracy of the budget. The basic engineering was completed in December 2018.

In 2019, KH Engineering started with the detailed engineering, in order to be able to tender the project in the market for civil and mechanical engineering works in particular.

Client benefits

With KH Engineering as a local company, the client has a service provider that can continue to support all project phases and is able to move with the business case and the client's strategy on tendering in the international market.

Project Manager: Ron de Zeeuw



2020- Financial Data

Consolodated Balance Sheet (in '1.000EUR)	<u>2018</u>	<u>2019</u>	<u>2020</u>
Current assets	68,333	63,311	57,738
Investment in long-term receivables	3,312	24,238	20,114
Fixed assets	4,388	3,862	3,563
Intangible assets after amortization	6,013	<u>6,687</u>	<u>7,252</u>
Total assets	82,046	98,098	88,668
Current liabilities	57,685	59,185	52,402
Long-term liabilities	10,379	22,730	18,292
Minority interest	13,628	15,840	17,529
Oh and a laborat a matter			
Shareholders' equity	<u>354</u>	<u>343</u>	<u>444</u>
Total liabilities and shareholders' equity	354 82,046	<u>98,098</u>	<u>88,668</u>
Total liabilities and shareholders' equity	<u>82,046</u>	98,098	88,668
Total liabilities and shareholders' equity Consolodated Results (in '1.000 EUR)	<u>82,046</u> <u>2018</u>	<u>98,098</u> <u>2019</u>	<u>88,668</u> <u>2020</u>
Total liabilities and shareholders' equity Consolodated Results (in '1.000 EUR) Sales	82,0462018130,834	98,098 2019 141,500	2020 135,534
Total liabilities and shareholders' equity Consolodated Results (in '1.000 EUR) Sales Gross Profit	82,046 2018 130,834 12,684	98,098 2019 141,500 13,347	2020 135,534 14,953
Total liabilities and shareholders' equity Consolodated Results (in '1.000 EUR) Sales Gross Profit Operating earnings	82,046 2018 130,834 12,684 3,368	98,098 2019 141,500 13,347 6,234	2020 135,534 14,953 7,726



Group Contacts

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