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ANNUAL REPORT





Offshore, marine, civil, environment and project development. Jan De Nul Group is a leading expert in five main activities.

Jan De Nul Group shapes both water and land. We enable the production of offshore energy and maintain the depth of waterways. We build new ports and create extra land. We realise complex infrastructure works and erect any type of building. We remediate and redevelop polluted sites. Thanks to the fruitful interaction within our company, we can offer overall solutions that combine one, several or even all these activities.





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PREFACE

2020 was a leap year. Not only were there 366 days but thanks to COVID-19, major disruption affected our normal output. Coronavirus spread around the world like wildfire and rudely reminded us that we are not in control of everything. The world was turned upside down: lockdown measures were announced, homework imposed and travel restrictions introduced. In short, the COVID-19 pandemic presented us with numerous challenges. Both on a personal and a business level.

This crisis has once again proved that our company is flexible. We set up a COVID-19 crisis team in no time. We focused on two important tasks: ensuring the safety and health of our people and assuring the continuity of projects for our clients.

We also elaborated our own testing and travel procedures. This has not prevented us from asking a lot from the JDNpeople. Colleagues were forced to spend long periods of time abroad; travel times became longer because of the many procedures, and quarantine measures sometimes weighed very heavily. We are very grateful for all the flexibility and loyalty shown!

FULL COMMITMENT TO SUSTAINABILITY

Every crisis creates opportunities. The past year has encouraged us to focus even more on sustainability. After all, the energy transition is unstoppable. Governments and local authorities are taking all sorts of initiatives to reduce the footprint of projects. And we aim to help them with that!

In 2019, our first three ULEv hopper dredgers entered into service, followed by the hopper dredger Sanderus and the cable installation vessel Connector in 2020. Our unique ULEv vessels reduce the emission of fine dust, nitrogen oxides and other pollutants to virtually zero. And that is enthusiastically received by the market.

Consequently, we continue to expand and modernise our fleet in a future-proof, and hence, sustainable manner. We are proud that the hopper dredgers Ortelius and Galileo Galilei and the cutter suction dredger Willem van Rubroeck will become operational in the course of 2021. As from 2022, the two offshore ULEv installation vessels, currently

> From left to right: Pieter Jan De Nul, Dirk De Nul, Julie De Nul, Ir. Jan Pieter De Nul

under construction, will also be deployed on projects. These investments underline Jan De Nul's continued commitment to a sustainable future.

PEOPLE ARE OUR TRUE CAPITAL

Besides equipment, we invest heavily in our people. Our own JDN Academy stimulates employees to keep on learning: from each other and with each other.

In the meantime, we have started to expand our offices in Aalst. The JDN Academy will have a large Education Centre with new simulators at its disposal. In this Centre we can train and prepare JDN-employees more efficiently for the ambitious projects of our clients.



"This crisis has once again proved that our company is flexible."

Board of Directors Jan De Nul Group

CODE ZERO

Jan De Nul also continues to develop as an organisation, resolutely opting for sustainability and setting itself ever more extreme goals. The name of our new company programme that unites this, is Code Zero. In our CSR report 2019-20, we zoom in on the sustainable achievements of the past two years.

Code Zero is a company-wide programme. Professionals from all our disciplines, with different motives and insights, intensively work together in the programme, aiming at the same unique goal: Zero Breaches, Zero Waste, Zero Emissions and Zero Accidents. Code Zero gives Jan De Nul a boost to face the great challenges ahead.

CONFIDENCE IN THE FUTURE

After the turbulent leap year of 2020, we have a positive view on the coming years. 2021 will be a year of transition. The end of the pandemic is in sight, thanks to global vaccination campaigns.

Jan De Nul has continued to invest with confidence in (sustainable) equipment, our people and the organisation. Add to that the economic growth in the second half of 2021, which will have a positive effect on our activities. This will enable us to further expand our 3.2 billion euro order book. But even more important: to carry out the most challenging projects together with our clients.



SUSTAINABLE The corona pandemic has forced us to stand still. Sometimes literally, trapped by lockdowns

The corona pandemic has forced us to stand still. Sometimes literally, trapped by lockdowns and quarantines. But also figuratively: to reflect on how we want to move forward in this world, in our market and especially in our company.

In the coming years, the market demand will be driven by climate change, the increase in the world population and the accompanying growth in world trade and energy demand. It requires an appropriate response from all our divisions.

33 PROJECTS IN AMERICA Offshore services and dredging

"We opt for a sustainable company management and the sustainable execution of projects. For all divisions in our company." Board of Directors Jan De Nul Group



Our **dredging division** is fully engaged in working with ULEv vessels. In combination with biofuel, these vessels reduce the emission of fine dust, nitrogen oxides and CO_2 to a minimum. The Belgian, German and Argentinian governments are already impressed.

In 2020, our **offshore division** kept on installing wind turbines in Europe, a known and trusted market. The division expanded both eastwards and westwards: wind farms have been realised in both the United States of America and Taiwan. Therefore, Jan De Nul is proud to take the lead in the global energy transition. Also this year, the **civil and environmental divisions** are focusing on future-proof and efficient energy management for all our construction works. In addition, making the sometimes heavily polluted areas habitable for people and nature has become a real specialisation.

Jan De Nul has opted for sustainability: a sustainable company management and the sustainable execution of projects. And this for all divisions of the company.

172 PROJECTS IN EUROPE 44 Offshore services and dredging 69 Civil construction 45 Environmental remediation

6,267

colleagues in 20<u>20</u>

47

14 PROJECTS IN ASIA Offshore services and dredging

11 PROJECTS IN AFRICA Offshore services and dredging

> **1 PROJECT IN OCEANIA** Offshore services and dredging

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FINANCIAL REPORT 2020



CSR REPORT 2019-2020







231 projects

in 2020

69 Civil construction 45 Environmental remediation 14 Project development 0-

103 Offshore services and dredging

2020 WAS ALL ABOUTS

ENERGY p. 12

An energy-conscious building is a prerequisite for a sustainable society. From design to realisation, Jan De Nul opts for a sustainable approach in harmony with all resources nature makes available to us: earth, wind, light and water. An almost poetic interaction of construction, nature and environment with all of us as an enthusiastic audience. Never change a winning team ... and so we also take the lead within the offshore wind industry. The global energy transition is well aligned with Jan De Nul's ambitions, as we have been strong believers in renewable energy from the very beginning. Columbus discovered America, the United States discovered Jan De Nul as their first international marine contractor for offshore wind projects.

PERSEVERANCE p. 22

How do you reconcile economy and ecology when deepening a port area? With a well-considered approach, innovative technology, a good dose of perseverance and a seasoned dredging contractor like Jan De Nul. However, we don't give up on a site that has been heavily polluted for decades either. Instead, we turn it into a valuable nature reserve. COVID-19 presented us with unprecedented challenges. For example, the severe restrictions on international passenger traffic meant that companies with employees all over the world had to be creative and, above all, show perseverance! Jan De Nul did this superbly. And after every example of dedicated teamwork, we let out a cry of joy: 'Yes, we did it!'

FUTURE-PROOF p. 3

Jan De Nul sets course for 2050. The Code Zero sustainability programme guides not only our company but also our individual employees towards a sustainable world. It is in our DNA and we propagate it with the same enthusiasm among our partners, clients and local communities. We contribute to the construction of healthcare infrastructure, which has been put under severe pressure this year. A five-star hospital putting the patient first? Not a problem. Connecting an island to the mainland electricity grid? Keep it coming. A remote electric control centre to manage a wind farm? Your wish is our command. The future is ours.

Energy-conscious building is a prerequisite for a sustainable society. From design to realisation, Jan De Nul opts for a sustainable approach in harmony with all resources nature makes available to us: wind, light and water. An almost poetic interaction of construction, nature and environment together with us all as an enthusiastic audience.

ENERGY

FROM EAST TO WEST: PIONEERS IN OFFSHORE WIND ENERGY

The offshore wind industry is on the rise. A development that Jan De Nul is happy to contribute to. In addition to our pioneering work in Taiwan, we were also the first international marine contractor to install an offshore wind project in federal waters in the United States. And with success! "We consciously take the lead in the global energy transition", says Project Manager Bert Reynvoet. "With our extensive experience and expertise, we can make a difference in many regions."

How do you see the offshore wind industry evolving?

Bert Reynvoet, Project Manager: "More and more countries are following Europe's example. Here, we already have over 20 years of experience with this type of infrastructure. For example, the first offshore wind project in Denmark consisted of seven wind turbines with a capacity of 1.5 MW each. We have come a long way since then: the turbines are becoming increasingly big and powerful. More importantly, this evolution will enable the energy transition from fossil to renewable energy, which ties in perfectly with the European Union's ambitions to become climate neutral by 2050."

"Other regions and countries, such as the United States, are only just beginning this journey. For instance, the recent Coastal Virginia Offshore Wind project, which was realised by Jan De Nul, is the first US offshore wind farm in federal waters. In Taiwan, by the way, we are carrying out a similar project. We can therefore rightly say that we play a prominent part in the internationalisation of offshore wind energy. These pioneering projects also perfectly illustrate our mindset: we never say no to an interesting challenge."



Bert Reynvoet, Project Manager

What were the biggest challenges for the project in Virginia?

Bert: "A new market, a challenging location and starting completely from scratch: the project preparations took almost two years. Logistically, it was a huge challenge to get the equipment and people on site safely and on time. Crossing the Atlantic Ocean from Europe to the United States in April is not easy. To prepare for that long sea voyage, we made specific calculations for the Vole au vent – our vessel – and drew up a tight route plan. Together with our QHSSE department, we closely monitored the weather and regularly adjusted the route. Safety always comes first."

"At the same time, COVID-19 crossed our path. Many countries closed their borders and measures changed almost on a daily basis. As a result, our preparations were largely ruined. Still, we were determined to keep our promises to the client. In the end, we succeeded in doing so by taking the entire installation team from Europe with us on board the Vole au vent. Thus, a crane operator, among many others, sailed across the Atlantic for seventeen days. An exceptional situation, but the client really appreciated that we went the extra mile."

Does this project herald a new era for the United States?

Bert: "It certainly does. The United States aims to build the equivalent of Europe's offshore wind energy infrastructure within the next 10 years. An ambitious target, but one to which we are firmly committed. The construction of our floating crane vessel Les Alizés confirms our ambitions for the American market. Besides, thanks to the project in Virginia, we have the advantage of experience on our side." "It was a very instructive period, both for us and the local authorities. Because the United States is only taking its first steps in the field of offshore wind energy, the support services, for example, are not yet running optimally. For instance, the local quay was not equipped to accommodate our equipment, so we immediately lifted all parts of the transport vessel onto the Vole au vent.

In preparation, we made extensive simulations of how the vessel behaves in certain weather conditions. In addition, the American approaches are different from those in Europe, not self-evident, but no problem for us."

The jack-up installation vessel Vole au vent was used for the transport and installation of both wind turbines.





Virginia:

Here, Jan De Nul built the first 12 MW offshore wind farm in US federal waters. The United States aims to build the equivalent of Europe's offshore energy production within the next 10 years.

What innovative techniques did you apply during this project?

Bert: "We looked at how we could automate our operations even more. For instance, we used to have to measure various points to check if the monopile was straight. As a result, we still needed a final calculation, which – again – took extra time. Now, we used different cameras from various angles, which enabled us to determine the inclination very accurately. We applied this technique here for the first time and could thus provide our client with a more efficient solution. In short, this project was a unique experience on several levels."

SCOPE OF THE VIRGINIA PROJECT

Jan De Nul was responsible for the transport of both the foundations and the turbines. The jack-up installation vessel Vole au vent was used for the installation works. The multipurpose vessel Adhémar de Saint-Venant took on the entire scour protection, using rocks from a nearby quarry. For this pilot project, Jan De Nul installed two wind turbines.

"The client really appreciated that we went the extra mile."

Bert Reynvoet, Project Manager



The multipurpose vessel Adhémar de Saint-Venant took on the entire underwater protection of the foundations using rocks.



WORKING MORE SAFELY AND EFFICIENTLY WITH HIGH-TECH REFLEX CAMERAS

Jan De Nul used pile foundations for the Coastal Virginia Offshore Wind project. Their installation is executed in three steps:

- 1 A mechanical gripper places the monopile foundation also referred to as Monopile or MP – in the exact position, a hammer drives the MP into the ground.
- 2 Specially trained surveyors check the condition of the MP flange.
- 3 Upon a positive evaluation, the MP is permanently installed.

To make this process more efficient and safer, the second step in particular offers options as it requires an additional lifting manoeuvre and physical movements of people. That is why the experts from our survey department put their heads together. This exercise led to an innovative method that was put to the test for the first time in Virginia: measuring with high-tech reflex cameras.



The surveyor takes photographs of the flange to check its condition.

Guided by the gripper, the Vole au vent hammers the foundation pipe into the seabed.



SOFTWARE SUCCESSFULLY INTERPRETS THE PHOTOS

What exactly does this innovative method entail? Before the installation, the flange of each foundation pile receives about a hundred self-adhesive or magnetic stickers. The surveyors take photos of these stickers with a high-tech reflex camera, after which the photos are sent automatically to a software programme that interprets the images. Once the foundation pile is in the ground, new photos are taken from the gripper platform. This allows the accurate measurement of the (new) 3D positions of the many targets on the flange and is able to check whether everything is going according to plan. The practical test in Virginia has already produced promising results. The accuracy of the measurements was sufficient. Further development should now fully optimise the technique. One thing is certain: for the next offshore projects, we will be able to install the pile foundations more efficiently whilst at the same time limiting the safety risks of a traditional installation.

PROVINCIAL GOVERNMENT BUILDING NAMUR: SUSTAINABILITY AT ITS BEST

Every building needs a builder as its father and a designer as its mother. That is why Jan De Nul, together with engineer and architect Dr Philippe Samyn M Sc. have been working on challenging projects for 20 years, with energy always at the forefront. The provincial government building in Namur is no exception. "Together, we have put up a revolutionary building that sets an example in terms of sustainability", says Samyn. "The natural stack effect makes it also COVID-proof."



The headquarters of the European Council 'Résidence Palace' in Brussels, the office buildings of Jan De Nul and soon the revalorisation of Place Matuvu in Knokke: Philippe Samyn and Jan De Nul have already built quite a track record together. In 2020, another gem was added: the provincial government building in Namur. In this innovative building, the Province of Namur brings together almost all its departments. The power supply is generated by photovoltaic cells and a geothermal heat pump.

"Together, we have put up a revolutionary building that sets an example in terms of sustainability", says Samyn. "The stack effect ensures natural ventilation. There is no need for automatic ventilation, the whole building is fully COVID-proof. In the Iranian desert, they have been using this technique for thousands of years. If it works there, it will most definitely work here as well."

ENERGY-EFFICIENT BUILDINGS

Efficient energy management is a constant feature in the projects of Samyn and Jan De Nul. In the contractor, the designer finds the ideal partner to realise his vision of sustainability. "The monetary unit in the world, in my opinion, is not the dollar, the yen or the euro but the joule", says Dr Philippe Samyn M Sc. "No matter how energy-efficient your building is, first you have to build it as cost-effectively as possible. And it should be useful and habitable for society for as long as possible. Jan De Nul goes along with that philosophy."

As for the provincial government building in Namur, Samyn looks back on a perfect collaboration: "I always enter into discussions with my colleagues at Jan De Nul with complete confidence. That creates room for reflection. Jan De Nul is always looking for improvements and solutions. At Place Matuvu in Knokke, for example, I wanted to incorporate coins in black concrete without CO₂. Impossible according to the concrete industry. And yet, thanks to its open mind and comprehensive network of contacts, Jan De Nul made it happen." "Future-proof and efficient energy management is the starting point of every construction project, both for Jan De Nul and for me."

Dr. Philippe Samyn M. Sc.

REALISING DREAMS

From the first meeting with Jan De Nul, Samyn felt the right energy. "The ships reminded me of my father, who was an engineer. Jan De Nul's love of art took me back to my mother, an artist. I immediately felt at home with the De Nul family and the way they run their business. Their employees are given the trust and the opportunity to work things

out for themselves. Jan De Nul has the expertise and experience to realise what I dream of."

The stack effect of the chimneys on the roof provides for natural ventilation, a technique that has been around for thousands of years and is completely COVID-proof.



AESTHETICS, INNOVATION AND ENERGY

The three ingredients of the successful cooperation between Jan De Nul and Philippe Samyn and Partners. For years, both parties have been working together on high-profile reference projects in Belgium, from the new headquarters for the European Council in Brussels to the new offices for the province of Namur in Wallonia and the new hotspot Place Matuvu in Knokke-Heist.



During the construction and renovation of Résidence Palace (2011-2019), the headquarters of the European Council in Brussels, energy and sustainability were central to the collaboration between Samyn and Partners and Jan De Nul.

The energy efficiency bar for this project for the highest European authorities was set to an extremely high standard of technical skill. The project is a textbook example of efficient and environmentally friendly energy technologies: photovoltaic panels on the roof covering an area of 1,988 m², rainwater recovery for the sanitary facilities and energy-efficient technical equipment controlling the lighting, humidity and temperature in the building. Heat exchangers maximise heat recovery and use this energy to heat and cool the building. Radiant ceilings and underfloor heating provide warmth on cold days whilst chilled ceilings cool the rooms in summer.

A future-oriented cooperation and vision that generates inspiration for new energy-efficient projects.





The province of Namur brings together all its administrative teams in the new provincial government building on the banks of the Sambre in the outskirts of the city of Namur.

A symbiosis of man and nature is evident in the design, which is built like a large village around eight rectangular patios. The covering of the patios with opening conservatories ensures a constant supply of fresh air throughout the building. The outside air is not only of decent quality, but also much more hygienic than mechanically distributed 'fresh' air. In cold weather, static air vents at the top of the windows alongside the patios provide ventilation via convectors in the floor, whilst in summer, the granite floors are cooled free of charge. The whole is covered by a photovoltaic sunshade, while white facades maximise the incidence of natural light.

The designer makes grateful use of nature to build in an energy-efficient and sustainable way, with only a minimum ecological footprint. Man and nature are united in this project, reflecting an invitation to dialogue and mutual respect.



The roaring sea, the screeching of seagulls, a strong north-westerly wind... The coast makes you dream. Everything is bubbling with energy. That is exactly the feeling that this project wants to create with the redesigning of the Albert Square, once the beating heart of the seaside town of Knokke-Heist.

Jan De Nul's project developer PSR and Goethals Promotor are breathing new life into the square with the realisation of this design by Samyn and Partners, generating huge aesthetic and economic added value for the surrounding area. The central, dome-shaped pavilion is an ode to light, made of alternating reflective and non-reflective glass. The feeling of infinity and freedom is reinforced by the water mirror all around the pavilion. Natural ventilation is also important in this project: the indoor temperature quickly becomes warmer in the higher areas of the pavilion, and it also permits the opening of the four doors of the main axes of the ground floor to ventilate the room. The water around the dome provides additional fresh air. Underneath the square is an underground car park with 150 private parking spaces, an injection of oxygen for a pressing parking problem in the neighbourhood.

Place Matuvu: the aesthetic hotspot of the future, coloured by a range of activities, for a very diverse audience. A perfect picture, with the roaring sea in the background!

2020 ANNUAL REPORT

PERSEVERANCE

FETAL

COVID-19 presented us with unprecedented challenges. For example, the severe restrictions on international passenger traffic meant that companies with employees all over the world had to be creative and, above all, show perseverancel Jan De Nul did this superbly. And after every example of dedicated teamwork, we let out a cry of joy: 'Yes, we did it!'

FROM POLICE CONVOYS TO NEGOTIATED SEATS ON GOVERNMENT PLANES

The outbreak of COVID-19 in the early 2020s brought international passenger traffic to a standstill for a long time. Local corona peaks would also continue to throw a spanner in the works for the rest of the year. So what do you do as a group with just over 200 projects in all corners of the world? "Take immediate action", says Katleen De Geyter, HR Manager at Jan De Nul. Together with colleague and prevention advisor Tiny Aerts, she used creative solutions to ensure that all crew changes could take place safely. A glimpse behind the scenes.



police escort.

In 2020, the world went into lockdown and many crew members got stuck on board.



What did you think when it turned out that COVID-19 was not a false alarm?

Katleen De Geyter, HR Manager: "The virus went from a local to a regional and finally a global problem at lightning speed. A bolt from the blue, so to speak. Everyone was taken by surprise. I have been with Jan De Nul for more than 20 years and this pandemic is undoubtedly the biggest challenge we have faced so far. But we did not bow down under the pressure."

Tiny Aerts, QHSSE Advisor: "The two main priorities were immediately clear. Keeping the virus out of our vessels and construction sites, and getting everyone to work or to their families on time. The latter in particular generated many intense and also moving moments."

How did you manage to get those crew changes done?

Katleen: "With a lot of creativity, perseverance and cooperation. For example, we set up an internal task force to look at escape routes for all our projects. Chartering planes, deploying long-distance buses, approaching ministries and sending out corona kits: it was all part of our new job description. This sometimes resulted in spectacular scenes. The first crew change in Uruguay, for instance, took place under an impressive police escort."

What was the biggest challenge?

Tiny: "The continuously changing national guidelines. What worked one time, no longer worked the next. And last-minute changes were the rule rather than the exception. We worked together with our local expatriates and business development managers and often had to run a race against time to get everything done. But we left no stone unturned to get the job done."

Katleen: "Indeed. For example, at one point we even contacted the Vice President of Ghana to ask for permission to land our charter on its territory or we knocked on the doors of neighbouring countries such as the Netherlands and France to put our people on their government aircraft – even though they were not citizens of those countries."

Which story won't you forget any time soon?

Tiny: "People you get home just in time for a birth, wedding or funeral, that's something you do not forget easily. We had, for instance, a Belgian colleague who, only a few days after his return, welcomed his youngest child in the maternity ward."

Katleen: "What I remember most of all is the team spirit. No complaining about yet another obstacle, but everyone acting decisively and pulling together. Nobody would be at rest until our people were actually on board or on the plane. It gives you a great deal of satisfaction when, in the evening, you receive a message or a photograph from colleagues on the other side of the planet saying 'We made it!'. It has brought us closer together as a group."

Katleen De Geyter, HR Manager



about corona? That we have the right people to bring even nearly impossible crew changes to a successful conclusion."

Katleen De Geyter, HR Manager



JUST IN TIME FOR CHARLES' BIRTH

When the impact of the coronavirus became clear, borders were closed one after the other. The result: employees threatened to become stranded en masse. One of them was Dennis De Groote, marine engineering officer on the cutter suction dredger Niccoló Machiavelli.

Dennis: "Normally, I would return from Vietnam on 10 March. But just that week we were in quarantine with the whole crew because of a high-risk contact of one our colleagues. The new departure date became 25 March."

In the end, Jan De Nul arranged for a seat on one of the last flights to Europe, just before the country closed its borders to all air traffic. Dennis: "For twelve hours, I saw every flight being cancelled. Only four flights were spared, including mine. I left at 6 am and at noon the Vietnamese border was closed. A close call indeed! But what matters is that on 3 April, when my son Charles was born, I was there!"

Dennis with his wife Nele and his sons Georges and Charles.

JAN DE NUL Adds lustre to top Regional port

Port of Fujairah in the Arab Emirate with the same name has been one of the world's most important oil storage centres for years. The port is also the setting for the largest ship bunker hub in the Middle East. And, to top it all off, the services that they provide are also widely praised. But with the Dibba Bulk Handling Terminal Project, Fujairah aims to raise its profile even further. The expansion of the port infrastructure aims at optimal capacity and efficiency. Right up Jan De Nul's street, even in difficult times.

UNITED ARAB EMIRATES: FAMILIAR TERRITORY

From the largest palm island in Dubai and the new port of Duqm in Oman to the port expansion project in Ras Laffan in Qatar, Jan De Nul already has an impressive track record of Arab prestige projects.

Stefan Moens, Area Manager Middle East



The aim of the Port of Fujairah was clear. As the only multipurpose port on the eastern coastline of the United Arab Emirates, it wanted to increase its bulk handling capacity while optimising operational efficiency.

e gutter suction dredger Niccoló Machiavelli excavates the rbody basing the Dibba Bulk Handling Terminal.



Fujairah:

For many years, Port of Fujairah has been an important oil storage centre. With the expansion in Dibba, the port aims to raise its profile even further. Port of Fujairah aims to increase its bulk handling capacity and optimise operational efficiency.

"We build on many years of experience in this region. The confidence we are receiving from Fujairah for this project confirms that our previous port expansion projects have been well received." Stefan Moens, Area Manager Middle East

DIBBA, FROM FISHING PORT TO MARITIME TRADE HUB

Until recently, the majority of people in Dibba town led a quiet fisherman's life. But because of its strategic location – just a stone's throw from limestone quarries and the Strait of Hormuz – the city is now being given a different purpose. The new bulk transshipment terminal of Port of Fujairah, located a few kilometres south, will drastically change life in Dibba.

However, the local population is not overlooked in this project. Jan De Nul, which is carrying out the port expansion together with Six Construct, brought the dredged material – some 8.6 million m³ – on land to create additional land for construction. In cooperation with the fishermen, the consortium also relocated the existing fishing harbour just outside the new bulk transshipment terminal, while carefully restoring the mooring pontoons. The project is thus a win-win for both the local population and port authorities.

INTERNATIONAL PROJECTS IN TIMES OF CORONA: Nothing is impossible

In February 2020, just before the coronavirus broke out in Europe and the Middle East, all parties signed the contract. The main tasks for Jan De Nul? Dredging both the fairway and the harbour basin and bringing the dredged material ashore. However, when the impact of the pandemic became clear, the first doubts about the feasibility of the project arose on the Arab side.

Stefan Moens, Area Manager Middle East at Jan De Nul, remembers that hesitant start well: "We were able to reassure the customer pretty quickly, but of course we now had to make good on our promises. International air traffic was almost completely shut down, which made crew changes a real challenge. Therefore, instead of 6 weeks, some colleagues worked on site for up to 12 weeks. By way of illustration, to get employees to Dibba, they had to board the trailing suction hopper dredger Francis Beaufort in Brindisi, Italy – a two-week journey. In the meantime, with much deliberation and perseverance, we arranged all the residence permits."

Due to corona, a project that had been completely cut out for Jan De Nul suddenly became a very complex undertaking. However, perseverance wins, and Port of Fujairah can now use its extra assets to underline its regional importance.

FROM MOST POLLUTED PLACE IN FLANDERS TO A BIOTOPE

For 70 years, the historic Fort Philip in the Port of Antwerp groaned under heavy pollution. First as a dumpsite, later as a place to burn waste. But that is now coming to an end. Jan De Nul is rolling up its sleeves to make the site liveable again. The plans are ambitious: turning the most polluted place in Flanders into a biotope for man and nature.

> This daring exploit will be a collaboration between our environmental division Envisan, our civil engineering experts and foundation specialist Soetaert. This teamwork is also necessary to breathe new life into the heavily contaminated site of Fort Philip. The project includes not only the most extensive remediation works ever undertaken in Flanders, but also the construction of a kilometrelong dike. And all that within a period of only two years.

ISOLATING WASTE WITH BENTONITE

FOR MAN AND

NATURE

"There are two contaminated areas on the site: the old Spanish fort and the nearby buffer pond", says Steven De Coen, Project Manager at Jan De Nul-Envisan. "As in every remediation project, we looked for the most technically and economically feasible solution. Due to the size, heterogeneity and nature of the contaminated material, we decided to isolate and encapsulate the on-site contamination to prevent it from spreading to the environment."

With a cement-bentonite wall reaching 30 metres deep, Jan De Nul isolates the residual waste. "Bentonite essentially consists of small particles of clay that together form an impenetrable whole", Steven explains. "In addition, a protective film ensures the complete encapsulation of the contaminated soil. This is finished off with a topsoil layer. In the buffer pond, we apply the same technique: we cover the contaminated sludge with an HDPE film, clay mats and a layer of clay. This will prevent the water in the pond from coming into contact with harmful elements."

CREATION OF A VALUABLE ECOSYSTEM

Besides remediation works, Jan De Nul is also responsible for the construction of a dike of more than two kilometres. This dike will hold back the water and restore nature. Steven: "With the dike works, we contribute to the realisation of the Sigma Plan, which protects Flanders against flooding of the Scheldt, while also paying attention to nature."

A breakwater, i.e. a special branch of the new dike, again gives space to fauna and flora. Michiel Duyvejonck, Site Manager for Envisan, confirms: "The breakwater creates a controlled flooding area where birds and other animals can build their own biotope. In addition, we are constructing the dike at 3.5 metres above sea level so that it is not visible at high tide. Yet the tide cannot wash away the sandy soil. This way, the ecosystem can be preserved."

ffer pond: :he buffer pond,

e same technique: we cover e contaminated sludge with h HDPE film, clay mats and ayer of clay.

Fort:

We partially excavate the old Spanish fort and then encapsulate it all around with a cement-bentonite wall of up to 30 m deep, a protective HDPE film and a topsoil layer.

Controlled flooding area: A new ecosystem will emerge in the flood plain behind the breakwater. This area is only flooded at high tide.

Breakwater: This new dike creates a controlled flooding area where birds and other animals can build their own biotope.

THE TRAGIC STORY OF FORT PHILIP

The Fort Philip site has a long but also tragic history. Philip II had it built in the 16th century to defend the Scheldt. In the 18th century, it formed part of the famous belt of forts around Antwerp. But from the 1950s, the site mainly served as a dumping ground for over 50 million litres of oil and chemical waste. In an attempt to get rid of the waste, the fort was set on fire and eventually filled with sand. However, the soil remained heavily polluted and the ravages of time have also left their mark on the area. Until today.

NINTH DEEPENING OF THE ELBE **PUTS THE PORT OF HAMBURG BACK ON THE MAP**

In recent years, the Port of Hamburg has slowly but surely dropped down the world rankings for container ports. At the beginning of 2020, for example, it was barely in 19th place and had to watch how other European ports, such as the Port of Antwerp and the Port of Rotterdam, were increasing their lead. The reason: a limited draught of 12.5 metres in the River Elbe, which connects the port with the North Sea. This makes it difficult for ships with a capacity of 20,000 TEU or more to reach the Port of Hamburg. But this is about to change, thanks to a large investment package and a significant contribution of Jan De Nul, amongst others.

our seas and oceans. But the larger the ship, the more complex it is to reach the port of Hamburg. As a result, container volumes have stagnated there, while

In recent years, ever larger ships have been crossing competitors in Rotterdam and Antwerp have benefited from the restrictions in Hamburg. The deepening of the Elbe - the ninth in history - should stop this trend.



NEW APPROACH DUE TO ECOLOGICAL CONCERNS

At the end of the works, the maximum possible draught for ships will be 13.5 metres, even 14.5 metres at high tide. But although the ambition is simple, the road to it passes many obstacles. The decision-making process took 17 years, with complaints coming mainly from the ecological community. After all, the raising of the last islands in the Elbe estuary with dredged sand in the 1990s had caused irreversible changes to the ecosystem of these islands. Therefore, the German authorities now chose to store the sediments in large underwater depots, covered with sandy material from the river bed. In this way, after 800 years of land reclamation, shallow mudflats will finally reappear in the Elbe estuary.

The Hamburg dream: 800 years in a nutshell

For eight centuries, the citizens of Hamburg have been reclaiming more and more land to protect themselves from winter storms and floods. In the 19th century, the plans for the first deepening of the Elbe were drawn. Today, 200 years later, the Elbe has been deepened for the ninth time. Did the project stay within budget and planning thanks to Jan De Nul's perseverance or was it the age-old persistence of Hamburg that did the trick? Well, it probably was a bit of both.

The cutter suction dredger Fernão de Magalhães was responsible for pre-treating the hard subsoil in the northern port areas.

DREDGING BETWEEN WARTIME AMMUNITION AND BREEDING BIRDS

However, years of meticulous preparation could not prevent a difficult start of the project. The two largest subprojects, including that of Jan De Nul, experienced delays. In several places, there was much more anthropogenic underwater material than expected, including possibly unexploded ordnance. This made mechanical dredging impossible. Jan De Nul therefore deployed its powerful trailing suction hopper dredger Pedro Álvares Cabral to hydraulically dredge large sections. However, important areas in the north, near the port entrance, had such hard subsoil that the cutter suction dredger Fernão de Magalhães had to pre-treat the subsoil before the trailing suction hopper dredger Pedro Álvares Cabral could suck up the sediments.

An additional difficulty was that certain areas were not always accessible due to breeding waders and fish spawning.

START OF A NEW ERA

Not only will the river be deepened. At the town of Wedel, the navigation channel will also be widened to 385 metres. Previously, only one ship could pass there at a time, but after the works have been completed, two ships will be able to cross. All in all, this will increase the annual capacity of the Port of Hamburg by three million TEU. Or, in other words: Hamburg is putting itself back on the map of international ports for container ships.



Pedro Álvares Cabral pumps the dredged sediments from its hopper into the hopper of the trailing suction hopper dredger Tristão da Cunha, which in turn dumps the sediments in the underwater depots.

INNOVATIVE Hopper-In-Hopper Pumping Technology

While the Pedro Álvares Cabral dredged the port entrance, the smaller hopper Tristão da Cunha was responsible for filling the shallow underwater depots in the town of Cuxhaven with the dredged sand and clay. An innovative hopper-in-hopper pumping technology was used for this, with the Pedro Álvares Cabral transshipping the dredged sediments into the Tristão da Cunha.

JOINING FORCES FOR CLEAN AIR

Since the end of 2020, the navigation channels in the vulnerable water areas Dollard and in the estuary of the Ems have been maintained by a ship with a large blue funnel. The client was primarily looking for a low-cost solution for the maintenance of the navigation channel to the town of Emden, Germany.

Jan De Nul was able to convince the client with its brand new trailing suction hopper dredger Tristão da Cunha: one of the first ships worldwide with the new Bureau Veritas certification for Ultra Low Emission vessels (ULEv). The Tristão da Cunha is the result of an extremely thorough design and ditto engineering to reduce fuel consumption to an absolute minimum.

Not only are ships like the Tristão da Cunha equipped with the most modern marine engines meeting the strictest emission standards, they also have advanced diesel particle filters and catalysts in their blue funnel – or chimney. As a result, they extract up to 99% of all soot and 90% of the nitrogen oxide (NO_x) from the exhaust gases.

With their ultra-low emissions, these Jan De Nul gems reduce the environmental impact to an absolute minimum. Moreover, the nitrogen reduction is unique in shipping and indirectly makes an important contribution to sustainable agriculture and fishing around Ems and Dollard. Unique, future-proof and at no extra cost to the customer.

<complex-block>



Bureau Veritas, the world leader in testing, inspection and certification, has developed a new certification for the performance of Ultra-Low Emission vessels (ULEvs). Jan De Nul's latest trailing suction hopper dredgers, the Sanderus, Ortelius, Tristão da Cunha, Afonso de Albuquerque and Diogo Cão, are the first vessels to have been awarded this certification. 2020 ANNUAL REPORT.

FUTURE Jan De Nul se Zero sustaina

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Jan De Nul sets course for 2050. The Code Zero sustainability programme guides not only our company but also our individual employees towards a sustainable world. It is in our DNA and we propagate it with the same enthusiasm among our partners, clients and local communities. The future is ours!

MODULAR HOSPITAL WITH AN EYE TO THE FUTURE

2020 was an eventful year for healthcare. Flexibility and reorganisation proved to be crucial. The Grand Hôpital de Charleroi (GHdC) foresaw this years ago and is consequently building the hospital of the future on an area as big as 22 football pitches. The temporary partnership Jan De Nul and Franki Construct is responsible for the building shell. Jansen joins the duo for the completion of the building works.



Eric Munyemana and Benoit Decroty

BUILDING WITH AIR BLOCKS

Benoit Decroty, Project Manager: "About 10% of a hospital is adapted every year to the needs of the moment. Therefore, we designed as few walls as possible inside the buildings. In this way, the layout of the rooms can be adapted for whatever purpose as required and at any stage. If there is a need for a new operating theatre, it can be done. But it could also be a new reception area."

Eric Munyemana, Work Planner: "We work with floating floor slabs for this: slabs without a visible support beam. The beam is incorporated in the floor plate, but this is only possible if the floor plate is sufficiently lightweight. By incorporating air blocks into our floor slabs, we are able to reduce the weight by more than 20%. A real technical masterpiece."

A GIGANTIC CONSTRUCTION SITE IN COVID-19 TIMES

In Charleroi, Jan De Nul is building not one, but four buildings with a total area of 154,000 m² – simultaneously. There will also be an underground car park of 45,000 m³, divided over three levels. On peak days, as many as 350 people are working on the site. However, on 20 March 2020, there were suddenly far fewer of them.

Benoit: "From one day to another, the works came to a halt because of COVID-19. Deliveries were on hold and materials were running out. For four weeks, we were only able to do some earthworks. But we made good use of that time by thoroughly preparing ourselves for a safe restart. With a small team, we then temporarily redesigned the existing buildings into larger canteens and changing rooms.

We also provided extra sanitary facilities. This allowed us to increase the personal space per person from 2 m² to 10 m², ensuring sufficient social distance. We also took additional hygiene measures, such as pumps with disinfectant hand gel and COVID-19 signage on the site."

Eric: "Also during the second corona peak, in January, we were unable to work for a few weeks. But there is no room for delay, as the hospital has to be open by mid-2024. The licences of the other five hospitals expire in that same year. They will then move to this location. Thanks to our good planning and precautions, we made up for the delays as best we could. We have worked really hard!

At peak times, 13 construction cranes and as many as 350 people were at work simultaneously.



FROM COALMINE TO HOSPITAL

GHdC's plan was to build a modern hospital, centrally located and easily accessible. The client had its eye on a former mining site at two important traffic arteries southwest of Charleroi: the intersection of the R3 and RN90.

Benoit: "This brought an extra challenge for us because the site also contained marshes of 'schlamm', a black muddy substance that is released when coal is washed. In those marshes, we could not work with ordinary piles. We had to look for a solution."

Eric: "That's right! We found the solution internally, at Soetaert. We chose to work with bored Kelly piles. That way, we could provide foundations up to a depth of 40 m. In just three months, we found the solution, convinced the client and had completely reorganised ourselves according to the new building method."

A SUSTAINABLE SITE

In the context of its Code Zero programme, Jan De Nul focuses on sustainable construction sites. In Charleroi, we have an energy-efficient site office: it consumes about 80% less energy than your average site office.

Eric: "The roofs, walls and floors were given extra insulation. The windows have triple glazing and door pumps keep the cold out and the heat in. Solar panels on the roof provide energy inside the site office, heat pumps ensure both heating and cooling. In the offices, you won't find conventional lamps but modern, energyefficient LED lighting."

Benoit: "During the construction works, we obviously also need lighting in the buildings. Here as well, we always and exclusively use LED lighting."



"About 10% of a hospital is adapted every year to the needs of the moment. Hence the choice for a modular approach."

Benoit Decroty, Project Manager

THE SCOPE OF OUR WORKS IN CHARLEROI

Jan De Nul, together with Franki Construct, is responsible for the building shell of the four new hospital buildings of the Grand Hôpital de Charleroi. After the delivery of the water- and windproof hospital buildings, Jan De Nul, together with Franki and Jansen, will also coordinate the complete finishing works. The delivery of the works is scheduled for April 2024.



For the Grand Hôpital de Charleroi, about 100,000 m³ of concrete was poured and a total of 2,800 piles, including 200 Kelly piles, were driven up to 30 metres deep.

The new hospital will have a surface of 154,000 m² on a 42-acre site.

5-IN-1: New Merged Hospital Brings Light in Dark Times

The healthcare sector has had a challenging year. But in the Belgian city of Charleroi, they also had something to look forward to: commissioned by 5 local hospitals, Jan De Nul is building their hospital of tomorrow. Modular, flexible and with the patient at its heart. "COVID-19 showed that this is the right choice", says David Van Drooghenbroeck, Director Institutional Affairs at the Grand Hôpital de Charleroi (GHdC). "A hospital must be able to reinvent itself at lightning speed."

David remembers the very beginning well: "In January 2010, we started from scratch. Our hospital was making loss and healthcare in Charleroi was fragmented. However, we had a grand plan: a merger of 5 hospitals. All we had to do, was finding a site and convincing all stakeholders." The building permit was awarded in 2015.



BLIND TRUST

The general public knows Jan De Nul mainly for its marine activities and large ships, but the company once started as a civil contractor and has vast experience in this field. David: "In 2018, we entrusted the construction to the Temporary Partnership Jan De Nul-Franki." Why? "Jan De Nul is known to have a great reputation in this sector. Never have I doubted their expertise in managing this immense construction project."

"I really appreciate the corporate culture and the hands-on mentality of Jan De Nul," says David. "Whenever we encounter a problem, I have full confidence in their experts. They act quickly and pragmatically, think along with us and strive for a solution for all parties."

FIVE-STAR HOSPITAL

Thanks to the merger, the new hospital will be one of the largest in the country and a very important regional employer. This is a great boost for a centre city like Charleroi.

Moreover, the patient will be the focus of attention. David: "In order to offer patients a quality care guarantee, we are constructing four separate buildings, each with its own function. Depending on the type of care you need, you have to go to another building. For example, long stays are separated from short stays and consultations are separated from hospitalisations. After all, each type of care creates different needs and requirements."

Covered passageways will connect the buildings and robots will deliver medication and linen. David: "What we haven't automated is the catering. In all, we will have 13 specialised kitchens. We attach great importance to high-quality menus. Because if the food is tasty and tailored to their needs, patients will eat better and recover faster."





"Building the hospital of tomorrow, we are already doing that today together with Jan De Nul."

David Van Drooghenbroeck, Director Institutional Affairs GHdC





The Grand Hôpital de Charleroi in figures

- 1,000 Total number of beds in the merged hospital
- 500 million euro Total investment
- 2024 Scheduled end of the project (June)

SITE GIVES EXTRA ENERGY BOOST

The old coalmine site on which the Grand Hôpital de Charleroi is being built is located alongside two major traffic arteries. A real eye-catcher when approaching the city from the southeast.

"When the second corona peak pushed our caregivers to the limit, the construction site was our ray of hope. Literally, because in those dark winter days, the 13 cranes provided light. The construction works made visible progress. It was heart-warming! It gave us courage to keep going and it also created a positive dynamic in and around Charleroi, a city that is currently redeveloping itself. We are all proud of 'our' construction site", David concludes with a big smile.

TOGETHER WE ARE BUILDING A SUSTAINABLE FUTURE

Zero Breaches, Zero Waste, Zero Accidents and Zero Emissions. These are the four pillars of Jan De Nul's new corporate programme Code Zero. For more text and explanation, we brought all primary contributors to the programme around the table. Their vision is unanimous: the focus is not so much on the individual goals, but rather on the common road towards them. Which fits in perfectly with the Imagine-Think-Act approach that has since become part of Jan De Nul's DNA.

From left to right: Isabelle Herteleer, Michel Deruyck, Colette Cooreman-Algoed and Christophe Leroy



For sailing enthusiasts, Code Zero is a well-known concept. After all, this type of sail offers the chance to catch more wind and thus go faster. That is also the intention of Jan De Nul's sustainability programme of the same name: creating a strong impulse to better foster corporate social responsibility (CSR) in our activities.



STRONGER TOGETHER

Isabelle Herteleer, CSR Coordinator: "Code Zero is a milestone for us rather than a starting point. We have been working on safety and energy management, among other things, for a long time. But this programme will allow us to combine all forces under one banner from now on. Previously, we had silos. Now we are far more integrated and the better for it."

Christophe Leroy, QHSSE Manager: "Indeed. Code Zero emphasises cooperation and transparency. We want to use the four priorities to send an accessible, concrete message to our employees and the outside world. Something that inspires people to jump on the bandwagon. Because one thing is clear: Jan De Nul is only a part of the story. To make a real difference, we aim for everyone's support, from our own employees and clients to suppliers and local communities."

NO REVOLUTION, BUT EVOLUTION

Michel Deruyck, Head of Energy Department: "The world will look completely different by 2050. In order to effectively face the biggest challenges, such as climate change, we need to change course now. Jan De Nul is very much aware of that. As a global organisation, we bear a responsibility independent of government regulations or external pressures. With Code Zero, we want to demonstrate that we take corporate social responsibility seriously."

Colette Cooreman-Algoed, ITA Project Manager: "For our CSR strategy to be successful, it is important to get all employees on the same page from the start and to acquire broad internal support. We want to involve everyone in order to maximise their contribution. With Code Zero, we provide them with the tools."

Christophe: "That fits in perfectly with our Imagine-Think-Act approach. Operational control is the key to success. Colleagues who do their jobs well and want to continuously improve themselves automatically contribute to our CSR ambitions. Achieving the targets that lead to the zero objectives is then the icing on the cake. In short, it is not a revolution, but an evolution."



MOVING UP A GEAR

Michel: "Meanwhile, the first initiatives under the Code Zero umbrella have been launched. For example, in the Belgian coastal towns of Raversijde and Knokke, we dredge using 100% sustainable biofuel and we subscribe to the Science-Based Targets initiative to meet the objectives of the Paris climate agreement."

Isabelle: "We are also committed to a sustainable procurement policy, circular solutions and training in our Code of Conduct. And that is just the beginning: for each of the four pillars within Code Zero, we are translating our ambitions into definitive actions that reinforce and complement each other."

Colette: "Code Zero gives our CSR strategy the impetus to really move forward positively. The aim: stimulating a movement that has been around for some time, but is now ready to move up a gear."



ELECTRICAL EXPERTISE STRENGTHENS PARTNER ROLE IN ENERGY TRANSITION

From levelling the seabed to reinforcing structures and installing wind turbines. The offshore capability of Jan De Nul was already versatile. But from now on, the group can bring a new trump card to the table: extensive electrical expertise. With the TPC project in Taiwan, the Electrical Department Offshore has proven that Jan De Nul is more than ever the ideal partner for large-scale, integrated offshore wind and cable projects.

TPC wind farm: With its 21 5.2 MW turbines, this wind farm is one of Taiwan's showpieces.

For the densely populated island of Taiwan, offshore wind energy is a logical choice. Numerous projects are in the pipeline to meet the ambitious government target: 5.5 GW by 2025.

IN DEEP WATER

For Jan De Nul, this is the first offshore wind project in which the electrical section is also part of the scope. For example, the foundations must contain the necessary low-voltage equipment, including navigation aids, radars, cameras and lighting. On the other hand, the Electrical Department Offshore has to ensure a flawless connection of the 100 MW wind farm to the local 161 KV high-voltage grid. The responsibility for the connection involved extensive studies to comply with the specific grid code of the Taiwanese grid operator. Result: the high-voltage substation in Changhua, which connects the wind farm with the Taiwanese grid, needed a major upgrade. To top it all off, the station is located 13 kilometres inland, so the wind farm connection runs under riverbeds and passes many other cables and civil obstacles.

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TANDEM JAN DE NUL AND HITACHI

Jan De Nul is responsible for the design, construction and installation of the foundations, and for the delivery and installation of the cables at sea and on land. Jan De Nul mobilises the ship for the installation of the wind turbines. The design and execution of the entire electrical scope, including grid connection, is also the responsibility of Jan De Nul. Consortium partner Hitachi Ltd. is responsible for the construction, assembly and installation of the offshore wind turbines and associated works. Following delivery, the consortium will be responsible for the operation and maintenance of the offshore wind farm for a five-year period.

EFFICIENT INTEGRATION OF SYSTEMS

In order to bring everything to a successful conclusion, new talent was recruited. When the project was awarded in 2018, the Electrical Department Offshore consisted of only two people. In 2020, there were 10 of them for the Taiwan project only: from site inspectors to high- and low-voltage specialists and even experts in automation. After all, the client also wanted a sophisticated control centre to monitor the wind farm remotely – in Chinese!

The team ended up developing a wide range of solutions that could also be useful in future projects,

thinking of ways to integrate systems more efficiently, design templates, electrical models, safety protocols and technical innovations.

From now on, Jan De Nul is a full-fledged EPCI partner: for wind farms for which Jan De Nul is in charge from A to Z, the electricity package can also be ticked off without a problem.



GUIDE FOR ALL OFFSHORE WIND PROJECTS

Jan De Nul's internal engineering office has seventy employees, thirty of whom are engineers. They carry out studies and stability calculations for all branches within the group. For projects of today and tomorrow.

For the TPC wind farm in Taiwan, the engineering department was responsible for the complete design management of the jacket foundations. A real challenge for a project with very tight deadlines and difficult preconditions. The region is seismically very active, is subject to severe storms and, from a foundation perspective, has a very poor subsoil.

While the engineering department was working on the design, it was also responsible for an extensive soil survey, seismic studies and meteorological analyses. Finally, all official communication with the client was in Chinese. All in all, a unique challenge and a great learning experience.

NEW SPECIFICATIONS, A CONTINUALLY EVOLVING DOCUMENT

Sharing knowledge internally is crucial. The JDN Academy gives colleagues access to a wealth of information: processes that went wrong, but also success stories. That is a strong basis to bring projects to a good end.

Due to the extensive scope of this wind farm, the engineering department took the initiative, together with all teams involved, to document the lessons learned from this project. They supplemented this knowledge with experiences from other wind projects of Jan De Nul. Result: a comprehensive library of Lessons Learned covering the entire life cycle of an offshore wind project. Invaluable specifications for the future, which will be permanently supplemented and adjusted by the engineering department.

135 KILOMETRES OF CABLE TO CONNECT CRETE TO THE GREEK MAINLAND

A direct energy connection with the Greek mainland would give a boost to the economic development of Crete. After all, the island still operates on expensive, polluting and oil-fired units. But nobody dared to make the crossing. Until Jan De Nul Group put its shoulder to the wheel. With the largest cable-laying vessel in the world, the company installed 135 kilometres of cable at a depth of 960 metres – a first!

960 metres, along razor-sharp rock:

The cable installation vessel Isaac Newton installs the cable at depths of up to

A seabed strewn with sharp rocks and steep slopes, unseen tension on the cable and limited space to work. In challenging circumstances Jan De Nul Group delivered a daring exploit. With the Isaac Newton – the world's largest cable-laying vessel – the company bridged 135 kilometres.

The depth of the installation immediately set a record: never before had Jan De Nul laid a cable at

a depth of 960 metres. However, this would inevitably increase the load on the vessel. To cope with the 75-tonnes load and the weight of the cable, the technical department adapted the rear deck. A large part was taken out and reinforced. That was not only safer for the vessel, but also better for handling the cable.

46 CONTAINERS OF PROTECTIVE MATERIAL

Between Crete and the Greek mainland, there is a very varied seabed that can cause the cable to become unstable, make bends that are too sharp or become fatigued during its service life. Jan De Nul and its client, the Greek cable manufacturer Fulgor S.A., worked closely together to design several types of protective material to protect the cable from these hazards. In total, the crew applied no less than 46 containers of protective material. This required a lot of manual labour. The project team worked out a number of solutions to reduce the load on the crew: the weight per piece was reduced and hydraulic tables allowed the crew to work at hip height.

Jan De Nul and cable manufacturer Fulgor S.A. jointly developed protective material to protect the cable against the hazards caused by the varied seabed.



PUSHING BOUNDARIES

Not only is this cable installed at unprecedented depths, it is also the longest submarine cable of its kind in the world. On top of that, Jan De Nul installed a large part of it in mid-winter. This made for very challenging conditions at times, with storms and waves up to seven metres high.

With this project, Crete is finally connected to the Greek electricity grid. But it is also an important,

ground-breaking milestone for Jan De Nul. Still, the maximum capacity has not yet been reached. We remain ambitious and therefore continue to explore and strengthen our position on the global market. The purchase of the construction and cable-laying vessel Connector confirms these ambitions.



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We do our bit for an ecological world, which is why this annual report is published on recycled paper (Nautilus - Super White).

For more information on this annual report, please contact: Paul Lievens, CFO Jan De Nul Group paul.lievens@jandenul.com

Dit rapport is ook beschikbaar in het Nederlands. Ce rapport est également disponible en français. Este informe también está disponible en español.



WIND ENERGY ON OUR SITE IN ZELZATE



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