CIVIL WORKS
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Jan De Nul Group is a world player for Civil Engineering, Dredging and Marine related and Environmental Projects. Both in the design and execution phase the key activities are executed by the Company’s in-house engineers using our own equipment. By combining such diverse activities Jan De Nul Group can offer an overall package and execute large-scale projects from start to finish. Next to our technical expertise, the financial strength of Jan De Nul Group is also a major asset.

Jan De Nul, as a company, was originally established as a Civil Engineering Construction Company and is still active in this field: which includes the construction of office and industrial buildings, water treatment plants, sewage systems and pipelines, shore protection and rock revetment, quay walls in marine-related projects, tunnels, bridges and locks, road and railroad construction, etc.

In its civil engineering activities Jan De Nul Group specialises in complex, multidisciplinary projects:

- Hydraulic engineering: marine-related construction works, harbour development, inland navigation channels and non-navigable rivers, inundation basins and storage reservoirs;
- Water treatment infrastructure: collectors, sewage systems, waste-water purification plants and plants for the production of drinking-water;
- Transport infrastructure: air, railroad and road traffic;
- Buildings for all purposes.

More information is to be found on www.jandenul.com
CIVIL WORKS

A comprehensive updated list of reference projects can be found on www.jandenul.com

2.1 HYDRAULIC ENGINEERING

Jan De Nul Group owes its success to the comprehensive service the Company can offer and construct in: dry earthmoving and dredging works, shore protection works and general civil engineering constructions.

Worldwide, Jan De Nul Group is involved in the most prestigious projects in hydraulic engineering and port development, both in the design and execution of dry earthmoving works, the construction of quay walls and breakwaters, shore protection works, rock revetment and dredging works, such as for example for the:

- Ras Laffan Port Expansion Project (Qatar);
- New Port Complex in Duqm (Oman);
- Palm Cove Canal, Palm Jebel Ali Island and Waterfront Project (Dubai);
- Manifa Field Causeway and Island Construction Project (Saudi Arabia);
- Soyo LNG Terminal (Angola).

In Belgium, Jan De Nul Group is actively involved in the development of the ports of Antwerp (the second largest port of Europe), Zeebrugge and Ghent, amongst others through the construction or renovation of docks, quay walls, locks, etc. Examples of which are:

- Straatsburg dock, America dock, Albert dock, Doel dock, Verrebroek dock and Deurganck dock in the port of Antwerp;
- Europe container terminal in the port of Antwerp;
- Berendrecht lock in the port of Antwerp;
- Kluizen dock in the port of Ghent;
- Outer and inner harbour of Zeebrugge.

Further for, Jan De Nul Group also participates in projects for inland navigation, non-navigable waterways, the construction of dams, locks, quay walls, shore protection, bank reinforcements, storage reservoirs and pumping stations, such as for example:

- Drinking-water storage reservoirs in Broechem, Eekhoven and Kluizen;
- Diversion of the sea channel Brussels-Scheldt in Hingene;
- Widening of the Albert canal (in all 60 km);
- Dam on the Maas in Waulsort;
- Locks in Bossuit, Zwevegem and Evergem;
- Water management works for the Vondelbeek in Lebbeke.
Palm Cove Canal - Dubai (U.A.E.)
Dry excavation of canal and construction of quay walls
HYDRAULIC ENGINEERING
Deurganck Dock - Antwerp (Belgium)

First Harbour Dock - Antwerp (Belgium)

Amerika Dock - Antwerp (Belgium)
Pipeline - Zeebrugge (Belgium)

RasGas - Qatar
In the past four decades Jan De Nul Group has established a unique record in the field of waste water purification and sewage system infrastructure, installations for the treatment of drinking-water, gas and water pipelines and this both for civil and electromechanical engineering aspects.

Such projects are not only executed in accordance with traditional forms of contract, but also utilising more complex contracts such as D&B (Design & Build), DBFM (Design Build Finance Maintain), BOOT (Build Own Operate Transfer), whether or not in co-operation with a public partner (PPC). By way of illustration: Jan De Nul Group was responsible for the design, construction, financing and management of Europe’s largest waste-water purification station at Brussels North.

To carry out and complete such projects, Jan De Nul Group combines all of its knowledge, expertise and its comprehensive experience: design and execution of earthworks, revetments, foundations, concrete constructions, installation of pipelines, injections, shore protection, buildings, road works and electromechanical engineering. Examples of which are:

- Waste water purification plants (WWTP) in Brussels North and Brussels South, in Bruges, Antwerp South and in Marchienne-au-Pont;
- Collectors in Ghent, Antwerp, Ternat, Brussels, Port Louis (Mauritius);
- Sewage system renovation in Antwerp Ruien, Vondelbeek;
Waste water purification plant Antwerp South - Antwerp (Belgium)

Construction of a water treatment plant
WATER TREATMENT AND PIPELINE INFRASTRUCTURE
WATER TREATMENT AND PIPELINE INFRASTRUCTURE
2.3 TRANSPORT INFRASTRUCTURE

Because of its central position in Europe and the presence of an inland world port, Belgium is a country where logistics play a very important economic part. The development of good transport infrastructure is therefore crucial for the ever increasing railroad and road transport.

For more than 30 years, Jan De Nul Group has executed, with its own staff and equipment, earthworks, piling and foundation works, engineering structures, drainage works and concrete constructions.

Some such projects are:

- High-Speed Lines (HSL) Rebecq-Tubize, Halle-Buizingen, Tienen-Hoegaarden, Waremme-Remicourt;
- Railway tunnels in Antwerp Damplein-Astridplein (drilled), Antwerp Central Station (horizontal excavation), Berchem Station-Lange Kievitstraat (horizontal excavation), Brussels Airport;
- Terminal A in Brussels Airport;
- HSL Station Brussels-South in Brussels;
- Highway A8 between Doornik and Halle;
- Highway E411 between Libramont and Neufchateau;
- Reconstruction of cloverleaf in Lummen;
- Railway tunnel Schuman-Josaphat.

Also outside Belgium Jan De Nul Group is active in this field, including, amongst others, being the main contractor for the ‘Manifa Field’ project in Saudi Arabia, a Design-and-Build project covering 41 km of highway to connect 27 newly constructed sea islands, including a 2.4 km long viaduct and several other bridges.
2.4 BUILDINGS

Buildings take a special place within the Jan De Nul construction company, as well as mastering the architectural aspects, building projects also require the in-depth expertise of special technologies, finishing techniques and materials. A separate division within Jan De Nul NV supports end customers, clients, architects, subcontractors and suppliers in a proactive and customer-oriented way to come to an optimal result, taking into account the wishes, ambitions and budgetary limitations of all parties concerned.

Jan De Nul NV builds both for the public and private sectors and some important buildings can be referred to in this respect as follows:

- Concert hall in Bruges;
- Head Office of Gaselwest in Kortrijk;
- Campus Gasthuisberg, buildings for Education and Scientific Research, in Leuven;
- Office buildings Business Park in Merelbeke;
- Hospital 2000 in Kortrijk;
- State Archives in Leuven;
- Office buildings Jan De Nul NV in Aalst.
Construction of the Concert Hall - Bruges (Belgium)
Offices Gaselwest - Kortrijk (Belgium)

Hospital - Charleroi (Belgium)
3 OTHER ACTIVITIES OF JAN DE NUL GROUP

3.1 DREDGING AND MARINE WORKS

This is no doubt the most important and best known activity of the group. For more than 50 years, Jan De Nul Group has executed many international dredging and land reclamation projects from start to finish. Construction and maintenance of harbours (design phase included), deepening of channels, dredging of rocks or sandbanks in open sea, rock revetment projects, rock revetment to protect offshore pipelines and oilrigs, pre-sweeping for offshore pipelines, coastal defence, etc. The company has successfully completed numerous prestigious projects worldwide and many other large-scale projects are already secured for the future. Jan De Nul Group owes its position as the world-wide market leader mainly to its technical expertise and extensive modern fleet. By investing in its own equipment, machines and ships, the group now has the most modern dredging fleet in the world and continues to look for new opportunities and challenges.

More information on the dredging activities is to be found in the Dredging and Marine Works brochure.
3.2 ENVIRONMENTAL WORKS

Soil and groundwater remediation, sludge treatment and environmental dredging and the processing of other specific waste substances: Envisan has experience in environmental works of all kinds. The multidisciplinary team has a wide scope of remediation methods at its disposal. Here also, Jan De Nul Group ensures an integrated approach, from design to completion, using its own equipment and even its own processing centres. Innovation and research and development are crucial to Envisan so as to offer its customers creative and competitive solutions to their individual problems. Envisan has developed into the ideal partner for complex remediation projects and for the remediation of old landfills and this is both on national and international levels.

More information on Envisan is to be found in the Environmental Works brochure.
SUPPORTING SERVICES

4.1 ENGINEERING DEPARTMENT
(STABILITY – CAD – MX – GRAPHIC SUPPORT)

Ever more clients are seeking an overall solution for their building plans with an integrated approach of design and execution. Jan De Nul Group recognised this trend some time ago and started setting up a fully fledged, professional engineering department. The integration of its specific expertise in both the design and execution phase creates considerable ‘added value’ resulting in more economic and safer building projects, increase of quality and a meticulous control of any risks involved.

The engineering department of Jan De Nul Group consists of a sizable team of specialised experts, qualified engineers, designers and draftsmen and has state-of-the-art soft- and hardware at its disposal.

The expertise of the engineering department include:

- Study and integrated design of all kinds of constructions in concrete, steel and wood;
- Geotechnical design in all its aspects;
- Drainage and dewatering of sub-structure foundation soil;
- Integrated design of marine infrastructure including wave action calculations;
- Design of large-scale earthworks, optimising and follow-up;
- Comparative study of the execution methods for all types of projects.

Complex projects require thorough preparations and intensive communication. Within the engineering department a team works with the programme MX to calculate all soil quantities in 3D, this way optimising major contracts (earth moving, dredging works, roads, railroads, etc.). Both from the CAD- and MX-teams information is passed on to the 3D visualisation team, where the various phases of a project or process can be visualised.
4.2 FORMWORK

Jan De Nul Group can rely on an extensive stock of formwork material for all kinds of applications and forms, both for system formwork and conventional form elements. The formwork division details the formworks based on the design data and in consultation with the executing teams, is inclusive of safety measures, scaffolding, etc.

Specific and special formwork is made to size and assembled in Jan De Nul’s own workshop. For executing concrete construction works, formwork plans are made for every casting phase, linked to parts lists that are used for the production in the workshop and for the transport to the construction sites.
4.3 EQUIPMENT

Jan De Nul Group adheres to a policy of investment in its own equipment and, as a result, it has at its disposal a comprehensive range of modern equipment covering the whole spectrum of specialised equipment needed for realising projects in the industries it is active in.

At this moment, Jan De Nul owns more than 450 heavy machines and this number will increase year by year. At present this includes:

- Floating equipment for executing hydraulic engineering works;
- Ramming equipment such as cranes, monkeys, pneumatic picks;
- Equipment for dry earthmoving works such as cranes, dumpers, bulldozers;
- Building cranes such as pillar cranes, cable cranes, telescopic cranes;
- Equipment for road construction such as graders, road rollers;
- Topographical equipment such as site positioning systems GPS, total station.

Jan De Nul Group also invests in specific equipment needed for executing one particular contract, examples of which are a bucket-wheel excavator for earthmoving works or the Starfish, an amphibious excavator that, thanks to the raised location of engine and cabin, can work in depths up to 6 to 10 metres. Finally, Jan De Nul Group has its own maintenance and repair workshop as well as a state-of-the-art metal processing division that can execute the most complicated turning, milling and welding works.