



# DDC

DUTCH DRILLING CONSULTANTS

Company brochure



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# The foundation for innovation



## COMPANY PROFILE

Dutch Drilling Consultants (DDC) is specialized in large diameter drilling. To execute the drillings we have a fleet of different types of pile top drilling rigs to our disposal.

DDC is active in different markets varying from onshore, near shore to offshore. For example we drill foundations for offshore wind farms, bridges, jetties, oil/gas platforms and ventilation shafts for tunnels.

Drilling is our core business, but we do also consultancy and engineering of foundation drilling projects. You can also hire drilling personnel.

Our office is in Waddinxveen, the Netherlands and our yard is in Ridderkerk, near the Rotterdam harbor. At the yard we assemble the constructions and make the equipment ready for transport to projects all over the world.



## HISTORY

Dutch Drilling Consultants was founded in 1987 under the name of Kamp Drilling Consultants. With experience on several projects and jobs for different Dutch offshore contractors such as Heerema, Ballast Nedam and the BAM a knowledgeable company was born.

With projects in the late eighties and early nineties like the Oseberg Jacket in the Norwegian North Sea, King Fahd Causeway in the Persian Gulf, the Goodwyn A Platform in Australian waters and Boston Harbor Sewage DDC expanded its track record in different industries on different environmental locations all over the world and DDC gained its well known and highly appreciated name.

After acquisition of Drilcon Benelux in 1998 Kamp Drilling Consultants B.V. became Dutch Drilling Consultants B.V. A strategic merger to serve the client in the best possible way as DDC portfolio was then expanded with the representation of well esteemed companies like Wirth, Klemm and Häny.

Growing into different markets from oil & gas, marine construction, building construction and the offshore renewable industry since 2005 it is now an all-round company working in different industries. After working in the company for over a decade the second generation took over the company in 2015 keeping it a family owned company ready for the next thirty years of history.



## DRILLING SPECIALIST

DDC is the drilling specialist known for sound consultation and advice. We are looking in close cooperation with our clients for the best practical solution. Our in-house engineering department has designed de most challenging projects all over the world.

## CONSULTANTS

Our expertise is available to you throughout your project. From the pre-engineering and bidding phase, we can assist in the selection of the right equipment for each specific project. We can indicate expected progress rates and advise on any necessary supporting equipment. Our advanced engineering team and high performance equipment allows our clients to reduce their cost. Which can result in a more concurrent bidding.

## DRILLING PERSONNEL

During the foundation drilling phase our drilling experts are available. From set up the equipment, actual drilling to decommissioning of the drill rig and equipment. Our drilling personnel has extensive field experience and have made many projects a success.



Engineering and consultancy

Trained and experienced drilling personnel



## TURNKEY DRILLING

Working together with our clients from tender phase until execution, we are always looking for the right drilling services to supply and creating every time the best final product for our client. This can vary from a common approach with the client during the design phase in order to obtain the ideal synergy between soil data, required equipment and end result up to emergency assistance during unexpected problems.

## PROJECT MANAGEMENT

One of our services is that we provide project management, meaning that we take care of the planning, organizing and securing of the resources to fulfill a successful completion of the clients specific project goals and objectives.

We can provide the drill rig with the drilling personnel, but we can also look at a project specific sequence and are able to adjust the equipment to optimize this.

For example we can provide a small auxiliary crane on the drill rig so that the main crane is available for other work. This is an easy example but we also sit down with our clients prior to the job at hand. We then manage the project planning and execution together with the client.

We have experience with creating the right equipment for assemblage in the rough environment. We also created a sequence for, at that time, the longest bridge of the world, where four rigs worked simultaneously from two jack up barges.

Those examples emphasize the view of DDC that every project requires a different approach and tailor-made equipment.



# Dealership and cooperation



## Dealership

Throughout our connections in the civil and offshore market we have good relationships with respected companies. This has resulted in the supply of information, equipment and service for below mentioned companies:



### KLEMM: BOHRTECHNIK

Klemm Bohrtechnik is a world-leading specialist for the development of exceptionally high-quality and powerful drills with total weights of up to 32 tonnes. The special feature: world-leading technologies which make Klemm drills unrelenting.



### HÄNY: MIXING- & INJECTIONTECHNOLOGY

When it comes to reinforcing, sealing and anchoring Häny does not compromise. Häny is the global partner for state-of-the-art mixing and injection technology. Wherever building sites, rock, anchorages or tunnel constructions need to be reinforced or sealed Häny has an solution.

### WIZARD: DRILLING RIGS

The DDC Wizard is a medium crawler drilling rig and is ideal for working in narrow spaces. The DDC Wizard has been designed and constructed for maximum performance, economy and ease of operation. The use is versatile, it can drill with auger or cased percussion drilling, sample taking or do core drilling.



### PROTEA: CRANES, WINCHES

Protea is an international engineering & equipment manufacturer supporting the offshore and onshore energy industry. With state-of-the-art factory in southern Poland. Protea delivers tailor-made material handling systems - cranes and winches - predominantly for vessels, drilling rigs, oil producing installations and wind farms.

# Dealership and cooperation



Pile top, anchor drill rigs

Cranes, winches

Grouting system

Piling and drilling

## Cooperation

DDC has partnerships with leading players in the offshore market. By working together we can share knowledge and experience. This allows us to offer sophisticated and complete solutions to our customers. With the following companies we have a collaborative partnership:



### DIESEKO GROUP

The Dieseko Group is specialized in the engineering, production, rental and sales of vibratory hammers (Variable Moment, High Frequency), ring and linear vibratory hammers, pressing machines, power packs (200 – 5000 kW), vibroflots and clamp systems. Within the holding, PVE and ICE are specialized in hydraulic vibratory hammers. In 2014 Dieseko Group PVE Piling & Drilling Rigs joined the group.



### IHC IQIP

IHC IQIP is a globally operating market leader of Dutch origin, which supplies innovative equipment and smart solutions for foundation, installation and decommissioning in the oil & gas, offshore wind and coastal & civil market. Founded in 2015 by merging four well known Royal IHC subsidiaries IHC Hydrohammer, IHC FUNDEX Equipment, IHC Handling Systems and IHC Sea Steel, they draw on more than 200 years of combined experience and expertise and an unbridled passion for service and innovation to meet the demands of a broad customer base, including oil and gas corporations, installation contractors, engineering agencies and government authorities.



### MHWIRTH: PILE TOP DRILL RIGS

MHWirth is a leading global provider of first-class drilling solutions and services designed. MHWirth vision is centered on an unparalleled commitment to quality and yielding economic advantages. MHWirth has a global span covering five continents with offices in more than 20 countries. DDC working together with MHWirth on large foundation drilling projects around the world. Our pile top drill rigs are made by MHWirth.

# Pile top drill rigs



## PILE TOP DRILL RIGS

DCC has chosen for MHWirth pile top drill rigs. The PBA drill rigs are robust and very reliable. These drill rigs have operated in arctic and desert environments. DDC owns several types of drill rigs, also in cooperation with MHWirth build flagship the PBA 1450.

## REVERSE CIRCULATION

Reverse Circulation Drilling (RCD) also known as airlift, is a system which brings the cuttings to the surface. Compressed air is injected into the drill pipe below water level, just above the drill bit. Because of difference in density the mixture of water, air and cuttings is flushed out of the drill string through the discharge.

## APPLICATIONS

### renewables

- Tidal systems
- Wind farms

### offshore

- Oil and gas structures
- Decommissioning

### nearshore

- Harbors
- Jetties
- Dry docks
- Dolphins

### onshore

- Civil constructions
- High rise buildings
- Riser/ventilation shafts





# Pile top drill rigs



## PBA 810/408

- Up to 3 m diameter borehole
- Small and good handling drill rig
- Suitable for jackets, anchors, bridges, etc.

## PBA 936

- Up to 6 m diameter borehole
- Robust heavy duty drill rig
- Suitable for mono-piles wind farms, etc.

## PBA 1450

- Up to 8 m diameter borehole
- Self Supporting Drill Unit
- Suitable for offshore drilling

### Advantages:

#### Completely self supporting

All facilities on board to carry out continuous drilling around the clock. Welfare facilities for a 12 hour stay

#### One piece installation

Drill rig, Extension Piece and BHA installed on the monopile in one lift. Saves installation time

#### No continuous need for installation vessel

Once installed, the crane ship can continue normal installation work.

Other drill rigs available on request



**Reliable**

**Proven design**

**Leading the market**

## Engineering

Each drilling project has its own characteristics. With our knowledge we can find the best solution for your project. Our engineering department has solved many environmental challenging subjects.

### DRILL STRING

DDC can provide complete drill rigs, drill strings or the components you need.

- Drill pipes
- Drill pipe stabilizer
- Bottom Hole Assembly (BHA)
- Cross over
- Drill collar
- Drill collar stabilizer
- Under reamer
- Drill bit
- Cutters

### DRILL RIG COMPONENTS

- Pile top adapter
- Hang of beam
- Sea fastening frame

### DISCHARGE TREATMENT

In the event when discharge cannot be deposited directly on land or in the water, we can provide settlement systems:

- Open system. (clean water flows freely away)
- Closed system (clean water is reused)



## Innovation

Our engineering department solved many problems and demands of the civil and offshore market. DDC is an innovating company, which is able to react quickly to unforeseen challenges with sound solutions. Below a selection of our solutions.

### VIBRATING AND DRILLING

In cooperation with PVE, DDC developed a method to vibrate and by refusal drilling method for giant monopiles. To lift the vibro and drill rig together on the pile a lot of handling time can be saved.

### STAND ALONE SYSTEM

In close cooperation with MHWirth, DDC designed the first stand alone drill rig PBA 1450 in the world. More information you find under drill rigs of this brochure.

### J-TUBE HOLE CLOSURE CLAMP

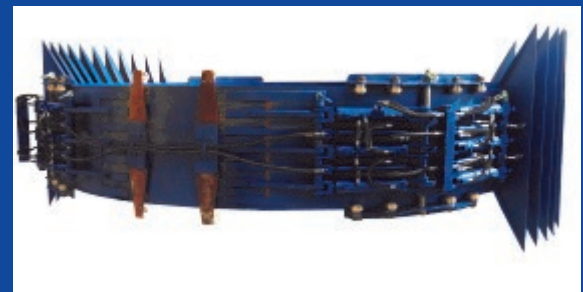
Some monopiles designs have openings for the electric cables. For airlift drilling we need a closed circuit otherwise the discharge is not working. The J-tube hole closer clamp covers these holes.

### EXTENDABLE ARMS

Lot of Wind farm projects nowadays use different sizes of monopiles. The diameter at the top is still the same for installing the MP but the diameter at the bottom differ. DDC designed a BHA which can drill these monopiles. For example DDC designed a BHA for Baltic 2 OWF which consist of five different diameters.

### PILE CUTTING

After the lifetime of offshore structures, decommissioning becomes more and more important. The structures are (grouted) stiff in the seabed. These structures can not be pulled out easily. DDC can drill out jacket- or mono- piles. Under seabed the cutting tool with is part of the drill string cuts the pile. So that the structure can be taken away.



**Innovative**

**Solution oriented**

**Practical solutions**

## West of Duddon Sand (Wods)

**Client:**

Dong Energy and ScottishPower Renewables

**Location:**

Irish sea, UK

**Date:**

September 2013 – December 2013

**Drill rig and foundation type:**

PBA 1450, OWF monopole

The West of Duddon Sands Offshore Wind Farm is located in the East Irish Sea approximately 14 km from the nearest coast on Walney Island, Cumbria.

The project consist of 108 wind turbines with a total installed capacity of 389MW and ensure clean renewable energy for more than 300,000 UK households.

DDC used the PBA 1450 drill rig for the project. The drill rig is a Self Supporting Drilling Unit (SSDU). That means that all the equipment is on the platform to carry out the drilling operations.



## Baltic 2 Offshore Wind Farm

**Client:**

EnBW Baltic 2 GmbH

**Main contractor:**

ArGe Baltic 2 Foundations

**Location:**

Rostock, Baltic sea, Germany

**Date:**

September 2013 – December 2013

**Drill rig and foundation type:**

PBA 936, OWF monopile, ø6500-4600mm

The Baltic 2 project consist of 41 jackets en 39 monopiles. DDC was standby for the event the monopiles could not reach the final depth by vibration. Due the different depth of water, each monopile is produced with different dimensions. There are in total 5 different diameters. The engineering department of DDC designed a Bottom Hole Assembly which could drill all of the different diameters. For this project we used the PBA 936.

Baltic 2 is the first project where they used XXL monopiles. The biggest pile was 73,5 meters long and weighted 930 ton.



## Satah Al Razboot (SARB)

**Client:**

ADMA OPCO

**Main contractor:**

Valentine Maritime Gulf

**Location:**

Persian Gulf, Abu Dhabi

**Date:**

April – June 2014, April – June 2015

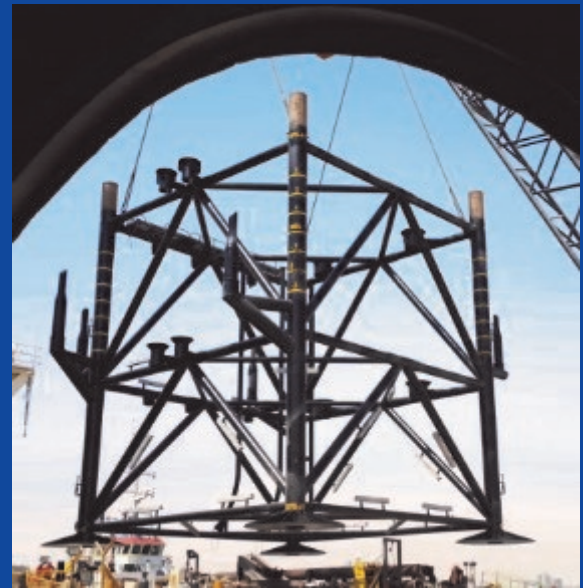
**Drill rig and foundation type:**

PBA 408, 612. Jackets and mooring anchors

SARB is a new field development off the northwest coast of Abu Dhabi. Oil and gas winning will be performed from two artificial islands (SARB1 and SARB2) with the well fluids sent by subsea pipeline to a facility on Zirku Island for processing, storage, and export.

Near each island we drilled the holes for flare and riser platform jackets. Valentine Marine used their own PBA 408 drill rig which were operated by DDC personnel. The jackets had straight legs. First the pilot hole was drilled, after that the hole was made wider by the air driven under-reamer.

For a SPM Buoy system we drilled the anchoring piles with the PBA 612. All operations were done from the barge DLB 1600 .



## PY-1 gas field

**Client:**

Hindustan Oil Exploration Company Ltd.

**Main contractor:**

Cal Dive Marine Construction Ltd.

**Location:**

Bay of Bengal near Chennai, India

**Date:**

January 2009 – April 2010

**Drill rig and foundation type:**

PBA 810, jacket

Arab PY-1 Gas field is the southernmost of the four sedimentary basins located along the eastern margin of India. It is bounded in the south by the Sri Lanka basement massif and in the north and west by the Indian Craton. The job consisted Transportation & Installation (T&I) of the PY-1 Sun Well-head Platform.

The PBA810 with 180 meter drill string with a 1240mm diameter Bottom Hole Assembly was on board as a contingency for the pile driving, for soil plug removal. If the piles could not be driven to the required depth drilling will be required to reduce friction to reach final penetration with hammering.



## Ichthys, LNG

Client:

INPEX

Contractor:

Bam international

Location:

Darwin, Australia

Date:

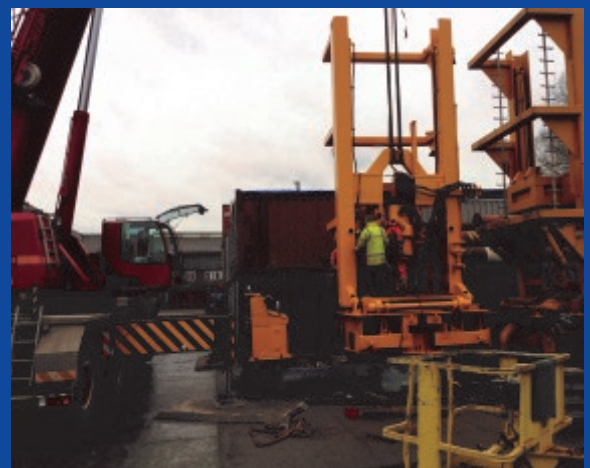
December 2013 – May 2014

Drill rig and foundation type:

PBA 815, piles two diameters

The Ichthys LNG Project consist of a Loading Jetty located at Blaydin Point, Darwin, Northern Territory. Gas from the Ichthys Field will be transported from the offshore CPF through a subsea pipeline more than 885 kilometers to the onshore LNG processing plant located at Blaydin Point.

BAM requested an drill rig which was directly available. For this project DDC revised an PBA 815 in a record time. We also delivered two BHA with a different diameter. The drill rig is shipped to Darwin and under supervision of our personnel mounted together. Our supervisor trained the BAM Clough personnel on site to operate the drill rig.



## Ferry port extension

Client:

Dover Harbour Board

Main contractor:

Herbosch-Kiere Marine Constructors Ltd.

Location:

Port of Dover, UK

Date:

October 2010 – November 2010

Drill rig and foundation type:

PBA 936, PBA 815 piles

Herbosch-Kiere Marine Constructors was awarded for the 35 m extension to the Dover ports Pier E. The extension is to cater for larger ferries that are expected to enter into service in 2011. The works consist of installing a 4 m diameter x 46 m long fendered monopile and a concrete deck suspended on 6 steel monopiles 1,2 m diameter.

The job for the 4m monopile was carried out with the PBA 936. The 6 smaller monopiles were executed with the PBA 815 using a drill bit of 1100 mm diameter. Both PBA's are hydraulically driven by a powerpack and works with the reversed airlift drilling principal for soil removal.



## Carolina Bridge

**Client:**

Ministry of Public Works of Surinam

**Contractor:**

Ballast Nedam

**Location:**

Suriname river, Surinam

**Date:**

May 2014 – August 2014

**Drill rig and foundation type:**

PBA 810, bridge and collision piles

The Carolina bridge crosses the Suriname River near the village of Redi Dati, some 50 km south of the capital city Paramaribo. The bridge has a total length of 204 m divided into 2 spans. The foundation design consists of foundation piles for the bridge pier in the river to support the bridge and foundation piles for the eastern and western abutment. The bridge pier is protected with a collision construction. In the past, there were several bridges hit in the fast-streaming Suriname river by boats.

For this project, we used our PBA 810 drill rig. We could use one diameter BHA for all the piles. For drilling the middle pier and the collision construction, we operated from a barge.



## Parking garage Anna van Bueren

**Client:**

SNS Property Finance and Fortress

**Main contractor:**

Ballast Nedam

**Location:**

The Hague, The Netherlands

**Date:**

September 2009 – October 2009

**Drill rig and foundation type:**

PBA 810, piles

Two of the foundation piles were leaking, and due to the groundwater pressure, 20 cubic meters of sand were pushed out through these piles. To prevent more sand from coming out, a grout plug was placed. When this grout plug had to be removed for inserting tension piles, DDC was requested to do so.

A backyard game for DDC, while normally working all over the world, this was a new experience. In the middle of the city center, we drilled out the 2 grout plugs, giving the client the option to complete their job. Working on this small jobsite, we asked for special solutions for mobilization and preparation. Also, a closed circulation system for the discharge and water supply was made.





**DDC b.v.**

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