

The Middelburg

An unfinished, abandoned ship hull was given another chance to life and turned into a trailing suction hopper dredger for sand mining company Van Ouwkerk

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Middelburg in Vlissingen, the Netherlands

The Dutch province of Zeeland is home to several companies that deal with the mining of marine sand. One of them is Van Ouwkerk, which has recently added another vessel to its fleet and decided to name its latest acquisition, a 2,400 m³ trailing suction hopper dredger (TSHD), after the capital of the province and hometown of the company: *Middelburg*.

DPC spoke with Ronald van Ouwkerk, owner and director of the company, who explained that the primary reason for the purchase of *Middelburg* was to serve as replacement of the aging 1955-built TSHD *Vlieree*.

But on top of that, the vessel is also meant to increase the company's production capacity. It is about two and a half times bigger than the 950 m³ *Vlieree* and provides much more operational flexibility.

Besides *Middelburg*, Van Ouwkerk's dredging fleet also comprises the 1,143 m³ TSHD *Hydra* and the plain suction dredger (SD) *Polaris*.

The hopper dredgers are deployed to dredge sand and gravel from the North Sea and the *Polaris* dredges sand from two extraction pits in the Western Scheldt, one near the Dutch-Belgian border, and one near Hansweert.

Van Ouwkerk delivers sand to clients in the Netherlands, Belgium, and northern France. From its storage and distribution facility in Middelburg, sand can be delivered by truck to places north of the Western Scheldt.

Belgium and northern France are mainly supplied by inland sand carriers that use the Canal Gent-Terneuzen and beyond Gent, the smaller Belgian and French canals. In addition, sand is supplied to Antwerp and along the Albert Canal in the direction of Liège.

Twofold sand delivery

Two different methods are applied for the delivery of the sand: "dry" and "wet". Dry discharge means that the sand is excavated from the hopper by a crane and placed onshore. The "wet" method consists of pumping the material into inland sand carriers with the help of a spreader pipe.

Until its decommissioning, the TSHD *Vlieree* was used to load sand into sand carriers, as it is still the case with the TSHD *Hydra* and the SD *Polaris*.

Dry discharge is done with the TSHD *Hydra*. In this case, a shore-based crane unloads the dredger.

The dry discharge is used for one of the company's other major activities, the mining of shells, which takes place at Van Ouwkerk's facility in Middelburg

The new one

To obtain more operational flexibility, the TSHD *Middelburg* has been fitted out so that it allows for both "dry" and "wet" discharging.

It is equipped with a complete dry discharge installation, consisting of a Caterpillar hydraulic crane and a conveyor belt system that includes a swivelling shore conveyor.

With this installation, sand can be delivered onshore, independent from local unloading facilities. Sand carriers can be loaded both “dry”, with the above-mentioned installation, as well as “wet” for which the dredger has a spreader pipe.

Middelburg is also equipped with two telescopic spuds, which make the vessel even more independent from shore facilities. In fact, the dredger can deliver sand and gravel to any location with sufficient water depth.

As a result, the vessel is highly flexible and Van Ouwerkerk is now, besides its regular clients, also able to supply sand directly to the construction sites of maritime and port projects as well as to coastal sand depots.

Second-hand vessel

Although *Middelburg* is new as a dredger, as a vessel it is not. In fact, it has been built on the basis of an existing, unfinished hull of a general cargo ship.

This hull was originally built under the name *New Vita*, but due to a bankruptcy was never completed. In 2016, it was part of an auction and Van Ouwerkerk explained that he saw the potential to turn it into a hopper dredger and decided to buy it.

Immediately after the acquisition, about a year was spent on engineering and design work. Most of the actual conversion and installation work was carried out in 2018. Van Ouwerkerk had all activities carried out under its own direction and supervision. This also involved bringing in the knowledge and expertise of the *Vlieree* crew, which was scheduled to become the new crew of *Middelburg*.

The conversion of the vessel has for the major part taken place at shipyards in the province of Groningen, such as, Ship and Steelbuilding in Foxhol and Royal Niestern Sander in Delfzijl, and along Van Ouwerkerk’s own quay wall in Middelburg.

Major elements of the conversion included the installation of the dredging equipment, a sand and gravel screen and the dry – and wet discharge systems. Also, in the hopper, bottom doors for dumping and a drainage system were installed.

Getting to work

Since its commissioning at the beginning of 2019, *Middelburg* has already supplied sand to three major construction projects: the new lock in Terneuzen; the Ørsted project in the port of Vlissingen; as well as a tunnel project near Rotterdam.

Furthermore, sand has been supplied for new housing projects in Vlissingen.

The aforementioned Ørsted project in Vlissingen consists of the construction of a new operation and maintenance base for the Danish energy company.

Located in the Buitenhaven Outer Harbour of the port, this base will serve the offshore wind farms Borssele 1 and 2 that Ørsted is in the process of realising in the North Sea, off the Dutch coast.

The base will comprise a quay wall and jetties for vessels for the transport of personnel and equipment to and from the wind farms.

Near Rotterdam, the vessel has delivered sand for the construction of a new motorway tunnel under the Nieuwe Waterweg, the so-called Blankenburg tunnel.

During this project, *Middelburg* has shown the advantage of having spuds. At the construction sites of the tunnel, both on the north side and the south side of the river, there are no mooring facilities and with the strong current in the river, it would have been very difficult to stay in a stable position by using engine power only.

With the help of its spuds, however, *Middelburg* stayed perfectly in place during the sand-delivery process.

All in all, the coastal depots that *Middelburg* has sent and delivered sand to are located in the Netherlands, Belgium, and France. [▢](#)



TSHD *Middelburg*

