The storm surge barrier on the Nieuwe Waterweg, together with the Hartel barrier, constitute the final elements of the Delta works, the plan for protecting the Netherlands against the sea.

Storm surge barrier on the Nieuwe Waterweg

The Maeslant barrier

Ministerie van Verkeer en Waterstaat

Zuid-Holland's state-of-the-art security system





Closing and opening procedures from hour to hour

The DSS computer calculates the predicted water levels 24 hours ahead. The predictions are updated every 6 hours.

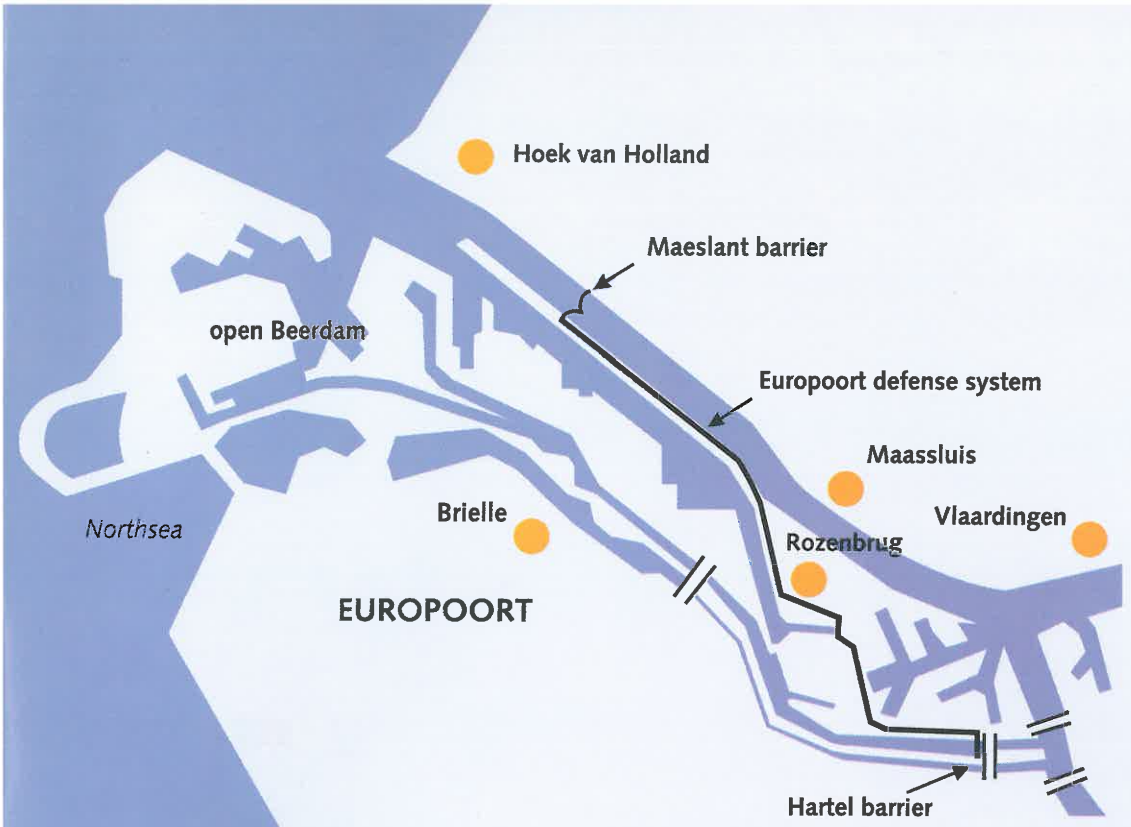
20-8 hours prior to closure
The computer (DSS) summons the operating staff.
12 hours prior to closure
Preparations at the barrier itself can commence.
8 hours prior to closure
The Haven Coordinatie Centrum (Port Coordination Centre) (HCC) is informed.
4 hours prior to closure
Water is let into the docks till it reaches the level of the river itself. The HCC sends out a warning to all shipping.
2 hours prior to closure
All shipping traffic is halted on the Nieuwe Waterweg and the Hartel canal.

Barrier closure commences.
0.5 hours after start of closure:
The gates have been floated to the centre of the Nieuwe Waterweg. The valves in the retaining walls are opened, and the sinking process starts.
1.5 hours after start of closure
The retaining walls sink to 1 metre above the sill. The high flow velocity under the walls flushes the sediment from the sill.
2.5 hours after start of closure
The retaining walls 'land' safely on a clean sill and seal off the Nieuwe Waterweg.

After the storm has passed and the water level on the river side is higher than on the sea side, the barrier can be opened again.
2 hours after start of opening
The water has been pumped from the retaining walls. The gates are floating.
2.5 hours after start of opening
The retaining walls are returned to the docks by the locomobiles. The gates of the docks can be closed, after which the water in the dock can be pumped back to the control level.

River water

The continuing flow of the river will cause the water level behind the barrier to rise but not to such an extent as to cause flooding. To prevent the build-up of river water the gates can be temporarily floated upwards. The excess river water can then flow underneath and discharge into the sea while the gates remain in position to be sunk again at the next high water level if necessary. The DSS computer decides when the gates are to be returned to the docks.



Europoort area with Maeslant barrier and Europoort defense system (including Hartel barrier)

The Hartel barrier

Protection of the lower reaches area

The Maeslant barrier is not an isolated edifice. Rotterdam and surrounding areas will only be safe if other structures are also built: the Europoortkering (Europoort defence system), plus the dike reinforcements to be carried out in the lower reaches area of the major rivers. This is the area between Dordrecht and Hoek van Holland, allong the Nieuwe Maas and the Nieuwe Waterweg. The Europoortkering protects the entire lower reaches area from flooding via the Europoort area.

Europoort barrier

The Europoort line of defense starts with a low dike at the Rozenburg point and connects to the southern edge of the Measlant barrier. The defense system continues on in southeast direction and ends with the Hartel barrier in the Hartel canal. In many places, construction of a new dike is unnecessary, as use can be made of existing elements in the landscape. A special aspect is that the water does not have to be stemmed everywhere. In places where the hinterland allows it, the water may run along or over the dike. This creates additional room for the river and allows nature to take its course.

The costs

The price tag attaching to the construction of the Maeslant barrier was considerably more friendly than the costs which would have accompanied large-scal dike reinforcements. The costs of the entire project came to 1.4 bilion guilders (1987 price level). These compromised the costs of the storm surge barrier, the Europoort defense system and the final dike reinforcements in the tidal river area - a good 400 million guilders less than the plan to continue with the then current dike reinforcements programme, and what is more, decades faster to build.

Colophon

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