

Vlassenbroek Project



The Sigma Plan protects Flanders from flooding while bolstering estuarine nature.

The Scheldt is a tidal river. Twice a month, the ebb and flow dynamic causes a spring tide, which comes with higher water levels. If this coincides with a northwesterly storm at sea, the water swells even more and it becomes a storm tide. The Gale of January 1976 is a well-known example of a storm tide. Causing severe damage in the Belgian provinces of Antwerp and East Flanders, the storm convinced the government that better protection was needed. This resulted in a large-scale water safety project called the Sigma Plan. The Sigma Plan was updated in 2005. The objective remains protection against flooding but at the same time the Flemish government will restore and further develop

the tidal nature along the river. Vlassenbroek is part of the updated Sigma Plan.

Sigma Plan project along the Scheldt

Along the Scheldt in Dendermonde lies the Sigma project Vlassenbroek. This is the ideal location to give the Scheldt more room during storm tide, thereby protecting the entire region. The flood control area Vlassenbroek consists of 2 parts separated by a floodable compartmentalisation levee. While both areas act as a safety, the development of extraordinary nature is also important. Uiterdijk, an existing flood control area that is being depoldered, is located in the northeastern part of Vlassenbroek.

Location

Province of East Flanders, Baasrode (borough of Dendermonde)

River: Scheldt

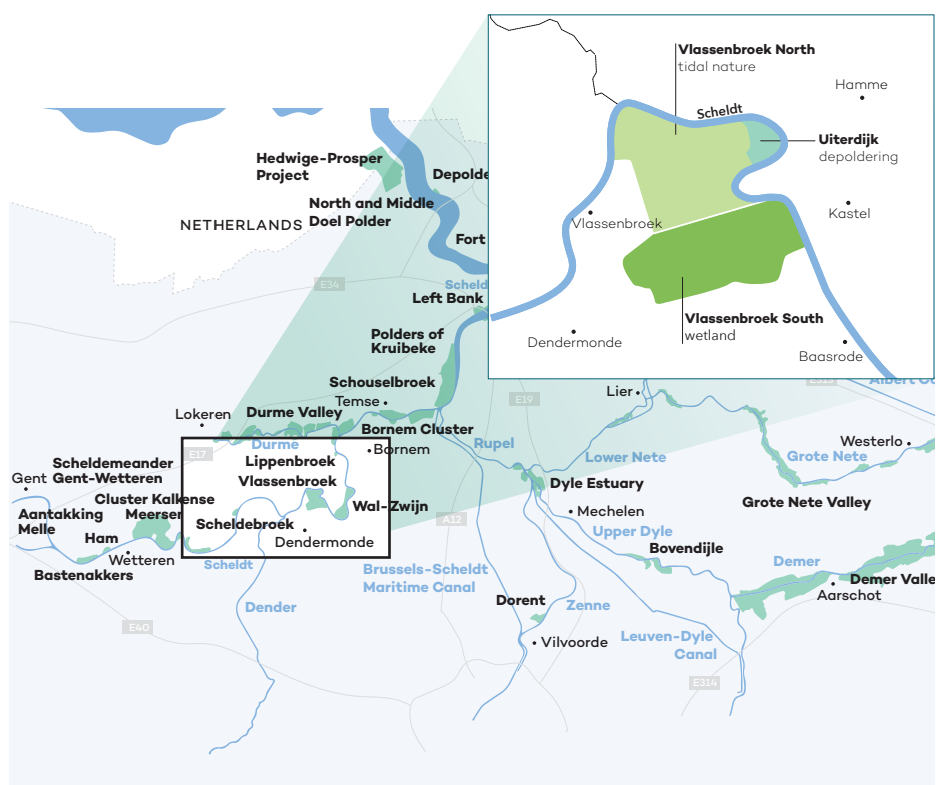
Surface area: 248 hectares

Measures

- Flood control area
- Flood control area with reduced tides
- Wetland
- Depoldering

Why?

- Flood protection
- Development of tidal nature and wetland (European conservation objectives)



What measures are being taken?

The objective of the works is twofold: better flood protection for the region and restoring EU-protected nature to its original state. The compartmentalisation levee divides the approximately 248-hectare area into two parts. The northern section is an area with a controlled reduced tidal regime: via the bidirectional sluice a limited quantity of water flows in and out of the area on the tidal rhythm. The southern section is not subject to a controlled reduced tidal regime but due to maintained high groundwater levels, it is essential to the development of valuable alluvial forest. And finally there is Uiterdijk, a 12-hectare flood control area in the northeastern part of Vlassenbroek. We are depoldering this area to allow water to flow in again to the tidal rhythm.

We are enhancing water safety in the region.

During storm tide the area will fulfil its safety function. The northern section will overflow in a controlled way via the (lowered) overflow levee. The overflow levee in the southern section will be slightly higher so it will only overflow when the Scheldt reaches higher water levels, something that only occurs once every ten years. On the western and southern landward side of the ring levee, a new collection canal and two buffer basins ensure the drainage of the water coming from smaller upstream courses.

A new pumping station can also shift larger quantities of rainwater from the collection canal around the flood area. This way the residents are protected from flooding even in the most extreme situations.

Flood control area

A flood control area is an area of flat land alongside a river that buffers water under extreme weather conditions. The water flows over an overflow levee and onto the plain. A ring levee always protects the hinterland to prevent any residential areas from getting flooded as well.



Inlet and outlet sluice Vlassenbroek North

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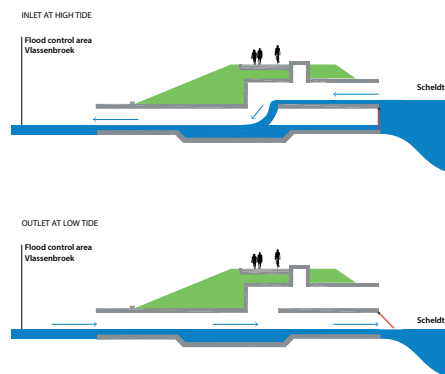


Outlet sluice Vlassenbroek South

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Controlled reduced tidal area

A number of flood control areas, such as the northern section of Vlassenbroek, are designed with controlled reduced tide, not only acting as a safety but also actively contributing to the development of tidal nature. A smart sluice system in the overflow levee is used for this purpose. At high tide, a high inlet sluice admits a limited quantity of water, just enough to trigger the development of tidal mudflats and tidal marshes. At low tide, the water flows back to the Scheldt through a low outlet sluice. This way the area ensures water safety while fostering the development of tidal nature.



Operation of a flood control area with reduced tides



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Depoldering

Depoldering means giving back land to the river. First we construct a new levee inland. Subsequently we remove the old levee either partially or entirely and also make deeper breaches, creating additional room between the old and the new levee where the river can (over)flow. This lowers the water level in the river and reduces the force of the water, thereby decreasing the risk of flooding. As the tides are given free rein again, this also gives rise to valuable tidal nature.

Wetlands

Wetlands within the Sigma Plan are marshy areas that are not influenced by the tide. During winter, ground water levels are high there and they drop in summer. The landscape varies from open water and reed beds across alluvial forests to wet grasslands.



Black kite



Sand martin



Purple loosestrife

At the same time, we are restoring rare estuarine nature.

Thanks to a bidirectional sluice, water from the Scheldt will flow in and out of the northern section of Vlassenbroek according to a tidal rhythm. Tidal areas are characterised by a high level of diversity. Especially those of the Scheldt: the tidal rhythm, the unique transition of fresh to saltwater and the interplay of water, sand and silt. In this world of extremes, the river etches out a network of tidal mudflats and marshes, gullies and creeks. Each of these biotopes has its own typical inhabitants. The wetlands in the southern section are a top location for moisture-loving trees such as alders, ash trees and willows. In other places reeds spring up.

A haven for rare species

The fauna and flora in Vlassenbroek is highly diverse. For instance, it was one of the first areas where the beaver found a welcome home. In addition you can also spot a variety of songbirds here, such as the bluethroat. Recently several other species were observed that are very rare in Belgium. A booted eagle soared here for quite a while and a couple of black kites nested in this area. With the support of Natuurpunt 's-Heerenbosch we also constructed a sand martin wall here. This is no luxury as the sand martin population in Flanders has dropped precipitously: from 6,000 to 7,000 couples to just 2,000 in twenty years' time.



LIFE Sparc

Thanks to the Sigma Plan, the Scheldt valley is better equipped to deal with the consequences of climate change, such as rising sea

levels and periods of heavy rainfall. In Europe the Sigma Plan serves as a perfect example. That is why a number of Sigma Plan areas

including Vlassenbroek receive additional EU funding through the LIFE Sparc project (life-sparc.eu).

Project name	Surface area	Municipality	Duration	Measure
Vlassenbroek	236 hectares	Baasrode (Dendermonde)	Operational flood control area 2025-2026	Flood control area Controlled reduced tidal area Wetland
Uiterdijk	12 hectares	Baasrode (Dendermonde)	2024-2026	Depoldering existing flood control area