

The Scheldt Quays in Antwerp

THE QUAY ZONES IN IMAGES





Sint-Andries and Het Zuid

In Sint-Andries and Het Zuid, we are taking the quay wall firmly in hand. The old quay wall will remain in place, but purely as a facade. A green levee along the water, with an integrated water barrier, protects the city from high water levels.

Timing

- Stabilisation: end of 2020
- Superstructure: end of 2022

WHAT CAN YOU EXPECT IN SINT-ANDRIES AND HET ZUID?

- 1.** Sturdy, handsome, familiar quay walls. We are 'softly' renovating the quay wall (see insert), which means we will not alter its original appearance.
- 2.** On the street side, next to the bicycle path, the concrete water barriers will be removed. Not only for aesthetic reasons, but also because a new, higher water barrier is needed.
- 3.** A green levee will emerge on the quay surface. The crest of the levee will lie 2.25 metres above

the current quay surface. Mobile gateways interrupt the levee at various spots. We will only close them if the water level rises too high. This way the quay zone remains accessible for events and for emergency services.

- 4.** The levee divides Sint-Andries and Het Zuid into a paved section on the river side, which can be flooded, and a green section on the city side. The old hangars and parking spaces disappear, creating a sea of space.
- 5.** For strollers, the City of Antwerp and AG VESPA are constructing a green corridor on the city side. Green areas, play areas and a wide cycle and strolling boulevard along with a city square are all part of the plan.



Sint-Andries and Het Zuid: pioneer's territory

In Sint-Andries and Het Zuid (which stretches from the De Gerlache Quay to the Zuiderterras), we have developed an effective method for stabilising the quay wall. We do this by placing a slurry wall behind the quay wall. This slurry wall absorbs the pressure the groundwater exerts on the quay wall. We also reinforce the foot of the wall (so it will not shift), and we allow the Scheldt to flow in and out of a vault via openings in the quay wall. We will develop a unique working method for each of the seven quay zones in Antwerp, but the insights and techniques used in Sint-Andries and Het Zuid will surely come in handy elsewhere.

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Droogdokken



Bonaparte Dock and the Loodswezen



Schipperskwartier and the City Centre



Three pillars of the Scheldt Quay Project

1. Stabilisation of the quay walls

With the Sigma Plan, waterway manager Flemish Waterways plc protects Flanders from the flooding of the Scheldt River and its tributaries. To safeguard the City of Antwerp, a structural stabilisation of the 19th century quay walls is necessary.

2. Elevated water barrier

Taking into account rising sea levels, we are replacing the existing water barrier with a higher alternative that is more pleasing to the eye.

3. Fresh transformation

In cooperation with the City of Antwerp and AG VESPA (the public works department for real estate and urban projects of the City of Antwerp), the quays are undergoing a profound make-over.



Nieuw Zuid

Nieuw Zuid is the outlier of the Antwerp Scheldt Quay Project. There, the quay wall is in critical condition. To the extent that it no longer even qualifies for repair. The solution? A 'hard renovation' of the wall by replacing it with a new construction with an authentic appearance.

How do we build the new wall?

1. Driving a combi-wall and excavating a construction pit

On the same level as the quay, behind the quay wall, we build a U-shaped construction pit with three steel walls. The rear wall of the construction pit is situated 40 metres behind the old quay wall. These walls are the so-called combi-walls – a combination of steel tubular piles and sheet piles – which we ram or drive ('pile driving') into the ground using heavy equipment.

2. Excavation

We then excavate and remove the ground in the construction pit and store it in another location on the building site. We use it later to refill the construction pit.

3. Demolition of the old wall

Using explosives, we demolish the old quay wall. For this drastic job, the contractor calls in assistance from a specialised subcontractor and from the experts at the Royal Military Academy [Koninklijke Militaire School (KMS)] and

the University of Gent, so that adjustments can be made, if necessary, after each phase of the work. Various holes are drilled in the quay wall to hold the charges of explosives. These charges are detonated at high tide.

4. Driving the steel frame

The new quay wall is built around a steel frame, a chain of gigantic steel tubular piles and sheet piles 37 metres long. These piles and sheets are driven 20 metres down into the soil.

5. Anchoring

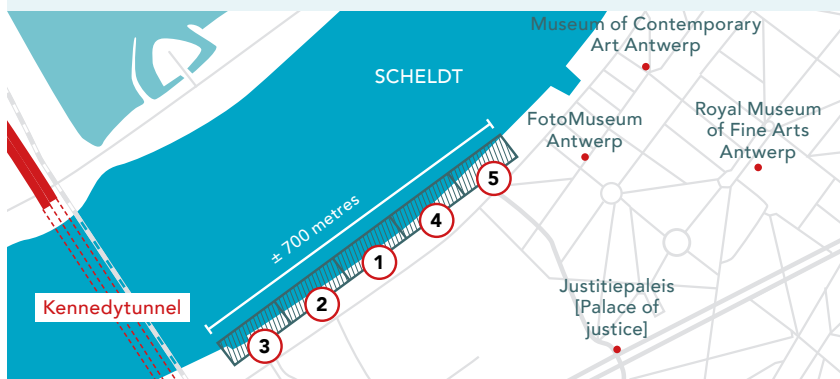
We refill the construction pit behind the new wall in phases. Between the front and rear walls, we span ground anchors on two levels.

6. Finishing the new wall

Under the high-water mark, we click precast concrete plates onto the frame. These plates are monumental prefab elements, replicas of the old cladding. We finish the top of the wall with the traditional style elements: bluestone, three layers of recuperated facade stone and the rugged mooring posts.

Timing

Our aim is to complete the renovation of the Nieuw Zuid quay wall by 2020 at the latest. We will use the same working methods in each of the five subzones. Then, starting in 2020, we can begin working on the elevated water barrier and the public spaces.





Blue Gate Antwerp

In the summer of 2015, the Antwerp Scheldt Quay Project delivered its first result—a new quay wall at the D’Herbouville Quay. This loading and unloading quay is the sustainable hub of Blue Gate Antwerp, a water-bound industrial terrain.

Over a distance of 200 metres, the old, unstable wall was encapsulated by a new construction built up around a frame of steel tubular piles. In less than one year, the unstable wall had been reinforced. The quay wall once again serves as a loading and unloading quay suitable for the largest inland shipping vessels. There is no longer any need for a separate water retaining wall at the transshipment quay, since the quay wall itself has been elevated to a safe Sigma height of 9.25 metres TAW*.

*TAW: Tweede Algemene Waterpassing; the reference height for measuring water levels in Belgium. 0 metres TAW corresponds with the average low-water level in Ostend.

Droogdokken

The Droogdokken Island in Antwerp will be home to a new, green, multifunctional park. Expect a hexagonal look-out surrounding an event zone in its centre. The water barrier will also be elevated with a natural levee, and more space will be created for mudflats and marshes.

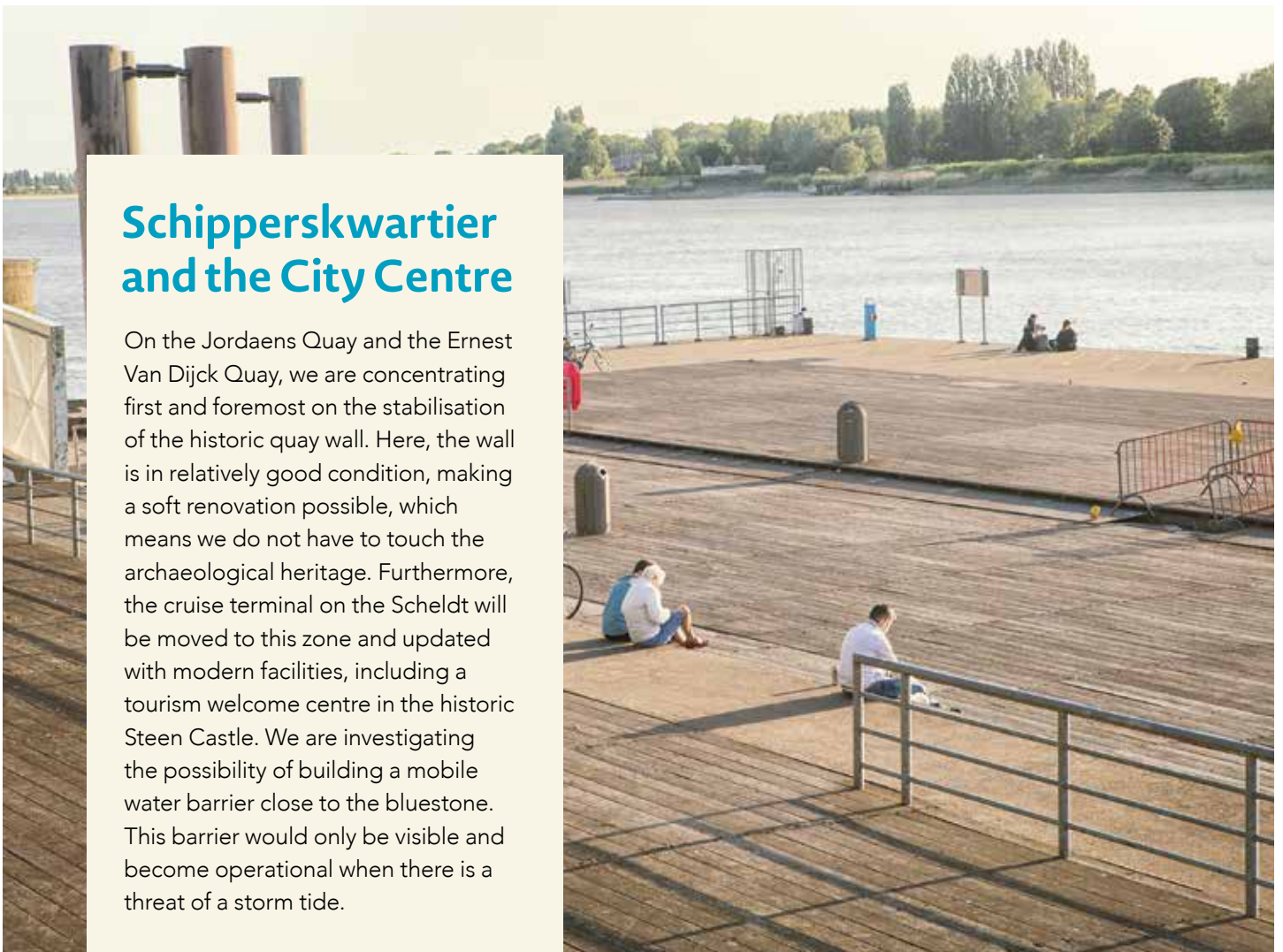
In May 2017, Flemish Waterways plc started building the new quay walls which will ultimately form a 2-hectare, hexagonal look-out construction. The park on top of it will be bordered by a new water barrier. To protect the city from flooding, the levee to the north of the Belvédère will be elevated to a safe height of 1 metre above the current quay surface.





Bonaparte Dock and the Loodswezen

The Museum aan de Stroom (MAS) and the Loodswezen dominate the view in this zone. To preserve the view of and from this unique spot as much as possible, we are investigating the possible use of mobile water barriers. These are water barriers which are virtually invisible in normal conditions and which are only used in emergencies. Ultimately, a pick-up point for water transportation may be built on a pontoon here. Strengthening the connection of this zone to the river is one of the most important challenges for the designers.



Schipperskwartier and the City Centre

On the Jordaens Quay and the Ernest Van Dijck Quay, we are concentrating first and foremost on the stabilisation of the historic quay wall. Here, the wall is in relatively good condition, making a soft renovation possible, which means we do not have to touch the archaeological heritage. Furthermore, the cruise terminal on the Scheldt will be moved to this zone and updated with modern facilities, including a tourism welcome centre in the historic Steen Castle. We are investigating the possibility of building a mobile water barrier close to the bluestone. This barrier would only be visible and become operational when there is a threat of a storm tide.



Kattendijk Dock and Rijnkaai

In the Kattendijk Dock and Rijnkaai zone, we are stabilising the quay wall, and, where possible, we are integrating the elevated water barrier into the buildings on the quay itself. On the city-side, the area behind the water barrier will also be elevated. This way a balcony will be built on the city, as it were, with vast river views in either direction. This newly designed waterfront facilitates a connection between the Eilandje and the Droogdokken Park.

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Flemish Waterways plc
Sea Scheldt - Sea Channel
Department
Wim Dauwe, M.S.
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Elisabeth Verwaest,
Flemish Waterways plc,
AG VESPA,
PROAP, Van Belle &
Medina, Dujardin

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