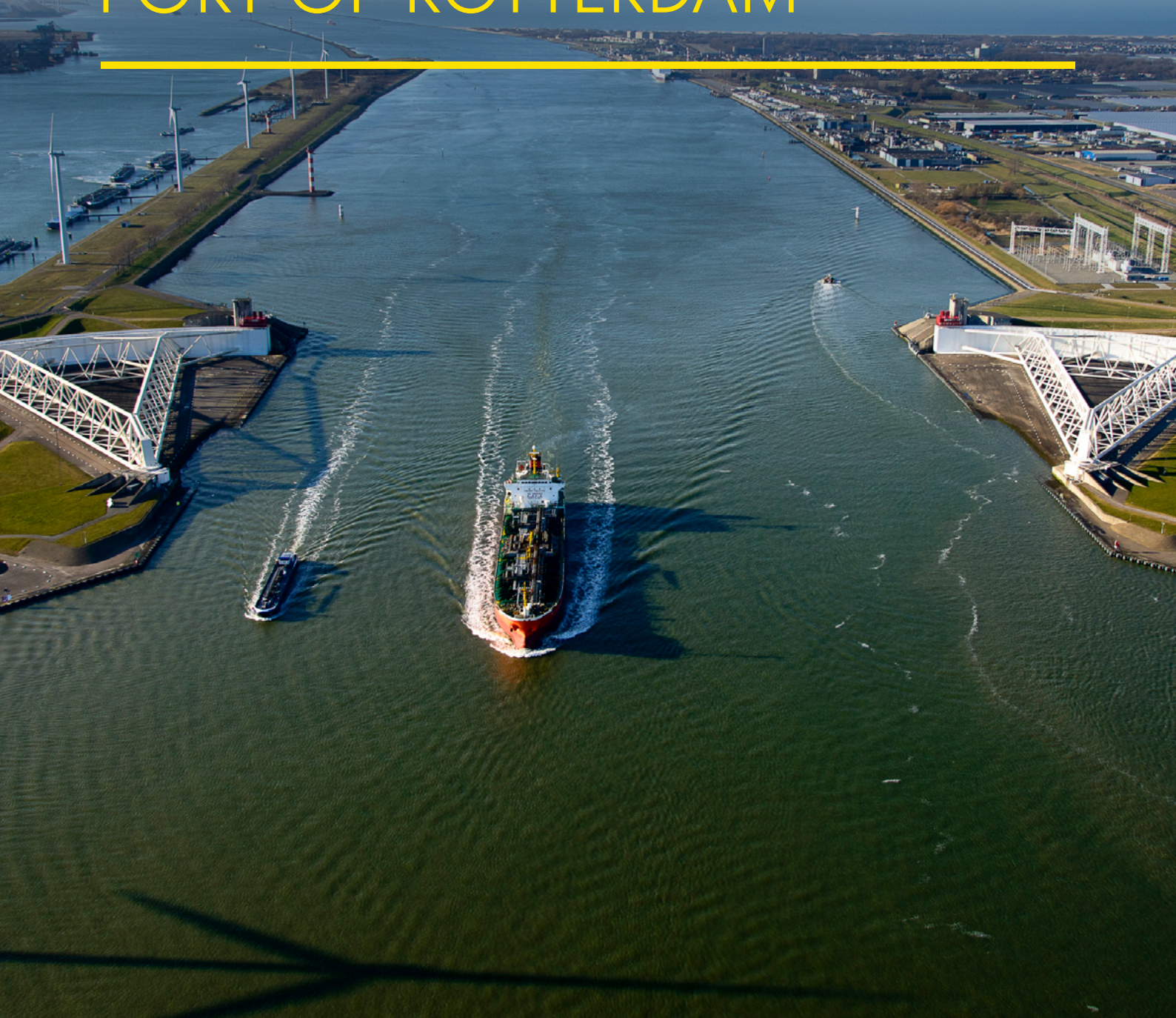


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# ADAPTATION STRATEGY FOR FLOOD RISK MANAGEMENT PORT OF ROTTERDAM

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# 1. CLIMATE CHANGE AND FLOOD RISKS IN THE PORT OF ROTTERDAM

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Sea levels are rising due to climate change and the risk of flooding in the port of Rotterdam is increasing. Because of the major economic interests and the presence of vital and vulnerable assets in the port area, it is important to think about sea level rise in good time and take the appropriate measures. The latest knowledge indicates that sea levels will rise between 30 cm and +120 cm by 2100. The probability of flood damage will therefore increase over time.

The Port of Rotterdam Authority and the City of Rotterdam have worked with stakeholders and

experts on approaches for each port area: the adaptation strategies. In this way, we ensure that everyone in the port will implement appropriate and cost-effective measures in time.

Which measures are most effective depends on the location and the type of business. They may be physical measures such as raising land locally, or they may also involve making vulnerable assets and installations flood-resilient.

Read about the risks and measures on: [portofrotterdam.com/floodrisk](https://portofrotterdam.com/floodrisk).



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## 2. WHAT IS THE FLOOD RISK IN THE PORT OF ROTTERDAM?

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The port of Rotterdam is located outside the flood defence system (see photo). Because the areas outside the flood defence system are relatively elevated, they are flooded only when water levels are very high. Businesses will be affected to some extent by excess water levels only when weather conditions are extreme. Until now, that has been seen in the port to a limited degree only, if at all.

The Maeslant storm surge barrier is located in the port area. In combination with the Hartel storm surge barrier and the Rozenburg diked area, it makes up the Europoort Barrier. When water levels are high (NAP +3 metres), the barriers are closed to protect the hinterland and therefore, in part, the port area. When the barriers are closed, the river water can be pushed up. This can also lead to water levels higher than NAP +3 metres. Most of the water will be gone within one day at most.

### Who is responsible for which area?

In areas behind the flood defence system, with protection by dikes, government authorities are responsible for flood risk management. In areas outside the flood defence system, the residents and businesses themselves are responsible.

### Flood probability

The port of Rotterdam is one of the most flood-resilient ports in the world. The flood probability is low. When a port area is inundated, the impact can be significant. Our assessments have shown that economic damage will predominate. There can be damage to buildings, equipment or installations, or business activities may be interrupted. In addition, there is a lower risk of environmental damage and a neglectable probability of casualties.

### Consequences of flooding

The Port Authority and the City of Rotterdam have joined forces and, working with businesses and stakeholders, identified the flood risks for each area in the port.

The consequences of flooding between now and 2100 have been assessed in detail for the entire port area.

### How do you estimate flood risks?

Read about the flood risks on [portofrotterdam.com/floodrisk](https://portofrotterdam.com/floodrisk).

Companies themselves are responsible for implementing measures and deciding what is acceptable.



# 3. AN ADAPTATION STRATEGY FOR THE PORT OF ROTTERDAM

Adaptation strategies have been drawn up for all port areas. They state whether measures are needed. Which measures are most effective (and when and where) depends on the location and the business activity in question. They may be physical measures, such as raising land locally, but they may also consist of making vulnerable assets and installations flood-resilient.

More information about the adaptation strategies: [portofrotterdam.com/floodrisk](http://portofrotterdam.com/floodrisk).



## Which measures can my company take?

There are some measures that every company can implement immediately. They do not depend on the location or the extent of sea level rise:



Include flood risk management as a criterion in investment decisions. This will allow you to make or construct sites in water-robust ways.



Inform organisations involved in initiatives for new spatial developments in the port about flood risks and possible management measures in good time. This makes it possible to incorporate these measures in the design without incurring significant additional costs.



Include flood risks in individual emergency and recovery plans. For companies that depend on each other, it makes sense to establish a joint (area-specific) emergency and recovery plan in order to establish a picture of chain dependencies.

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## Measures for flood risk management

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Our website includes an overview of measures that every company can take to improve the situation with respect to flood risk management. It distinguishes between types of asset, sizes of investment and types of measure. This makes it possible to filter the relevant measures. The focus here is on generic descriptions of the measures in question.

See: [portofrotterdam.com/watersafety](https://portofrotterdam.com/watersafety)



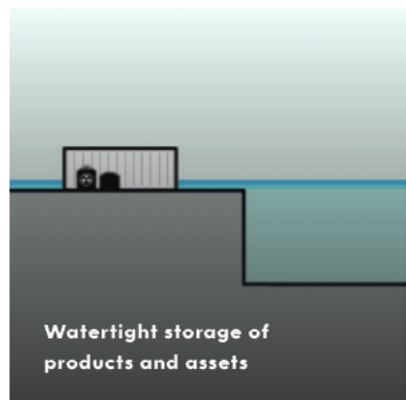
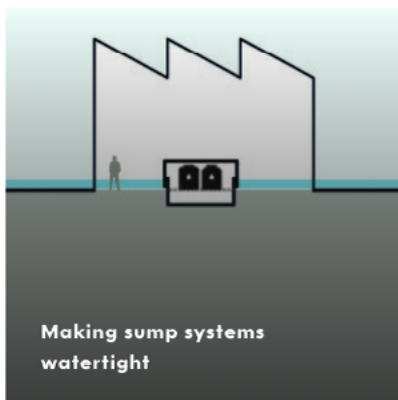
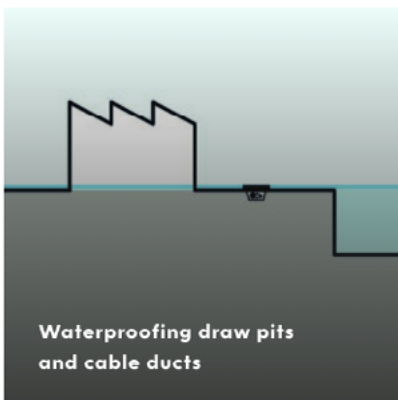
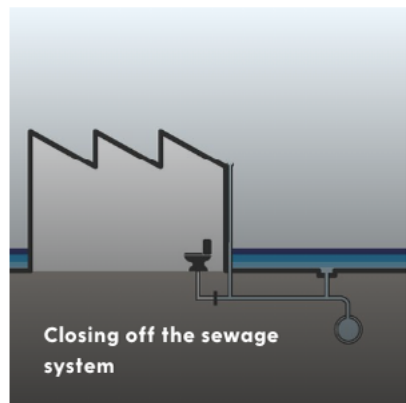
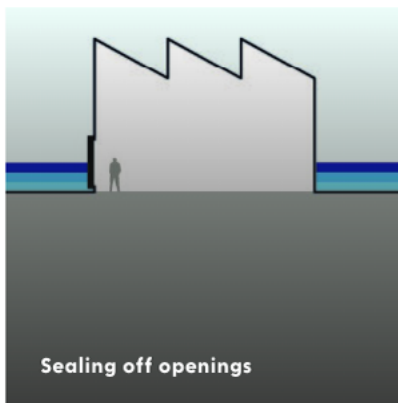
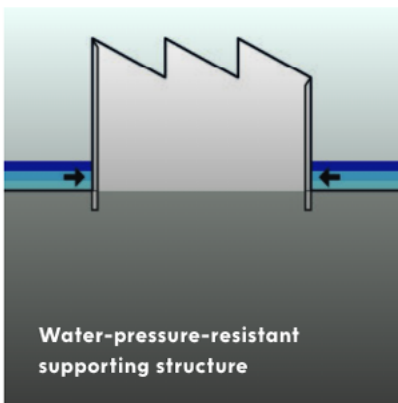
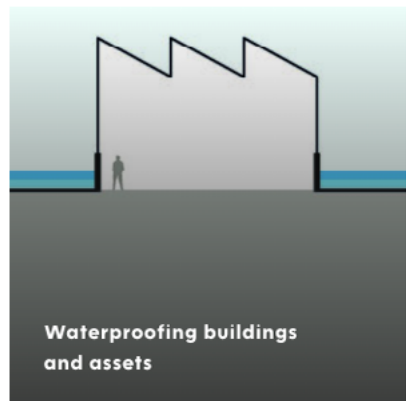
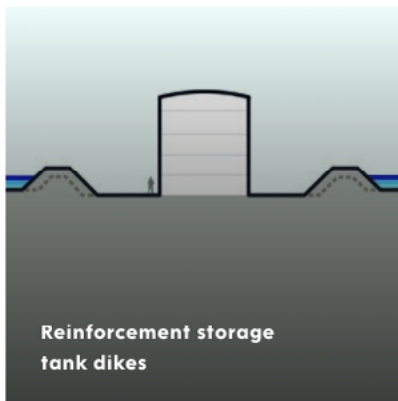
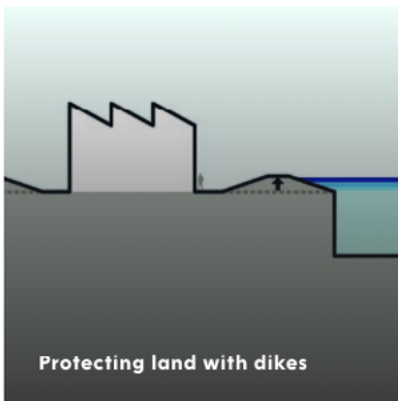
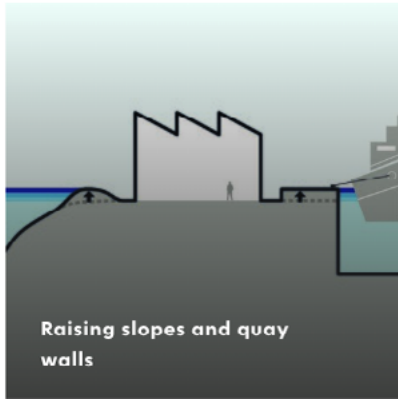
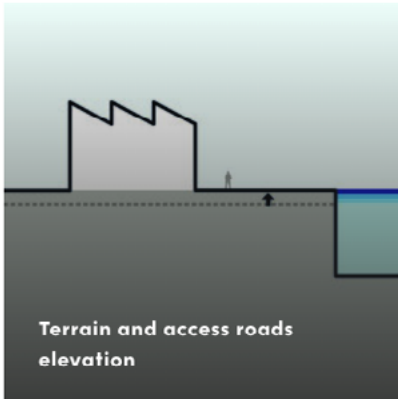
# WATER SAFETY MEASURES

Filter results

Assets

Investment

Measures



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## 4. WHAT CAN YOU EXPECT FROM THE PORT AUTHORITY?

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The Port Authority is responsible for ensuring that public areas in the port are flood-resilient. We have now fully anchored flood risk management in all of our projects, major maintenance programmes and all future investments. We always make an assessment of whether it is useful and necessary to implement measures for flood risk management. In recent years, this has resulted in a range of measures. In addition, we are responsible for providing the businesses and other stakeholders in the port with correct and timely information about flood risks.

We feel responsible for working with businesses in the port to ensure that the port of Rotterdam remains flood-resilient. In collaboration with the City of Rotterdam, other government authorities, companies and utility companies, and infrastructure managers, we are therefore working hard on that goal. This is a joint ambition that we can achieve only if all stakeholders in the port take their responsibilities in this respect.

Our approach fits in with the central government's **Rhine Estuary/Drecht Towns Delta Programme**.

Would you like to know more about the adaptation strategies, possible risks or implementing measures?

Go to: [portofrotterdam.com/floodrisk](https://portofrotterdam.com/floodrisk).

Or send an email to [waterveiligheid@portofrotterdam.com](mailto:waterveiligheid@portofrotterdam.com).

The Flood Risk Management Team of the Port of Rotterdam Authority will be happy to help!

**ADAPTATION STRATEGY.** MAKE IT HAPPEN.