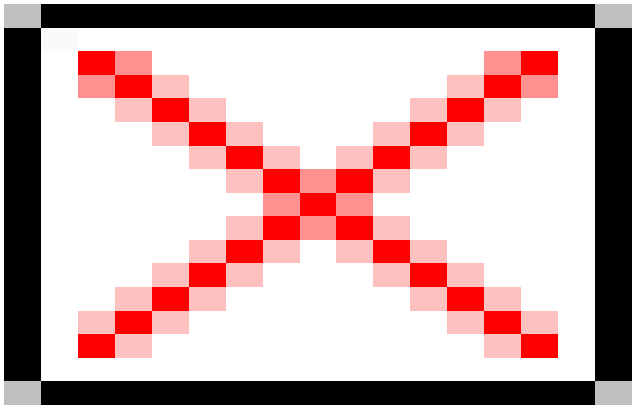
IMDC
Water management / Policy
Location:
Antwerp, Belgium
Client:
Port of Antwerp



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Application of the decree to drain rainwater from the Antwerp port area

The specific character of the port area of Antwerp means a specific approach is required for applying the decree to drain rainwater.
As part of its ambition to simplify administrative procedures, the Port of Antwerp wants to present utility companies with objective answers to their applications for building permits and environmental permits.
The decree follows a philosophy of first reusing rainwater, then percolating water, and finally the temporary storage and slowed drainage.
IMDC was awarded the contract for developing the procedures and tools that will simplify and objectivise the permit application process.

Infiltration Procedure
The port area is characterised by polluting industries, and hence infiltration is not desirable. A procedure has been drafted in consultation with the environmental agency and the public company for waste management to exclude infiltration in polluted areas.
The official tool that the authorities use to determine the susceptibility of soils for infiltration does not take into account the stowage of the port area. An exhaustive analysis of drillings and samplings and the results of the modelling of groundwater flow have allowed the mapping, on which the tool is based, to be updated.
A further piece of research determines the added value of infiltration. The port area has been subdivided into homogenous areas in terms of groundwater flow. Infiltration can only be imposed in areas where it creates an added value. A model has been built of groundwater flow to determine how much infiltration contributes to supplying resources with water, to pushing back salt water and to protecting against drought.

Procedure for retaining and slowing down the drainage of rainwater
Instead of individual retention basins, the environmental agency has agreed to use the port basin as a common retention basin, provided that this satisfies the conditions prescribed in the decree. IMDC has built a water balance model to investigate the capacity of the port basin and the conditions for slowing drainage.

The research has shown that, even in the event of the full hardening of the port area, the capacity of the port basin would suffice: in other words, an increase of water levels below the maximum levels permitted in the port. The results also show that the drainage outflows are clearly lower than the outflows permitted by the

decree.
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