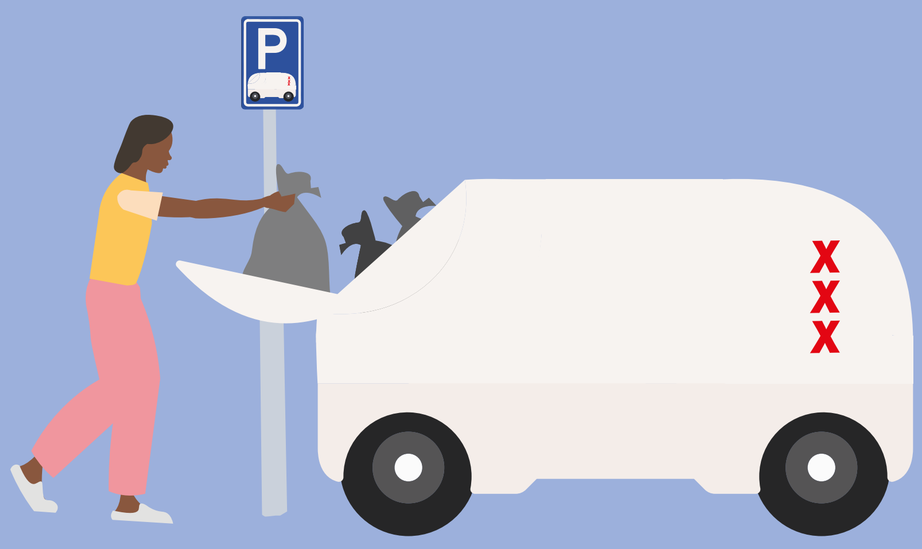
Robots for a cleaner Amsterdam



Mobile Robot Container

To address the major waste challenges posed by the city centre's current policy of allowing residents to deposit waste outside twice a week, the Mobile Robot Container concept aims to **provide waste disposal options at will** in the centre, thereby reducing littering behaviour and optimising waste management efficiency by **autonomously transporting waste to a hub when full**. In addition, it will **reduce the physical burden on employees** by eliminating the need to manually collect waste from the street and minimise the need for heavy waste trucks in the centre, **reducing the strain on fragile bridges and quays**.

Mobile Robot Bin

To address littering behaviour, the Mobile Robot Bin concept aims to **motivate proper waste disposal behaviour** through **rewarding interactions**, while at the same time **increasing the efficiency of waste collection** for Amsterdam's cleaning employees. In order to align with Amsterdam's identity and raise awareness, the look will be created in collaboration with local artists.

Dirty Amsterdam

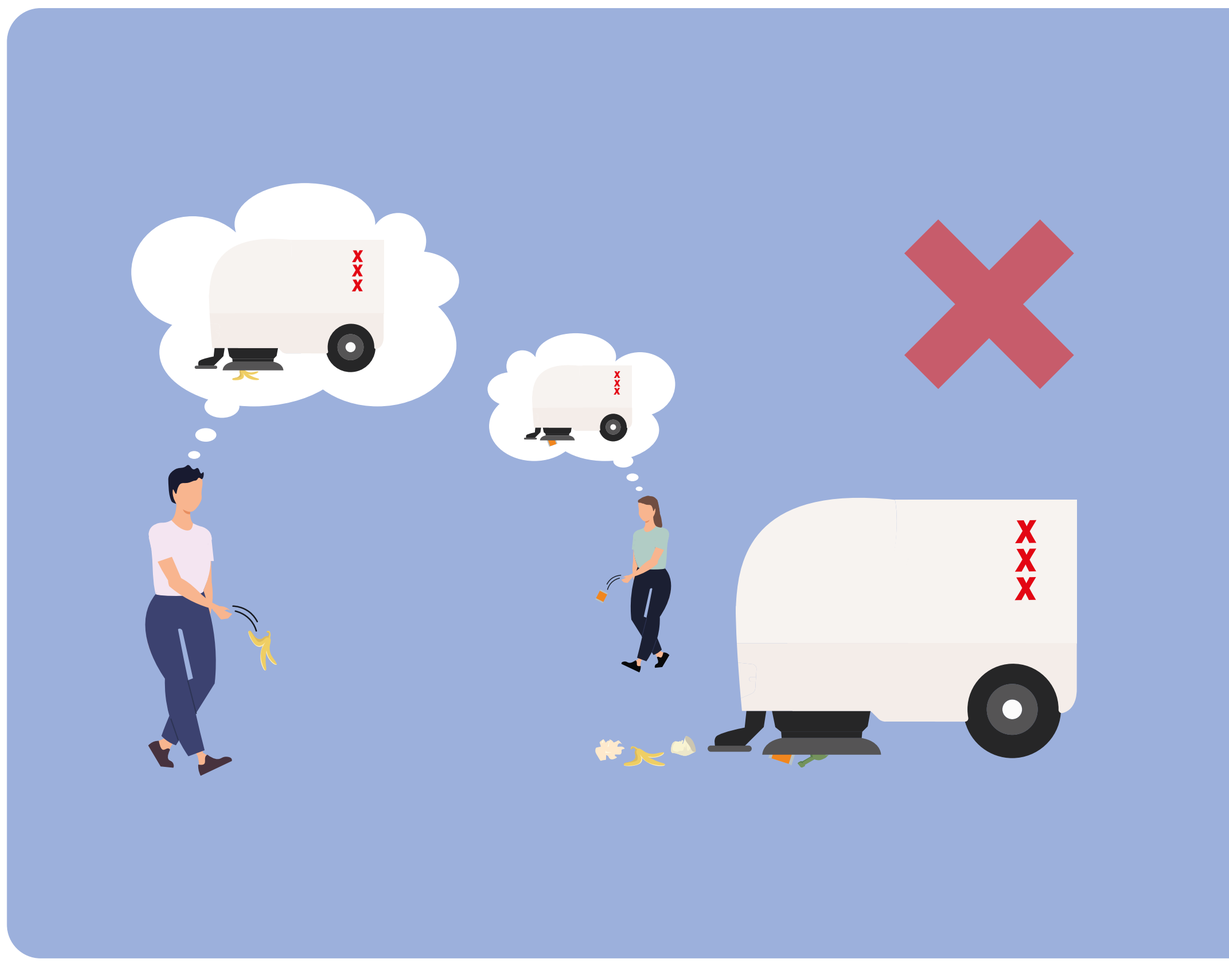
Amsterdam currently faces **challenges in maintaining a clean public environment**, which has a significant impact on the overall quality of life. As the city continues to grow, this **waste problem is expected to worsen**. Amsterdam's waste problems are often **caused by littering behaviour** and **inefficiencies in waste management practices**, which reinforce each other and make the situation worse. To address these issues, the municipality of Amsterdam requested research into robots as an additional capacity to help achieve a cleaner city.

Cleaning robots in Amsterdam? *No!*

Littering behaviour is influenced by many factors, including 'the belief that a place will be cleaned' and 'reduced perceived responsibility'. The **presence of cleaning robots** may inadvertently **trigger littering behaviour factors**, potentially leading people to assume that the robots will take care of the cleaning, further **stimulating littering behaviour** and **exacerbating waste accumulation** in Amsterdam in the long term.

Robots that keep people involved? *Yes!*

To **avoid stimulating littering behaviour** in Amsterdam, robots need to keep people involved in the waste management process in the robots' task. By using robots as a tool to **promote proper waste management behaviour** and to instil a sense of ownership in residents, while at the same time **improving waste management efficiency**, robots can be a valuable solution for promoting a cleaner Amsterdam.



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Robots for a Cleaner Amsterdam:
Roadmapping Waste Relationships
for the Next Decade

MSc. Strategic Product Design

Graduation committee

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