

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 690182

UNDERGROUND CONTAINERS IN HIGHER POPULATION DENSITY AREA



Background (REF: 1)

Underground containers are an interesting solution to overcome difficulties linked with the implementation of separate collection in dense areas and vertical housing. They offer several advantages over traditional wheelie bins: less handling needed, less space consumption, better integration into the landscape, cleaner surroundings, less odours, higher capacities leading to less overflowing and lower collection frequencies.

Underground containers are also regarded as a good way to raise awareness and inform citizens about selective collection since they bring a more positive image of waste and resources collection.

ACTION 🐪

Analyse the specific characteristics and needs of each area and if adequate: design an underground collection system in higher population density areas with adapted openings to establish cleaner surroundings and improve the collection efficiency

Example of good practice implemented

Underground containers in Paris region (France) (REF: 1)



Syndicat Emeraude is an intermunicipal organisation bringing together 17 municipalities, in charge of municipal waste and recyclables collection and treatment for a population of about 270 000 inhabitants. The territory encompasses dense areas and a rate of vertical housing of about 55%. **To overcome difficulties linked with high density and vertical housing, the first underground containers were implemented in 2006 as a pilot project.**

Figure-1. Underground containers in Paris (France). Source: Regions for Recycling

Following the success of the pilot action, there was an increasing demand on the territory. The first introduction of underground container was made in 2006 in a single apartment block. By the end of 2012, around 850 containers were installed.

The results showed that municipalities experiencing a moderate or high installation of underground containers had increasing collected quantities per capita (respectively +9 and +10%), whereas other municipalities' performances were more stable. Other positive outcomes were reported:

- Cleaner living environment for residents: as waste and resources are being stocked underground, it consumes less public space.
- The fact that all containers are grouped together makes it easier for users to understand the sorting guidelines.
- Bigger containers leading to less frequent collection tours lead to savings (calculated decrease of 30% for the costs of collection). Collection route is also shorter.
- The system is also less constraining for caretakers, who do not have to take out containers on the kerbside anymore.



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- A You should also establish an evaluation system, based on KPIs in order to be able to monitor solution adopted.
- **A** It is important to consider costs and benefits of the selected solutions.
- ▲ For large cardboard, collection can be less effective than other materials unless openings are adapted.
- ▲ In some cases, underground containers can result in reduced quality and higher contamination.

How to start? (REF: 1)-

- Analysing morphology and socio-demography of the municipality.
- Constant communication activities during the implementation of the system toward every main stakeholder is also a key for success.
- Since the system relies on a collection truck with a compactor, it requires a certain number of collection points to be made profitable.
- The containers should be located within a short distance from the entry door of the apartment block, so that it is not too inconvenient for users and it reduces noise issues for the surrounding apartments.
- Monitoring collection systems and advice on possible improvements.



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| Aesthetically the system blends well with the surroundings | | ٠ | • |
| Flexible times (in practice) for dropping off waste | | | • |
| Cost of collection is potentially lower than with other systems | • | | |



Figure-2. Underground containers with adapted openings in Barcelona (Spain). Source: Ajuntament de Barcelona (Spain)



References:

- 1. REGIONS FOR RECYCLING (2014): Good practice, Paris region: Underground containers
- 2. ZERO WASTE: SYSTEM CHARACTERIZATION
- **3.** WASTE MANAGEMENT WORLD (2011): Underground Bins for London Households