



# Going Underground ?

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# What do we do now?



**Bins on  
streets  
24/7**



**Different  
frequencies**



**Residents  
having place  
bins out for  
collections**



# What do we do now (Cont)



Non-recyclables



Garden waste



Food waste (kitchen)



Food waste (kerbside)



Paper



Glass and cans



Cardboard



Plastic bottles



Textiles



# What do we do now (Cont)





# Issues with the current system?

- **Cost of and storage of replacement bins & containers**
- **Cost of different vehicles**
- **Labour intensive (source segregated Vs Co-mingled)**
- **Vandalism of bins (crime & arson)**
- **Easily damaged / lost (vandals or crew)**
- **Costly to deliver**
- **Cleanliness (perceived responsibility)**
- **Assisted Collections**



# A change of mind-set Go Continental – Go Underground



**PRINCESS STREET GARDENS EDINBURGH  
FROM 200 LITTER BINS TO  
16 SILO BINS**



# Underground Waste Storage Systems



- **Mainly used in European countries.**
- **Access to the system can either be open or restricted access.**
  - **Use of a swipe card or RIDF fob.**
- **Volumes of storage containers vary from system to system but normally 3,000, 4,000 and 5,000 litres.**
- **Usually made from either Stainless Steel or plastic inside a pre cast concrete unit.**
- **Needs to be enough void space, completely clear of all and any services to a depth of a minimum of 3 metres. (or possible additional expense for re-routing services)**
- **Have a minimum overhead clearance of approximately 8.8m - 9.8m and be free from any overhanging obstructions such as trees or cables.**

**The collection system requires that the collection vehicle needs to be fitted with a crane or Hiab.**

# Type of Systems Available



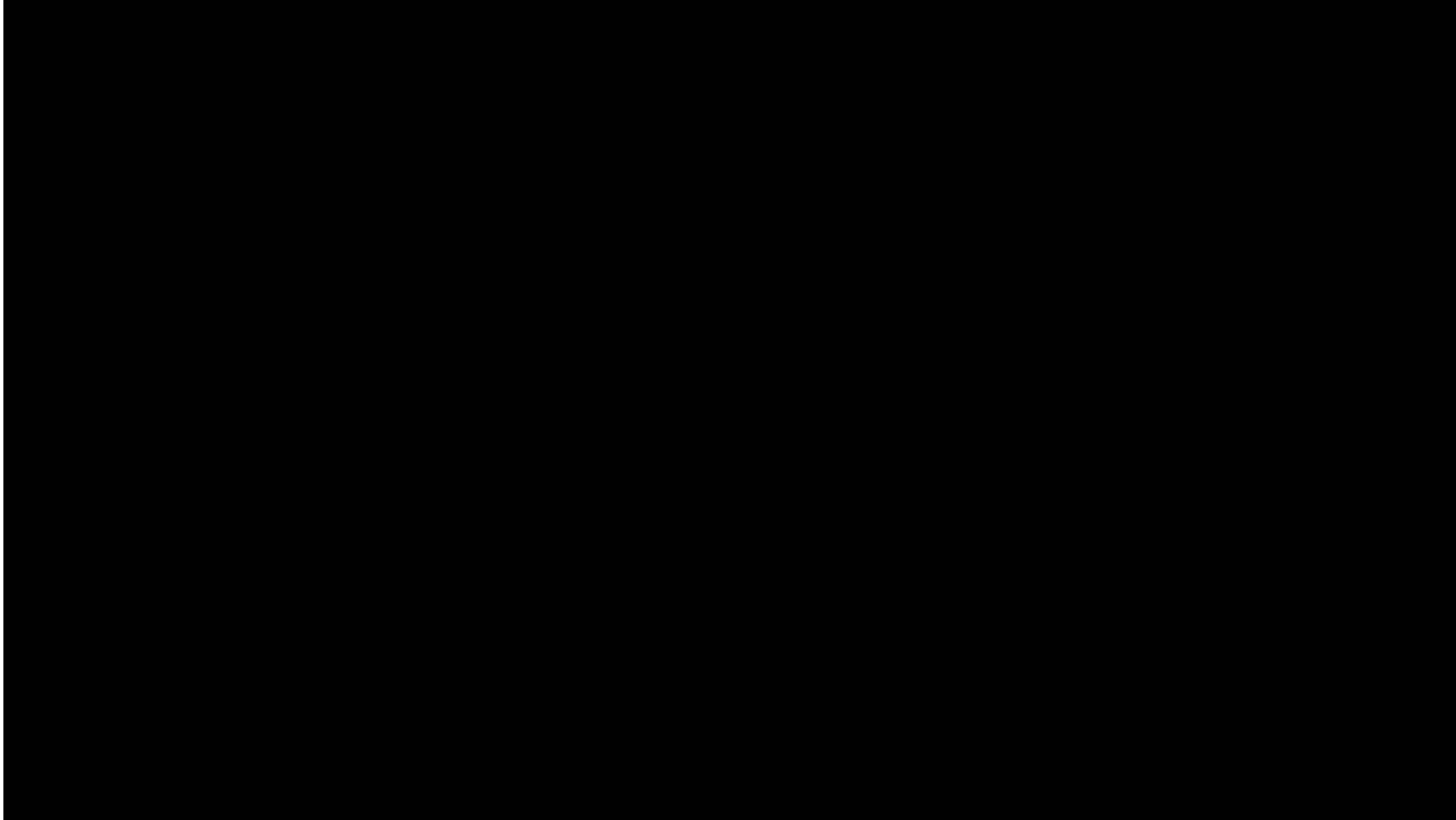




# Type of Systems Available



**apse**



# Type of Systems Available





**apse**

# Type of Systems Available



# Advantages of Going Underground



- Removes the adverse visual impact.
- Releases space above ground.
- Greatly minimises potential disturbances to residents, **(visual, noise pollution, odours)**
- Allow bins to be placed in locations where above ground systems might otherwise be unacceptable to the community.
- Resistance to vandalism, arson attacks and adverse weather conditions. **(extreme wind)**
- Potentially reducing collection costs through reduced collection times. **(collection of a smaller number of large containers opposed to a large number of smaller ones spread over a wide area)**
- **Reduced operational costs.** (potential for single operative operation)
  - H&S must be considered at the design stage of any development and should take into account the use of single operatives
- Resident does not have to worry about missing the collection. **(No missed bin complaints)**

# Disadvantages of Going Underground



- **Cost ?????**
- **Maintenance** (Container requires little maintenance)
- **Groundworks** (On existing developments possible re-routing of services)
- **Public acceptability**
  - Considerable change from what is perceived as the norm
  - Distance to carry waste (should be within 30 metres)
- **Operational issues**
  - Staff acceptance
  - Negotiations with unions
  - Political buy-in
  - Assisted collections



# Assisted Collections



- **Many elderly and disabled residents see the ability to place their bin out for collection as a sign of their continued independence.**
- **Typically involves the operative entering the property, collecting the bin and returning it to the same place after collection.**
- **In an underground system the need for assisted collections should be reduced.**
- **How do we deal with residents that cant carry bags?**
- **Assisted collections are not provided in flats?**
- **In certain circumstances could be provided through site staff/caretakers.**
- **Given the generally low number of potential assisted collection requirements, it is not believed that the requirement for assisted collection is a barrier to the take up of an underground bin collection system.**



# Potential Efficiencies ?

## Operational efficiencies up to 70%

- ✓ In time to collect. (each underground bin = 21 wheeled bins)
- ✓ Staffing costs. (potentially single operative system)
- ✓ Potential reduction in the number of vehicles. (Rounds 40% to 50% bigger)

## Capital efficiencies.

- ✓ Underground bins are potentially cheaper to install than wheeled bins systems?
  - primarily through the removal of costs for bin compounds and associated structures.



# Dependencies

- **Number of properties** (full round required)
- **Excellent Communications**
- **Use of fill level sensors**
- **Access restrictions** (reduce contamination)
- **Location of tipping facilities**
- **Political support**

# Contact details



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## Interim requirements

**Roads & Highways, Building Maintenance, Bereavement Services,  
Environmental, Parks & Open Spaces, Waste, Facilities & Leisure etc.**

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