



Underground Refuse – All Systems Go!

Andy Mudd, Head of APSE Solutions

Why Underground Refuse Systems?



- Huge cost reduction
- Much reduced carbon footprint
- Reduction in street litter
- Improved street scape
- Very popular
- Safer for collectors



Can be used in different scenarios



Average cost of current domestic collection methodologies



- Average cost per household = £70 pa
- Average cost per 5000 properties - £350,000 pa
- Breaks down into 2 vehicles at an average cost of 50k pa each, plus 6 operatives at £250k = £350k pa
- This is based on 3 240l bins per property with fortnightly collection of residual waste and a collection of 2 recycling streams – 10,000 lifts per week



Equivalent revenue cost of URS

- At one bin per 20 properties with 2 recycling streams
- Requires 750 5000l bins at 250 sites
- Weekly lifts to cover maximum capacity of 10k wheeled bins = 480 requiring 1 vehicle and 2 crew
- Per annum cost = £50k vehicle plus £100k staff = £150k.
- Saving = 200K but with fill sensors much more as current bins emptied before they are full

Carbon reduction



- Fewer vehicles; travelling fewer miles; using less fuel
- No more travelling to empty bins well below their capacity
- Minimum saving = $\frac{1}{2}$ of current carbon footprint

Improved recycling levels



- Technology can provide household specific metrics to better target promotional effort including rewards schemes and maybe eventually pay as you throw
- Public nature of bins creates peer pressure
- Removes requirement for people to find space to recycle



Improved streetscape

- Removes the need for bin storage areas
- Removes bins/bags from streets and ginnels
- Reduced stop start vehicular movement
- Less litter on streets

But people won't like it



Well which would you prefer?

Do people really value this?



Non-recyclables



Garden waste



Food waste (kitchen)



Food waste (kerbside)



Paper



Glass and cans



Cardboard



Plastic bottles



Textiles

When they could have this?



It's too expensive!



- URS are not cheap
 - But they save loads
 - And save the planet
 - And are safer, cleaner and more user friendly
 - Do the sums and create an invest to save business case
- Developers should be happy to pay for installation on new estates
 - Cost effective by comparison with meeting requirements for bin storage space
 - Much lower cost if installed before housing is built
 - Add value to new housing
- And can be given a nudge
 - Planning guidance
 - Planning gain
 - Add value to properties

Its new - let somebody else go first



- Portugal
- Holland
- France
- Spain
- And much of the rest of Europe have had it for many years
- Tower Hamlets and several other London boroughs
- Peterborough
- Cambridge
- Edinburgh
- Glasgow

And now Liverpool!

- First large scale local authority installation in UK
- Initially in dense housing areas – 140 sites, covering 27,000 properties
- First 12 installations now officially opened
- Others on the way
- One Show filming and featuring this underground revolution

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If only we had big bins underground





“I want Liverpool to be a zero-waste city and to achieve that we need to be smarter in how we enable people to dispose of what they generate in their homes. These subterranean super-bins are going to make a huge difference to the quality of life for thousands of families across huge swathes of our inner-city neighbourhoods.

“We need to consult with communities on the locations but when installed these bins will have both an immediate and dramatic impact on the cleanliness of our streets and will save the council a huge amount of time and money for many years to come. They are an environmental and economic win-win”

Joanne Anderson, Mayor of Liverpool



The framework: Encouraging joined up solutions



- Bins
 - Fully Underground
 - Semi underground
 - Above ground
- Technology
 - Access control
 - Monitoring
 - Fill level sensors
 - Weighing
 - Routing
- Vehicles
 - Designed for the job
- Maintenance and cleaning
 - Essential to a long and successful life!





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