



London Borough of Tower Hamlets

**Waste storage and collection
systems supplementary
information (2017)**

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Introduction

There has been a significant increase of high rise developments within the borough in the last few years and this tendency is expected to continue given the need to deliver housing.

The use of traditional wheeled and Euro bins are extremely impractical and costly to the Council given the time taken to collect from individual locations.

In order to sustainably manage waste generated from residential developments we are seeking to move away from the traditional wheeled bins towards more innovative mass waste collection systems that enable residents to have good access to their refuse, reduce the number of collections the council's waste operatives make in a week and reduce the number of locations within a development that the operatives have to go to.

The Proposed Submission version of the Local Plan addresses the need to ensure that waste can be segregated and stored within the development in order to:

- minimise transport movements from waste collection operations;
- minimise the financial and operational burden on existing waste collection system;
- maximise efficient use of collection resources;
- encourage recycling behaviour by residents and reduce contamination of recyclables collected; and
- make a positive impact on the quality of the street scene.

In order to reduce the number of traditional wheeled bins the Local Plan policy requires:

'New major residential developments must incorporate high quality mass waste collection systems that do not include traditional methods of storage and collection and are compatible with our waste collection methods outlined in appendix 4. In instances where this is not practicable, supporting evidence must be submitted with the application to demonstrate this.'

This evidence base document supports the policy approach and provides and background and reasoned justification for requiring mass waste collection systems.

Tower Hamlets current situation with waste:

Our waste collection teams currently collect waste from approximately 300,00 households which include flatted developments. This creates a significant cost to the council and additional collection costs are applied every year based on the number of new developments.

New developments increasingly involve a higher number of flats and therefore additional bins/bin storage is required. Ultimately, this means that there is an increase in the number of bins that require collection by the Council. Collections costs are based on the number of bins lifted per week. The total refuse collection cost in 2016/17 was £5,412,643.33 and total recycling collection cost was £3,746,964.15.

The collection of bins is also time-consuming for the operatives meaning that they need to spend more time in each development to complete collections. We forecast that more collection rounds will be needed in future to cover the increasing demands.

Traffic congestion is a very serious issue within the borough and it is projected to get worse as the population continues to grow. Reducing the number of trips will save time for the operatives and the service will be more efficient.

There are a number of issues that the waste collection operatives face when collecting waste from traditional wheeled bins within the borough.

The crews frequently cannot access the bin storage areas for multiple reasons:

- The location is heavily congested meaning that the operatives cannot stop for long periods of time and collections cannot be completed. This means that a further collection will need to be made later on in the day or the week.
- Fobs/keys/codes used to access the bin stores have been changed without giving notice or appropriate access to the operatives.
- Access to the bin store is blocked.

Another issue that prevents waste being collected on the allocated day is that on a number of occasions the recycling bins are contaminated and the operatives are instructed not to collect contaminated recycling bins as this can contaminate the whole load. Contamination refers to items such as food waste being placed within the recycling bins.

When a recycling bin has been identified as contaminated they are tagged by the operatives and a different operative goes back to the relevant locations to collect the contaminated bins within 72 hours. This is a time consuming and costly process.

There is a specific crew in charge of delivering, replacing and repairing refuse and recycling bins. Annual expenditure in 2016/17 in bins provision and maintenance was £209,575.28.

Many properties in the borough receive more than one refuse collection per week because the allocated bin storage has insufficient capacity to store the waste for a week. This is adding pressure to the service both in collections and in costs.

The recycling rate in 2016/17 was 27.6%. This figure is significantly below the London Plan target of 50% by 2020 for London. Whilst we are working towards this target we have not been able to achieve it partially due to the fact that a high proportion of properties within the borough are within flatted developments. 86% of the housing stock in Tower Hamlets is flatted properties, which makes recycling more challenging to deliver and storage space becomes a critical issue. A significant proportion of the existing blocks and estates have no dedicated bin store rooms for recycling and there is limited storage space within the individual properties to facilitate segregation of waste and recycling. Improving the infrastructure in future developments by ensuring there is sufficient internal storage space and an easy and convenient to use mass waste collection system is vital if we are to achieve increased capture rates to improve the quality of the materials collected.

Data has been gathered on the number of major residential planning applications that have been decided within the last two financial years and this highlights the total number of Euro (bulk) bins that have been required

2016-17		
Total no. of containers	Residual waste	Recycling
Bulk (1110/1280)	770	449
Underground waste systems	169	115

2015-16		
Total no. of containers	Residual waste	Recycling
Bulk (1110/1280)	946	553
Underground waste systems	208	142

The information highlights that whilst a number of developments have incorporated mass waste collection systems such as Underground waste Systems the majority of developments use traditional wheeled bins.

Mass waste collection systems and their benefits

The Proposed submission version of the Local Plan includes details of mass waste collection systems as detailed below.

Non-traditional mass waste collection and storage systems

There are a number of non-traditional waste collection systems that can be incorporated into developments. All of the systems require land to be set aside to store collected waste materials.

While it is not our responsibility to prescribe the type of waste collection and storage facility developers should incorporate into a development, the facility must be compatible with our waste collection vehicles. It is therefore advised that applicants/developers contact the team that manages waste collection prior to the submission of a planning application to ascertain whether the system is compatible with our collection service.

There are three main groups of waste collection systems and some are on-site waste processing systems, which could be considered to help us reduce the burden on waste collection services. . These are as follows;

- Underground container systems.
- Vacuum collection systems.
- On-site compaction and container collection systems.

It should be noted that the above is not an exhaustive list of alternative waste collection and storage systems and developers/applicants can present other methods that are compatible with our waste collection service.

Underground waste collection systems

Underground container collection systems are already in use within the borough and have proven to be a good solution to high-density developments and they can also be incorporated into developments of much lower densities. This system involves a large steel container set into a concrete hole underground, above which is a set of inlet containers to allow residents to deposit bagged waste materials. The design of the inlet containers can vary greatly and can be adjusted to suit the specific design requirements of the development or streetscape.

These systems are suitable for dry mixed recycling and residual waste. The container systems allow more waste to be stored in the centralised underground containers than traditional bins/bags, and therefore reduces vehicle movements. In instances where there is more than one building proposed as part of the development, the underground container system eliminates the need for a refuse collection from each building.

The flexibility of these systems is such that the inlet containers can be located outside of the building, in front courtyards allowing residents to deposit waste when they are leaving the building. Access to the containers can be restricted for residents only, through the use of fobs that are operated by a sensor. Containers can also be fitted with sensors to measure their fill level.

It should be noted that these systems are not generally suitable for food waste and therefore additional space within the development is required to accommodate this fraction of waste.

Vacuum collection systems

Vacuum systems involve waste being conveyed through a network of underground pipes from residential blocks to a central bulking point or 'terminal building' where the materials are bulked up into containers. The system is capable of dealing with all three fractions of waste, residual, dry mixed recycling and food waste. Like the underground container system this one also allows more waste to be stored and therefore reduces vehicle movements.

Residents 'post' waste materials into the inlet containers, similar to the underground container systems. The system is operated automatically through a system of sensors and valves that are linked to a computer system located in the terminal building. It is possible to integrate the vacuum system within buildings, so that residents can place waste materials into chutes on each floor of their block for ease of use/access.

The flexibility of these systems is such that the inlet container can be located inside or outside of the building to suit budget and design.

On-site compaction and container collection systems

On-site compaction and collection systems principally involve large roll on roll off containers for storing waste materials combined with an electrically powered hydraulic ram to reduce the volume of waste inside the containers and a hopper for depositing waste materials safely into the container.

Containers will be required to collect segregated fractions of waste.

If internal chutes are used the development must be designed to ensure that there is either one chute per waste stream, or there is a 'diverter' system attached to the end of the chute which directs materials into the correct hopper and container. Residents would control the system through selecting the correct button on a panel located at the chute door.

The flexibility of these systems is such that access can be restricted to residents through sensors.

Food waste macerators

Food waste disposal units within developments are also an option, subject to approval from Thames Water. They involve small macerators installed under domestic kitchen sinks used to grind food waste into slurry to allow for it to be

disposed of through the normal wastewater system. The macerator is fitted just underneath the kitchen sink and once installed it mechanically chops and grinds food waste using blades. These systems can also reduce the need for traditional bin collection, as the materials are treated by water treatment companies and the sewerage system.

Other benefits of mass waste collection systems

If developments were required to incorporate mass waste collection systems that enable a once a week collection this would result in significant time and cost savings to the council and would also result in reduced traffic congestion as there would be less waste vehicles on the road. Areas within the borough such as the Isle of Dogs which is projected to experience significant levels of growth currently experience high levels of congestion. The reduced vehicle movements from waste vehicles will help to address congestion issues.

The entire borough is in an air quality management area. Parts of the borough exceed WHO guidelines limits and EU Safe Legal Limits regarding Nitrogen Dioxide. The reduction in vehicle movements would also have a positive impact on air quality within the borough.

Viability

The cost of installing mass waste collection systems will inevitably have an impact on the viability of a development. The council is therefore having a number of mass waste collection systems viability tested.

Infrastructure to support the systems we are requiring

Details of how we can demonstrate that we have the infrastructure to support the requirement of these waste systems

- The Council currently has three vehicles for the collection of underground waste systems and is in the process of procuring an additional vehicle to support the expansion of the service
- The incumbent contractor is hiring a vehicle for the collection of compacted waste from a new development that has installed this system
- A new waste (rubbish and recycling) collection contract is due to be procured in 2018 to start in 2020. The specification will outline the requirement for the new incoming contractor to make provision for the collection of rubbish and recycling from underground systems and from compactors. The specification will be flexible to enable the growth of these systems and to enable the additional purchase/hire of suitable vehicles for on-site waste collection systems

Instances where traditional bins might be considered appropriate

- In developments with less than 10 units
- In developments consisting of low rise/individual properties only
- Where the new development is a conversion above commercial units and space does not allow for the construction of an on-site waste facility and where collections would be directly off the highway due to established road network
- Where it can be demonstrated that the installation of a mass waste collection system would render a development unviable (however this is subject to an assessment and consideration with the council's development management team)

There may be other instances where the mass waste collection systems are not considered to be appropriate, however this will be considered on a case by case basis.

Conclusion

It is evident that the borough cannot continue to manage waste sustainably by using traditional wheeled bins to store and collect waste. Mass waste collection systems can help the borough to provide a sustainable solution to the management of waste both in the short and long-term.

The associated costs with the systems is in many instances viable as can be seen from schemes that have been implemented, and the overall benefits of the scheme both environmental, financial and time saving are significant.