



# Waste Management Guidelines for Architects and Property Developers

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# Section 1

## Introduction

### 1.1 Purpose of Document

This document provides guidelines for architects and developers of new residential, commercial and mixed-use units in the London Borough of Lewisham, to ensure that the arrangements for storing, collecting and managing waste are appropriate.

The requirements for managing waste are different according to the type and size of each development, so care should be taken to ensure the right sections of these guidelines are used.

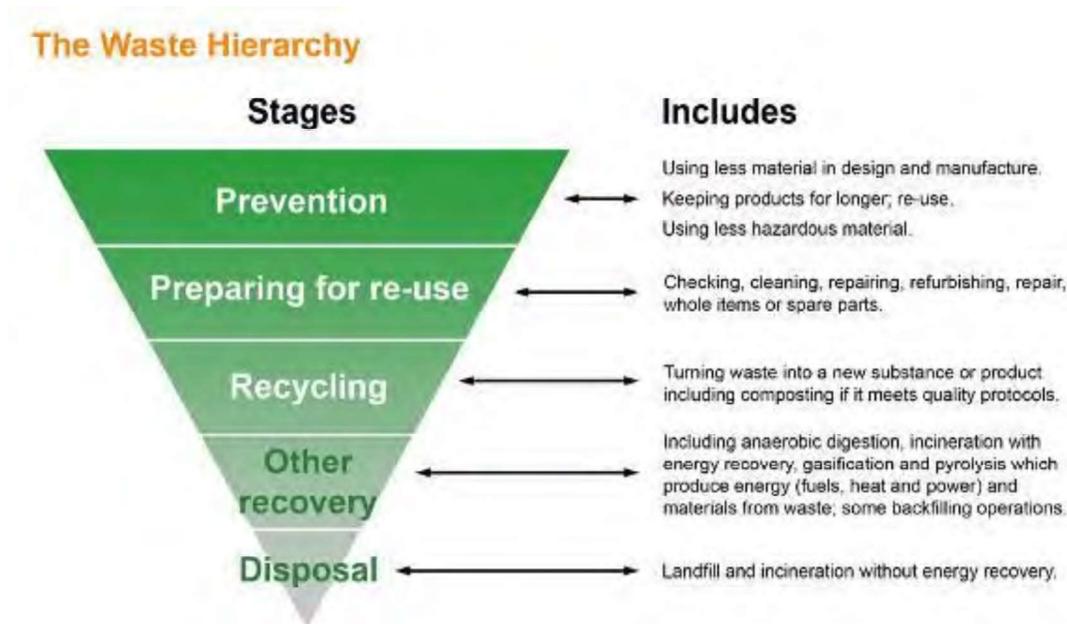
Architects and developers should also refer to Approved Document H6 of the Building Regulations 2010, and British Standards EN BS 5906:2005.

These guidelines do not cover the requirements for managing construction and industrial waste.

### 1.2 Policy Context – European & National

The Environmental Protection Act 1990 is the primary legislation governing waste management, and defines many of the roles and responsibilities involved. In particular, it sets out the duties of a waste collection authority (such as the London Borough of Lewisham) to collect refuse and recycling produced by residents, subject to this waste being presented in an appropriate manner.

The Waste (England and Wales) Regulations 2011 have transposed the revised Waste Framework Directive from European to English law. These Regulations require local authorities, businesses and other bodies to ensure that all aspects of waste management are governed by the following hierarchy:



This means that architects and developers must make provision for waste to be reduced or reused prior to being put out for a recycling or refuse collection. There is more information on the local context in the next section.

These Regulations also require that ‘separate collections’ for waste paper, metal, plastic and glass are established for both commercial and household sources by 2015. The use of co-mingled collection systems (where different materials are collected together and separated later) has been approved in principle, but only where it can be demonstrated that separated collection systems are not technically, environmentally or economically practicable (TEEP). The basis for this TEEP assessment has not yet been determined, but it is anticipated that the existing collection systems for household waste in Lewisham will be considered acceptable.

### 1.3 Policy Context – Local

Lewisham is an inner London Borough which spans from Deptford in the North; Sydenham in the West; Catford in the South and Lee Green in the East. It covers an area of approximately 3473 hectares.

Lewisham shares a vision with its partners to make Lewisham the best place to live, work and learn. Lewisham’s Municipal Waste Management Strategy feeds into the Sustainable Communities Strategy, in particular as it contributes towards delivering the ‘clean, green and liveable’ priority outcome.

The Council is committed to providing a high quality waste management service which is efficient, effective and convenient to its users and maximises the opportunity for recycling where at all possible whilst at the same time adhering to the principles of the waste hierarchy and encouraging waste prevention and reduction.

The Council is also committed to the protection and enhancement of the urban environment, the conservation and sustainable use of resources and the minimisation

and elimination of pollution.

#### **1.4 Waste Reduction**

Owing to the rising financial and environmental costs of waste disposal, it is the London Borough of Lewisham's policy to require architects and developers to properly apply the waste hierarchy in new developments by taking steps to encourage a reduction in the amount of waste that is presented for collection. This is in addition to more established strategies for maximising recycling, such as making internal and external space available for segregation of recyclable items from other waste.

The following are suggested actions for reducing waste arisings at new developments:

- Provide on-site composting facilities for all developments, including individual compost bins in private gardens and community composting sites on larger developments. Information on how to compost materials at home, and the benefits of doing so, should be provided in all new residents' packs.
- Engage with community and third sector organisations to collect reusable furniture items from bulk waste stores.
- Provide and manage a communal tool and equipment store/service for residents in blocks of flats, including vacuum cleaners, power drills etc. This will help with storage pressure in the flats, as well as reducing the need for residents to buy products that will actually be used very little.
- Encourage reuse and sharing of items amongst neighbours by providing a physical or online notice board. This could include rarely-used kitchenware and cleaning appliances, as well as books, DVDs and other such products.
- Select durable, high-quality materials and fitted appliances for new homes and businesses.
- Install in-sink food waste disposal units (macerators), or allow for their future installation through the choice of appropriate sink designs and provision of under-sink power supplies in all new kitchens. See Section 7.4 for more information.
- Consider the installation of small-scale on-site combined heat and power (CHP) systems fuelled by waste for new larger developments. There is more detail on alternative waste technologies given in Section 7.

#### **1.5 Submitting Planning Applications**

When a planning application is submitted, the London Borough of Lewisham will expect details of the proposed storage accommodation for waste and recyclable material to be specified and agreed.

In determining planning applications, permission will not normally be granted in advance of submission of details indicating satisfactory storage arrangements for waste and recyclable material. However, in exceptional circumstances it may be considered appropriate to reserve details of the waste storage accommodation for approval prior to the commencement of construction.

In larger developments the Council may require a waste management plan to be submitted. This should indicate:



- Estimated volumes and types of waste produced by the development.
- The size and location of waste and recycling stores, and how the waste will be delivered to these facilities.
- The size and quantity of containers for waste.
- Any proposed separate collection point, and the method for transferring waste to this location.

Architects and developers are encouraged to consult with the Council's Waste Management department at the earliest opportunity in the design process to ensure that proposals for waste storage and collection meet the necessary requirements. Developers of mixed-use or commercial sites may also need to consult with other waste collection providers to ensure that their requirements are met.

## Section 2

# Houses

This section of the guidance should be followed for houses which have a front garden or yard, where each property will have individual waste storage provision.

The London Borough of Lewisham does not recommend the use of communal waste storage for developments of houses, and encourages developers to ensure that all street-level properties have direct road access to simplify waste collection services. However, where this is not possible, architects should follow the guidance in Section 3 for the design and positioning of bin stores, rather than using the detail in this section for premises with individual waste and recycling bins.

### 2.1 Collection Services Overview

The London Borough of Lewisham currently provides a weekly refuse and weekly recycling service for residents in individual houses.

Wheelie bins are used for containing and collecting refuse. Lewisham now has 'one-bin' and 'no side waste' policies for refuse to encourage residents to reduce, reuse and recycle their waste.

240 litre wheelie bins are also used for recycling, which are emptied every week. The recycled materials are co-mingled, which means they are collected together and sorted out later on at a materials recovery facility (MRF). At present the following materials are included in the collections, which can all be placed into the same bin without any need for further segregation:

- Mixed paper and card
- Plastic bottles
- Glass bottles and jars
- Food tins and drink cans

A wide range of other items can be taken to our Reuse & Recycling Centre on Landmann Way, SE14 5RS

The Council also provides a £15 for 3 large items collections of bulky waste. Garden waste is currently collected using sacks which cost £10 for a roll of 10. These can be organised through Lewisham's Call Centre or online. No containers are provided for these services at the present time.

### 2.2 Internal Storage

To enable and encourage occupants of new residential units to recycle their waste, developers should provide adequate internal storage, usually within the kitchen, for the segregation of recyclable materials from other waste.

Developers are also encouraged to install in-sink food waste disposal units to help reduce the amount of waste being presented for collection. Please see Section 7.4 for more information.

### **2.3 External Storage – Capacity**

Developers should ensure that there is sufficient and appropriate space within the front garden or yard for the necessary wheelie bins.

For 1- or 2-bed houses, it is recommended that space is allocated for two bins; 1 x 240 litre (recycling) and 1 x 180 litre (refuse).

Where a street-level property is being subdivided into flats, it may be appropriate to allow for each dwelling to have its own refuse and recycling bins. However, the proliferation of wheelie bins can be detrimental to the streetscene, so adequate solutions must be devised by architects to minimise this. In some cases, it may be more appropriate to move the property onto a communal waste storage system, using larger wheelie bins or Eurobins (1100 or 1280 litres).

It shall be the responsibility of the developer to purchase the necessary bins for external waste storage, and ensure that these are in place before residents move into new properties. The London Borough of Lewisham can provide these bins, with details of indicative prices given in Appendix B. If bins are to be purchased from another source then the details must be provided and agreed with the Council in advance.

### **2.4 External Storage – Design Features**

The design of the front garden or yard should enable the bins to be stored in a shaded position away from windows. The bins must not intrude on the street scene, and therefore must be contained within an appropriate front wall, fence or hedge for the garden, or alternatively within a dedicated and suitably designed structure within the boundary of the premises. Bin storage areas should be located to minimise nuisance to adjoining properties.

In all cases there must be sufficient space for the occupants to easily access both their refuse and recycling bins to deposit waste, and it must be possible for the lids of all bins to be fully opened. There should be clearance of 150mm around and between each bin to enable ease of movement. Each bin should be able to be used and moved without having to move another bin first.

All collections for individual houses take place at the front of the premises. Residents are required to present their wheelie bins for collection at the edge of their premises, but not on the pavement itself. Adequate provision must be made for the elderly, disabled and families with young children, such that the design of the front of the premises enables residents to set out all of the required containers for collection on the same day while maintaining sufficient access to the property entrance for a wheelchair or double-buggy.

Appropriate access for collection crews must also be included in the design of the outside space. This should involve solid surfaces, with a maximum of 1 step down to the pavement from the bin storage/presentation point (there must be no steps up from this position). The distance from the presentation point to where the collection vehicle can safely stop should be no more than 15m for bins of up to 240-litres, or 10m for larger containers. There should not be any locks on the doors or gates of bin storage chambers for individual houses.

If developments of individual houses are located on new access roads, these must be designed in accordance with Section 6 to allow safe use by waste collection vehicles.



## 2.5 Bulky Household Items

Lewisham residents can pay for a bookable collection for most items that will not fit into their refuse wheelie bin, such as furniture or large appliances. 3 items can be collected at a time and there is a £30 charge for fridges or freezers.

Developers should ensure that residents are able to present large items for these collections so that no obstruction is caused to building exits, nor to the refuse and recycling bins.

## 2.6 Garden Waste

Residents can book a garden waste collection from the Council. The material being put out for collection should be contained within the purchased sacks and placed in the front garden. Developers should therefore ensure that there is sufficient space at the front of the premises for such material to be presented for collection so that no obstruction is caused to building access or the refuse and recycling wheelie bins.

To enable and encourage residents to compost their garden waste at home, the Council requires any properties with a rear garden to include sufficient space for a home composting bin. Lewisham residents can purchase home composting bins at reduced prices, which are available in the following size:

- 220-litre: 900mm high, 740mm diameter

Developers are encouraged to install compost bins in all private gardens to encourage their use by residents.

## Section 3

# Purpose-Built Flats

This section provides information and guidance on waste storage and collection requirements for purpose-built blocks of flats, where residents share communal waste facilities.

The guidance given in this section on the design, size and location of bin stores will be applicable for other types of facility as well, including commercial units and housing developments without individual bins.

There is specific information provided in Section 5 for sites where waste containers are to be stored underground.

In new developments, and particularly larger-scale sites with 50 units or more, it may be appropriate for alternative on-site waste treatment and management solutions to be built into the design, which will help to reduce the impact on the local environment and reduce the requirements for waste storage capacity. For more information please see Section 7.

Architects and developers should be aware that the London Borough of Lewisham does not offer a compacted waste collection service. At sites where compaction is used, waste collection and disposal will need to be arranged and paid for through a private contractor that is able to offer an appropriate service. More information on compaction is available in Section 4.

### 3.1 Collection Services Overview

The London Borough of Lewisham currently provides weekly refuse and recycling collection services for residents living in purpose-built flats.

Most purpose-built flats have communal refuse bins for residents to use. The standard type of bin are metal Eurobins, but in some smaller developments there are sets of two-wheeled plastic bins. In locations where there are refuse chutes installed, Chamberlain bins are normally used.

Separate containers are used for recycling. These communal Eurobin containers are sited around bin storage areas or other appropriate locations, and are clearly labelled to distinguish them from refuse containers.

The following items can be put into the recycling bins:

- Mixed paper and card
- Plastic bottles
- Food tins and drink cans

A wide range of other items can be taken to the Jenkins Lane Reuse & Recycling Centre.

Free collections of green garden waste are offered to all residents in the borough, and this service is sometimes used by those living in blocks of flats who have their own private garden. Green waste and litter from communal areas is considered to be commercial waste so is not accepted.

The London Borough of Lewisham offers residents free collections of most bulky household items, which are also available to occupants of developments where



communal waste storage is provided. In these cases, a separate designated area must be provided for bulky waste, and only those items which have been booked for a collection will be cleared.

Where bulky items are dumped on a private development (or left in a bin storage area without a collection being booked), it is the responsibility of the site managers to organise a collection through a commercial arrangement with the Council or a private contractor.

### **3.2 Internal Storage**

To enable and encourage occupants of new residential units to recycle their waste, developers should provide adequate internal storage, usually within the kitchen, for the separation of recyclable materials from other waste.

Residents will be responsible for providing their own internal containers. However, it is recommended that developers consider methods to integrate the reusable sacks for recycling into the design of the kitchen areas to enable and encourage residents to make full use of them.

Developers are also encouraged to install in-sink food waste disposal units to help reduce the amount of waste being presented for collection. Please see Section 7.4 for more information.

### **3.3 External Storage – Capacity**

The London Borough of Lewisham will undertake one weekly collection of refuse. Recycling collections will be provided on a weekly or fortnightly basis, but developers should ensure there is sufficient bin storage capacity for the latter. Sufficient capacity for waste storage must be provided for each household to allow for extended gaps between collections owing to Bank Holidays, severe winter weather or other operational disruptions.

The London Borough of Lewisham recommends that developers follow the guidance issued in document H6 of the Building Regulations with regards to waste storage capacity, so that a total of 0.25m<sup>3</sup> (250 litres) is provided per dwelling.

For developments where the average number of bedrooms in the dwellings is less than 2, developers may choose to follow the formula for calculating waste storage capacity as set out in BS 5906:2005. However, any eventual under-provision of waste storage that results from not providing the recommended capacity of 250 litres per household will be the responsibility of the site managers to resolve.

The London Borough of Lewisham recommends that 25-30% of waste storage capacity be allocated for mixed recycling, where 250 litres per household are being allocated. Where the BS 5906:2005 calculation is being used, it is recommended that this be used to determine the refuse capacity, with recycling allocated as an additional 25-30% capacity on top of this.

Developers should give consideration to the flexibility of the storage capacity provided, so that the Council and site managers are able respond effectively to rising levels of resident participation in recycling and/or an increased range of materials (such as glass, mixed plastics and drinks cartons) becoming accepted in the recycling bins.

### 3.4 External Storage – Bins

For developments with more than 6 households, communal 1100 or 1280 litre Eurobin containers should be provided for both refuse and recycling. However, for developments of 6 or fewer households, it is permissible for communal two wheeled 180 litre (refuse) and 240 litre (recycling) bins to be used. The total storage capacity should comply with the requirements given above.

It shall be the responsibility of the developer to purchase the necessary bins for external waste storage, and ensure that these are in place before residents move into new properties. In order to ensure the manufacturing quality, branding and labelling meet required standards, developers or site managers should acquire the necessary refuse and recycling bins from the London Borough of Lewisham. Bins must be purchased, and will not be provided by the local authority for an annual hire charge.

In the event that a developer/site manager wishes to acquire bins independently of the Council, the full specifications must be provided and agreed in advance. The Council reserves the right to refuse to empty bins that do not meet the required standards if there is a risk of damage to the collection vehicles or to the safety of the collection staff.

For the latest indicative container price list for bin purchases from London Borough of Lewisham, see Appendix B. Full terms and conditions for the supply of containers will be provided at the point of purchase, and updated prices should be sought from the Council.

It will be the responsibility of the site managers to arrange for bins to be cleaned. It is recommended that space is allocated on-site for the storage of at least one empty container, to allow cleansing of bins to be undertaken on a rotation basis without reducing the availability of refuse and recycling storage capacity.

Site managers will be responsible for the security of the bins, and the storage arrangements should therefore be designed to minimise the risk of theft, arson or other vandalism. In the event of a bin being stolen, or damaged beyond repair through vandalism, the site manager will be required to purchase a replacement container. Minor damage to bins that have been purchased from Lewisham Council may be repairable without a charge to the site managers. Bins that have been purchased from other sources will be the responsibility of the site managers to repair or replace.

It will be the responsibility of site managers to adequately cleanse waste storage and collection areas, including the floor, internal walls, bins and lighting fixtures. Site managers will also be responsible for ensuring that all waste is placed into the containers for collection. This includes materials that have been placed beside or on top of bins, or waste that has overflowed from the containers.

### 3.5 External Storage – Location

For purpose-built flats it is necessary to provide an appropriate storage area for refuse and recycling containers. These must be an integral part of any new development, with appropriate design, capacity, layout, access and signage. Communal bin storage areas should be clearly identified on plans, and the space allocated to them must be guaranteed for the purposes of waste storage.

Communal bin storage areas must be located within the footprint of the development, and ideally be at ground level. However, if an underground storage solution is planned for standard wheeled bins (such as in a basement car park) then an appropriate collection

point for the containers at ground level must be provided and clearly shown on the plans. Developers that are looking at using underground systems should refer to Section 5.

Bin storage areas should be easily accessible for the dwellings that they serve, with residents being required to walk no further than 30m from their front door (excluding vertical distances) when carrying refuse and recycling. For larger developments it may be necessary to provide several bin storage areas to ensure an adequate distribution across the site. The location of communal bin storage areas should have regard to the impact of noise and smell on the occupants of neighbouring properties, both existing and proposed.

### **3.6 External Storage – Dimensions**

The size and layout of each bin storage area must be designed to accommodate a sufficient quantity of refuse and recycling bins for the number of dwellings that the storage area is likely to serve. Where more than one bin storage area is being provided, consideration should be given to the likely usage of each storage area so that they are sized appropriately. Developers should take into account the preference of some residents to deposit waste as part of their daily commute, which may mean they use a bin store they walk past on their way out, rather than the one closest to their home. For blocks of flats divided into cores, the size of the bin stores must correspond to the number of dwellings accessed through each entrance.

All bins must be fully accessible from the front face, to allow for easy depositing of waste. Layouts that require bins to be swapped round mid-week are permissible if it is demonstrated that there will be site management presence at the development.

There must be a minimum of 150mm clearance around and between each bin within a storage area. Where there is more than one bin within a storage area, there must be 2m clearance in front of each bin to enable it to be accessed and safely moved without needing to move any of the other containers.

All doors and alleys must be at least 2m wide to allow for safe manoeuvring of bins.

The minimum internal height for a bin storage area and any access doorways is 2m. There should be no other internal fixtures or fittings that reduce the clearance above the bins, so that their lids can be opened fully.

### **3.7 External Storage – Design Features**

Bin storage areas should be contained within a suitable enclosure to prevent nuisance from the spread of waste, odour or noise. The walls should be constructed of materials that are non-combustible, impervious, easy to keep clean, and able to withstand impacts from fully-loaded Eurobins being moved. Where necessary, the installation of a suitable buffer can prevent contact between the bins and the inside faces of the walls. It is also recommended that any switches, plugs or other similar installations are placed above or well below the height of the rim of the bins.

The external faces of the enclosure walls should be constructed or clad in material that is in keeping with the visual style of the surroundings. It is recommended that the use of appropriate screening or soft landscaping is considered to make bin storage areas more aesthetically pleasing.

The enclosures must be suitably designed to prevent entry by vermin.

Where a roof is being placed over the bin storage area or it is located indoors, the enclosed space must be well ventilated. The roof must be constructed of non-combustible, robust, secure and impervious material.

There should be adequate lighting in the bin storage area. This lighting should involve sealed bulkhead fittings for the purpose of cleaning down with hoses. Switching should be either through a proximity detection system or on a time delay button to prevent lights being left on. This lighting should be easy to maintain by local site staff without the need for specialist parts.

The use of doors or gates can help to reduce the potentially detrimental visual impact of a bin storage area, and can also enable site manager to reduce the risk of bin theft or vandalism. Such doors must not open outward over a public footway or road, and should not cause an obstruction to other access when in an open position. They should be able to remain or be secured in the open position so that access for collection staff is unimpeded when the bins are being emptied.

The thresholds of any doors or gates must be free of rims or impediments at floor level. Where these are part of the design of standard door units being installed, developers must apply graded resin strips or other appropriate features on either side to minimise any impediment to the movement of the bins. Floor-level thresholds must also be very securely fixed down to prevent rising, warping or other such issues.

There must be a water supply with standard tap fittings available to the bin storage area to enable washing down of the bins, walls and floor.

Bin storage areas must have a suitable impermeable hard standing ground covering which can be cleaned easily. The slope of the floor must enable it to drain properly and completely. The drainage system must be suitable for receiving a polluted effluent. Any gullies must not be in the track of the container wheels. See Section 3.4.6 for details on requirements for cleansing bin storage areas.

The design of bin storage areas should pay as much regard as possible to accessibility for disabled or elderly residents. Where the bin storage areas cannot be designed to meet the requirements of these residents, suitable alternative arrangements should be put in place by the site managers to support any tenants who are unable to use the external waste storage facilities provided.

Storage areas for refuse and recycling bins should be clearly identifiable as such, through the use of appropriate signage on doors or walls. The London Borough of Lewisham should be consulted in the design of these signs to ensure information is accurate, consistent and presented appropriately, particularly with regards to the waste and recycling services offered in the borough. The use of 'Recycle Now' iconography is recommended for recycling signage.

### **3.8 External Storage – Access and Pulling Distances**

The bin storage areas must be located within a specified minimum distance of a point where the collection vehicle can safely stop for loading. The maximum distances that operatives should be required to wheel containers, measured from the furthest point within the storage/collection area to the loading position at the back of the vehicle, are:

- 15m for any wheeled container up to 240-litres
- 10m for any container greater than 240-litres

The stopping point for the vehicle should be safe, legal and designed to minimise any

obstruction to traffic. Please note the requirements for vehicle access given in Section 6.

The surfacing of the route the operatives will take between the bin storage/collection area and the vehicle should have a hard, smooth and continuous finish. The pathway must be free of any ironworks, trees, drainage gulleys or other features which would obstruct or impede the movement of the bins.

The pathway should be free of any steps. If access to a roadway is required along the route then a dropped kerb must be provided as close as possible to the storage area.

Slopes should be avoided wherever possible along the pathway, but where needed the gradient should fall away from the bin storage area and should be no greater than 1:12. It is not acceptable for the route between the storage area and the collection vehicle (i.e. in the direction that filled bins will be pulled) to have any uphill gradients.

Signage and, if appropriate, road/pavement markings should be used to indicate that the storage areas are not to be blocked at any time.

If locks are to be fitted to any doors or gates at bin storage areas, these should be of a standard 'Fire Brigade' pattern. If a keypad and code is to be used for gaining access, then developers and site managers should be aware that the code will be shared with a number of collection staff, and all arrangements must be agreed with the London Borough of Lewisham prior to installation. Where padlocks are intended to be used, it is required that these be purchased from the London Borough of Lewisham so that they are of a consistent design and lock fitting. If locks or codes are changed at any point, it will be the responsibility of the site manager to supply new keys or codes to the Council at no cost and as soon as the change has been made.

### **3.9 Designated Collection Points**

In locations where it is not practicable for architects to provide full access to the bin storage areas for waste collection vehicles, or standard Eurobins are to be located in underground car parks, a separate designated collection point must be provided.

It is the responsibility of the site managers to move the waste containers to the designated collection point by 6am on the scheduled day, and then to return the containers to their storage areas after emptying.

Sufficient provision should be made to ensure that all health and safety requirements are met for on-site staff to move the bins. Where bins are to be towed to the presentation point using a tug, there will be specific requirements for the site layout, bin design and towing operation. Further indicative information is provided in Appendix D.

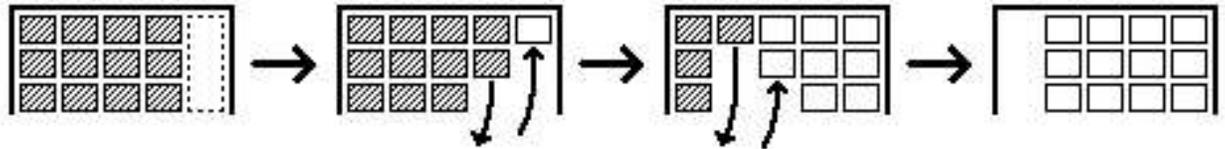
To minimise the potential for delays to collections, the designated collection area should be large enough for all the refuse and recycling bins to be positioned ready for collection at the same time.

The space in the collection area must be sufficient to enable operatives to return emptied bins to a position that does not obstruct the manoeuvring of those containers that are yet to be emptied. A simple example of how this might be achieved is given in the diagram below:

Filled bins set out for collection, with space left for emptied containers to be returned

Collection operation begins, with containers wheeled to vehicle, emptied and then returned to space available

All containers emptied, and ready to be returned to storage area



Developers and site managers must make sufficient provision to prevent other vehicles parking in the collection area, or in a position that would impede access for collection operatives.

Adequate arrangements must be provided for the collection vehicle to remain at its loading point for an extended period, particularly where a significant number of bins are to be emptied at the same time. Site managers should ensure that no other access is required to or through the designated collection point on the scheduled day of collection.

In positioning and designing the collection point, architects must ensure that the distance that operatives will need to wheel bins from the furthest point within this area to reach the loading point at the back of the collection vehicle does not exceed 10m.

Developers should ensure that they adhere to the other relevant access requirements for waste collection. In particular, dropped kerbs must be provided beside the designated collection point if they are not level with the roadway.

Developers will need to give consideration as to how residents can dispose of their waste when the bins have been moved to the collection point. If the refuse bins have been moved at a separate time to the recycling bins, there must be adequate arrangements in place at all waste storage areas to ensure that residents attempting to deposit non-recyclable refuse have the opportunity to do so without contaminating a recycling container.

### 3.10 Bulky Household Items

London Borough of Lewisham provides residents with a bulky waste collection service for 3 large items at a cost of £15. This service is available for residents living in flats, but can only be provided if adequate measures have been included in the design of the development. If these measures are not in place then the Council may not be able to undertake collections requested by residents, and the site managers will be required to make alternative commercial arrangements to have bulky items removed.

Residents can book a collection of bulky household items through the Council's Call Centre or website. Details of the items needing to be collected are taken at the point of booking, and this information is issued to the relevant collection crew.

The Council will only collect those items that have been booked for a special collection by a resident. Any other items that are left in a waste storage area without a booking having been made, or are dumped elsewhere on the development, will be the responsibility of the appropriate site managers to clear through a chargeable commercial arrangement with the Council or a private contractor.

Designated storage facilities must be provided for residents to deposit bulky waste items

they have booked for a collection:

- For developments of 25 units or more, these storage areas must be separate from those containing normal refuse and recycling bins.
- For developments of up to 25 units, the bulky waste storage area can comprise a designated space within a standard bin store. In such arrangements, the presence of bulky waste must not obstruct the refuse and recycling bins, and similarly it should be possible to safely remove the bulky items without the need to move any other bins. Collections will not be undertaken by the Council if the bulky waste causes an obstruction or is itself obstructed.

The total floor area provided for storage of bulky waste awaiting collection must equate to 10m<sup>2</sup> per 50 households, with a minimum of 7.5m<sup>2</sup>.

The guidance provided earlier on design, accessibility and signage for waste storage areas should also be followed for bulky waste stores. However, it is an additional requirement that bulky waste stores are covered, so that potentially reusable items are protected from the weather.

Appropriate signage must be installed to identify the designated areas. It is also recommended that signage be installed at other waste storage areas to provide information to residents on how to correctly dispose of bulky items.

### **3.11 Management-Provided Internal Waste Collection Services**

In large residential developments, it may be proposed by developers that the site management will provide an internal waste collection service for residents, either door-to-door or through use of smaller communal waste deposit points.

Developers considering doorstep collections must ensure that all relevant health & safety issues are addressed, including trip hazards and fire risk. In particular, developers must be able to demonstrate to the London Borough of Lewisham that they have consulted and received approval from the London Fire Brigade in respect of any such proposals.

A waste storage area must be provided on each floor, which includes provision for appropriate and separate containers for refuse and recycling. The storage area must be well-lit, ventilated, include fire-suppression technology, and be designed to enable easy cleansing.

Any external waste storage areas, and the location where the waste will be presented for collection, must be designed in accordance with Section 3.

A written statement must be provided to the London Borough of Lewisham which demonstrates how the internal waste collection service will be operated and managed, and how the waste will be presented for collection.

### **3.12 Chute Systems**

Designers of larger residential developments may consider the installation of chute systems to make it easier for tenants to deposit their waste. The London Borough of Lewisham does not recommend this type of system owing to the tendency of the chutes to get blocked, but if such a system is being considered then the following guidelines should be followed.



Waste chutes must be designed to fit in with the architectural aesthetics of the buildings.

The internal surfaces of the chutes should be completely smooth to minimise snagging of waste sacks and subsequent blockages.

Chute systems will only be permitted if there are two separate chutes provided at each installation point, to enable the segregation of refuse and dry recycling.

The receptacles on each floor into which tenants deposit their waste must be clearly labelled to encourage recycling and minimise the risk of contamination. Poster or sticker designs should be presented to the Council's Waste Management department for approval. The use of Recycle Now iconography is recommended.

It will be the responsibility of the site management to cleanse and maintain chute systems, and clear any blockages which may arise. The London Borough of Lewisham will expect to see details of how this will be managed.

A fully enclosed and secured bin storage area must be provided at the base of each chute, designed in accordance with the requirements set out in Section 3.

Chamberlain bins are recommended for use with chute systems (see Appendix A for more information). However, Eurobins may also be used, and are recommended if it is expected that some tenants will deposit their waste directly into the containers without using the chutes.

Site management will be responsible for rotating the bins at the base of the chutes between the weekly collections to prevent overflowing of waste. Any overflows which do occur will be the responsibility of site management to clear.

## Section 4

# Commercial & Mixed-Use Developments

This section provides information on the specific requirements for developments that include commercial units. The information given in this section should be read in conjunction with Section 3, and treated as additional to those which are set out in that section in relation to capacity, storage and access.

### 4.1 Service Provision Overview

The London Borough of Lewisham undertakes regular collections of residential waste, details of which have been given in the previous sections. For standard refuse and recycling collections there is no charge levied by the Council, except for the purchase of bins for new developments.

However, the arrangements for commercial waste are different, as businesses do not receive a collection service through their Business Rates. The Council does offer a commercial waste collection service, with a range of container options and collection frequencies to suit all types of premises. Businesses can also choose to take out a contract with a fully licensed private waste collection firm.

### 4.2 Design of Waste Storage Facilities

All developments should provide sufficient storage capacity for all waste arisings, whether commercial or residential in origin.

The design and layout of waste storage areas or chambers will be consistent with that for purpose-built flats, so architects should follow the guidance given in Section 3.

### 4.3 Segregation of Commercial and Household Waste

External storage areas for waste on mixed-use developments must be segregated, so that domestic and commercial waste bins are in separate secured areas.

Access to the domestic bins should only be possible for residents of the development and site management. It is also good practice to secure the commercial bin storage area to prevent residents from misusing these for disposing of household waste.

Combined storage of domestic and commercial waste can be permitted if the developers make arrangements for this to be dealt with through a commercial contract. The London Borough of Lewisham reserves the right to refuse to undertake domestic waste collections from non-segregated storage areas.

Suitable arrangements for segregating the storage of bulky household waste items will also need to be made.

All storage areas must be easily identifiable through the use of clear and appropriate signage. It is also recommended that residents and businesses are provided with leaflets

or information sheets explaining which waste storage areas to use.

In developments where on-site businesses will be arranging individual contracts with waste collection providers, it will be necessary to ensure there is sufficient space available for each commercial unit to have its own bin or allocated area for storage.

On developments with multiple commercial units, landlords or site managers may choose to include the cost of waste collection in the unit rental price. This will enable a single contract to be arranged between the landlord/site manager and the Council or a licensed waste collection provider, and remove the need for individual bins/storage areas to be provided for each business.

Architects and developers should ensure that provisions for waste storage and collection are compatible with the varying container and vehicle types used by different waste contractors. If it is known that a particular provider is the intended contractor for a site then that company should be consulted with at the earliest opportunity.

#### **4.4 Waste Storage Capacity**

The guidance given in Section 3 should be followed in relation to the required capacity for domestic refuse and recycling.

The quantity of waste generated on commercial premises can vary significantly, depending on the nature of the business occupants and the frequency of collection they secure through their waste contract. Architects and developers should identify the types of businesses intended for any units proposed on their developers, and ensure that adequate storage capacity is provided for the likely quantity of waste generated. Further guidance for some types of premises is given in British Standards BS 5906:2005.

#### **4.5 Waste Collection Frequency**

Residential refuse and recycling collections are undertaken by the London Borough of Lewisham on a weekly basis.

Collection frequencies for commercial waste will be dependent on the space available, the amount of waste being generated and the particular contractual arrangements. However, where commercial units will be producing food waste, developers should be aware of the increased likelihood of odours. A twice-weekly collection service is recommended for such businesses, and should be allowed for in the design of the waste storage and access. Premises which generate a significant quantity of waste may also benefit from a twice weekly collection to reduce the need for storage space.

#### **4.6 Recycling**

The Waste Regulations 2011 require “separate collections” of paper, metal, plastic and glass to be in place for businesses by January 2015. Developers should ensure that businesses and waste contractors are able to meet these requirements through the design of waste storage and collection facilities at new developments, including storage space within the business premises.

Mixed-material recycling is in operation for household waste, but such schemes may not be appropriate or permissible for businesses. As such, architects should consider the need for separate bins for each material for business premises.

Medium to large hotels and restaurants must be designed to include separate storage provision for waste cooking oil.

#### 4.7 Compactors

In locations where the space available for storing waste is limited, it may be appropriate for developers to consider using compaction systems to reduce the volume of the waste being generated on site. There are various types of compactors available to suit different types and sizes of development.

Developers should note that the London Borough of Lewisham does not offer a compacted waste collection service, so alternative arrangements would need to be made with a private contractor to have the bales of waste collected. The intended service provider should be consulted at the earliest opportunity in the planning process to ensure that their requirements for container storage and access are met.

Compactors for residential developments only tend to be effective if the development has a managed waste system with portorage. The use of compactors in residential developments will also mean that site managers will need to pay for ongoing household waste collections operated by a private contractor, whereas no charges would be levied (apart from container purchase) for collection of non-compacted waste by the London Borough of Lewisham.

Compactors are recommended for all office developments larger than 5,000m<sup>2</sup>. For offices over 15,000m<sup>2</sup> in size a rotary compactor is preferable, for those in excess of 20,000m<sup>2</sup> a portable skip compactor or rotary compactor may be used. For units of 1,500m<sup>2</sup> or more, or for small units where the gross combined floor space exceeds 1,500m<sup>2</sup>, a small sack compactor is recommended.

The most appropriate type of compactor for units of 2,000m<sup>2</sup> or more is the small sack compactor. This type of compactor may also be used for small units where the gross combined floor space exceeds 2,000m<sup>2</sup>.

For major retail developments of over 5,000m<sup>2</sup> a rotary compactor is recommended. Those over 10,000m<sup>2</sup> should be provided with a rotary compactor or portable skip compactor, and those over 15,000m<sup>2</sup> should consider use of a larger static compactor.

Compactors are recommended for fast food outlets with an eat-in facility, and are recommended for other restaurants. A small sack compactor, or the type using rotary wheeled containers, is suitable for most applications, although the rotary compactor is preferable for restaurants with potentially high output.

For hotels up to 250 bedrooms the most appropriate type of compactor is the small bag compactor, or the type that compresses waste into Eurobin wheeled containers. For larger hotels a rotary compactor, portable skip compactor or static compactor is recommended, particularly for those with banqueting facilities.

## Section 5

# Underground Waste Storage Systems

The locating of waste storage containers in underground facilities can help architects and developers to provide more space at ground level for other features, and will often add to the aesthetic appeal of a development.

Underground systems can vary from basic systems which involve standard waste containers being stored in a section of a basement car park to more advanced systems involving bulk storage containers lifted out using crane attachments on refuse vehicles.

### 5.1 Bulk Waste Containers – Overview

Unfortunately the London Borough of Lewisham will not be able to service standard underground waste storage systems, similar to those in use in local authorities in London such as Tower Hamlets and Lambeth as we do not have use of a dedicated specialist collection vehicle. Architects and developers that are interested in using such a system at a new site should however consult with the Council's Waste Management department at the earliest opportunity to discuss the feasibility.

These types of system require the construction of underground concrete chambers, varying from 1.5m to 3m in depth. These are used to store removable bulk waste containers, which are normally available in 3m<sup>3</sup>, 4m<sup>3</sup> and 5m<sup>3</sup> sizes (although it is strongly recommended that the largest size is used wherever possible). Waste is deposited into these bulk containers through receptacles at street level, which come in a range of designs but are often around the size of a street litter bin. These receptacles are attached to a floorplate over the chamber and bulk container, which together provide the only components that are visible to the public.

The containers are emptied by a vehicle fitted with a telescopic crane, which lifts the bulk container out of the concrete chamber. In some systems the receptacle, floorplate and bulk container are one unit and are lifted out in their entirety, whilst in others the floorplate is attached to the chamber by hinges along one side so it can be opened to reveal the bulk container underneath. The concrete chamber is fitted with a safety platform, which rises up to street level as the bulk container is lifted out to reduce the risk of operatives or pedestrians falling into the chamber.

The bulk container is lifted above the vehicle for emptying, with hooks on the crane being used to operate a mechanism that opens the bottom of the container so that the waste can drop out. Once emptied, the bottom of the container is closed before it is restored to its normal position in the chamber.

### 5.2 Bulk Waste Containers – Design Guidelines

The underground storage chamber must be housed in a concrete casing. The chamber should be 100% waterproof, and appropriate design features must be incorporated to eliminate water ingress from ground level. In areas where ground stability is reduced,

such as where a high water table is present, the chamber must be set or secured on concrete stilts to prevent any movement.

The chamber must be fitted with a rising safety platform, which should be made from galvanised steel, able to carry a load of at least 150kg, and provide a complete seal for the shaft below when raised.

The removable bulk container should be manufactured from galvanised steel, and be fully sealed through welded joints to prevent leakage or ingress of liquids. It should feature a bottom-opening trap door to allow emptying of container, operated through hook systems on the collection vehicle's lifting crane.

The floorplates and receptacles at ground level must be designed to fit in with the surrounding built environment, offer a range of aperture options to target different material streams, provide sufficient opportunities for branding/labelling, and be accessible for elderly and disabled residents.

It is recommended that the fixed floorplates and receptacles are protected from vehicle damage through the use of bollards or other barriers.

The receptacles must be fitted with an access control feature to prevent misuse of the waste containers for non-domestic waste. The site managers should ensure that the necessary keys, fobs or swipe-cards to use the system are only provided to eligible residents.

It is recommended that the bulk containers be fitted with remote fill level alarms or indicators, to enable efficient management and operation of the collection services, and to reduce vehicle movements at developments where these underground waste systems are installed.

### **5.3 Bulk Waste Containers – Site Locations**

A safe and accessible stopping point must be available for the collection vehicle to service each underground bulk waste container. This should be a maximum distance of 10m and a minimum distance of 3m from either side of the vehicle. It is not possible to service sites from the front or back of the vehicle, so it must be able to pull up alongside every site.

Leg stabilisers on the vehicle may be used during collection. These can protrude up to 2.5m on each side, and must be able to rest on a hard and even surface that is able to withstand loading of up to 4 tonnes.

Sites should be located on private land, off the public highway. In a case where a developer wishes to place a site on land next to the public highway, and have the collection vehicle stop on that road to service the site, then the following points will need to be taken into consideration:

- Sites should be at least 15m from any highway junctions, and well away from any emergency access. Sites will not be permitted beside Traffic Sensitive Roads or bus routes.
- The collection vehicle must be able to access the site, as per the requirements set out above. The developer must be able to demonstrate that appropriate measures will be in place to prevent access being blocked by parked cars, and if necessary provide alternative parking spaces if any existing ones need to be removed.
- The developer will be required to undertake and fund all necessary surveys, planning

and remedial works to strengthen the footway around the site so that it is able to bear a load of 26 tonnes. In addition, a retaining wall will be needed to protect the structural integrity of the pavement, if a site is being installed directly next to it.

- **The developer will be required to demonstrate that pedestrian safety can be maintained during collection, and that an alternative route is available for pedestrians while the footway is blocked.** In addition, the presence of a staff member from the managing agent of the block may be required during collections to assist in keeping pedestrians away from the collection vehicle, so this should be factored in to the estate management plan.

Access must be completely clear, as it is not safe to lift bulk containers over any parked cars, other obstructions or where the public will continue to have access during collection. It must be possible for the collection crews to cone-off and close public access to an area around the vehicle, and between the vehicle and the bin chamber.

Overhead working clearance of at least 15m is required at all sites, and installations must not be located beneath any potential obstructions such as trees, balconies, walkways or cables. Installations must not be within 5m of any overhead power line.

During collection operations it is not possible to move the vehicle until the crane has been returned to its storage position and locked, and any stabilisers have been raised. As such, installations must be positioned so that the stationary vehicle will not cause an obstruction to any emergency access or busy roads/pedestrian routes.

#### **5.4 Bulk Waste Containers – Vehicle Access**

Architects and developers should take into account the details given in Section 6 in relation to access. However, for underground waste storage systems there will be additional requirements, as a specialist vehicle will be required to service the sites which Lewisham Council can supply at this point in time. An indicative set of specifications is provided below however. This is based on a vehicle type used for servicing underground bins in another London borough.

- Dimensions: 10m length, 2.3m wide, 4.2m high
- Leg stabilisers: protrude up to 2.5m on each side when deployed during collection
- Turning circle: 25m
- Loading: 26t, maximum axle loading of 11.5t, leg stabilisers exert up to 4t each side

#### **5.5 Bulk Waste Containers – Recycling**

Recycling must be integrated into all systems, through provision of dedicated underground bins for mixed recycling or another appropriate solution. This must enable the same recycling services to be provided as are available to other residents (see Section 3), but should also enable flexibility in the event of future developments within Lewisham's recycling collections.

#### **5.6 Bulk Waste Containers – Bulky Waste Items**

The street-level receptacles used in underground waste systems are not appropriate for disposing of bulkier waste items, including large pieces of cardboard, furniture and electrical appliances.



Architects and developers must provide an alternative storage location at all developments where underground waste systems are in place, in order for residents to have somewhere to dispose of bulkier waste.

It shall be the responsibility of site managers to clear away any bulky items or other waste left beside the street-level receptacles, including at any sites located next to the public highway.

### **5.7 Bulk Waste Containers – Non-Household Waste**

As noted above, the underground waste storage systems provided for residents must be dedicated solely for the disposal of household waste and recycling. However, developers may look at providing separate underground installations for the use of businesses, particularly in developments where a standard waste collection system for commercial premises would significantly impact on landscaping and local aesthetics. There will be a number of considerations for developers looking at this sort of approach.

Site managers or landlords would need to hold a single contract for the collection and disposal of commercial waste from the development, with the costs being passed on to the businesses by an appropriate recharging mechanism.

The commercial waste contract would need to be held with the London Borough of Lewisham, or a private contractor able to service underground waste storage systems.

Some types of commercial waste may not be suitable for disposal in underground storage, either because of bulk or excessive weight.

Underground waste storage may not offer sufficient flexibility to enable businesses to exploit opportunities in the market to segregate higher-value materials for specialist recycling collections.

### **5.8 Bulk Waste Containers – Repair, Maintenance and Management**

It shall be the responsibility of site managers to arrange for the repair and maintenance of all underground waste storage systems in their developments.

Site managers shall also be responsible for keeping the installations and the areas around them clean and clear of other waste. This includes the removal of any waste or water from inside the bin chamber.

Maintenance and cleansing of the bulk containers, safety platforms or chambers will require the bulk containers to be lifted out. The London Borough of Lewisham may be able to provide assistance with this if there is available capacity within the weekly schedule for the collection vehicle, and an appropriate charge would be levied for this service. However, it is recommended that site managers look to appoint a cleansing and maintenance contractor that is able to undertake the lifting of the bulk containers itself as part of its contract, ensuring that all the necessary health and safety considerations of doing so are adequately addressed.

### **5.9 Basement Storage of Towable Eurobins**

A relatively simple solution to providing underground storage of waste containers involves placing Eurobins in a basement storage room (often part of an underground car park) that is accessible by tenants for depositing waste. The bins are then brought up to ground

level by the site managers through the use of service elevators or ramps.

The design and layout of the storage area should meet the appropriate requirements set out in Section 3. If access is through an underground car park, appropriate markings and parking restrictions may be required to protect access to the bin stores.

It will be the responsibility of the site manager to move the waste containers to an agreed designated collection point at ground level, and return the containers to their storage area after emptying. See Section 3 for more details about the requirements of this designated collection point.

A written statement must be provided to demonstrate how the movement of the bins to the collection point will be managed and undertaken. The plans must also show the parking location for any tractor and trailer that may be used by site staff for this purpose.

Where a goods/service elevator is intended to be used to transport the bins to ground level, it must be large enough to safely accommodate a porter and the appropriate number of containers, and the width of the doors must allow free movement of the bins.

## **5.10 Underground Eurobin Chambers with Lifting Mechanisms**

An alternative approach is to place standard Eurobin containers in purpose-built below-ground chambers, with chutes running into the bins from receptacles at street level. The containers are made accessible for collection through a rising elevator system that brings the bins to ground level, to then be wheeled to the collection vehicle.

The underground storage chamber must be housed in a concrete casing. The chamber should be 100% waterproof, and appropriate design features must be incorporated to eliminate water ingress from ground level. In areas where ground stability is reduced, such as where a high water table is present, the chamber must be set or secured on concrete stilts to prevent any movement.

The rising elevator system must conform to all relevant British and/or European Standards. Depending on the design of the system, mechanisms to secure the bins in place to prevent damage during the operation of the elevator system may be needed.

The deposit points or receptacles at ground level must be designed to fit in with the surrounding built environment, offer a range of aperture options to target different material streams, provide sufficient opportunities for branding/labelling, and be accessible for elderly and disabled residents.

The storage system location and design of adjacent roadways must meet the requirements set out elsewhere in this guidance document, such that:

- The Eurobins will not need to be pulled more than 10m to be emptied.
- All paving between the elevator platform and the vehicle is solid, smooth and level.
- Dropped kerbs are provided to access the roadway.

The storage system should be protected from vehicle damage at ground level through the use of bollards.

It will be the responsibility of the site manager to operate the elevator system so that the waste collection teams can access the bins at ground level. Due consideration should be given as to how to restrict access to the areas around the storage system during operation for health and safety reasons.



The maintenance and repair of the elevator system, ground level deposit points and other features of this system will be the responsibility of the site manager.

Underground bin systems of this type must be dedicated for the use of residents only, with separate waste containerisation for commercial waste. Developers wishing to place commercial waste bins in underground chambers should take into account the considerations given in Section 5.8.

## Section 6

# Vehicle Access

Vehicles used to collect waste and recycling will be amongst the largest and heaviest needing to access any development. Further information about the dimensions and other specifications of waste collection vehicles used by the London Borough of Lewisham, please see Appendix C. Developers should be aware that other private contractors undertaking collections of commercial waste from developments may use larger vehicles.

In order to ensure that all refuse and recycling collections can take place unimpeded and without the risk of any damage to the vehicles, paving or other fabric of the sites, developers must ensure that access roads and driveways meet the following requirements.

### 6.1 Roadway Strength

Roads should have foundations and a hard-wearing surface capable of withstanding a fully laden waste collection vehicle of 26 tonnes gross vehicle weight, with a maximum axle weight of 11.5 tonnes. Any ironworks situated in the roadways should also be capable of withstanding the loads indicated.

### 6.2 Roadway Layout

Roads should have a minimum width of 5m. Pinch points, such as archways or gates, should give a minimum clearance of 3.7m width, and additional allowances must be given if vehicles are required to approach from an angle.

Any part of a building through which a waste collection vehicle passes must have a minimum clear height of 4.5m, to allow for overhead fixtures and fittings.

If a turning space is necessary, the road layout should permit a turning circle of 17m kerb-to-kerb, or 20.3m wall-to-wall.

Any locations where the gradient of the roadway changes must be designed to allow for the overhang of the lifting equipment at the back of waste collection vehicles.

### 6.3 Manoeuvring

Waste collection vehicles should not be required to reverse more than 12m, and then only in exceptional circumstances. If pedestrians also use access routes where waste collection vehicles will be required to reverse, an additional raised footpath must be provided. Waste collection vehicles should never be required to reverse up or down a slope/ramp.

Where possible, developers should design road layouts so that waste collection vehicles are not required to reverse in from or out to the public highway.

Vehicles undertaking collections should be able to stop for loading in a safe and legal position where they will not obstruct other traffic, pedestrians or access.

Appropriate measures must be incorporated into road layouts to control unauthorised parking of vehicles that would prevent access by the waste collection vehicles and staff. Developers should ensure that sufficient car parking is provided in order to prevent such problems.

#### **6.4 Permitted Access**

Access to storage areas should be possible from 06:00 to 22:00, Monday to Sunday.

If there is any electronic gate or barrier control into the development then immediate access for waste collection vehicles must be possible without the need for the crew to know an entry code, use a swipe-card, or carry any fob/key other than one of a standard 'Fire Brigade' pattern.

#### **6.5 Turntables**

Architects and developers are strongly encouraged to enable access to bin storage or presentation areas via standard road layouts and without the need for complicated manoeuvring.

Where the use of turntables is being considered to resolve access problems on constrained sites, architects must consult with the Council's Waste Management department at the earliest opportunity. Use of such technology is not recommended owing to the increased complexity and the impact that equipment failure will have, but where it is to be employed the following key points will need to be noted:

- The turntable must be designed to withstand significant off-centre loading from a 26-tonne vehicle.
- To minimise risk of injury and damage to equipment and property, the diameter of the turntable must be sufficient to fully encompass the footprint of the vehicle, including the rear overhang.
- Site management staff will be required to greet the refuse collection vehicle and assist in manoeuvring it into the correct position on the turntable. Site staff will then be required to operate the device, and provide appropriate marshalling instructions to the driver when it is safe to move the vehicle again.
- In the event of non-availability of the turntable, site staff will be required to present the bins at an alternative accessible location for collection. The bins may therefore need to be towable, and an appropriate alternative site allocated (with dropped kerbs in place if necessary).
- The layout of the turntable area must enable the refuse vehicle to be able to use turning manoeuvres to exit the area if the turntable fails mid-turn. These manoeuvres should be analysed through a swept-path analysis, but it is permissible for this to involve a multiple-point turn as it will only be required in exceptional circumstances.
- The turntable should be regularly serviced to minimise the risk of failure.

## Section 7

# Alternative Waste Management Technologies

The generation of waste from new large-scale developments could have a significant impact on the local environment, and will place an additional burden on the existing collection, treatment and disposal infrastructure in Lewisham. The requirement for adequate waste storage space and suitable access routes for collection vehicles will also reduce the flexibility that architects have in making the best use of the land available.

The London Borough of Lewisham will expect to see a detailed strategy/plan for all new development sites, setting out how it is proposed to manage household and/or commercial waste being generated across the entirety of the development, in accordance with the guidelines in this document.

For larger developments, and particularly those comprising buildings of several storeys, the production of this waste management plan is likely to emphasise the scale of the problem that architects will face in providing enough on-site storage capacity for a large number of dwellings. The requirements for this provision will put additional pressure on land set aside for car parking, could potentially reduce the scope for co-locating an optimal number of income-generating commercial units, and may also have an impact on the size and attractiveness of any proposed communal garden spaces.

The generation of waste from new large developments will represent a significant addition to the total municipal waste arisings within Lewisham. The Council's existing collection infrastructure is already operating at full capacity, and investment in the purchase and operation of new vehicles will therefore be required in order to service new large developments. The London Borough of Lewisham may seek a financial contribution from developers to cover these costs where appropriate.

Many of the problems associated with waste collection and storage for large developments can be negated through the use of alternative on-site technologies to treat waste generated by the occupants. The use of such technologies can significantly reduce the need to allocate as much space for waste storage, minimise the noise and disruption caused when waste collections are undertaken, and can help new developments to achieve a higher environmental performance standard.

The London Borough of Lewisham strongly recommends that alternative waste technologies are investigated for all new large-scale developments. Some examples of technologies that are already in use elsewhere in London, the UK and abroad are given below, and developers may also wish to refer to the guidance given in Section 5 in relation to alternative on-site waste storage systems.

There are a number of existing and proposed technology options for managing and treating waste on site. Developers are encouraged to ensure that all appropriate options have been investigated, and should also consider the potential of trial projects as a means of attracting external funding to assist with initial capital costs. All on-site thermal treatment technologies will be subject to appropriate regulations and will require suitable environmental permits.

## 7.1 Pyrolysis

The London Borough of Wandsworth is trialling pyrolysis technology (PyroPure™) to treat non-recyclable waste on-site at one of its estates. The technology utilises heat inside a pressurised container to break waste down into a fine carbon dust, which can then be flushed into the existing sewerage network. The process does not break down any metal or glass elements in the waste, which means that these can be extracted for recycling following the pyrolysis treatment.

## 7.2 Micro-CHP (Combined Heat & Power)

Waste is a valuable resource that can be used to generate power, and technology that achieves this at a large scale has been in use for decades in the form of energy-from-waste ‘incinerators’. However, small-scale versions of this technology allow for this to be brought to a community level, where residents and businesses can directly utilise the energy derived from their waste, and in so doing often get much lower prices for their electricity.

These types of facilities can be connected to a district heating network, in order to make use of the waste heat produced through the power generation. This heat can be piped to residential and commercial units, replacing traditional individual boilers in the production of heat and/or hot water. This is known as ‘combined heat and power’, or CHP.

Small-scale CHP systems that use waste as a fuel bring many benefits, including cheap supplies of heat and power for occupants, reduced requirements for waste storage and collection, and notable reductions in the environmental impact when compared to traditional developments. These can be attractive prospects for potential tenants, increasing the value of properties and commercial units on new developments.

CHP technology is not yet very common in the UK, but there are numerous examples from the European mainland of how it can be integrated into new and existing developments at various scales.

## 7.3 Community Composting

Where practicable, the London Borough of Lewisham encourages developers to make arrangements to facilitate communal/community composting to serve the needs of flats or dwellings that do not have access to a private garden. The main considerations are that the composting bins are screened, that the area is purpose built and clearly signposted, and that ongoing management and maintenance is provided. In all cases the composting scheme must achieve full compliance with the Animal By-Products Regulations (2005), and if applicable it must be registered with the Environment Agency to have either a waste management licence, an environmental permit, or the appropriate exemptions.

## 7.4 Food Waste Disposers (In-Sink Macerators)

Food waste is a potential source of fertiliser for agricultural land and biogas-derived energy, and the use of alternative treatment solutions that can harness this potential is therefore a key priority for the national government. Ongoing research is showing that the use of in-sink macerators (also known as food waste disposers) in household kitchens will be a very effective way to divert organic kitchen waste to existing anaerobic



digestion facilities at sewerage treatment works, without the need to set up separate collections.

A key barrier to the wide-scale introduction of in-sink macerators is the cost of retro-fitting kitchens with sinks that have a wider plughole, and an electrical power supply underneath to power the units. However, the provision of such facilities, and indeed to provide the disposer itself, will have a negligible impact on the cost of the kitchens in new developments.

The London Borough of Lewisham recommends that developers ensure pipe networks in new blocks of flats are compatible with food waste disposers.

Developers are encouraged to provide in-sink macerators in the kitchens of all new developments. Where this is not taking place, developers should fit sinks that are compatible with such units, and ensure there is an under-sink power supply available that will enable a food waste disposer to be fitted later.

## **7.5 Automated Vacuum Collection Systems**

Automated vacuum collection (AVAC) systems use underground pneumatic pipe networks to move waste from ground-level deposit points to a single collection station elsewhere on the development. These systems can be built for the transfer of refuse, as well as various recycling streams. They greatly reduce the requirements for waste storage infrastructure to be distributed across large sites, and also allow architects and developers to consider reducing the clearances and turning circles of roads across the development as access for waste collection vehicles is generally not required (except at the collection station). However, the maintenance requirements of this type of system will need to be appropriately considered, particularly with regards to residents' service charges.

In order to realise the full benefits of AVAC systems, the waste needs to be compacted at the collection station so that the size of that facility can be kept to a relative minimum. Developers considering this type of system will therefore need to be aware that the London Borough of Lewisham does not currently provide a compacted waste collection service, so alternative arrangements would need to be made through a private contractor.

The requirements for AVAC systems will be very specific to each development, and any developers considering this kind of system should consult with the Council's Waste Management department at the earliest opportunity.

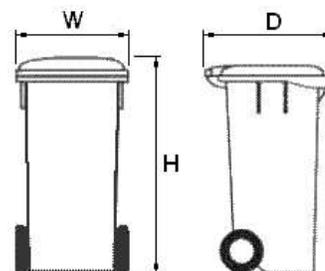
# Appendix A

## Container Dimensions

### Two-Wheeled Bins

Note that recycling bins are normally available in 180- and 360-litre sizes only.

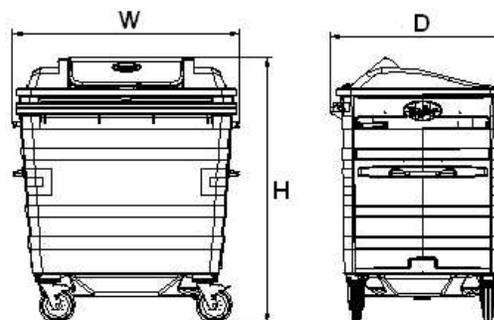
Capacity	H (mm)	D (mm)	W (mm)
180-litre	1080	725	485
240-litre	1085	730	570
360-litre	1090	850	620



### Eurobins

1100-litre is the standard (and recommended) Eurobin container.

Capacity	H (mm)	D (mm)	W (mm)
660-litre	1310	720	1250
1100-litre	1370	980	1250
1280-litre	1430	985	1260

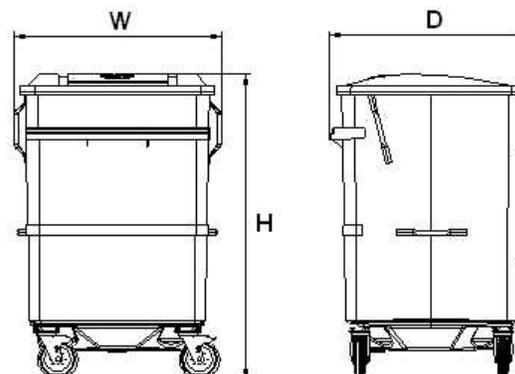


### Chamberlain Bins

940-litre is the standard (and recommended) Chamberlain container.

Capacity	H(mm)	D (mm)	W (mm)
720-litre	1410	770	1020
940-litre	1500	970	1020

Note that Chamberlain bins are only suitable for use where refuse/recycling chutes are installed. Eurobins should be used at all other locations.





## Appendix B

# Container Price List

This table gives indicative prices for waste containers purchased from the London Borough of Lewisham. Final prices will be confirmed at the point an order is made.

Container Type	Indicative Unit Price
180-litre wheeled bin	£25
240-litre wheeled bin	£25
360-litre wheeled bin	£65
660-litre Eurobin	£280
1100-litre Eurobin	£290
940-litre Chamberlain	£250

Recycling containers will normally incur additional costs to account for more robust locking mechanisms and additional lid and branding features.

Towable Eurobins will normally cost up to £150 more than standard models.

# Appendix C

## Vehicle Dimensions and Specifications

This section provides information on the standard vehicles used by the London Borough of Lewisham to collect both refuse and recycling. A schematic of the vehicles is provided on the following page.

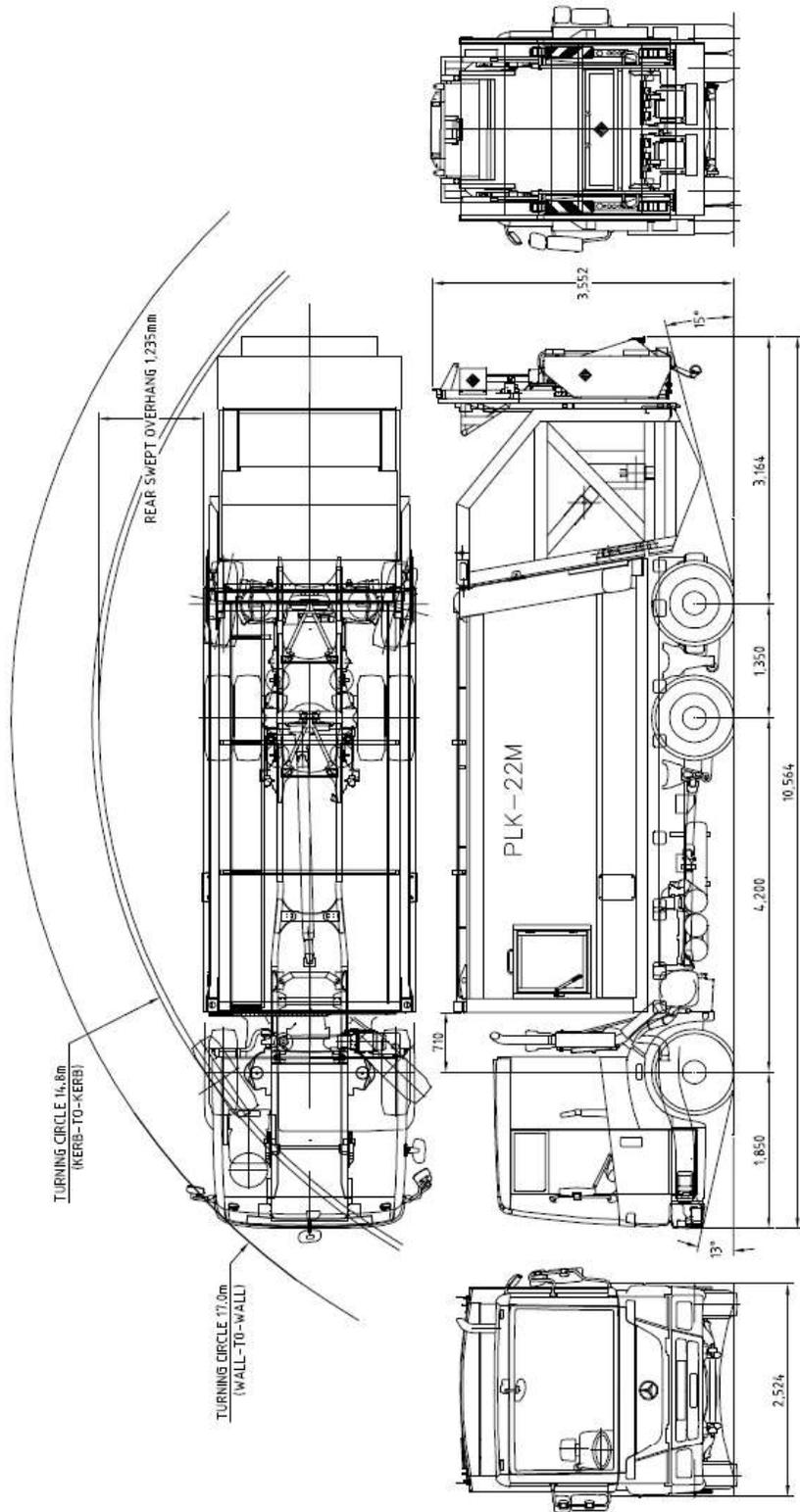
Drive	6x2 rear-steer
Overall width	2524 mm
Overall length	10564 mm
Overall height	3552 mm
Wheelbase (axle 1 to axle 2)	4200 mm
Rear bogie spread (axle 2 to axle 3)	1350 mm
Rear swept overhang	1235 mm
Gross Vehicle Weight	26000 kg
Maximum axle load	11500 kg
Approach angle	13°
Departure angle	15°
Turning circle between walls	14.8 m
Turning circle between kerbs	17.0 m

Architects and developers of sites where commercial units will be located should be aware that private waste contractors use a range of vehicles, which can sometimes be larger or have different manoeuvrability concerns than those specified below. In these circumstances, developers should consult with the intended private contractors to establish the specifications for other vehicles that may need to access the site. **It is recommended that a 6x4 rigid vehicle is modelled in these circumstances, as it is an industry standard.**

The details of the vehicle that will service underground bulk waste containers have not yet been finalised. Designers of sites where this system are to be used should consult with the Council's Waste Management department.

Skip vehicles may need to access and serve some locations. Developers should be aware that, while most of these vehicles are smaller than standard waste collection trucks, they may require more vertical clearance to operate safely, particularly in locations where skips are to be raised and lowered.

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CHASSIS: MERCEDES-BENZ  
 MODEL: ECONIC EURO 5 2629LL 6x2 REAR-STEER  
 CAB: 4 MAN CREW  
 WHEELBASE: 4.200mm + 1350mm

BODY: HOIST  
 POWERLINK 22M  
 OTTO CONTINENTAL

# Appendix D

## Bin Towing Operations

This section provides basic information on bin towing operations, to help assist architects and developers to design layouts that are appropriate.

Site managers will be responsible for all towing of bins from storage areas to agreed presentation points, and as such must ensure that these operations are compliant with health and safety guidelines.

Bin manufacturers can provide more detailed information on how to use their towable products safely, and can also provide bespoke advice, guidance and training where necessary.

### Site Layout

The towing of bins should be considered a vehicular operation. As such, the surfacing, gradients, sightlines etc. on routes where bins will be towed should be appropriate for cars. There must be dropped kerbs with a gradient no steeper than 1:12 wherever bins are to be towed between a pavement and roadway.

Where bin towing is to take place along routes used by pedestrians, pathway widths must be sufficient for there to be ample clearance between a double-buggy and the tug/bins.

### Bins

The Council recommends the use of galvanised steel bins with removable towing links. There are some models of bins with retractable towing attachments, but in the past these have interfered with the lifting equipment on the collection vehicle, resulting in the Council refusing to empty them, so it is recommended that such bins are not used.

Towable bins require modifications over standard Eurobins, including strengthening of the sides and bases, heavy-duty castors with directional locks, and towing attachments installed on either end. Bins should also have locks for the lids, so that they can be secured before being towed.

A regular inspection and maintenance programme should be in place for towable bins to ensure the towing links, attachments and castors remain in a safe condition.

### Towing Links

The links for towing the bins are supplied separately. The bin-to-bin links are designed to fit into the 'hitch' attachment at one end and the 'eye' attachment at the other, providing a secure connection between the containers. The bin-to-tug links fit the 'hitch' attachment at one end, and then have a connection point to the tug at the end other that is designed for a simple pin system. The pins are not supplied, so should be acquired with the tug.

It is generally recommended that site staff are issued with a maximum of three bin-to-bin links (and one bin-to-tug link) to ensure that they do not connect more than four bins at a time.

## Tugs

Tugs are not supplied by the London Borough of Lewisham, so need to be sourced from appropriate vehicle manufacturers. It is common practice for the developer to acquire the tug to provide to the housing company or site staff as part of the handover of the development, to ensure it is available for use as soon as the building starts to be occupied.

The tugs should have sufficient towing power for four fully-loaded 1100L steel bins, with additional power if these bins are going to have to be towed up an incline (such as from a basement car park). The braking power also needs to be sufficient to bring the train of heavy bins to a stop within an appropriate distance.

Tugs should be fitted with a towing attachment, which has its own pin for use with the bin-to-tug links.

Tugs should have a flashing beacon to warn pedestrians and other road users of a potential hazard.

## Towing Guidelines

It is the responsibility of site managers to ensure that their staff engage in safe towing operations for bins. Detailed guidance and information is available from the relevant bin manufacturers on how to use their products, whilst some housing management companies may have their own policies and procedures based on experience at other sites. The following are some key points:

- All staff involved in towing should have received the appropriate training on these operations.
- No more than four bins should be towed at any time.
- Bin towing should not exceed 4 km/h.
- Additional care should be taken on curves, slopes or when passing over speed humps.
- Bins should not be towed over kerbs – dropped kerbs should be used.
- Stopping distances will be greatly increased when a train of loaded bins is being towed.

# Reference

These waste management guidelines are based on a combination of the appropriate regulations, codes of practice and operational requirements specific to the London Borough of Lewisham.

The following documents should be referred to by architects or developers, but the requirements set out in this set of guidelines should be adhered to for any new development in Lewisham.

- 1) British Standards BS 5906:2005 – Waste management in buildings – Code of practice
- 2) 2010 No.2214 Building and Buildings, England and Wales – The Building Regulations 2010
- 3) The Building Regulations 2000 – Approved Document H, Drainage and Waste Disposal (2002 edition)
- 4) Code for Sustainable Homes – A step-change in sustainable home building practice – DCLG, Dec 2006
- 5) **Attachments:**
  1. Final report - Waste Management Planning Advice for Flatted Properties.
  2. Waste management planning advice for flatted properties - case studies
  3. Lewisham Council Truck Dimensions



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Document



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Document



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Document



# Contacts

Enquiries should be directed to our Call Centre in the first instance:

**Tel:** 020 8314 7171

**Email:** \*\*\*\*\*@Lewisham.gov.uk

For specific enquiries relating to waste storage and collection, please contact the Waste Management department. Please note that it may be necessary to supply site plans and initial waste management proposals to enable your enquiry to be handled:

**Tel:** 020 8314 2017

**Email:** paddy.swift@Lewisham.gov.uk