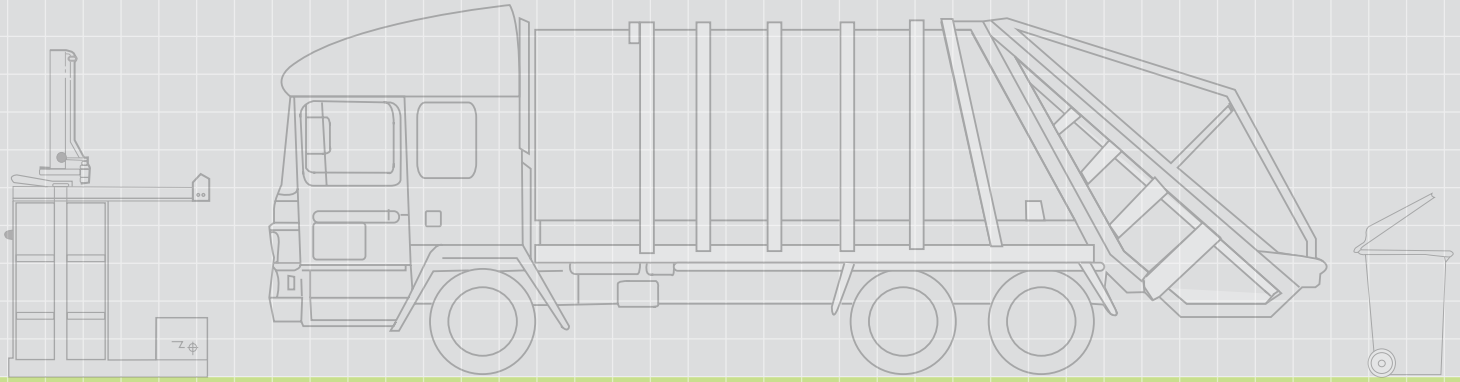
Local Government

Waste Storage Guide

for Northern Ireland



September 2010
Issue #1

Supported by:



Local Government

Waste Storage Guide

for Northern Ireland

September 2010
Issue #1

IMPORTANT NOTES

Please contact the relevant council's Building Control Service to confirm whether this is the latest version of the guide.

The latest version of this guide should be available to download from any council website.

While this document provides detailed guidance and advice, it is not intended to be an alternative to discussion and consultation. It is important, therefore, to consult with the relevant council's Building Control Service early in the design stage and regularly throughout the development process of each individual project.

This guide is designed to assist you in achieving compliance with relevant legislation. However, it is not a replacement for legislation, and compliance with the guide does not automatically guarantee compliance with all relevant legislation. The onus is on the architect, developer and property owner to be familiar with and act in accordance with prevailing legal requirements.

This guide relates only to waste storage and access; you should consult with councils and other agencies on other matters, as normal, throughout the design and development process.

Whilst every care has been taken in the preparation of this document, no liability shall rest with any council for any error or omission. Examples and equipment references are for indicative and illustrative purposes only and it remains the responsibility of the Applicant to ensure designs/ waste management plans meet requisite standards.

Table of Contents



Acknowledgements

The following individuals and their organisations have contributed to the development of this guidance:

Technical Working Group Members

Trevor Burns	Banbridge District Council
Marcus Campbell (Chairman)	Belfast City Council
William Frazer	Banbridge District Council
Patrick Hobson	Down District Council
Yvonne Irvine	Belfast City Council
Alan Mayrs	Belfast City Council
Darren McCamphill	Belfast City Council
Terry Mitchell	Belfast City Council
Keith Patterson	Waste & Resources Action Programme
Craig Wisener	Coleraine Borough Council

The Department of Finance and Personnel

The Department of Finance and Personnel, Building Standards Branch, assisted by providing comment on the drafts of the guide.

Foreword



We all have a right to live, work and relax in a healthy and safe environment and while there are many obvious and high-profile factors involved in achieving this, one important factor – waste - is often overlooked.

Concerns about sustainability and climate change are changing how we view waste and what we do with it. We are moving away from waste management towards an era of resource management. Major investments are being put into infrastructure and systems to 'reduce, re-use and recycle' waste – rather than just 'dump' it. Meeting the challenge to 'rethink waste ' is clearly underway.

The Executive has sought to give a strategic focus to introduce legislation, policy and infrastructure to improve waste management in Northern Ireland. Councils have launched new collection services and major educational campaigns. Residents and businesses are getting used to different coloured bins for separate items, different collection days and an ongoing stream of information about what they can or should do with their waste.

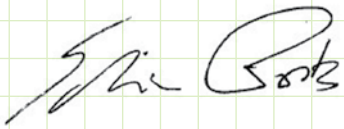
Despite all of this, problems arise at many homes and businesses because they simply do not have enough space to store their waste. If waste is not properly planned for in the design of buildings, it can lead to over-flowing bins and storage areas, environmental health risks and obstructions on roads and footways.

This guide hopes to address that problem by providing practical advice and guidance to ensure that waste is properly planned for at the earliest stage of the design and build process.

While the guide has been developed by local government, I am pleased at their successful consultation and collaboration with central government to achieve a document which is useful to both. As a result, the DoE Planning Service will include the guide as an Informative on Planning Applications, and the DFP Building Standards Branch considers the guide to be complementary to Part J (Solid waste in buildings) of the Building Regulations.

I am very pleased, therefore, to commend the *Local Government Waste Storage Guide for Northern Ireland* to you, in the belief that it will provide greater clarity for building designers and practical benefits for property owners and managers.

Minister of the Environment
Edwin Poots MLA



Introduction

Purpose

This document gives guidance and advice to architects, developers and building contractors to ensure that arrangements for storing and accessing waste are properly considered when designing individual buildings and building developments.

Background

Many councils have found that poor planning for waste storage and access can lead to a range of problems for those charged with collecting the waste. However, poor design can also cause considerable difficulties, including health & safety hazards, for residents. This guide aims to ensure that sufficient consideration is given to the issues of waste storage and access at the design stage.

This guide builds on guidance previously provided by Belfast City Council[1]. It has been developed and produced by Northern Ireland's three Waste Management Partnerships (led by Belfast City Council) in association with the Northern Ireland Local Government Association (NILGA) and the Local Government Technical Advisers Group (TAG), to be suitable for province-wide use.

Scope

The guidance in this document applies only to solid waste in relation to:

- new builds;
- extensions; and
- changes of use

for:

- residential buildings; and
- commercial and light industrial buildings.

This document covers the requirements for household waste and commercial waste. It does not cover specialised wastes, such as clinical and hazardous wastes.

1 'Waste and Recycling Storage Requirements: A guide for developers, architects and building contractors', (2005), Belfast City Council



How to use this Guide

i. General

The guide is divided into sections. Sections 1 - 8 form the core of the document, providing step-by-step guidance to ensure that any development is designed well and in accordance with legislation relevant to waste storage and access.

- Sections 1 - 4 deal primarily with estimations and calculations.
- Sections 5 – 8 deal with the physical design characteristics.

Appendices at the end of the document serve two broad purposes:

- They provide some general supporting information, including worked examples.
- They outline the roles of other relevant agencies, along with the key legislation relevant to waste storage and access.

It may be useful to break large residential developments down into more manageable constituent elements. Dwellings should be considered separately to non-domestic elements of mixed-use developments.

This guide is designed to assist you in achieving compliance with relevant legislation. However, it is not a replacement for legislation, and compliance with the guide does not automatically guarantee compliance with all relevant legislation. The onus is on the architect, developer and property owner to be familiar with and act in accordance with prevailing legal requirements.

The information in this guide will be sufficient for you to produce a Waste Management Plan for your development. Detailed guidance on the content of Waste Management Plans is included in Appendix IX.

ii. Council Considerations

Waste collection schemes, methods and frequencies can vary between councils, and even within the same council area, which makes it difficult to give definitive guidance on some matters. This guide allows flexibility for the various approaches taken by different councils; **it is important, therefore, to consult with the relevant council early in the design stage and regularly throughout the development process of each individual project.**

iii. Waste Collection Technologies

Waste treatment and collection technologies are continually changing and developing. As a result, the use of traditional 'bins' and 'bin lorries' is no longer the only available option. In fact, in light of declining natural resources, rising fuel costs and climate change considerations, this method may become less and less sustainable in the mid to long term.

Therefore, some alternative collection options are outlined for your consideration in Appendix VIII. However, not all councils or commercial waste services will be in a position to support such methods, so you will need to discuss the possibilities with the relevant council or commercial waste contractor directly.

All of the advice in this guide assumes the use of traditional waste containers. You should consult with the relevant council and apply the guidance as appropriate where alternative methods are proposed.

Alternative Waste Storage Strategies and Methods

This guide details waste storage and access arrangements which will help meet the requirements of relevant legislation and achieve best practice. We recognise that there may be other suitable methods to achieve the intent of legislation and this guide. Contact the relevant council early in the design stage if you wish to propose alternative methods.

Councils will give positive consideration to schemes which deviate from the principles outlined within this guide, if it can be demonstrated that they wholly comply with the design guidance set out within Building Research Establishment Environmental Assessment Method (BREEAM) Ecohomes or The Code for Sustainable Homes.

General Considerations and Information



Waste Policy and Legislation Context

i. EU Legislation

In light of the effects of land-filled biodegradable waste on climate change, the EU Landfill Directive sets statutory targets for reducing the quantities of land-filled biodegradable municipal waste to:

- 75% of 1995 levels by 2010
- 50% of 1995 levels by 2013
- 35% of 1995 levels by 2020

Failure to meet these targets will incur fines for the relevant councils, which will have to be funded via the ratepayer. As a result, waste management has changed and will continue to change dramatically over the next several years.

ii. 'Towards Resource Management'

The Northern Ireland Waste Management Strategy 2006-2020, 'Towards Resource Management'[2], published by the Department of the Environment, details six policy strands which should be pursued in order to achieve the EU targets.

Strand 2, Recycling and Recovery, sets out targets for the percentage of NI waste to be recycled or composted annually:

- 35% by 2010
- 40% by 2015
- 45% by 2020 [3]

Over time, the EU targets and waste legislation are likely to necessitate increased segregation of waste. This will have an impact on operational practices and the number of containers required by each property to keep various fractions of waste separated.

In light of the impending fines and in order to discourage land-filling and encourage recycling, the Government is steadily and significantly increasing the tax on land-filled materials.

This guide details how properties need to be designed for effective waste management in light of climate change considerations and the practical implications of the associated legislation (i.e. collections of segregated recyclable materials).

2 Available at www.ni-environment.gov.uk/waste/strategyni
3 This is likely to rise to 50%, to reflect the target set by the revised European Waste Framework Directive.

Household Waste and Commercial Waste

Councils are responsible for collecting household waste from the vast majority of dwellings. This is one of the services funded through the domestic rates.

Owners or managers of non-domestic properties (e.g. businesses, schools, and libraries) are responsible for arranging the collection and disposal of the waste they generate. In the vast majority of cases this is a chargeable service. Councils should provide a commercial waste service to meet this need, but many other private waste collection contractors also provide a commercial waste service. Thus, the level of service (and price) will be agreed under contract with the selected commercial waste operator.

Note that, even in the same development, each non-domestic property may be served by a different commercial waste service.

This guide recognises that there are differences in the household and commercial waste services and you should also keep these differences in mind when designing the development. Commercial waste should not be presented for collection as household waste.

Kerbside Collection

Councils in Northern Ireland normally operate a kerbside collection policy for household waste. This means that waste from dwellings (whether single properties or apartment blocks) should be presented at the boundary of the property, or at another designated waste collection point, for convenient collection by the refuse collection crew. All dwellings should be designed with this in mind.

Councils normally operate an 'assisted lift' policy for dwellings where the residents are proven to be physically unable to present waste containers for themselves. If a dwelling qualifies for an 'assisted lift', the refuse collection crew will collect the containers from their normal storage area.

Commercial waste will be collected from a point agreed between the customer and the commercial waste operator.



1. Estimating the Weekly Waste Arisings

1.1. Introduction

This section details how to calculate the volume of waste (in litres) likely to be generated from a property on a weekly basis. **Note, however, that the required storage capacity does not necessarily equal the weekly waste arisings. You are shown how to calculate the required storage capacity in Section 2.**

1.2. Total Weekly Waste Arisings

Table 1 indicates the typical waste arisings (in litres) on a weekly basis for various types of property. This volume includes residual and recyclable waste. **If your development is not included in this table, contact the relevant council to agree the appropriate classification or establish a suitable estimate.**

The weekly arisings may change according to seasonal variations, regular or periodic events or any other factor which may differentiate the property in question from the typical properties reflected in Table 1. Such factors should be accounted for in calculated weekly waste arisings. It may be useful to produce a profile of estimated weekly waste arisings for the year, using realistic assumptions and/or collective knowledge or experience.

The weekly arisings may change according to occupancy level. The figures in Table 1 are based on realistic or possible (as opposed to minimum) occupancy levels and should be regarded as the minimum for the purposes of waste storage planning. All further calculations and planning will be based on these figures.

1.3. Breakdown of Waste Arisings

The following paragraphs provide some basic information regarding how the total weekly waste arisings might be broken down into individual waste streams. However **you should liaise with the relevant council to establish how the total estimated waste arising should be broken down into the various fractions.**

1.3.1. For dwellings, a recent NI-wide study[4] shows that the total waste disposed of via kerbside collection breaks down roughly (by weight) as follows:

- 30% Residual
- 35% Dry Recyclable
- 35% Organic Waste (25% Food Waste + 10% Garden Waste)

This is an average and it is assumed to account for only a portion of garden waste; the total arising indicated in Table 1 should not be reduced for dwellings which do not have gardens.

This is a breakdown by weight, rather than volume. The fractions tend to vary in form and density, so the volume breakdown is different to the weight breakdown.

Note also that the appropriate breakdown will vary between councils depending on the services that they provide. Services will vary, depending on factors such as the technologies currently available to them, economic viability and environmental benefit.

1.3.2. For non-domestic properties, the breakdown will vary depending on the nature of the operations involved. Segregation of waste for recycling should be facilitated, and, in the absence of any other information, the following breakdown should be assumed:

- 65% Residual
- 35% Dry Recyclable

4 Review of Municipal Waste Component Analysis, (February 2008), DoE NI Environment and Heritage Service



Table 1 - Typical Weekly Waste Arisings[5]			
Building	**Weekly Waste Calculation**	**Example**	**Weekly Waste Arising (litres)**
Dwelling (not HMO) **This estimate assumes residential purposes only; if the dwelling is also used for any non-domestic purposes, the relevant arisings should be separately estimated and planned for.**	70L per bedroom + 30L per dwelling	3-bedroom house	240
House in Multiple Occupation	100L per bedroom + 60L per dwelling	3-bedroom house	360
Office	50L per employee	10 employees	500
Shopping Centre	10L per sqm of sales area	25,000 sqm sales area	250,000
Fast Food Outlet	5L per sale	45,000 sales per week	225,000
Department Store	10L per sqm of sales area	3,700 sqm	37,000
Restaurant	75L per dining space	30 dining spaces	2,250
4/5 Star Hotel	350L per bedroom	370 bedrooms	129,500
2/3 Star Hotel	250L per bedroom	100 bedrooms	25,000
1 Star Hotel / B&B	150L per bedroom	5 bedrooms	750
Supermarket (small – sales area up to 1500sqm)	100L per sqm of sales area	800 sqm sales area	80,000
Supermarket (large – sales area more than 1500sqm)	150L per sqm of sales area	2,000 sqm sales area	300,000
Industrial Unit	5L per sqm of floor area	2,000 sqm floor area	10,000
School	2,500L per 100 pupils	700 pupils	17,500

YOU SHOULD NOW KNOW THE EXPECTED RESIDUAL AND RECYCLABLE WASTE (IN LITRES) ARISING FROM EACH PROPERTY ON A WEEKLY BASIS

5 Based primarily on British Standard BS5906:2005 Waste management in buildings – Code of practice

2. Calculating the Storage Capacity Required

2.1. Introduction

This section primarily explains how to calculate the storage capacity required for the estimated waste arisings calculated in Section 1. It also gives guidance on internal waste storage and bulky household waste storage.

2.2. For any property or collection of properties, note that:

- The required storage capacity depends on the quantity of waste arising and how frequently it is collected.
- It is possible that the various waste fractions will be collected on different frequencies.
- It may be useful to split the development into its constituent parts and plan the waste storage for each part separately.

2.3. For mixed-use developments:

Commercial and household waste should be stored separately and the respective required storage capacities should be calculated separately.

2.4. For dwellings:

2.4.1. (External) Waste Storage

Waste will most likely be collected on a weekly or alternate-weekly basis, or some combination of the two. Where an alternate-weekly collection[6] is implemented for any fraction of waste, storage capacity should be provided for two weeks' waste arisings of that fraction.

Note that the arisings detailed in Table 1 are for total waste output (i.e. all waste fractions combined). For dwellings, the various types of waste should be separated into different containers in accordance with the requirements of the relevant council; this is discussed in detail in Section 3.

Contact the relevant council to determine the collection frequencies for the various waste fractions collected. Use this information to calculate the storage capacity required. Note that collection frequencies can vary even within the same council area.

2.4.2. Internal Waste Storage

Provision should also be made for the segregation of waste within a dwelling, to simplify transfer to the segregated external waste storage area.

Segregation should be designed into the kitchen (or utility area), as a minimum.

6 See Definitions/Glossary of Terms for explanation.



You should liaise with the relevant council to establish whether an internal storage area should be designed to accommodate a kerbside box, and the appropriate dimensions. Note that a kerbside box may be heavy or awkward to carry over a distance or a complicated route; consider the health and safety implications of such an arrangement.

2.4.3. Bulky Household Waste

Any individual dwelling should be designed to provide an external area (within the curtilage of the property) suitable for the temporary storage of bulky household waste, such as furniture or white goods. This area should be no less than 2.5m x 1.5m and consideration should be given to access arrangements, such as door and pathway widths, obstacles and gradients.

Any apartment complex should be designed to provide a designated bulky household waste storage area. This area should:

- provide at least 10sqm for every 50 households or part thereof;
- be reasonably square, with no dimension being less than 2m; and
- be designed in accordance with the detailed guidance provided in Section 7.

Note that the removal of bulky household waste can be arranged, as necessary, by contacting the relevant council. There may or may not be a charge for this service.

2.5. For non-domestic properties:

2.5.1. (Main) Waste Storage

Waste will be collected on a frequency agreed under contract with a commercial waste service. Table 2 shows how the required storage capacity relates to the collection frequency:

Table 2 – Collection Frequency and Storage Capacity	
Collection Frequency	**Minimum Storage Capacity**
Once per week	One week's waste
2 – 5 Days per week	Four days' waste
6 – 7 Days per week	Two days' waste
For properties where the frequency of collection has not been established, capacity should be provided for a weekly (once per week) collection.	
Note that a 7 day collection would not be widely available	

The storage capacity should accommodate seasonal variations (this may also be managed by contracting for extra collections at peak times).

The storage capacity should accommodate expected changes in waste collection frequencies, systems or methods.

For businesses which are generating food waste, the collection frequency should be adequate to minimise odours and the risk of vermin.

Each property should have its own storage area or a management system to ensure that customers are paying only for their own waste.

2.5.2. Temporary Waste Storage

In cases where waste will be temporarily stored in smaller waste containers in the property before being transferred to the main waste storage area, the temporary storage arrangements should provide for the various waste fractions to be appropriately segregated.

2.5.3. Special Considerations

Please note that the detailed information in this guide only applies to general household and commercial waste. Be aware that specific regulations may apply to various wastes produced, such as (but not limited to):

- Waste Cooking Oil - Caterers such as hotels, restaurants and takeaway outlets should include suitable separate storage provision for waste cooking oil. Contact the relevant council's Environmental Health Service for further guidance.

- Raw meat, fish, poultry etc. – Retailers such as butchers, fishmongers and supermarkets should include separate storage provision for waste raw meat, fish, poultry and other former foodstuffs. Contact the relevant council's Environmental Health Service for further guidance.

- Clinical Waste – Hospitals, health centres, clinics and other healthcare establishments should include separate storage provision for clinical waste. Contact the Health and Safety Executive for Northern Ireland (HSENI) for further guidance.



2.6. Possible measures to reduce the required storage capacity

The capacity required can be reduced by use of a compactor; see Appendix III for more information about compactors and guidelines/limitations on their use.

Some waste materials can be made more manageable by the use of a baler; see Appendix IV for more information about balers and guidelines/limitations on their use.

Depending on the size of development and the volume of waste expected, the council may wish to or agree to install one or more Bring Sites. This may reduce the capacity required at the main waste storage areas. Contact the relevant council to discuss this possibility. See Appendix V for more information on Bring Sites.

YOU SHOULD NOW KNOW:
- **THE STORAGE CAPACITY (IN LITRES) REQUIRED FOR THE VARIOUS WASTE FRACTIONS**
- **WHAT EXTENT OF INTERNAL OR TEMPORARY STORAGE PROVISION IS REQUIRED**
- **WHAT SIZE THE BULKY HOUSEHOLD WASTE STORAGE AREA SHOULD BE**

3. Number and Types of Waste Containers Required

3.1. Introduction

This section provides guidance on calculating the numbers, types and sizes of waste containers that should be accommodated. Refer to Appendix II for the capacities and typical dimensions of standard waste containers.

Waste containers can normally be purchased through the relevant council or prospective commercial waste contractor. If you intend to purchase containers from any other source, you should liaise with the council or commercial waste service to ensure that the proposed containers are satisfactory in terms of:

- quality;
- design; and
- suitability for the application.



3.2. Dwellings

For any dwelling the waste will have to be separated into at least two and possibly three or more fractions, each fraction to be stored separately in dedicated receptacles.

The typical waste container for houses or bungalows is the 240L wheeled bin. Kerbside boxes (typically 55L capacity) are used in some areas for recyclable waste.

Large wheeled containers, such as Euro Bins, are often used for flatted accommodation. Where Euro Bins are to be used, a Waste Management Plan should be designed and agreed with the council. See Appendix IX for further information on Waste Management Plans.

Contact the relevant council to establish the different waste fractions that should be stored separately, and the appropriate receptacles. Note that this may vary from location to location even within the same council area.

Note that the capacity/space to be allocated at design stage is based on the potential occupancy of a dwelling. The provision of bins by a council is, however, based on the actual occupancy.

3.3. Non-domestic properties

There is increasing environmental and cost pressure on businesses, schools and other organisations to recycle as much waste as possible. Provision should be made for the segregation of waste as:

- Space is needed for items which should not be land-filled (e.g. fluorescent tubes, refrigerators)
- Legislation demands pre-treatment of all waste before landfilling; segregation of waste for recycling qualifies as a pre-treatment
- Land-filling will continue to become significantly more expensive and recycling is expected to become increasingly economical
- Regardless of legislation, recycling is a more environmentally-responsible practice and should be facilitated

The types of waste container for non-domestic properties will depend on the commercial waste contractor. In the absence of any other information, you should assume that 1100L Euro Bins will be used.

YOU SHOULD NOW KNOW THE NUMBERS, TYPES AND SIZES OF WASTE CONTAINERS THAT YOUR WASTE STORAGE AREA SHOULD BE ABLE TO ACCOMMODATE

4. Calculating the Size of a Waste Storage Area

4.1. Introduction

The waste storage area should be large enough to allow each waste container to be individually accessed and removed without moving any of the others. This is to ensure that:

- Residents/users can conveniently use any waste container at any time, without having to swap them around. Where this is not the case, users may be tempted to simply dump the waste into or around the storage area once the accessible containers are filled, rather than rearrange them.
- Waste containers can be conveniently removed as necessary for emptying[c].

The guidance in this section assumes that the dimensions of the waste containers to be used are no greater than the typical dimensions detailed in Appendix II. **Liaise with the council or prospective commercial waste contractor to confirm the dimensions of the containers to be used, and increase the area calculations accordingly, if necessary.**

4.2. Calculations

Tables 3.1 to 3.4 show how to calculate the storage space required, for any given number of standard containers.

Note that the waste storage area for use by a single dwelling should never be less than 1.8m x 1.2m[c]. This area is sufficient to accommodate three 240L bins.

The tables distinguish between situations where a waste storage area is 'enclosed' and 'not enclosed'. However, the 'not enclosed' calculations may be used if the doors to the waste storage area can be opened to the extent that the area is effectively not enclosed.

The tables assume either a single row layout (containers in a row beside one another, with the lids opening at the front – see Figure 1) or an opposing rows layout (two single rows, as previously described, facing one another – see Figure 2). Other layouts may be used so long as all relevant design requirements are adhered to. **Liaise with the relevant council to ensure that any alternative layout and the corresponding calculated area is satisfactory.**

Where a mixture of container sizes will be used in the same storage area, apply the relevant areas/calculations while adhering to all other relevant design requirements. **Liaise with the relevant council to ensure that the calculated area is satisfactory.**

If containers are stackable (e.g. plastic boxes), it may be acceptable for the storage area to be calculated accordingly.

c In order to ensure compliance with paragraph J2(1)(c) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.



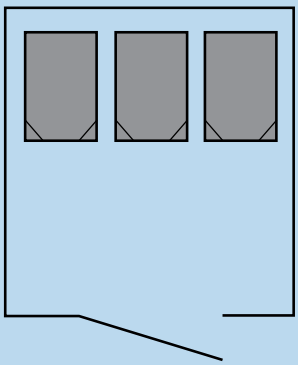


Figure 1: Wheeled Bins in Single Row Layout (not to scale)

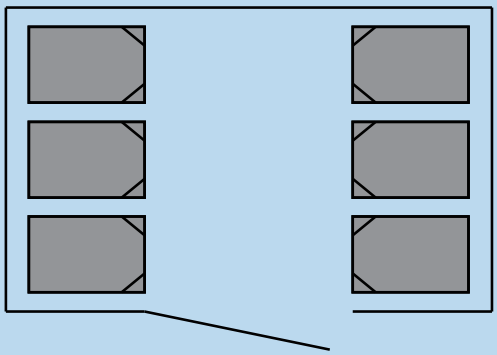


Figure 2: Wheeled Bins in Opposing Rows Layout (not to scale)

Tables 4.1 and 4.2 show the required dimensions, and the corresponding area, for an enclosed storage area housing up to 40 containers, using the calculations shown in Tables 3.1 to 3.4.

If the container size you intend to use is not covered by Tables 3.1 to 3.4, calculate the required area according to the principles detailed and exercised throughout Section 4. **Liaise with the relevant council to ensure that the calculated area is satisfactory.**

YOU SHOULD NOW KNOW WHAT SIZE THE WASTE STORAGE AREA NEEDS TO BE

TABLE 3.1 - Container Capacity 240L or Less				
No. of Containers	Minimum Storage Area Dimensions (m)			
	Single Row Layout		Opposing Rows Layout	
	Not Enclosed	Enclosed	Not Enclosed	Enclosed
1 - 3	1.2 x 1.8	2.0 x 1.8	2.8 x 1.2	2.8 x 1.2
4	1.2 x 2.4	2.0 x 2.4	2.8 x 1.2	2.8 x 1.2
Single Row Layout - For each additional container add at least the following discrete area while maintaining a rectangular area overall:	1.2 x 0.6	2.0 x 0.6		
Single Row Layout (Not Enclosed) - Minimum additional clearance space required to front of row:	0.8 x row length			
Opposing Rows Layout - For each additional container or pair of containers add at least the following discrete area while maintaining a rectangular area overall:			2.8 x 0.6	2.8 x 0.6
Thus, for example, 5 bins would need a dedicated storage area of at least:	1.2 x 3.0 (plus an adjacent usable clear area of 0.8 x 3.0 to make a total area of 2.0 x 3.0)	2.0 x 3.0	2.8 x 1.8	2.8 x 1.8
Minimum Door/Gate Clearance		1.0		1.0
Minimum Operating Corridor (3 or more containers in a row; 2 or more containers opposing)	1.2			



TABLE 3.2 - Container Capacity 360L				
No. of Containers	Minimum Storage Area Dimensions (m)			
	Single Row Layout		Opposing Rows Layout	
	Not Enclosed	Enclosed	Not Enclosed	Enclosed
1 - 3	1.4 x 2.1	2.4 x 2.1	3.3 x 1.4	3.3 x 1.4
4	1.4 x 2.8	2.4 x 2.8	3.3 x 1.4	3.3 x 1.4
Single Row Layout - For each additional container add at least the following discrete area while maintaining a rectangular area overall:	1.4 x 0.7	2.4 x 0.7		
Single Row Layout (Not Enclosed) - Minimum additional clearance space required to front of row:	1.0 x row length			
Opposing Rows Layout - For each additional container or pair of containers add at least the following discrete area while maintaining a rectangular area overall:			3.3 x 0.7	3.3 x 0.7
Thus, for example, 5 bins would need a dedicated storage area of at least:	1.4 x 3.5 (plus an adjacent usable clear area of 1.0 x 3.5 to make a total area of 2.4 x 3.5)	2.4 x 3.5	3.3 x 2.1	3.3 x 2.1
Minimum Door/Gate Clearance		1.0		1.0
Minimum Operating Corridor (3 or more containers in a row; 2 or more containers opposing)	1.5			

TABLE 3.3 - Container Capacity 660L				
No. of Containers	Minimum Storage Area Dimensions (m)			
	Single Row Layout		Opposing Rows Layout	
	Not Enclosed	Enclosed	Not Enclosed	Enclosed
1 - 2	1.4 x 3.0	2.2 x 3.0	3.0 x 1.5	3.0 x 1.5
3	1.4 x 4.5	2.2 x 4.5	3.0 x 3.0	3.0 x 3.0
4	1.4 x 6.0	2.2 x 6.0		
Single Row Layout - For each additional container add at least the following discrete area while maintaining a rectangular area overall:	1.4 x 1.5	2.2 x 1.5		
Single Row Layout (Not Enclosed) - Minimum additional clearance space required to front of row:	0.8 x row length			
Opposing Rows Layout - For each additional container or pair of containers add at least the following discrete area while maintaining a rectangular area overall:			3.0 x 1.5	3.0 x 1.5
Thus, for example, 5 bins would need a dedicated storage area of at least:	1.4 x 7.5 (plus an adjacent usable clear area of 0.8 x 7.5 to make a total area of 2.2 x 7.5)	2.2 x 7.5	3.0 x 4.5	3.0 x 4.5
Minimum Door/Gate Clearance		1.5		1.5
Minimum Operating Corridor (2 or more containers in a row; 2 or more containers opposing)	1.3			



TABLE 3.4 - Container Capacity 1100L				
No. of Containers	Minimum Storage Area Dimensions (m)			
	Single Row Layout		Opposing Rows Layout	
	Not Enclosed	Enclosed	Not Enclosed	Enclosed
1 - 2	1.8 x 3.2	3.1 x 3.2	4.4 x 1.6	4.4 x 1.6
3	1.8 x 4.8	3.1 x 4.8	4.4 x 3.2	4.4 x 3.2
4	1.8 x 6.4	3.1 x 6.4		
Single Row Layout - For each additional container add at least the following discrete area while maintaining a rectangular area overall:	1.8 x 1.6	3.1 x 1.6		
Single Row Layout (Not Enclosed) - Minimum additional clearance space required to front of row:	1.3 x row length			
Opposing Rows Layout - For each additional container or pair of containers add at least the following discrete area while maintaining a rectangular area overall:			4.4 x 1.6	4.4 x 1.6
Thus, for example, 5 bins would need a dedicated storage area of at least:	1.8 x 8.0 (plus an adjacent usable clear area of 1.3 x 8.0 to make a total area of 3.1 x 8.0)	3.1 x 8.0	4.4 x 4.8	4.4 x 4.8
Minimum Door/Gate Clearance		2.0		2.0
Minimum Operating Corridor (2 or more containers in a row; 2 or more containers opposing)	1.8			

TABLE 4.1 – Single Row Layout (Enclosed)

No. of Containers	240L or Less				360L				660L				1100L			
	Dimensions (m)			Area (m2)	Dimensions (m)			Area (m2)	Dimensions (m)			Area (m2)	Dimensions (m)			Area (m2)
1	2.0	x	1.8	3.6	2.4	x	2.1	5.0	2.2	x	3.0	6.6	3.1	x	3.2	9.9
2	2.0	x	1.8	3.6	2.4	x	2.1	5.0	2.2	x	3.0	6.6	3.1	x	3.2	9.9
3	2.0	x	1.8	3.6	2.4	x	2.1	5.0	2.2	x	4.5	9.9	3.1	x	4.8	14.9
4	2.0	x	2.4	4.8	2.4	x	2.8	6.7	2.2	x	6.0	13.2	3.1	x	6.4	19.8
5	2.0	x	3.0	6.0	2.4	x	3.5	8.4	2.2	x	7.5	16.5	3.1	x	8.0	24.8
6	2.0	x	3.6	7.2	2.4	x	4.2	10.1	2.2	x	9.0	19.8	3.1	x	9.6	29.8
7	2.0	x	4.2	8.4	2.4	x	4.9	11.8	2.2	x	10.5	23.1	3.1	x	11.2	34.7
8	2.0	x	4.8	9.6	2.4	x	5.6	13.4	2.2	x	12.0	26.4	3.1	x	12.8	39.7
9	2.0	x	5.4	10.8	2.4	x	6.3	15.1	2.2	x	13.5	29.7	3.1	x	14.4	44.6
10	2.0	x	6.0	12.0	2.4	x	7.0	16.8	2.2	x	15.0	33.0	3.1	x	16.0	49.6
11	2.0	x	6.6	13.2	2.4	x	7.7	18.5	2.2	x	16.5	36.3	3.1	x	17.6	54.6
12	2.0	x	7.2	14.4	2.4	x	8.4	20.2	2.2	x	18.0	39.6	3.1	x	19.2	59.5
13	2.0	x	7.8	15.6	2.4	x	9.1	21.8	2.2	x	19.5	42.9	3.1	x	20.8	64.5
14	2.0	x	8.4	16.8	2.4	x	9.8	23.5	2.2	x	21.0	46.2	3.1	x	22.4	69.4
15	2.0	x	9.0	18.0	2.4	x	10.5	25.2	2.2	x	22.5	49.5	3.1	x	24.0	74.4
16	2.0	x	9.6	19.2	2.4	x	11.2	26.9	2.2	x	24.0	52.8	3.1	x	25.6	79.4
17	2.0	x	10.2	20.4	2.4	x	11.9	28.6	2.2	x	25.5	56.1	3.1	x	27.2	84.3
18	2.0	x	10.8	21.6	2.4	x	12.6	30.2	2.2	x	27.0	59.4	3.1	x	28.8	89.3
19	2.0	x	11.4	22.8	2.4	x	13.3	31.9	2.2	x	28.5	62.7	3.1	x	30.4	94.2
20	2.0	x	12.0	24.0	2.4	x	14.0	33.6	2.2	x	30.0	66.0	3.1	x	32.0	99.2
21	2.0	x	12.6	25.2	2.4	x	14.7	35.3	2.2	x	31.5	69.3	3.1	x	33.6	104.2
22	2.0	x	13.2	26.4	2.4	x	15.4	37.0	2.2	x	33.0	72.6	3.1	x	35.2	109.1
23	2.0	x	13.8	27.6	2.4	x	16.1	38.6	2.2	x	34.5	75.9	3.1	x	36.8	114.1
24	2.0	x	14.4	28.8	2.4	x	16.8	40.3	2.2	x	36.0	79.2	3.1	x	38.4	119.0
25	2.0	x	15.0	30.0	2.4	x	17.5	42.0	2.2	x	37.5	82.5	3.1	x	40.0	124.0
26	2.0	x	15.6	31.2	2.4	x	18.2	43.7	2.2	x	39.0	85.8	3.1	x	41.6	129.0
27	2.0	x	16.2	32.4	2.4	x	18.9	45.4	2.2	x	40.5	89.1	3.1	x	43.2	133.9
28	2.0	x	16.8	33.6	2.4	x	19.6	47.0	2.2	x	42.0	92.4	3.1	x	44.8	138.9
29	2.0	x	17.4	34.8	2.4	x	20.3	48.7	2.2	x	43.5	95.7	3.1	x	46.4	143.8
30	2.0	x	18.0	36.0	2.4	x	21.0	50.4	2.2	x	45.0	99.0	3.1	x	48.0	148.8
31	2.0	x	18.6	37.2	2.4	x	21.7	52.1	2.2	x	46.5	102.3	3.1	x	49.6	153.8
32	2.0	x	19.2	38.4	2.4	x	22.4	53.8	2.2	x	48.0	105.6	3.1	x	51.2	158.7
33	2.0	x	19.8	39.6	2.4	x	23.1	55.4	2.2	x	49.5	108.9	3.1	x	52.8	163.7
34	2.0	x	20.4	40.8	2.4	x	23.8	57.1	2.2	x	51.0	112.2	3.1	x	54.4	168.6
35	2.0	x	21.0	42.0	2.4	x	24.5	58.8	2.2	x	52.5	115.5	3.1	x	56.0	173.6
36	2.0	x	21.6	43.2	2.4	x	25.2	60.5	2.2	x	54.0	118.8	3.1	x	57.6	178.6
37	2.0	x	22.2	44.4	2.4	x	25.9	62.2	2.2	x	55.5	122.1	3.1	x	59.2	183.5
38	2.0	x	22.8	45.6	2.4	x	26.6	63.8	2.2	x	57.0	125.4	3.1	x	60.8	188.5
39	2.0	x	23.4	46.8	2.4	x	27.3	65.5	2.2	x	58.5	128.7	3.1	x	62.4	193.4
40	2.0	x	24.0	48.0	2.4	x	28.0	67.2	2.2	x	60.0	132.0	3.1	x	64.0	198.4



TABLE 4.2 – Opposing Rows Layout (Enclosed)

No. of Containers	240L or Less				360L				660L				1100L			
	Dimensions (m)			Area (m2)	Dimensions (m)			Area (m2)	Dimensions (m)			Area (m2)	Dimensions (m)			Area (m2)
1	2.8	x	1.2	3.4	3.3	x	1.4	4.6	3.0	x	1.5	4.5	4.4	x	1.6	7.0
2	2.8	x	1.2	3.4	3.3	x	1.4	4.6	3.0	x	1.5	4.5	4.4	x	1.6	7.0
3	2.8	x	1.2	3.4	3.3	x	1.4	4.6	3.0	x	3.0	9.0	4.4	x	3.2	14.1
4	2.8	x	1.2	3.4	3.3	x	1.4	4.6	3.0	x	3.0	9.0	4.4	x	3.2	14.1
5	2.8	x	1.8	5.0	3.3	x	2.1	6.9	3.0	x	4.5	13.5	4.4	x	4.8	21.1
6	2.8	x	1.8	5.0	3.3	x	2.1	6.9	3.0	x	4.5	13.5	4.4	x	4.8	21.1
7	2.8	x	2.4	6.7	3.3	x	2.8	9.2	3.0	x	6.0	18.0	4.4	x	6.4	28.2
8	2.8	x	2.4	6.7	3.3	x	2.8	9.2	3.0	x	6.0	18.0	4.4	x	6.4	28.2
9	2.8	x	3.0	8.4	3.3	x	3.5	11.6	3.0	x	7.5	22.5	4.4	x	8.0	35.2
10	2.8	x	3.0	8.4	3.3	x	3.5	11.6	3.0	x	7.5	22.5	4.4	x	8.0	35.2
11	2.8	x	3.6	10.1	3.3	x	4.2	13.9	3.0	x	9.0	27.0	4.4	x	9.6	42.2
12	2.8	x	3.6	10.1	3.3	x	4.2	13.9	3.0	x	9.0	27.0	4.4	x	9.6	42.2
13	2.8	x	4.2	11.8	3.3	x	4.9	16.2	3.0	x	10.5	31.5	4.4	x	11.2	49.3
14	2.8	x	4.2	11.8	3.3	x	4.9	16.2	3.0	x	10.5	31.5	4.4	x	11.2	49.3
15	2.8	x	4.8	13.4	3.3	x	5.6	18.5	3.0	x	12.0	36.0	4.4	x	12.8	56.3
16	2.8	x	4.8	13.4	3.3	x	5.6	18.5	3.0	x	12.0	36.0	4.4	x	12.8	56.3
17	2.8	x	5.4	15.1	3.3	x	6.3	20.8	3.0	x	13.5	40.5	4.4	x	14.4	63.4
18	2.8	x	5.4	15.1	3.3	x	6.3	20.8	3.0	x	13.5	40.5	4.4	x	14.4	63.4
19	2.8	x	6.0	16.8	3.3	x	7.0	23.1	3.0	x	15.0	45.0	4.4	x	16.0	70.4
20	2.8	x	6.0	16.8	3.3	x	7.0	23.1	3.0	x	15.0	45.0	4.4	x	16.0	70.4
21	2.8	x	6.6	18.5	3.3	x	7.7	25.4	3.0	x	16.5	49.5	4.4	x	17.6	77.4
22	2.8	x	6.6	18.5	3.3	x	7.7	25.4	3.0	x	16.5	49.5	4.4	x	17.6	77.4
23	2.8	x	7.2	20.2	3.3	x	8.4	27.7	3.0	x	18.0	54.0	4.4	x	19.2	84.5
24	2.8	x	7.2	20.2	3.3	x	8.4	27.7	3.0	x	18.0	54.0	4.4	x	19.2	84.5
25	2.8	x	7.8	21.8	3.3	x	9.1	30.0	3.0	x	19.5	58.5	4.4	x	20.8	91.5
26	2.8	x	7.8	21.8	3.3	x	9.1	30.0	3.0	x	19.5	58.5	4.4	x	20.8	91.5
27	2.8	x	8.4	23.5	3.3	x	9.8	32.3	3.0	x	21.0	63.0	4.4	x	22.4	98.6
28	2.8	x	8.4	23.5	3.3	x	9.8	32.3	3.0	x	21.0	63.0	4.4	x	22.4	98.6
29	2.8	x	9.0	25.2	3.3	x	10.5	34.7	3.0	x	22.5	67.5	4.4	x	24.0	105.6
30	2.8	x	9.0	25.2	3.3	x	10.5	34.7	3.0	x	22.5	67.5	4.4	x	24.0	105.6
31	2.8	x	9.6	26.9	3.3	x	11.2	37.0	3.0	x	24.0	72.0	4.4	x	25.6	112.6
32	2.8	x	9.6	26.9	3.3	x	11.2	37.0	3.0	x	24.0	72.0	4.4	x	25.6	112.6
33	2.8	x	10.2	28.6	3.3	x	11.9	39.3	3.0	x	25.5	76.5	4.4	x	27.2	119.7
34	2.8	x	10.2	28.6	3.3	x	11.9	39.3	3.0	x	25.5	76.5	4.4	x	27.2	119.7
35	2.8	x	10.8	30.2	3.3	x	12.6	41.6	3.0	x	27.0	81.0	4.4	x	28.8	126.7
36	2.8	x	10.8	30.2	3.3	x	12.6	41.6	3.0	x	27.0	81.0	4.4	x	28.8	126.7
37	2.8	x	11.4	31.9	3.3	x	13.3	43.9	3.0	x	28.5	85.5	4.4	x	30.4	133.8
38	2.8	x	11.4	31.9	3.3	x	13.3	43.9	3.0	x	28.5	85.5	4.4	x	30.4	133.8
39	2.8	x	12.0	33.6	3.3	x	14.0	46.2	3.0	x	30.0	90.0	4.4	x	32.0	140.8
40	2.8	x	12.0	33.6	3.3	x	14.0	46.2	3.0	x	30.0	90.0	4.4	x	32.0	140.8

5. Siting and Design Considerations for a Waste Storage Area

5.1. General principles

- Waste should not be stored in an area that is plainly visible from the main public route past a property.
- Waste should not be stored on a public highway or in any public area.
- The waste storage area should not obstruct sight lines for pedestrians, drivers or cyclists[a].
- The waste storage area should not obstruct any utility service points.
- The waste storage area should not obstruct access paths or property entrances/ exits.
- The waste storage area should not obstruct fire exits[a].
- The waste storage area should be sited and designed to minimise the fire hazard and the risk of arson[7]; in particular, it should:
  - be sited at a safe distance from potential ignition sources[a];
  - be sited at a safe distance from the property, windows and boundary fences, to prevent the spread of fire[a]; and
  - be designed such that waste containers cannot be removed and used for starting a fire elsewhere.
- The waste storage area should be sited in such a way as to ensure it does not make it easy to gain illegal access to the property (e.g. allowing criminals to climb on bins to enter windows).
- The waste storage area should be sited away from windows and ventilators to prevent nuisance to occupants/users from odour and noise[a].
- The waste storage area should be in a shaded area to reduce the potential for odours.

5.2. The waste storage area for use only by a single dwelling should:

- be sized in accordance with the guidance in Sections 1-4[c];
- have a hard, washable, impervious and free-draining surface[c];
- have adequate natural and/or artificial lighting;
- not obstruct any means of escape[a];
- be in the open air or have good natural ventilation[a]; and
- be designed for use by older persons and persons with disabilities.

7 A full range of detailed fire safety guides for various types of property is available at www.communities.gov.uk/fire/firesafety/fire-safetylaw/aboutguides

a In order to ensure compliance with paragraph J2(1)(a) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.

c In order to ensure compliance with paragraph J2(1)(c) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.



5.3. A communal waste storage area for dwellings should:

- be sized in accordance with the guidance in Sections 1-4[c];
- be in the open air or have good natural ventilation[a];
- be designed for use by older persons and persons with disabilities;
- be suitably enclosed within a yard or purpose-built enclosure for the sake of appearances and to prevent nuisance from spread of rubbish, odour and noise;
  - the enclosure should be constructed and finished in keeping with the surroundings;
  - if not enclosed, the waste storage area should be screened off, using boundary walls, fencing or planting;
- be designed such that store doors/gates do not open over the public highway;
- have consideration given to whether doors/gates should open outwards to minimise obstruction;
- have a facility to hold doors/gates open (other than fire doors) while the bins are in use or being moved in or out of the store;
- be included in the site's maintenance and cleansing regime;
- have a floor which is constructed and finished in materials that are impervious and easily kept clean[c];
- have a convenient water supply for washing in order to maintain hygiene standards;
- have the floor laid to a fall with suitable drainage (e.g. trapped gully);
- have adequate natural and/or artificial lighting (artificial lighting, switches and any other electrical fitting should be sealed to protect from water ingress while the store is being washed);
- be covered by any CCTV system which is installed in the development;
- not obstruct any means of escape (particularly fire exits) or access to fire alarm points or fire extinguishers[a];
- be designed and/or managed such that access to the storage area is easy for residents but difficult for non-residents; and
- be designed such that no-one can hide in the store from anyone entering. Consideration should be given to:
  - wall heights (where the storage area has no roof);
  - internal layout of bins;
  - fitting windows/mesh to doors/gates to provide visibility of the inside; and
  - placing of the light switch (if any).

a In order to ensure compliance with paragraph J2(1)(a) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.
c In order to ensure compliance with paragraph J2(1)(c) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.

5.3.1. Where the store is integral to a building, access should be designed and/or controlled so as to ensure that:

- non-residents cannot enter the main building via the store; and
- the waste containers can be moved easily between the store and the collection point (in accordance with the guidance given in Section 6)[d].

5.3.2. The store should have a rubber buffer fitted internally to the walls and doors / gates to prevent damage and noise. Ensure that any extra area required for the provision of the buffer is factored into the size of the store.

5.3.3. If the store has a roof, it should be high enough to allow:

- users to stand upright in the store; and
- waste container lids to be fully opened.

5.3.4. The store should incorporate clear signage and markings to:

- identify the bin stores;
- state which properties are entitled to use each store;
- state that the bin store should not be used for any other purpose;
- state that all waste should be placed in the containers;
- state which containers should be used for the various types of waste;
- state the arrangements for bulky household waste;
- indicate the location of the nearest Household Waste Recycling Centre (contact the relevant council for details); and
- indicate the location of the nearest 'Bring Site' (contact the relevant council for details).

d In order to ensure compliance with paragraph J2(1)(d) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.



5.4. The waste storage area for a non-domestic property should:

- be sized in accordance with the guidance in Sections 1-4 [c];
- be in the open air or have good natural ventilation[a];
- be designed for use by older persons and persons with disabilities;
- be suitably enclosed within a yard or purpose-built enclosure for the sake of appearances and to prevent nuisance from spread of rubbish, odour and noise;
    - the enclosure should be constructed and finished in a manner that is in keeping with the surroundings);
    - if not enclosed, the waste storage area should be screened off, using boundary walls, fencing or planting;
- be designed such that store doors/gates do not open over the public highway;
- have consideration given to whether doors should open outwards to minimise obstruction;
- have a facility to hold doors/gates open (other than fire doors) while the bins are in use or being moved in or out of the store;
- be included in the site's maintenance and cleansing regime;
- have a floor which is constructed and finished in materials that are impervious and easily kept clean[c];
- have a convenient water supply for washing in order to maintain hygiene standards;
- have the floor laid to a fall with suitable drainage (e.g. trapped gully);
- have adequate natural and/or artificial lighting (artificial lighting, switches and any other electrical fitting should be sealed to protect from water ingress while the store is being washed);
- not obstruct any means of escape (particularly fire exits) or access to fire alarm points or fire extinguishers[a];
- be covered by any CCTV system which is installed in the development;
- be designed and/or managed such that access to the storage area is only possible for legitimate users; and
- be designed such that no-one can hide in the store from anyone entering. Consideration should be given to:
    - wall heights (where the storage area has no roof);
    - internal layout of bins;
    - fitting windows/mesh to doors/gates to provide visibility of the inside; and
    - placing of the light switch (if any).

a In order to ensure compliance with paragraph J2(1)(a) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.
c In order to ensure compliance with paragraph J2(1)(c) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.

5.4.1. Where the store is integral to a building, access should be designed and/or controlled so as to ensure that:

- no-one other than legitimate users can enter the main building via the store; and
- the bins can be moved easily between the store and the collection point (in accordance with the guidance given in Section 6)[d].

5.4.2. The store should have a rubber buffer fitted internally to the walls and gates/doors to prevent damage and noise (any extra area required for the provision of the buffer should be factored into the size of the store).

5.4.3. If the store has a roof, it should be high enough to allow:

- users to stand upright in the store; and
- waste container lids to be fully opened.

5.4.4. The store should incorporate clear signage and markings to:

- identify the waste stores;
- state which property is entitled to use each store;
- state that the waste store should not be used for any other purpose;
- state that all waste should be placed in the containers; and
- state which containers should be used for the various types of waste.

5.4.5. Note that additional consideration should be given to waste storage in non-domestic properties where waste is more likely to present a health risk, for example:

- food premises (contact the relevant council's Environmental Health Service for further guidance):
  - waste storage in food premises should be within a secure open area external to the premises (but within the property boundary); and
  - where the waste store is internal to the food premises, it should be an enclosed ventilated store situated away from food rooms.
- healthcare premises (contact the Health and Safety Executive for Northern Ireland (HSENI) for further guidance).

d In order to ensure compliance with paragraph J2(1)(d) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.




recycle

6. Access Considerations for a Waste Storage Area

6.1. General principles

This section outlines the minimum requirements that should be observed to ensure that waste containers can be transported manually without the use of mechanical equipment (such as a tractor and trailer).

These requirements should be observed, even if the use of mechanical equipment is planned, as this will allow manual transport of containers to proceed in the event of mechanical breakdown.

The only exception is in the case where the waste storage area is in a basement. If mechanical equipment is to be used to transport the waste containers, the gradient requirement may be relaxed (although all relevant legislation should be observed).

When mechanical equipment is to be used, consideration should be given to whether any of these requirements need to be enhanced. For example (but not limited to):

- access and parking arrangements for the equipment (e.g. path widths); and
- specification of the laden weight that pathways can withstand.



6.2. Dwellings

6.2.1. The route from the property to the waste storage area should be:

- no more than 30m[b]; and
- easily negotiable for anyone depositing waste[b].

6.2.2. The route from the waste storage area to the waste collection point should:

- not be via a dwelling or any other building, other than a garage, carport or other open covered space[b];
- be no more than 25m, unless agreed with the council;
- avoid vehicular traffic;
- avoid car parking areas or other obstacles;
- have a firm base;
- be rendered with a smooth continuous finish;
- be free of steps or kerbs (a dropped kerb or cross-over should be used where necessary);
- conform to the guidelines given for gradients in Appendix I; and
- be a minimum width of:
  - 1.0m where containers of 360L capacity or less are used;
  - 1.5m where 660L Euro Bins are used; and
  - 2.0m where 1100L Euro Bins are used.

6.2.3. For a dwelling where Euro Bins are used, a Waste Management Plan should be approved with the council to ensure that waste containers can and will be presented at the waste collection point. See Appendix IX for more information on Waste Management Plans.

6.2.4. For a dwelling where the waste store is to be in a basement area:

- a Waste Management Plan should be approved with the council to ensure that waste containers can and will be presented at the waste collection point.
- if a goods lift is to be used, consider how many waste containers are to be accommodated and make sure that:
  - the lift is large enough to accommodate the waste container(s) and the porter; and
  - the lift doors are sized appropriately for the waste container(s).

b In order to ensure compliance with paragraph J2(1)(b) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.

6.3. Non-domestic properties

6.3.1. The route from the property to the waste storage area should:

- be easily negotiable for anyone depositing waste[b];
- avoid potential ignition sources; and
- be of a distance and design which takes account of factors such as:
  - the type of waste;
  - the volume of waste;
  - the weight of the waste; and
  - how frequently waste will need to be transported to the waste storage area.

6.3.2. The route from the waste storage area to the waste collection point should:

- be of a distance and design[d] which takes account of factors such as:
  - the type of waste;
  - the volume of waste;
  - the weight of the waste; and
  - how frequently waste will need to be transported to the waste collection point;
- avoid potential ignition sources;
- avoid vehicular traffic;
- avoid car parking areas or other obstacles;
- have a firm base;
- be rendered with a smooth continuous finish;
- be free of steps or kerbs (a dropped kerb or cross-over should be used where necessary);
- conform to the guidelines given for gradients in Appendix I; and
- be a minimum width of:
  - 1.0m where containers of 360L capacity or less are used;
  - 1.5m where 660L Euro Bins are used; and
  - 2.0m where Euro Bins are used.

b In order to ensure compliance with paragraph J2(1)(b) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.
d In order to ensure compliance with paragraph J2(1)(d) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.



6.3.3. For a non-domestic property where the bin store is to be in a basement area:

- a Waste Management Plan should be designed to ensure that waste containers can and will be presented at the waste collection point (see Appendix IX for more information on Waste Management Plans); and
- if a goods lift is to be used, consider how many waste containers are to be accommodated and make sure that:
  - the lift is large enough to accommodate the waste container(s) and the porter; and
  - the lift doors are sized appropriately for the waste container(s).

7. Siting, Design and Access Considerations for a Bulky Household Waste Storage Area for Apartments

7.1. Introduction

This section provides design guidance for bulky household waste storage areas for apartment accommodation.

Note that the removal of bulky household waste can be arranged, as necessary, by contacting the relevant council. Thought should be given to whether this should be done by individual residents or as part of a building management service. There may or may not be a charge for the collection of bulky household waste.

Residents should be advised of how to dispose of their bulky household waste in the information given to them when taking residence in the apartments.



7.2. Detailed design of bulky household waste storage areas for apartments

7.2.1. A bulky household waste storage area should:

- be sized in accordance with the guidance in Section 2;
- be designed for use by older persons and persons with disabilities;
- be suitably enclosed within a yard or purpose-built enclosure for the sake of appearances, to prevent nuisance from noise and to prevent items from becoming waterlogged;
    - the enclosure should be constructed and finished in keeping with the surroundings;
    - if not enclosed, the bulky household waste storage area should be screened off, using boundary walls, fencing or planting;
- have access clearance at least 2m wide;
- have doors which open outwards to minimise obstruction;
- be designed such that the doors do not open over the public highway;
- have a facility to hold doors/gates open (other than fire doors) while items are being moved in or out of the store;
- have a floor which is constructed and finished in materials that are impervious and easily kept clean;
- have adequate natural and/or artificial lighting;
- be designed to minimise the fire hazard and the risk of arson; in particular, the bulky household waste storage area should:
    - not obstruct any means of escape (particularly fire exits);
    - be sited at a safe distance from potential ignition sources;
    - be sited at a safe distance from the property, windows and boundary fences, to prevent the spread of fire; and
    - be designed such that waste items cannot be removed and used to start a fire elsewhere.
- be covered by any CCTV system which is installed in the development;
- be designed and/or managed such that access to the storage area is easy for residents but difficult for non-residents; and
- be designed such that no-one can hide in the store from anyone entering. Consideration should be given to:
    - internal layout;
    - fitting windows/mesh on doors/gates to provide visibility of the inside; and
    - careful placing of the light switch (if any).

7.2.2. The store should be included in the site's maintenance and cleansing regime.

7.2.3. The store should be designed to ensure that items do not become waterlogged (making them too heavy for refuse collection crews to remove). Consideration should be given to:

- roofing - the roof should be high enough to accommodate tall items and allow users to stand upright;
- whether or not the store should be enclosed (enclosed is preferable) and to what extent; and
- drainage.

7.2.4. There should be clear signage and markings to:

- identify the store;
- state which properties are entitled to use the store;
- state that the bulky household waste store should not be used for any other purpose; and
- indicate the location of the nearest Household Waste Recycling Centre.

7.2.5. Where the store is integral to a building, access should be designed and/or controlled so as to ensure that:

- non-residents cannot enter the main building via the store; and
- bulky items can be moved easily between the store and the collection point.

7.2.6. The route from the property to the bulky household waste storage area should be:

- no more than 30m; and
- easily negotiable for anyone depositing items.



7.2.7. The route from the bulky household waste storage area to the waste collection point should:

- not be via a dwelling or any other building, other than a garage, carport or other open covered space;
- be no more than 25m;
- avoid vehicular traffic;
- avoid car parking areas or other obstacles;
- be free of steps or kerbs (a dropped kerb or cross-over should be used where necessary);
- be a minimum width of 2m;
- have a firm base;
- be rendered with a smooth continuous finish; and
- conform to the guidelines given for gradients in Appendix I.

7.2.8. When a bulky household waste store is sited in a basement area:

- if a goods lift is to be used, make sure that;
  - the lift is large enough to accommodate bulky waste items and the porter; and
  - the lift doors are sized appropriately for the waste items.

7.2.9. In all cases a Waste Management Plan should be approved with the council to ensure that a suitable system is in place for the disposal of bulky household waste and that residents are fully informed of it. See Appendix IX for more information on Waste Management Plans.

8. Siting, Design and Access Considerations for the Waste Collection Point

8.1. General principles

The waste collection point should be of sufficient area to accommodate all bins/ containers/ receptacles.

The waste collection point should be such that waste can be presented without blocking vehicular or pedestrian access.

Note that heavy vehicles may not be acceptable in environmentally sensitive locations such as conservation areas or in the vicinity of listed buildings.

If a waste storage area or bulky household waste storage area is suitably sited and designed, it is possible that it may be adopted as the waste collection point. **Liaise with the relevant council to discuss the suitability of the waste storage area or bulky household waste storage area being adopted as the waste collection point.**

Note that where the waste storage area or bulky household waste storage area is adopted as the waste collection point, it remains the responsibility of residents or the site management to provide access to the storage area for collection.

8.2. For dwellings:

8.2.1. The waste collection point should be agreed with the council, and be:

- at or outside the boundary of any individual property;
    - for large private developments, apartment complexes, etc., liaise with the relevant council to establish whether the waste collection point may be sited within the bounds of the development.
- no more than 3m from the nearest suitable access point for the refuse collection vehicle. RCV access considerations are detailed in Appendix VI.



8.2.2. The path between the waste collection point and the nearest RCV access should:

- avoid vehicular traffic;
- avoid car parking areas or other obstacles;
- have a firm base;
- be rendered with a smooth continuous finish;
- be free of steps or kerbs (a dropped kerb or cross-over should be used where necessary);
- conform to the guidelines given for gradients in Appendix I; and
- be a minimum width of:
  - 1.0m where containers of 360L capacity or less are used;
  - 1.5m where 660L Euro Bins are used; and
  - 2.0m where 1100L Euro Bins are used.

8.3. For non-domestic properties:

The waste collection point will be agreed with the commercial waste contractor. However, designing a waste collection point according to the following guidelines will make agreement easier.

The waste collection point should be no more than 3m from the nearest suitable access point for the refuse collection vehicle. RCV access considerations are detailed in Appendix VI.

The path between the waste collection point and the nearest RCV access should:

- avoid vehicular traffic;
- avoid car parking areas or other obstacles;
- have a firm base;
- be rendered with a smooth continuous finish;
- be free of steps or kerbs (a dropped kerb or cross-over should be used where necessary);
- conform to the guidelines given for gradients in Appendix I; and
- be a minimum width of:
  - 1.0m where containers of 360L capacity or less are used;
  - 1.5m where 660L Euro Bins are used; and
  - 2.0m where 1100L Euro Bins are used.

List of Consultees

The following organisations have been consulted with regard to the content of this guide:

- Northern Ireland's 26 councils
- Northern Ireland's 3 Waste Management Partnerships (arc21; North West Region Waste Management Group; Southern Waste Management Partnership)
- DoE Northern Ireland Environment Agency
- DFP Building Regulations Unit
- DoE Planning Service
- DSD Housing Division
- Northern Ireland Housing Executive
- DRD Roads Service
- Northern Ireland Water
- Northern Ireland Fire & Rescue Service
- Northern Ireland Building Regulations Advisory Committee (NIBRAC)
- Northern Ireland Chief Environmental Health Officers Group (CEHOG)
- Waste & Resources Action Programme (WRAP)
- Northern Ireland Federation of Housing Associations
- Technical Advisers Group (TAG)

Definitions / Glossary of Terms



NOTE: Although the following definitions are intended for use only in relation to the guidance given in this document, they are also consistent with the intent of relevant legislation.

Alternate-Weekly Collection (AWC)
A waste collection frequency where one or more waste fractions are collected on alternate weeks from a given home. For example, residual waste may be collected on one week and recyclable waste on the other. Or recyclable waste may be collected on an alternate-weekly basis (i.e. every second week) and residual waste on a weekly basis.

Assisted Lift
A service provided by a council to a dwelling where the residents are proven to be physically unable to bring their waste containers to the kerbside. If a property qualifies for an assisted lift (under the terms of the relevant council's assisted lift policy) the refuse collection crew will collect and return waste containers to the waste storage area.

Biodegradable Waste
Waste, typically originating from plant or animal sources, which may be broken down by other living organisms (this process generates gases which are contributing to climate change.)

Bring Site
A small site provided and managed by the council where the public can deposit a range of recyclable and/or re-usable items.

Bulky Household Waste
Household waste which is either too heavy or too large to place in the waste container provided (e.g. furniture, white goods).

Clinical Waste
A waste arising from the healthcare or clinical operations normally taking place in hospitals, nursing homes, dentists, surgeries etc. Clinical wastes require specialised disposal services.

Collection Frequency
How often (frequently) waste is collected. This normally ranges from daily to weekly or alternate-weekly.

Commercial Waste
Waste which arises from general operations in non-domestic properties. It does not include wastes such as clinical waste or hazardous waste which need specialised disposal services.

Commercial Waste Service
A chargeable service provided by a council or private contractor to collect and dispose of commercial waste.

Container
Term used as some councils or commercial waste services may accept waste in bags, boxes etc. as well as bins.

Controlled Waste
The UK term used for wastes controlled under the EU Waste Framework Directive. It includes household and commercial waste.

Curtilage
The land which surrounds and belongs to a dwelling.

Dry Recyclable Waste
Dry materials which can be collected for recycling. This will vary between locations, but may include paper, card, glass, cans, plastic bottles, textiles and foil.

Dwelling
A house, flat or maisonette, including any accommodation therein of not more than 50m^2 in total floor area, forming part of the dwelling and used by a resident of the dwelling for the purposes of any business, profession or calling.

Food Waste
Raw and cooked organic waste arising from animal and plant sources in the normal course of cooking or preparing food.

Garden Waste
Organic waste arising from plants in the normal course of gardening.

Hazardous Waste
A waste which presents a hazard because of its toxicity, explosiveness or other properties. Hazardous wastes require specialised disposal services or methods.

High-rise Building
Any building of 5 storeys or more (including the ground floor).

House in Multiple Occupation (HMO)
A dwelling occupied by more than two qualifying persons, being persons who are not all members of the same family.

'Qualifying persons' means persons whose only or principal residence is the house in multiple occupation, and for that purpose a person undertaking a full time course of further or higher education who resides during term time in a dwelling shall, during the period of that person's residence, be regarded as residing there as his only or principal residence.

A person is a member of another's family if:
- he is the spouse of that person, or he and that person live together as husband and wife, or
- he is that person's parent, grandparent, child, grandchild, brother or sister

Household Waste
Waste which arises from dwellings in the course of normal household activities. It does not include wastes such as clinical waste or hazardous waste which need specialised disposal services.



Low-rise Building
Any building of 4 storeys or less (including the ground floor).

Municipal Solid Waste (MSW)
The household waste and commercial waste collected by a council.

NI Local Government Association (NILGA)
The Northern Ireland Local Government Association (NILGA) exists to represent the voice of local government and facilitate the development of the sector.

Non-Domestic Property
Any property other than a dwelling, or any part of a dwelling which is used for non-domestic purposes, eg business.

Organic Waste
Waste material arising from plant or animal sources. For the purposes of this document, organic waste comprises food waste and garden waste.

RCV
Refuse Collection Vehicle: Normally known as a 'bin lorry', but can describe any vehicle which is used to collect waste.

Receptacle
See 'container'.

Recyclable Waste
A waste which can be used as or processed into a usable resource rather than being sent to landfill.

Refuse
See 'Waste'.

Refuse Collection Crew
Normally known as the 'bin men'. The council or commercial waste service employees who collect the waste.

Residual Waste
Waste which cannot be recycled; the waste that is left after recyclable waste has been taken out.

Technical Advisers Group (TAG)
TAG's main aims are to provide co-ordinated and comprehensive advisory services to local and central government and its agencies and to provide a professional network for the development and dissemination of best practice.

Waste
Any substance or object that the producer, user, or person in possession of it discards, intends to discard or is required to discard.

Waste Arisings
The waste arising from, being generated by, or coming out of a property.

Waste Collection Point
The physical location where a property owner/user should present the waste in order for the refuse collection crew to collect it (sometimes referred to as the bin collection point.)

Waste Fractions
The different elements or types of waste arising from a property. Waste from a dwelling might be broken down into the residual waste and recyclable waste fractions; the recyclable waste can be further broken down into the dry recyclable and organic recyclable fractions. Waste from a hospital might be broken down into office waste, food waste and clinical waste fractions; these could be further broken down into their residual and recyclable fractions.

Waste Management Partnership / Waste Management Group
A coalition of councils who operate a collective approach to strategic waste management issues. Such issues typically include establishing waste treatment and disposal contracts and infrastructure. There are three such partnerships operating in Northern Ireland:

- The Southern Waste Management Partnership (SWaMP2008) represents eight councils in the southern region of Northern Ireland
- The North West Region Waste Management Group (NWRWMG) represents seven councils in the north west region of Northern Ireland
- arc21 represents the remaining eleven councils in the east of Northern Ireland

Waste & Resources Action Programme (WRAP)
WRAP helps individuals, businesses and councils to reduce waste and recycle more, making better use of resources and helping to tackle climate change. Established as a not-for-profit company in 2000, WRAP is backed by government funding from England, Scotland, Wales and Northern Ireland.

Waste Storage Area
An area (whether open or enclosed) where waste is stored.

APPENDIX I – Gradients



1) General principles

The gradient of the pathway used to transport waste should conform to the guidance given in Table 5, as illustrated in Figure 3.

An area qualifies as level if it has a gradient no steeper than 1:60.

If mechanical equipment is to be used to transport the waste, liaise with the council to establish whether a steeper gradient is acceptable.

2) Examples:

Example 1: If the gradient is 1:11, there must be a level rest area (gradient no more than 1:60) no more than 1m from the starting point. This rest area becomes the new starting point.

Example 2: If the gradient is 1:18, there must be a level rest area (gradient no more than 1:60) no more than 8m from the starting point. This rest area becomes the new starting point.

Example 3: If the gradient is 1:25, there is no need for a level rest area at any point along the route.

Table 5 - Pathway Gradients

Gradient	Maximum travel distance before a level area is required (m)
1:11	1
1:12	2
1:13	3
1:14	4
1:15	5
1:16	6
1:17	7
1:18	8
1:19	9
1:20	10
1:21+	No limit

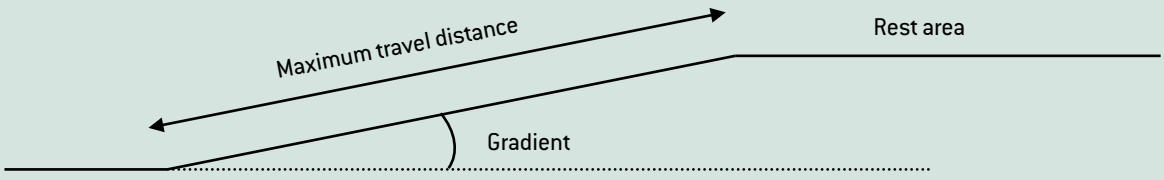


Figure 3: Pathway Gradients

APPENDIX II - Waste Storage Equipment

1) General

Waste should be stored in such a way as to prevent animal and vermin (including bird) scavenging.

There are five commonly-used forms of storage equipment:

- Plastic Bags/ Sacks
- Plastic Boxes
- Wheeled Containers
- Roll-on/Roll-off (RORO) Containers
- Skips

Alternative waste storage and collection methods, using underground storage containers, are becoming more widely available. See Appendix VIII for more details.

Storage equipment should be maintained and repaired/ replaced as necessary.

Liaise with councils and commercial waste contractors to establish which forms of storage equipment they will accept from the relevant properties.

2) Specifications for waste storage equipment

a) Plastic bags/ sacks

i) Size:

- Maximum capacity 60L; and
- Maximum dimensions 950mm long by 700mm overall width (gussets extended).

ii) British Standards – should conform to BS 6642:1985.

iii) Gauge - should meet the following minimum standards to minimise the risk of splitting:

(1) General office use: 120 gauge (30 micron), medium density, maximum 80% recycled.

(2) Catering (hotels, restaurants etc): 160 gauge (40 micron), low density, maximum 80% recycled.

Figure 4: Plastic bags/sacks

b) Plastic boxes

i) Capacity - typically 55L.

ii) Dimensions:

Table 6.1: Typical Dimensions (mm) – 55L Plastic Boxes	
Height	375
Length	590
Width	440

iii) Note that the sizes of plastic boxes may vary. **Liaise with the relevant council to establish the actual size of kerbside box for design purposes.**

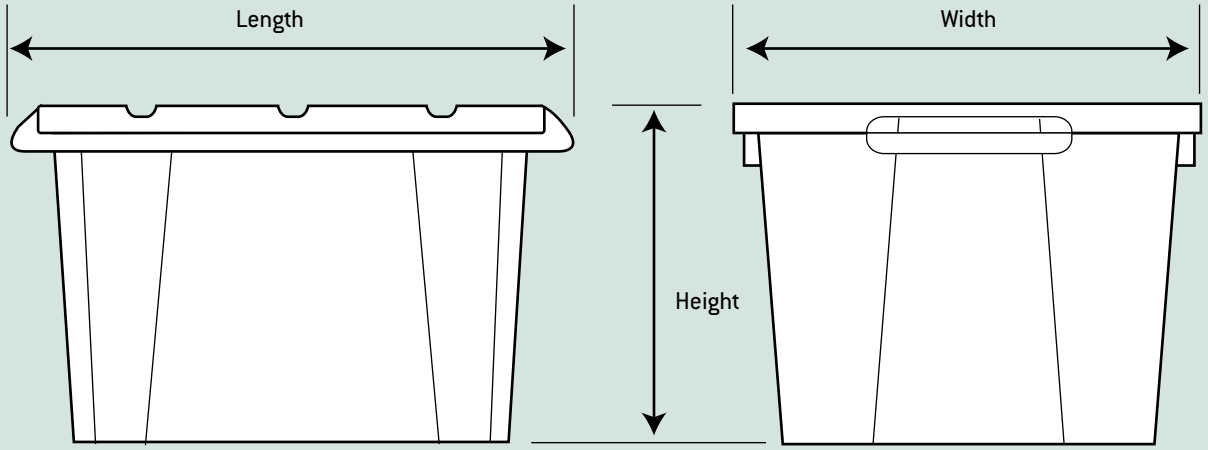


Figure 5: Typical Kerbside Box

c) Wheeled containers

i) Two-wheeled plastic bins ('wheelie' bins)

(1) Capacity - most commonly 140L, 240L and 360L.

(2) British Standards – should conform to BS EN 840:2004.

(3) Dimensions:

Table 6.2 - Typical Dimensions (mm) – Two-wheeled Plastic Bins			
Capacity	**140L**	**240L**	**360L**
Height	1100	1100	1115
Depth (front to back)	555	740	880
Width	505	585	665

(4) Liaise with the relevant council or commercial waste contractor to ensure that the chosen wheeled bins are suitable.

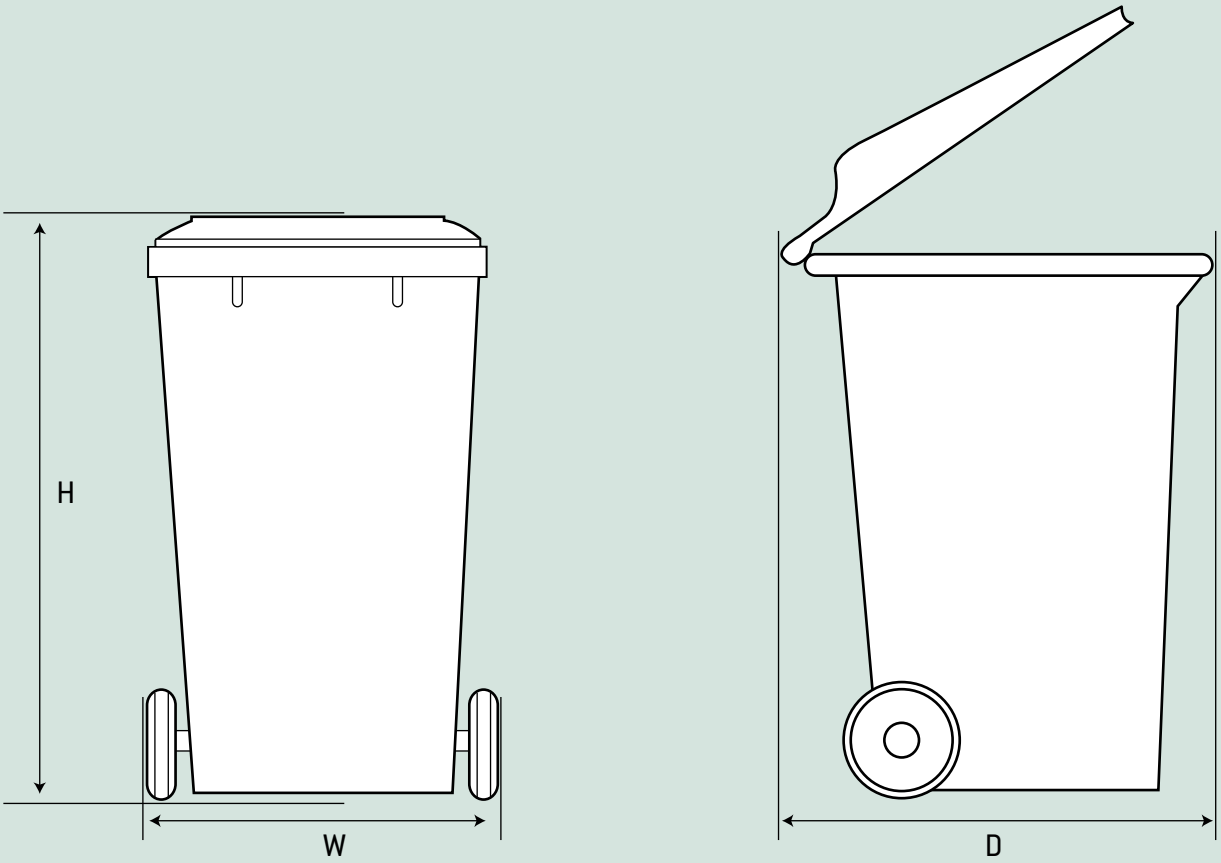


Figure 6: Typical 2 - Wheeled Bin

ii) Euro Bins (four castor wheels)

(1) Capacities - 660L and 1100L.
(2) British Standard – should conform to BS EN 840:2004.
(3) Security – should have a fixed lid which can be locked if required.
(4) Dimensions:

Table 6.3 - Typical Dimensions (mm) – Euro Bins		
Capacity	**660L**	**1100L**
Height	1320	1470
Depth (front to back)	820	1260
Width	1380	1380

(5) Liaise with the relevant council or commercial waste contractor to ensure that the chosen Euro Bins are suitable.

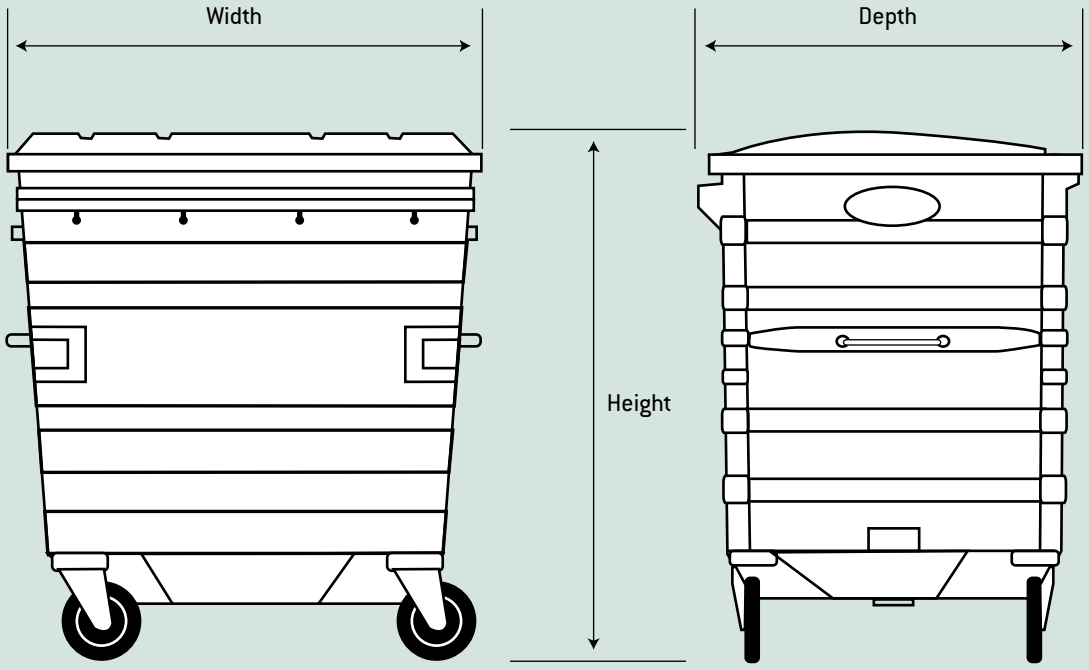


Figure 7: Typical Euro Bin

d) Roll-on/Roll-off (RORO) containers

i) These containers are:

- bulk storage containers;
- available in open and enclosed versions;
- available in a number of sizes and capacities, typically ranging between 10-40 cubic m (the weight of the waste materials will dictate the size of container); they may be used with or without a compactor;
- transported using a hook-lift vehicle.

ii) When designing for RORO containers, consideration needs to be given to:

(1) suitable siting; in particular:

- the RORO container should not obstruct any means of escape (particularly fire exits); and
- to prevent the spread of fire, a RORO container should never be placed against a building and should normally be a minimum of 6m away from any part of the premises.

(2) access and operating requirements for the collection vehicle (see Appendix VI);
(3) the space required to offload empty containers and uplift full ones;
(4) ensuring that during loading/unloading the vehicle will not encroach on or block:

- any public right of way;
- fire exits or other entrances/exits.

iii) Note that councils do not generally provide a RORO collection service; this service is more likely to be provided by a commercial waste contractor.

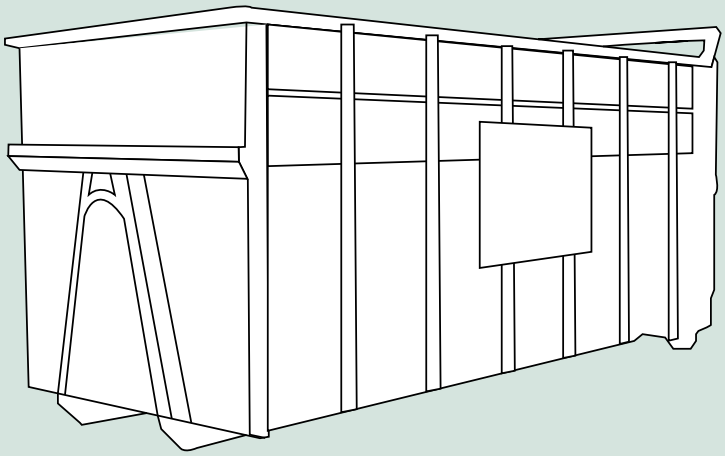


Figure 8: Typical RORO Container

e) Skips

i) These Containers are:

- bulk storage containers;
- generally open-topped;
- available in a number of sizes and capacities, typically ranging between 6-15 cubic m (the weight of the waste materials will dictate the size of container); and
- transported using a special vehicle which attaches chains to lugs on the side of the skip in order to lift it.

ii) When designing for skip containers, consideration needs to be given to the same issues as for RORO containers.

iii) Skips containing waste should be covered when being transported.

iv) Note that councils do not generally provide a skip collection service; this service is more likely to be provided by a commercial waste contractor.

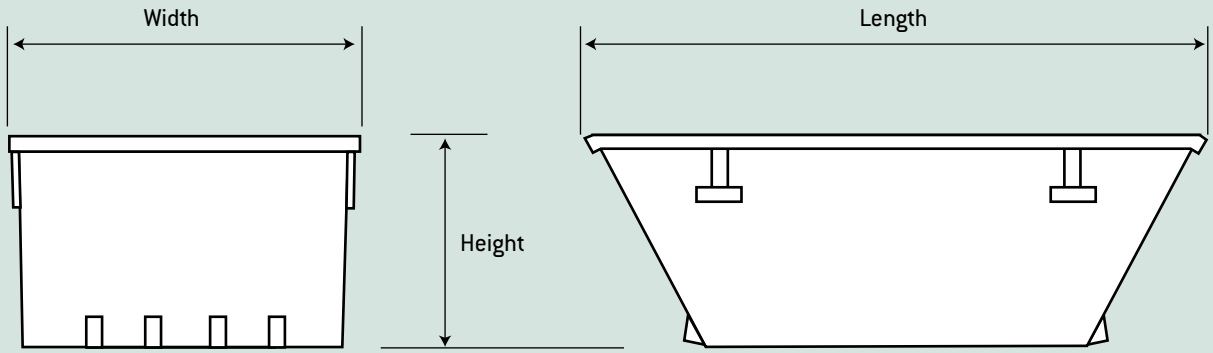


Figure 9: Typical Skip Container

APPENDIX III - Waste Compactors



1) General

A compactor is a piece of mechanical equipment which compresses waste into a smaller volume so that less storage capacity is required. The compacting operation will result in a greater density and, therefore, greater weight of waste in a given volume.

Compactors are only suitable for developments of dwellings as part of a fully managed system.

This appendix just gives some outline information and advice. You should do your own detailed research before proceeding with a plan which incorporates a compactor.

Note that the guidance in Sections 1-8 of this guide pertains primarily to (un-compacted) waste stored in wheeled containers. You will have to separately research the storage design requirements for compacted waste which is not stored in wheeled containers.

Note that (as outlined below) there are a number of complications that can arise when compactors are used. Therefore, councils and waste collection contractors may not accept compacted waste. You will need to check with the relevant council or prospective waste collection contractor before investing in a compactor or designing it into your waste management plan. **The advice given in this appendix is only applicable where use of a compactor has been agreed with the council or contractor.**

Ensure that where a compactor is used, the Waste Management Plan still facilitates segregation of waste into the required fractions.

2) Types of compactor

There are several suppliers, makes and models of compactor, of varying sizes and specifications. **You should carry out more detailed research and agree an appropriate compactor and site design in conjunction with the prospective waste collection operator and/or the relevant council.**

However, for information, the following types of compactor are commonly available:

a) Bag compactors

- Bag compactors compact waste in heavy-duty plastic waste sacks (typically 300 gauge).
- They generally have either a cylindrical or cabinet type body (the cabinet type are typically similar in size and shape to a filing cabinet).
- They can typically achieve a compaction ratio in the region of 6:1.
- A bag of compacted waste may weigh in the region of 30kg.

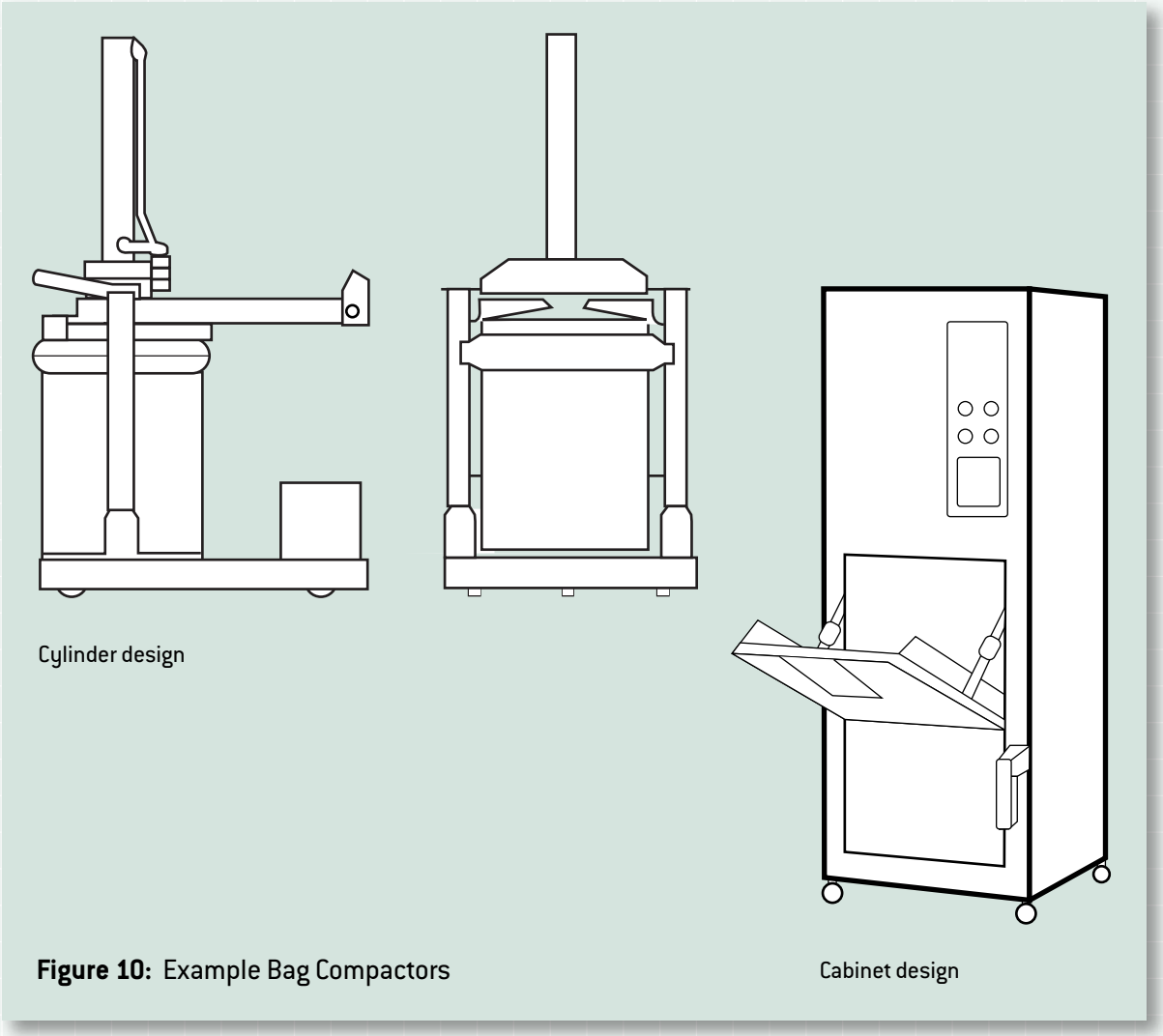


Figure 10: Example Bag Compactors

b) Wheeled bin compactors

- Wheeled bin compactors, as the name suggests, operate with wheeled bins. They are available for most sizes of wheeled bins and Euro Bins.
- Adequate clearance/operating space will be required in excess of the footprint of the bin and equipment.
- These compactors can achieve typical compaction ratios in the region of 6:1.
- Note that there is a risk of damage to plastic bins and castor damage to the Euro Bins, depending on the design of the compactor and how well the bin is supported during compaction.
- Wheeled bin compactors will vary in size, depending on the wheeled bin to be accommodated. The footprint of the wheeled bin plus compactor will be typically equal the footprint of the wheeled bin plus 50%-75%. Additional operating space will also be required.

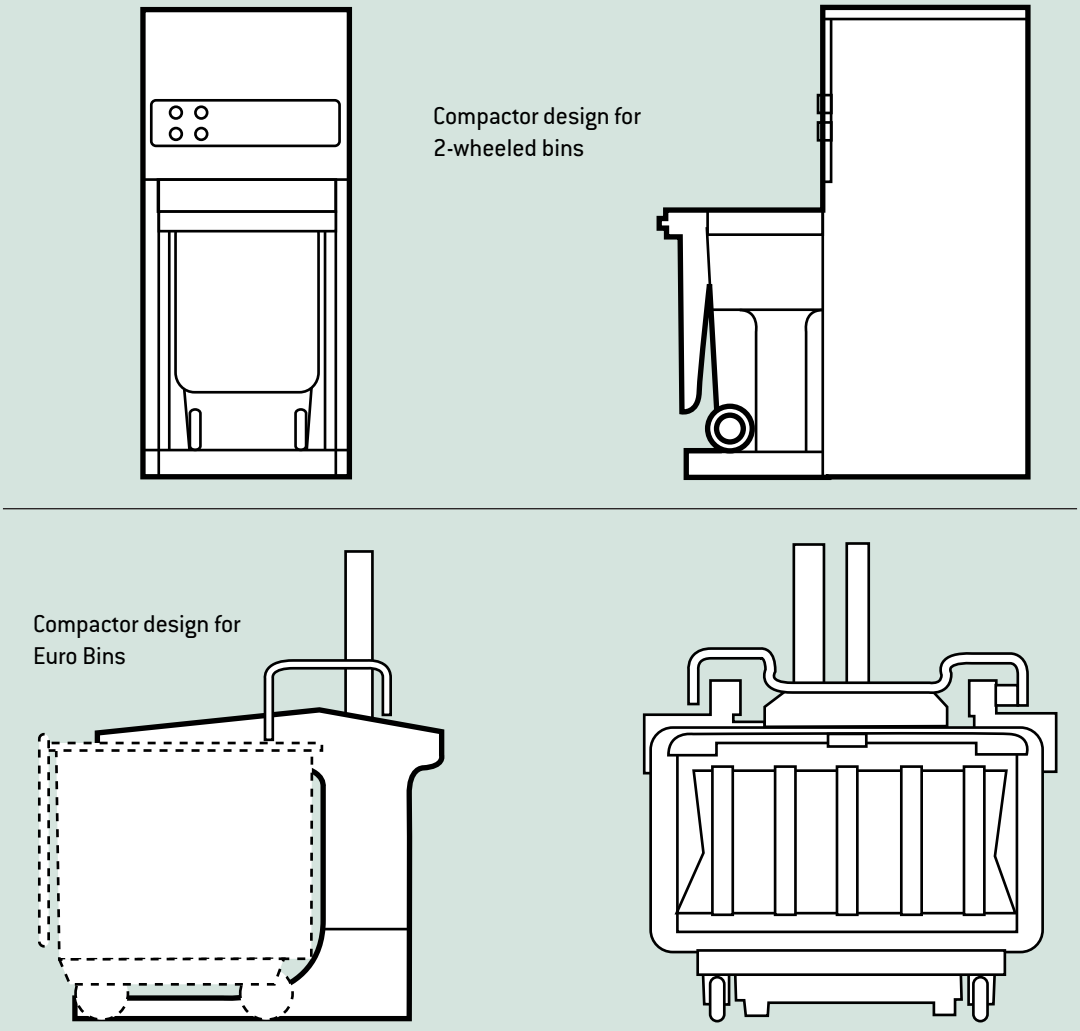


Figure 11: Example Wheeled Bin Compactors

c) Rotary compactors

- A rotary compactor uses a heavy duty spiked rotating head to tear and compact waste fed into it.
- The compacted waste is normally deposited in a large bag or a wheeled container for disposal.
- Typical compaction ratios are in the region of 6:1.
- Rotary compactors vary in size but are typically occupy a footprint in the region of 2.0m x 2.0m.

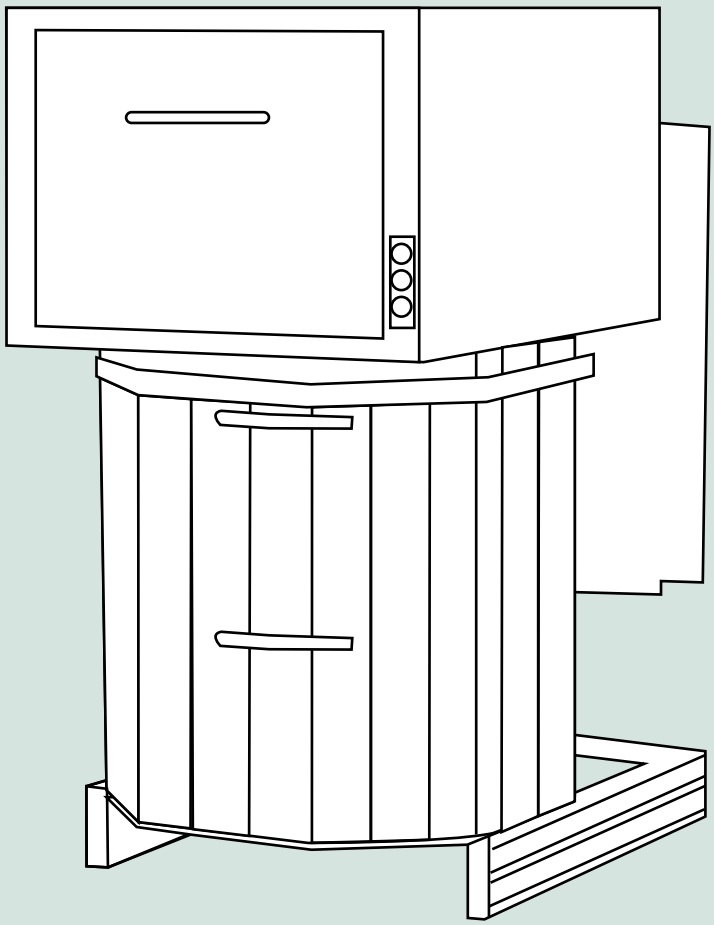


Figure 12: Example Rotary Compactor

d) Portable skip compactor

- This comprises an enclosed skip with a built-in compactor. The whole unit is replaced when full.
- These compactors have a range of capacities, in the region of 10 – 40 cubic metres and can achieve compaction ratio in the region of 4:1.
- They require direct access by a skip vehicle.
- These compactors are suitable for use in premises where a significant volume of waste is likely to be produced, such as large offices, retail units and hotels.
- The space required will vary depending on the skip capacity.
- The site should be designed to accommodate the skip and the skip vehicle.

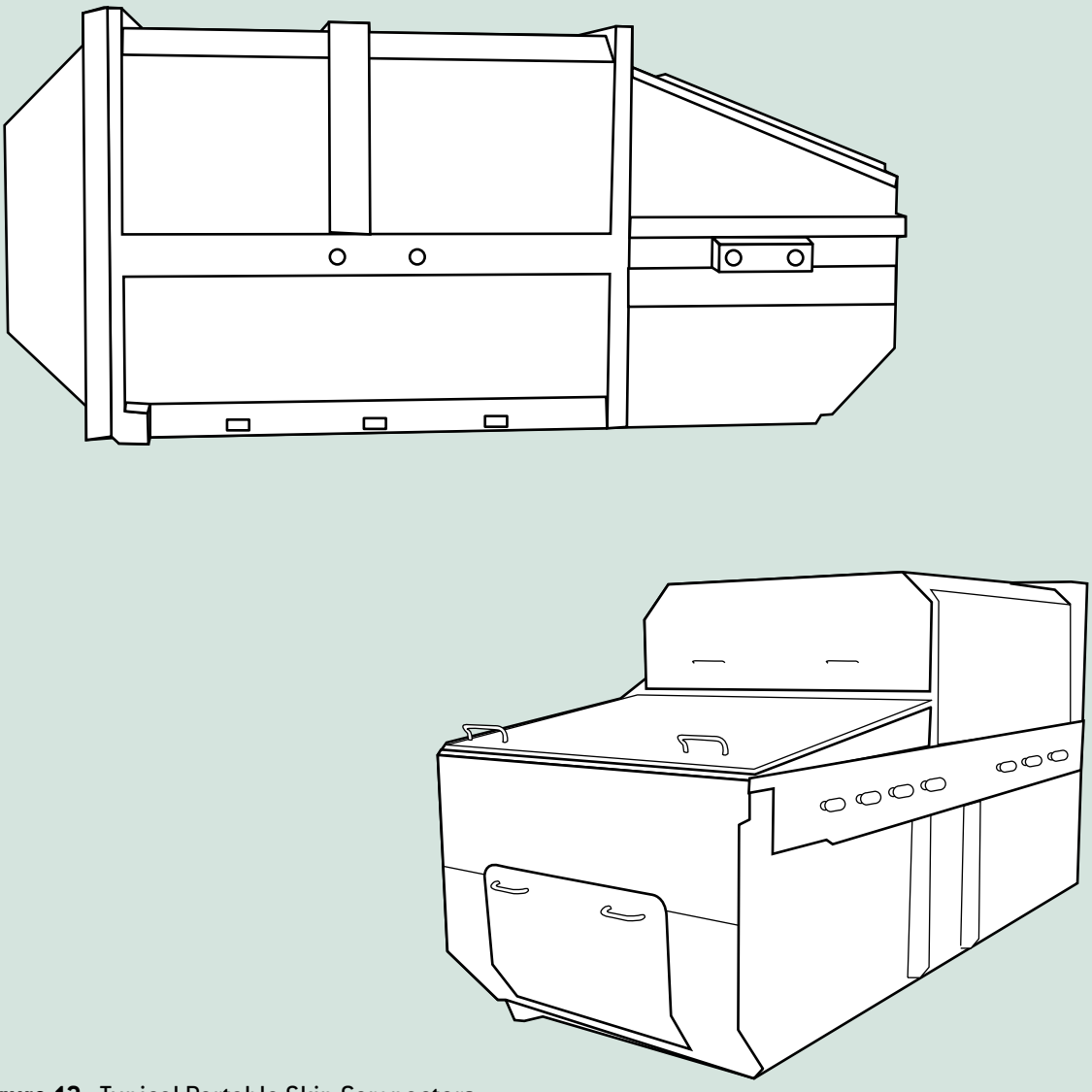


Figure 13: Typical Portable Skip Compactors

e) Static compactor

- These units are fixed and used in conjunction with a removable fully enclosed skip.
- Skips are available in a range of capacities, in the region of 10 to 50 cubic metres.
- Static compactors can achieve volume reductions in the region of 4:1.
- Static compactors are suitable for developments where a considerable volume of waste is likely to be produced, such as large retail, hotel and commercial developments.
- The space required will vary depending on the skip capacity.
- The site should be designed to accommodate the compactor, skip and skip vehicle.

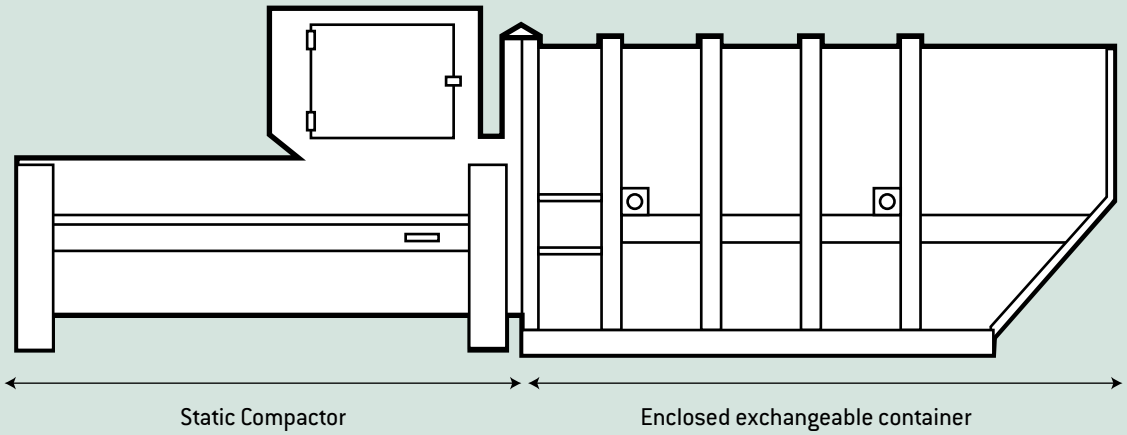


Figure 14: Example Static Compactor with RORO Container



3) Compactor applications:

The following are rough guidelines for suitable applications for the various types of compactor. However, you should carry out your own detailed research with suppliers.

a) Offices

- Compactors are suitable for office developments larger than 2,500sqm.
- For offices >10,000sqm a rotary compactor is suitable.
- For offices >15,000sqm a portable skip compactor is suitable.

b) Light Industrial

- For units of >1,500sqm or for small units where the combined floor space is >1,500sqm a small sack compactor is suitable.

c) Retail

- For units of >1,500sqm or for small units where the combined floor space is >1,500sqm a small sack compactor is suitable.
- For major retail developments of >5,000sqm a rotary compactor is suitable.
- For major retail developments of >10,000sqm a portable skip compactor or larger static compactor is suitable.

d) Restaurants or fast food outlets

- Compactors are useful for restaurants and for fast food outlets with a sit-in facility.
- A small sack compactor or a wheeled bin compactor is suitable for most applications.
- A rotary compactor is suitable for restaurants with potentially high output.

e) Hotels

- For hotels of up to 250 bedrooms a small sack compactor, or the type using wheeled containers, is the most suitable.
- For hotels of more than 250 bedrooms (particularly those with banqueting facilities) a rotary compactor, portable skip compactor or a static compactor is suitable.

f) Dwellings

- Compactors only tend to be effective in domestic developments where there is a managed waste system with porterage.

4) Complications associated with the use of compactors

a) Compactors are mechanical equipment. A management strategy is required to take account of all associated considerations, such as:

- training;
- ensuring that access to the equipment is suitably restricted; and
- ensuring that waste is compacted as necessary.

b) Wheeled containers filled with compacted waste will obviously weigh more than wheeled containers (of the same size) filled with non-compacted waste. Because of this:

- there are additional health and safety risks for those who handle the wheeled containers on site and for the collection crew;
- more careful consideration needs to be given to the locations and design of the compactor site and the waste collection point, and the routes (including distance) between them; and
- the mechanical lifts on an RCV may not be able to lift wheeled containers filled with compacted waste.

c) Waste disposal costs are based on weight. The use of a compactor presents complications for operators who have no weighing facility on their collection vehicles and use a volume-to-weight conversion to calculate costs and charges.

d) Some types of compactor will require a forklift or other mechanical equipment to lift the compacted waste. Consideration needs to be given to training, access and storage requirements for such equipment.

e) Most compactors will require an electrical source, possibly 3-phase.



5) Compactor site design considerations

a) A metal floor plate should be fitted where waste is being compacted, to protect the surface.

b) For static compactors, guide rails should be fitted so that the container lines up with the compactor when it is being returned to the site.

c) An appropriate heavy-duty stop barrier should be fitted at the rear of a portable compactor site.

d) When designing for portable skip compactors and static skip compactors, consideration needs to be given to:

i) the access and operating requirements for the skip vehicle (see Appendix VI);

ii) whether space is required to offload an empty skip and uplift a full one;

iii) ensuring that during loading/unloading the skip vehicle will not encroach on or block:

- any public right of way;
- fire exits or other entrances/exits.

APPENDIX IV – Waste Balers

1) General

Balers compact waste material and strap it into a self-contained bale.

Waste balers are available for a range of materials including cardboard, plastic, paper, foil and polystyrene.

Balers are designed to produce a bale consisting of only one material (only cardboard, only plastic etc.) However, the same baler may be suitable for producing bales of different materials.

Balers should only be used in domestic developments as part of a fully managed system.

This appendix just gives some outline information and advice. You should do your own detailed research before proceeding with a plan which incorporates a compactor.

Note that the guidance in Sections 1-8 of this guide pertains primarily to (un-compacted) waste stored in wheeled containers. You will have to separately research the storage design requirements for baled waste, which is typically stored on pallets.

Note that councils and waste collection contractors may not accept baled waste. You will need to check with the relevant council or prospective waste collection contractor before investing in a compactor or designing it into your waste management plan. **The advice given in this appendix is only applicable where use of a compactor has been agreed with the council or contractor.**

Ensure that where a compactor is used the Waste Management Plan still facilitates segregation of waste into the required fractions

2) Types of baler

There are several suppliers, makes and models of baler, of varying sizes and specifications. **You should carry out more detailed research and agree an appropriate baler and site design in conjunction with the prospective waste collection operator and/or the relevant council.**

However, for information, the following types of baler are commonly available:

a) Top-loading mini baler

- These are small top loading balers which would be used where space is limited and material output is not likely to be excessive.
- Typical compression ratio of 6:1.
- Typical footprint is in the region of 1.0m x 1.0m, minimum headroom in the region of 2.2m.

b) Top-loading baler

- These are versatile top loading balers, which are suitable for use in most restaurants and retail units.
- Typical compression ratio of 4:1.
- Typical footprint is in the region of 2.0m x 1.0m, minimum headroom in the region of 2.7m.

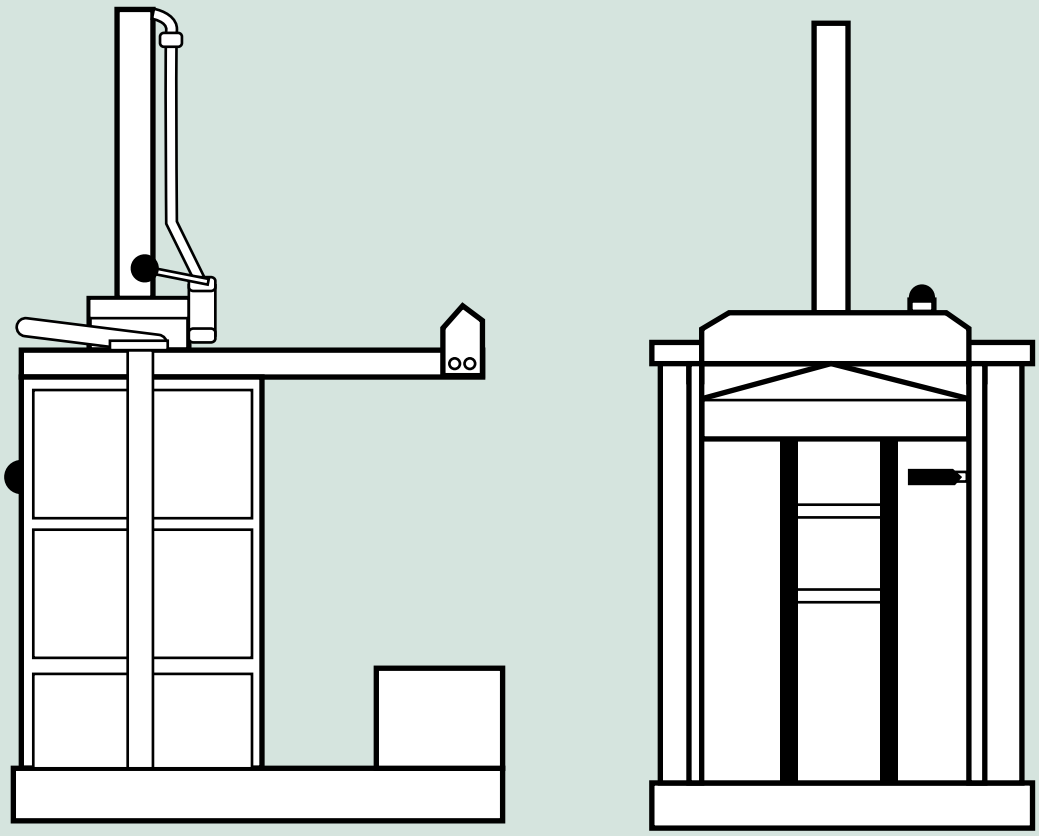


Figure 15: Example Top-loading Baler

c) Top-loading twin-chamber baling press

- These are efficient top loading balers, which are ideal for use where a reasonable output of cardboard is possible, e.g. hotels, mixed retail developments and large restaurants.
- Normally with a twin-chamber baler, the second chamber can be loaded while the first is compacting.
- Typical compression ratio of 4:1.
- Typical footprint is in the region of 2.0m x 1.0m, minimum headroom in the region of 2.2m.

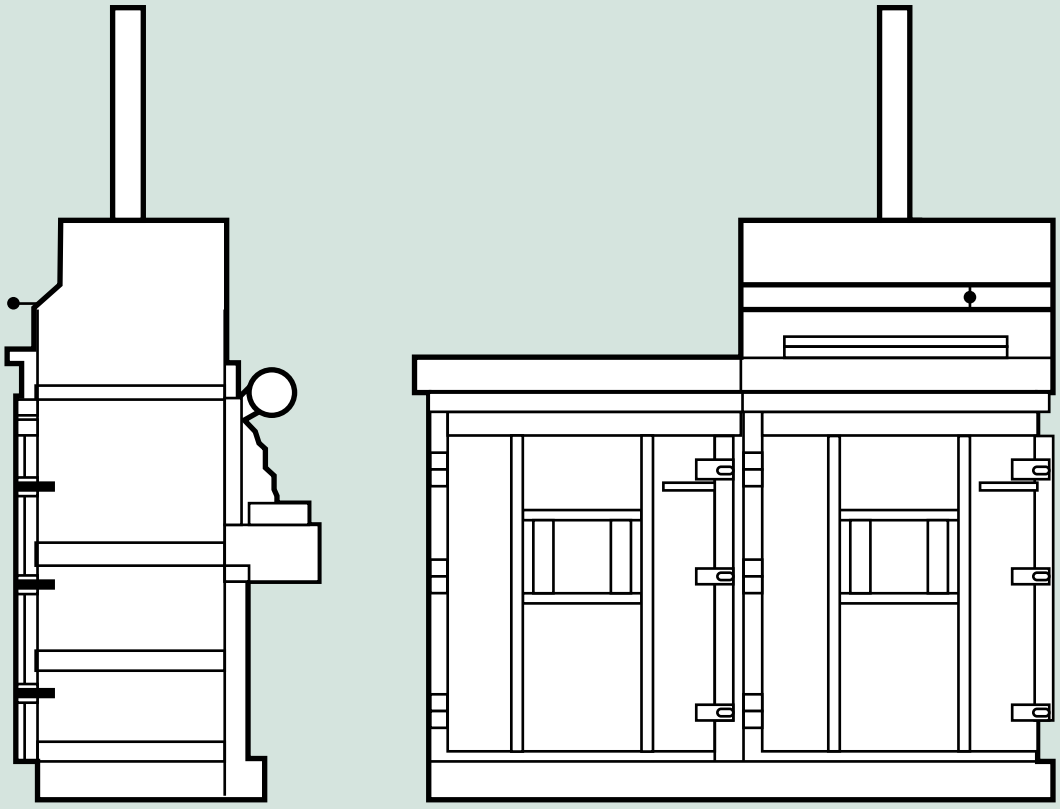


Figure 16: Example Twin-Chamber Top-loading Baler

d) Front-loading balers

Front loading balers, as the name suggests, facilitate loading at the front, rather than the top. They are available in a range of sizes, compression ratios and chambers, similar to top-loading balers.

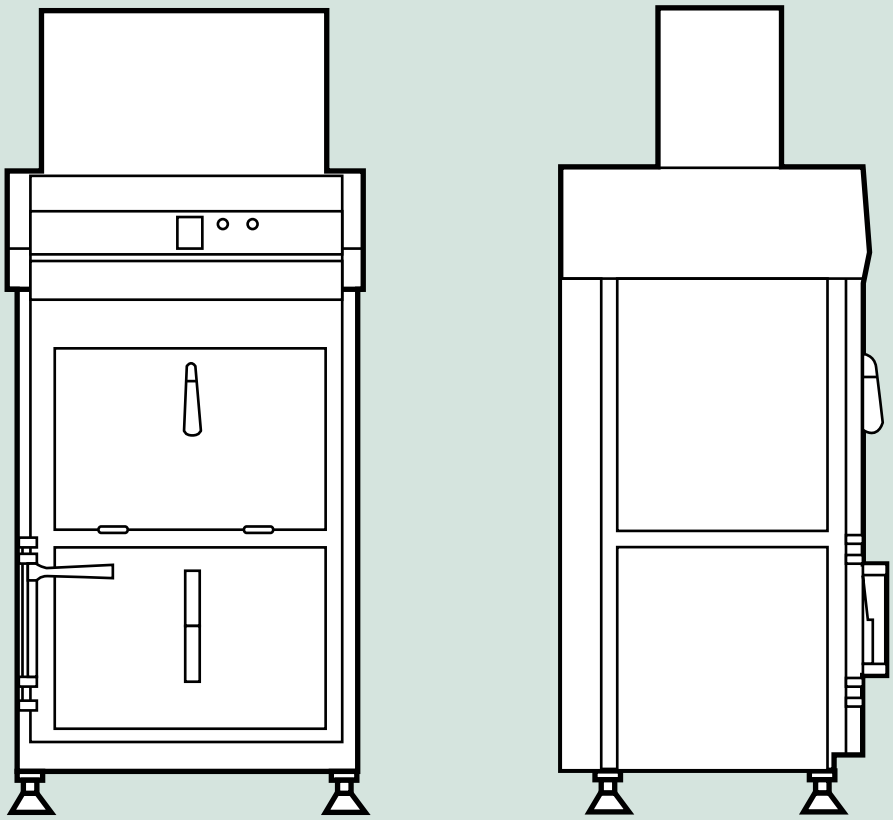


Figure 17: Example Front-loading Baler

APPENDIX V – Bring Sites

Bring Recycling Sites differ from other forms of recycling containers in that they are publicly accessible. As a result, careful consideration should be given to public access and potential nuisance when designing and locating Bring Sites.

C ouncils are increasingly providing Bring Recycling Sites to support kerbside recycling collections or to target materials, such as glass, which may not be collected through a kerbside scheme. Bring recycling schemes have also been found to be easier, more cost-effective methods of providing recycling services in areas of high density housing.

The following key points have been adapted from 'Good Practice Guide to Bring Recycling', (2006), DEFRA. The DEFRA guidance should be consulted fully when locating and designing Bring Recycling Sites.

1) Bring Recycling Sites should be located:

- on a hard, level surface;
- in an area that will attract high numbers of people;
- close to a main road for public access;
- where they will be highly visible, with clear signage and good lighting;
- close to centres of high population density and pedestrian footfall;
- where they can be easily accessed and serviced; and
- where a litter bin can be sited nearby.

2) It is important that the site be accepted by local residents. Therefore, it should minimise the negative impact on neighbouring domestic properties. To ensure this, Bring Recycling Sites should:

- avoid areas which could be deemed a fire hazard;
- avoid areas where facilities could be used to gain access to neighbouring gardens or premises;
- be designed and managed such that banks are locked and bolted to the ground;
- be designed such that banks and site infrastructure are vandal- and graffiti-proof; and
- be landscaped into their surrounding environs.

3) Bring Recycling Sites should be sited and designed in partnership with the relevant council.



APPENDIX VI - Vehicle Dimensions and Access Requirements

1) General

This appendix contains the type of information necessary to design a development for access by collection vehicles.

Roads should be designed to minimise the need for reversing and allow collection vehicles to proceed in a mainly forward direction.

Where it is necessary to reverse a collection vehicle, an appropriate turning area should be provided, free from parked cars and other obstacles.

Typical dimensions and access requirements are given here. Liaise with the relevant council to establish the actual figures applicable for the location.

2) Refuse Collection Vehicle (RCV) (Three-axle 26.0 tonnes Gross Vehicle Weight)

Table 7.1: Refuse Collection Vehicle (Three-axle 26.0 tonnes GVW)	
Width	2.5m
Overall Length (including bin lifts)	11.8m
Height	3.8m
Minimum Height Clearance Required	4.5m
Turning Circle (kerb to kerb)	23.1m
Turning Circle (wall to wall)	24.7m
Axle Weight - Front	7.0 tonne
Axle Weight - 2nd	9.5 tonne
Axle Weight - 3rd	9.5 tonne

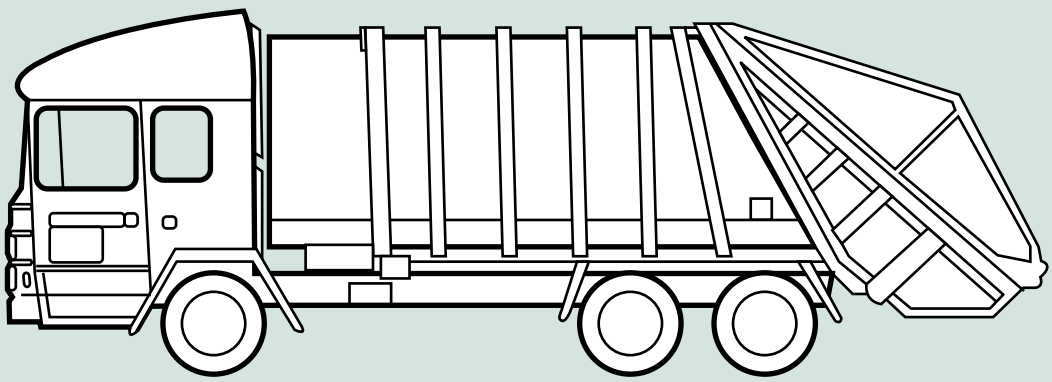


Figure 18: Typical 3-Axle Refuse Collection Vehicle

3) Skip vehicle (Two-axle 18.0 tonnes Gross Vehicle Weight)

Table 7.2: Skip Vehicle (Two-axle 18.0 tonnes GVW)	
Width (mirror to mirror)	3.0m
Overall Length	7.1m
Working Length (vehicle and skip)	11.0m
Height - Travelling (with skip)	3.7m
Minimum Height Clearance Required – Travelling	4.5m
Height – Working	4.45m
Minimum Height Clearance Required – Working	4.9m
Turning Circle (kerb to kerb)	14.4m
Turning Circle (wall to wall)	17.0m
Axle Weight – Front	7.1 tonne
Axle Weight – Rear	11.5 tonne
Notes:	
The service bay should not have ceiling-mounted services (ducts, sprinklers, pipes etc.)	

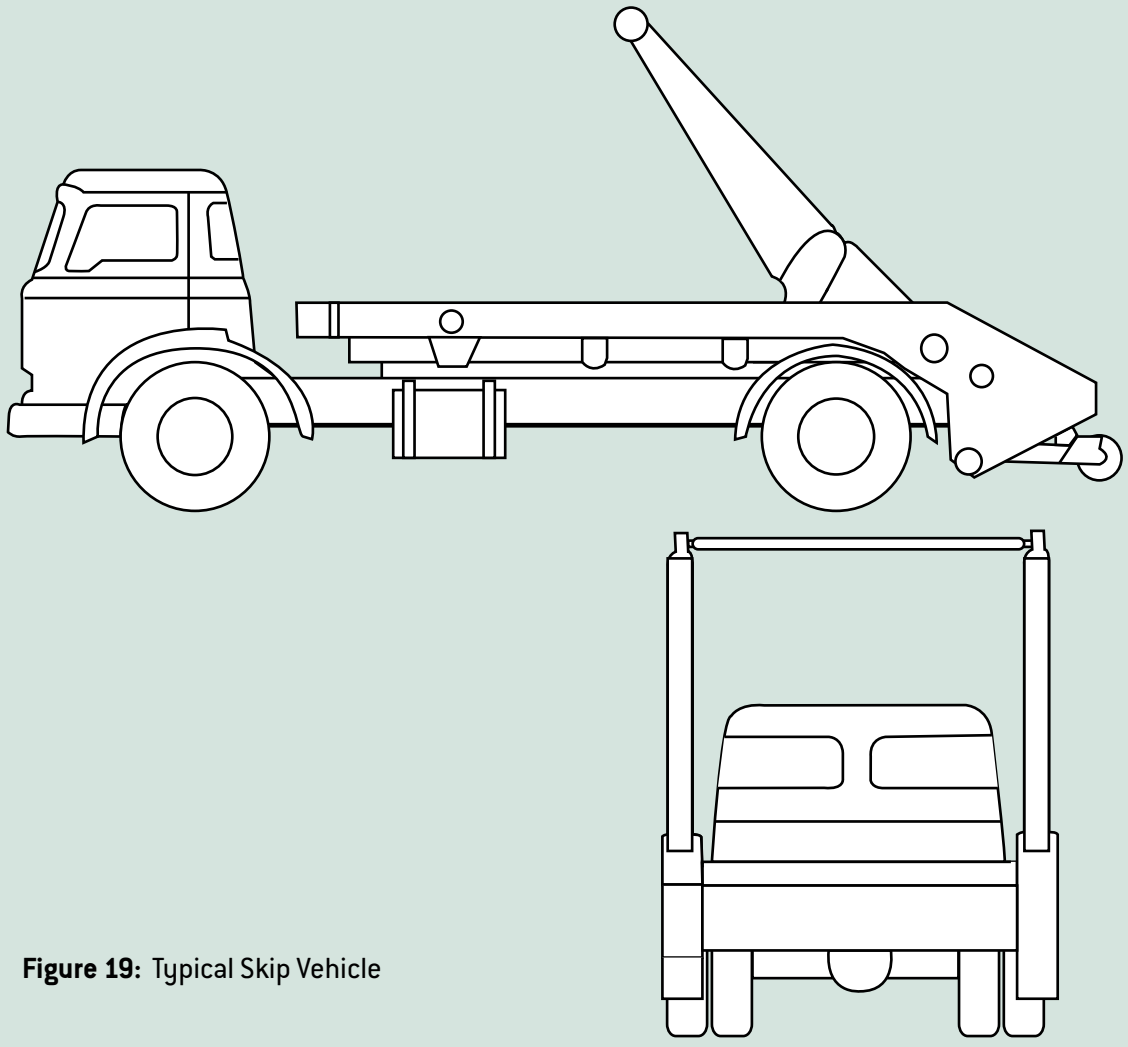


Figure 19: Typical Skip Vehicle



4) Roll-on/Roll-off vehicle (Four-axle 30.0 tonnes Gross Vehicle Weight)

Table 7.3: Roll-on/Roll-off Vehicle (Four-axle 30.0 tonnes GVW)	
Width	2.5m
Overall Length	11.0m
Working Length (vehicle and skip)	16.5m
Height - Travelling (with skip)	4.3m
Minimum Height Clearance Required – Travelling	5.0m
Height – Working	5.5m
Minimum Height Clearance Required – Working	6.0m
Turning Circle (kerb to kerb)	21.4m
Turning Circle (wall to wall)	22.8m
Notes:	
The service bay should not have ceiling-mounted services (ducts, sprinklers, pipes etc.)	

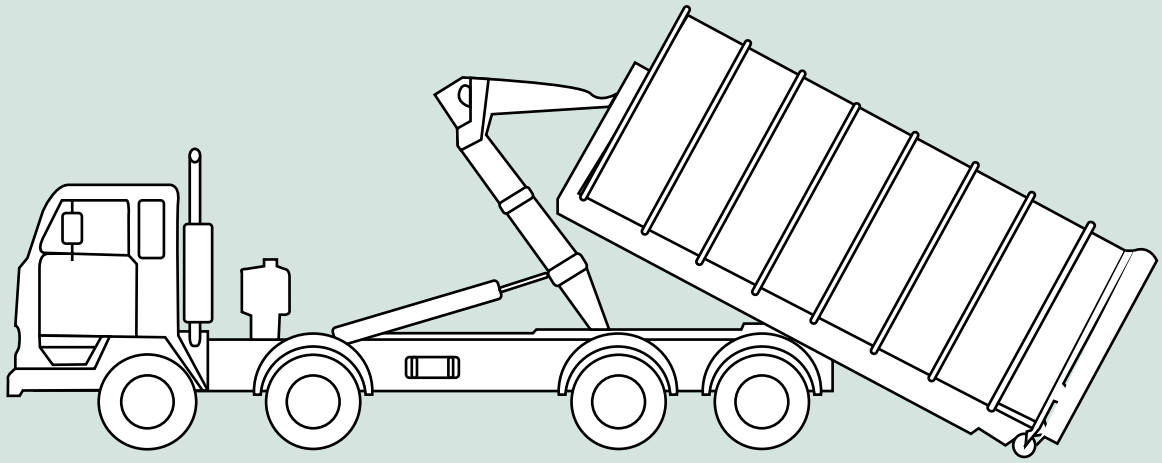


Figure 20: Typical RORO (Hook-lift) Vehicle

APPENDIX VII - Waste Chute Systems

1) General

A waste chute system consists of a ventilated vertical pipe penetrating all floors in a building. Waste is fed into the system via hoppers inlets which are connected to the vertical pipe. At the base of the waste chute a moveable communal waste container is provided for the collection and removal of discharged material.

A waste chute system may be used as the sole means of solid waste removal for residents, or in conjunction with other systems.

The other guidance in this document should be followed where waste chute systems are used. However, (as outlined below) a number of additional considerations arise when waste chutes are used. **You should produce a Waste Management Plan to cover all design and management considerations and liaise with the relevant council to ensure that the arrangements are satisfactory.**

2) The following additional considerations should be taken into account where a waste chute system is used:

a) A suitable inspection and maintenance regime is necessary to ensure that chutes are kept clean and clear of blockages.

b) The waste storage area needs to be maintained in order to ensure that capacity is available and the waste chute is kept clear.

c) Careful thought should be given to how the segregation of waste will be achieved[x]. Separate waste chutes may be provided, or segregation may be achieved by using a combination of collection systems.

d) The issue of sound transfer from the waste chute (or the waste storage area) to accommodation needs to be addressed.

e) Fire Safety separation is required between the accommodation and the waste chute[y] (and the waste storage area).

x In order to ensure compliance with paragraph J(3)(b) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.
y In order to ensure compliance with paragraph J(3)(f) of the Building Regulations (NI) 2000 (as amended); see Appendix XII.



3) Where a waste chute system is to be used:

a) It should be designed to comply with BS 1703:2005[z].

b) There should be a waste chute inlet no more than 30m from any individual dwelling.

c) The design of the overall waste management system for the building should:

- facilitate the segregation of waste in accordance with the requirements of the council; and
- take into consideration possible future changes in the volumes and fractions of waste to be collected.

d) Residents should be fully informed about:

- how to use the chute system; and
- the collection arrangements for the various fractions of waste.

z In order to ensure compliance with paragraph J3 of the Building Regulations (NI) 2000 (as amended); see Appendix XII

APPENDIX VIII - Alternative Treatment, Storage and Collection Methods

1) General

This appendix outlines some alternative treatment, storage and collection methods which you may wish to consider when designing your development. Many of these systems use underground storage to reduce the amount of surface space used.

These are just some of the alternative methods, and there are various manufacturers. You should do your own further research.

Each alternative system will have its own particular strengths and weaknesses. You should carefully evaluate the systems available. Considerations include:

- cost;
- any specific plant/ equipment required (and access requirements);
- suitability for the size and type of development; and
- safety.

The chosen system should:

- facilitate the segregation of waste for recycling; and
- be able to be serviced by a standard vehicle and/or with standard attachments.

In commercial applications, the chosen system should have an access control system to identify the user for charging purposes.

Systems are included in this appendix for information, not endorsement. In all cases, you should liaise with the relevant council or prospective commercial waste contractor in order to establish which alternative system, if any, is suitable and can be supported. You should produce a Waste Management Plan to cover all design and management considerations and liaise with the relevant council to ensure that the arrangements are satisfactory. See Appendix IX for more information on Waste Management Plans.

2) Alternative waste treatments include:

a) Waste macerators

- A macerator is a device which chops or grinds waste for disposal into sink waste pipes, drains and sewers. This includes food waste disposers, sink waste disposers, waste grinders and waste disposal units.
- Use of macerators should be carefully managed in order to ensure that recyclable waste is removed beforehand.
- The approval of Northern Ireland Water should be sought when considering installing a macerator.

b) Pyrolysis plant

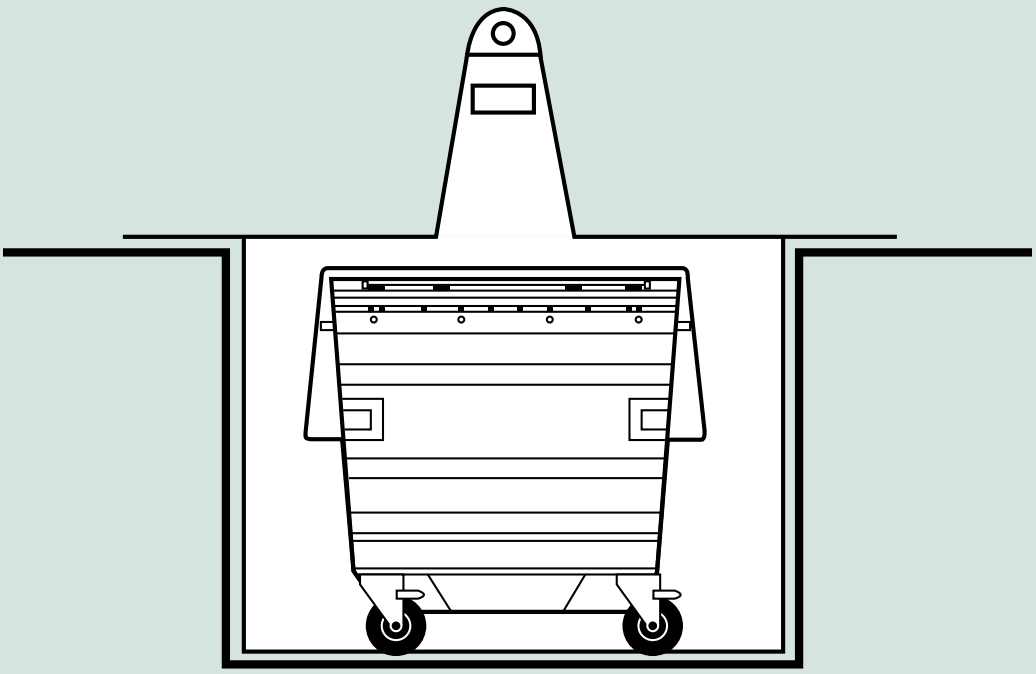
- Pyrolysis is a thermal treatment which reduces waste to ash, which can then be flushed away via the sewage system.
- Small pyrolysis plants (in the order of 1 cu m) can be installed for communal use (perhaps with chute systems).
- Use of pyrolysis plants should be carefully managed in order to ensure that recyclable waste is removed beforehand.
- The approval of Northern Ireland Water should be sought when considering installing a pyrolysis system.

3) Alternative waste storage and collection systems include:

a) Underground storage using standard wheeled containers

- With this type of system, users deposit waste via an inlet port above the ground (this looks similar to a litter bin) and it falls into a standard wheeled container which is submerged on a platform underground.
- Systems are available for use with most sizes of wheeled container (see Appendix II for more details on wheeled containers).
- The whole arrangement is raised, either by an in-built hydraulic lift system or an on-vehicle crane, to bring the wheeled container to ground level for collection.
- Due to collection vehicle access requirements, this type of system can only be installed externally to a building.

Figure 21: Underground Storage Platform using Wheeled Container



b) Underground storage comprising an all-in-one unit

- With this type of system, an inlet port (which looks similar to a litter bin) above the ground and a storage container below the ground form a complete unit.
- These units come in various capacities (typically in the 3000L – 5000L range).
- The whole unit is lifted by a crane attached to the collection vehicle. The waste is emptied into the collection vehicle by opening trap doors on the bottom of the unit.
- Due to collection vehicle access requirements, this type of system can only be installed externally to a building.

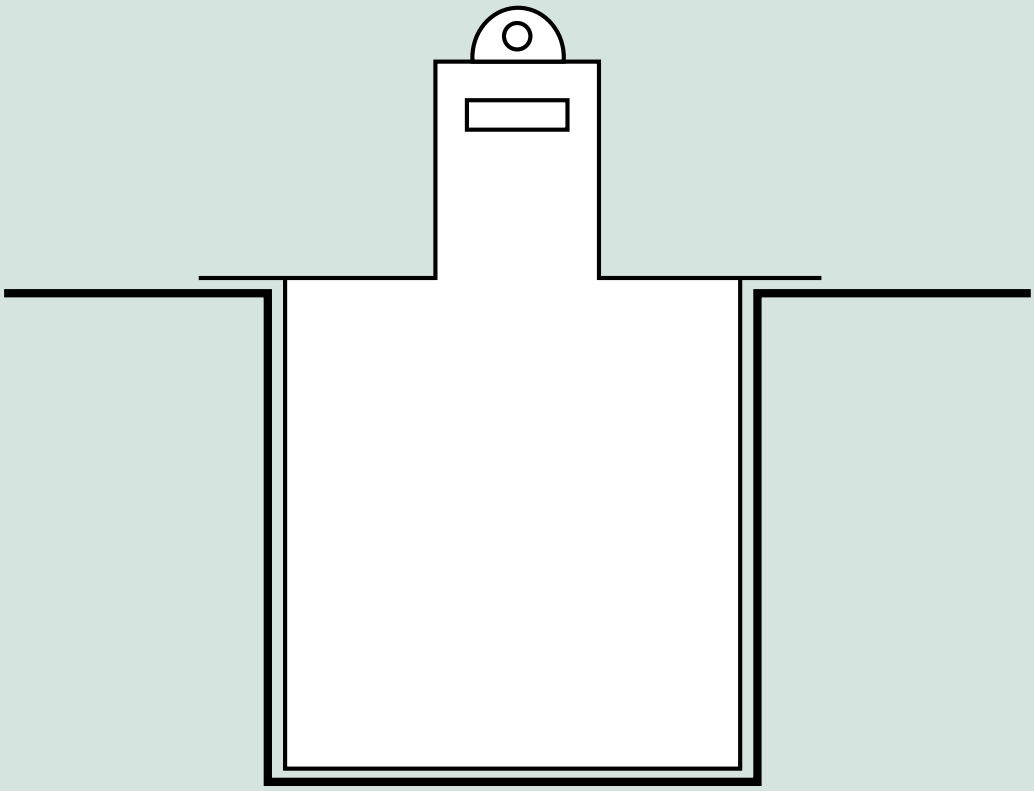


Figure 22: Enclosed Underground Storage Unit

c) Underground vacuum system

- With this type of system, waste is deposited into inlet ports (located above ground throughout the development) and extracted to a central collection point, via a network of underground pipes.
- The central collection point is typically located 1-2 miles away from any given inlet.
- The waste is stored in standard RORO containers at the collection point (see Appendix II for more information on RORO containers).
- The inlet ports can be located throughout the development.
- The inlet ports can be installed internally and/or externally to a building.
- A vacuum system is typically only viable where:

  (1) there is a density of at least 50 properties/ha; and

  (2) there are at least 500 dwellings connected.

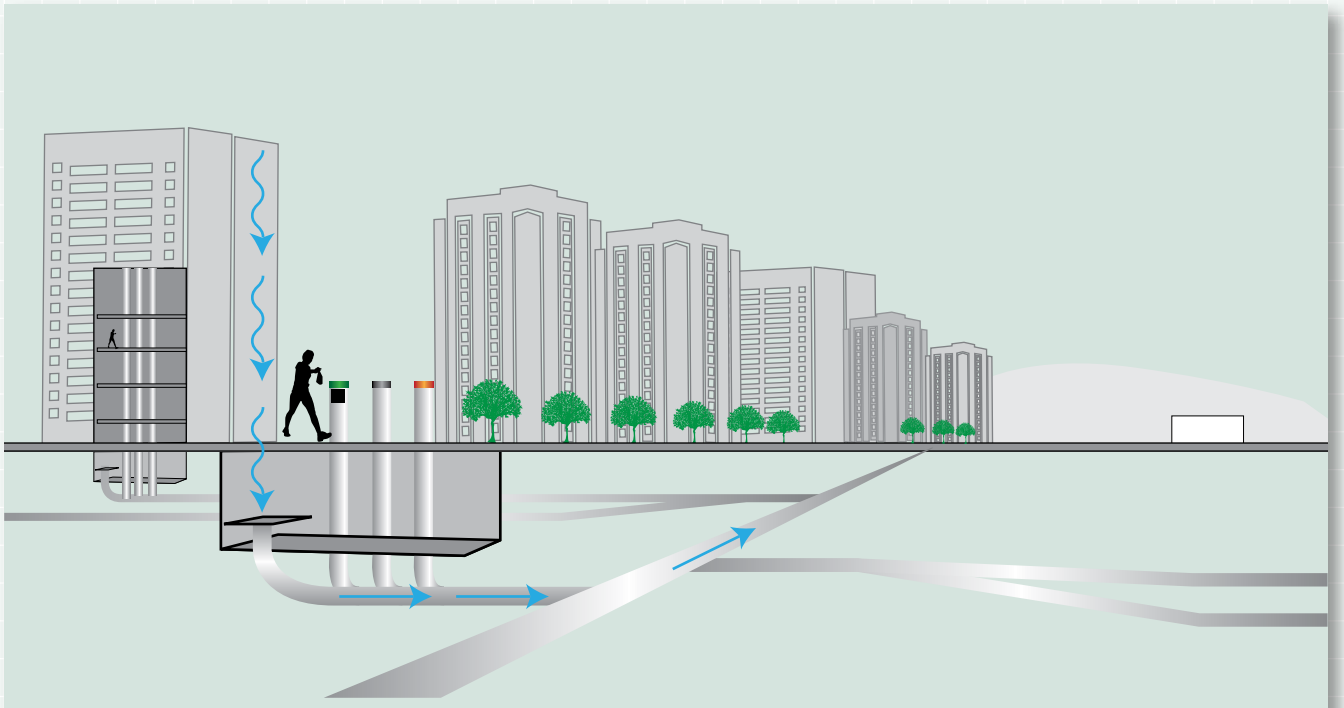


Figure 23: Underground Vacuum System

APPENDIX IX - Design of a Waste Management Plan

1) General

A Waste Management Plan should be produced and agreed with the relevant council where requested, or under any of the following circumstances:

- waste will be stored in communal waste containers;
- containers of greater than 240L capacity are to be used;
- the proposed waste storage area is in a basement;
- a bulky household waste storage area is provided;
- the development is commercial or mixed-use;
- a waste compactor or baler is to be used;
- a waste chute system is to be used; or
- any new or alternative waste treatment, storage or collection method is to be used.



2) A Waste Management Plan should detail:

i) Estimated volumes of each fraction of waste.

ii) The temporary internal storage arrangements for segregation of waste (in dwellings).

iii) The arrangements for storage and collection of bulky household waste.

iv) Any proposed compacting or baling equipment, and the associated design and management arrangements, as outlined in Appendices III and IV.

v) Whether a waste chute system is to be used, and the associated design and management arrangements, as outlined in Appendix VII.

vi) Whether any new or alternative waste treatment, storage or collection method is to be used, and any associated additional design or management arrangements.

vii) The numbers and types of containers that will be used for each waste fraction.

viii) The locations and sizes of the waste storage areas, and the numbers and types of containers to be accommodated.

ix) How segregation of waste for recycling will be enforced in developments using communal waste storage areas, communal waste containers or waste chute systems.

x) How commercial and household waste will be segregated in mixed-use developments.

xi) How the waste from different commercial properties will be segregated and identified to ensure correct charging.

xii) How waste will be transported to the storage areas.

xiii) The location and size of the waste collection point.

xiv) How waste will be transported to the waste collection point.

xv) Design specification (widths, gradients, finishes etc.) for the paths/ routes between the waste storage areas and the waste collection point(s).

xvi) Storage and access arrangements for any mechanical equipment proposed for the transport of waste.

xvii) Risk assessments and method statements, as appropriate.

xviii) How residents/users will be advised of the various collection arrangements.

xix) How residents/users will be advised of changes to collection arrangements e.g. holiday periods.

xx) A contact name/details for the council to use, should any problems arise.

xxi) Review dates to ensure that the arrangements are periodically re-examined and, if necessary, updated.

APPENDIX X – Worked Examples

1) Example 1: 3-Bedroom Dwelling House – Scenario 1

Scenario:

This example assumes that you intend to build a 3-bedroom dwelling house and you have talked to the relevant council who advised that:

1. they will be carrying out alternate-weekly collections[8] for residual waste in black wheeled bins and dry recyclable waste in blue wheeled bins; and
2. you should plan for a 50:50 split of residual and dry recyclable waste.

Section 1: Calculate the estimated residual and recyclable waste (in litres) arising from the property on a weekly basis:

- According to Table 1 you can expect 70L per bedroom plus 30L = (70x3) + 30 = 240L weekly total.
- A 50:50 split means 120L residual and 120L dry recyclable waste per week.

Section 2: Calculate the storage capacity (in litres) required for the various waste fractions; Plan the internal or temporary storage; Determine the size and nature of the bulky household waste storage area, if applicable:

- Alternate-weekly collections mean that storage is needed for 2x120L = 240L residual waste and 2x120l = 240l dry recyclable waste.
- You arrange with the kitchen designer to incorporate segregated waste storage.
- You ensure that the design of your dwelling provides open space no less than 2.5m x 1.5m which is suitably accessible for the temporary storage of bulky household waste.

Section 3 (in conjunction with Appendix II): Determine the numbers and types of container required:

- Storage space is required for one black 240L wheeled bin and one blue 240L wheeled bin.

(Note that this example is mainly for education and familiarisation; **in practice the council will be able to advise you immediately on the numbers and types of container required for a 3-bedroom dwelling house.)**

8 See Definition / Glossary of Terms for explanation.



Section 4: Calculate the size of the waste storage area:

You decide to store the bins side by side (single row layout) in an open storage area:

- Table 3.1 shows that you need 1.2m x 1.8m dedicated storage area, with a further 0.8m available along the length of the row to allow free movement of the bins past each other for collection.

Section 5: Determine the site and design of the waste storage area:

- Your storage area should comply with Sections 5.1 and 5.2.

Section 6: Design the access routes to and from the waste storage area:

- Your access routes should comply with Sections 6.1 and 6.2.

Section 7: Design the bulky household waste storage area:

- Not applicable. Requirements covered in Section 2.

Section 8: Determine the site and design of the waste collection point:

- Your waste collection point should comply with Sections 8.1 and 8.2.

2) Example 2: 3-Bedroom Dwelling House – Scenario 2

Scenario:

This example assumes that you intend to build a 3-bedroom dwelling house and you have talked to the relevant council who advised that:

1. they will be carrying out alternate-weekly collections[9] for residual waste in black wheeled bins and organic waste in brown wheeled bins; dry recyclable waste will be collected on a weekly basis in 55L Kerbside Boxes;
2. you should plan for a 40:30:30 split between residual:organic:dry recyclable waste;
3. the kerbside boxes may be stacked on top of one another; and
4. you should design the internal storage area to accommodate a 55L kerbside box with the following dimensions:

    - Height 375mm
    - Width 440mm
    - Length 590mm

Section 1: Calculate the estimated residual and recyclable waste (in litres) arising from the property on a weekly basis:

- According to Table 1 you can expect: 70L per bedroom plus 30L = (70x3) + 30 = 240L weekly total.
- A 40:30:30 split means 96L residual, 72L garden and 72L dry recyclable waste per week.

Section 2: Calculate the storage capacity (in litres) required for the various waste fractions; Plan the internal or temporary storage; Determine the size and nature of the bulky household waste storage area, if applicable:

- Alternate-weekly collections mean that storage is needed for: 2x96L = 192L residual waste and 2x72L = 144L garden waste.
- Weekly collections mean that storage is needed for 72L dry recyclable waste.
- After discussion with the council, you arrange with the kitchen designer to incorporate storage areas to accommodate a standard 20L waste bin for residual waste and a 55L kerbside box measuring 0.38m x 0.44m x 0.59m.
- You ensure that the design of your dwelling provides open space no less than 2.5m x 1.5m which is suitably accessible for the temporary storage of bulky household waste.

9 See Definition / Glossary of Terms for explanation.



Section 3 (in conjunction with Appendix II): Determine the numbers and types of container required:

- Storage space is required for one black 240L wheeled bin, one brown 240L wheeled bin and two kerbside boxes.

(Note that this example is mainly for education and familiarisation; **in practice the council will be able to advise you immediately on the numbers and types of container required for a 3-bedroom dwelling house.)**

Section 4: Calculate the size of the waste storage area:

You want to store the containers side by side (single row layout) in an open storage area, with the kerbside boxes stacked on top of one another. You need space to accommodate three containers of 240L or less:

- Table 3.1 shows that you need 1.2m x 1.8m dedicated storage area, with a further 0.8m available along the length of the row to allow free movement of the bins past each other for collection.

Section 5: Determine the site and design of the waste storage area:

- Your storage area should comply with Sections 5.1 and 5.2.

Section 6: Design the access routes to and from the waste storage area:

- Your access routes should comply with Sections 6.1 and 6.2.

Section 7: Design the bulky household waste storage area:

- Not applicable. Requirements covered in Section 2.

Section 8: Determine the site and design of the waste collection point:

- Your waste collection point should comply with Sections 8.1 and 8.2.

3) Example 3: 5-Bedroom Dwelling House

Scenario:

This example assumes that you intend to build a 5-bedroom dwelling house and you have talked to the relevant council who advised that:

1. they will be carrying out alternate-weekly collections[10]. Residual waste will be collected on week 1 in black wheeled bins. On week 2, garden waste will be collected in brown wheeled bins and dry recyclable waste will be collected in blue wheeled bins;
2. you should plan for a 40:20:40 split between residual:garden:dry recyclable waste; and
3. they can collect 360L bins, and you can and should design for these. However, according to the council's policy, only three 240L wheeled bins (one for each fraction of waste) will be collected initially. The council will only offer a larger wheeled bin if a family of six or more people occupy the property.

Section 1: Calculate the estimated residual and recyclable waste (in litres) arising from the property on a weekly basis:

- According to Table 1 you can expect 70L per bedroom plus 30L = (70x5) + 30 = 380L weekly total.
- A 40:20:40 split means 152L residual, 76L garden and 152L dry recyclable waste per week.

Section 2: Calculate the storage capacity (in litres) required for the various waste fractions; Plan the internal or temporary storage; Determine the size and nature of the bulky household waste storage area, if applicable:

- Alternate-weekly collections mean that storage is needed for: 2x152L = 304L residual waste, 2x76L = 152L garden waste and 2x152L = 304L dry recyclable waste.
- You arrange with the kitchen designer to incorporate segregated waste storage in the utility area adjacent to the kitchen; you arrange with the bathroom designer to incorporate segregated waste storage in the main upstairs bathroom.
- You ensure that the design of your dwelling provides open space no less than 2.5m x 1.5m which is suitably accessible for the temporary storage of bulky household waste.

10 See Definition / Glossary of Terms for explanation.



Section 3 (in conjunction with Appendix II): Determine the numbers and types of container required:

- Storage space is required for one black 360L wheeled bin, one brown 240L wheeled bin and one blue 360L wheeled bin.

Section 4: Calculate the size of the waste storage area:

You decide to store the containers side by side (single row layout) in an open storage area. You need space to accommodate two 360L containers and one 240L container:

- Table 3.2 shows that you need 1.4m x 2.1m dedicated storage area, with a further 1.0m available along the length of the row to allow free movement of the bins past each other for collection.

Section 5: Determine the site and design of the waste storage area:

- Your storage area should comply with Sections 5.1 and 5.2.

Section 6: Design the access routes to and from the waste storage area:

- Your access routes should comply with Sections 6.1 and 6.2.

Section 7: Design the bulky household waste storage area:

- Not applicable. Requirements covered in Section 2.

Section 8: Determine the site and design of the waste collection point:

- Your waste collection point should comply with Sections 8.1 and 8.2.

4) Example 4: Apartment Complex

Scenario:

This example assumes that you intend to build an apartment complex, comprising:

- Thirty 2-bedroom apartments and
- Ten 3-bedroom apartments

and you have talked to the relevant council who advised that:

1. they will be carrying out alternate-weekly collections[11] for residual waste and dry recyclable waste;
2. you should plan for a 50:50 split between residual and dry recyclable waste; and
3. they can collect Euro Bins.

Section 1: Calculate the estimated residual and recyclable waste (in litres) arising from the property on a weekly basis:

- According to Table 1 you can expect 70L per bedroom plus 30L per apartment:
  - 30 x ((70x2) + 30) = 30 x 170L = 5100L weekly arisings from the 2-bedroom apartments and
  - 10 x ((70x3) + 30) = 10 x 240L = 2400L weekly arisings from the 3-bedroom apartments
  - 5100L + 2400L = 7500L weekly total from the apartment complex
- A 50:50 split means 3750L residual and 3750L dry recyclable waste per week.

Section 2: Calculate the storage capacity (in litres) required for the various waste fractions; Plan the internal or temporary storage; Determine the size and nature of the bulky household waste storage area, if applicable:

- Alternate-weekly collections mean that storage is needed for: 2x3750L = 7500L residual waste and 2x3750L = 7500L dry recyclable waste.
- You arrange with the kitchen designer to incorporate segregated waste storage in the kitchen of each apartment.
- A bulky household waste storage area of 10 sqm will be required:
  - You choose dimensions of 4.0m x 2.5m

11 Note also that relevant legislation is outlined in Appendix XI



Section 3 (in conjunction with Appendix II): Determine the numbers and types of container required:

- You decide to use 1100L Euro Bins. Storage space is required for seven 1100L Euro Bins for residual waste and seven 1100L Euro Bins for dry recyclable waste.

Section 4: Calculate the size of the waste storage area:

- From Tables 4.1 and 4.2 you see that if you store the 14 Euro Bins in a single row layout (side by side) you need a much larger area overall than if you store them in opposing rows layout (two rows of 7 facing one another).
- You decide on the opposing rows layout and plan in an enclosed waste storage area of 4.4m x 11.2m.

Section 5: Determine the site and design of the waste storage area:

- Your storage area should comply with Sections 5.1 and 5.3.

Section 6: Design the access routes to and from the waste storage area:

- Your access routes should comply with Sections 6.1 and 6.2.

Section 7: Design the bulky household waste storage area:

- Your bulky household waste area should comply with all of the guidance in Section 7.

Section 8: Determine the site and design of the waste collection point:

- Your waste collection point should comply with Sections 8.1 and 8.2.

5) Example 5: Franchised Fast-Food Outlet

Scenario:

This example assumes that you intend to open a franchised fast food outlet which will be open 7 days per week. According to your research and franchise information, you expect:

- 8,000 sales per week
- An 80:20 split of residual and dry recyclable waste

and you have talked to a commercial waste operator who advised that:

1. they can carry out collections for residual and recyclable waste up to 6 days per week; and
2. they can collect any type of wheeled container.

Section 1: Calculate the estimated residual and recyclable waste (in litres) arising from the property on a weekly basis:

- According to Table 1 you can expect 5L per sale i.e. 8,000 x 5L = 40,000L per week.
- An 80:20 split means 32,000L residual and 8,000L dry recyclable waste per week.

Section 2: Calculate the storage capacity (in litres) required for the various waste fractions; Plan the internal or temporary storage; Determine the size and nature of the bulky household waste storage area, if applicable:

- The business will generate 32,000/7 = 4571L of residual and 8,000/7 = 1143L of dry recyclable waste per day.
- Your research shows that no commercial waste contractor operates more than six days per week in the area. You decide on daily collections (six days per week) to minimise the amount of waste storage required. But you still need capacity for two days' waste. Thus, waste storage is needed for: 2x4571L = 9142L residual waste and 2x1143L = 2286L dry recyclable waste.
- You think through the temporary storage requirements required internally to ensure that waste fractions can be accommodated and segregated before being transferred to the main waste storage area.
- Bulky household waste storage is only required for dwellings. It is not necessary for your fast food outlet.
- However, you contact the council's Environmental Health Service to establish whether there are any other waste storage considerations to be addressed.



Section 3 (in conjunction with Appendix II): Determine the numbers and types of container required:

- You compare the numbers of 660L Euro Bins required with the number of 1100L Euro Bins required.
- You would need fourteen 660L Euro Bins for residual waste and four 660L Euro Bins for dry recyclable waste. i.e. eighteen 660L Bins in total.
- You would need nine 1100L Euro Bins for residual waste and three 1100L Euro Bins for dry recyclable waste. i.e. twelve 1100L Bins in total.

Section 4: Calculate the size of the waste storage area:

- After due consideration, you decide that the containers should be enclosed in a purpose-built store.
- From the tables you see that:
  - You would actually need slightly less area for the eighteen 660L Bins than the twelve 1100L Bins.
  - In this case, whether you use 660L Bins or 1100L Bins, the opposing rows layout (two rows of bins facing one another) requires considerably less space overall than the single row layout (all bins side by side).
- However, quotes from the commercial waste operator indicate that it will be cheaper to collect the 1100L Bins.
- You decide to use 1100L Bins, laid out in two opposing rows of six, which means that you need a waste storage area of 4.4m x 9.6m.

Section 5: Determine the site and design of the waste storage area:

- Your storage area should comply with Sections 5.1 and 5.4.

Section 6: Design the access routes to and from the waste storage area:

- Your access routes should comply with Sections 6.1 and 6.3.

Section 7: Design the bulky household waste storage area:

- Not applicable.

Section 8: Determine the site and design of the waste collection point:

- Your waste collection point should comply with Sections 8.1 and 8.3.

APPENDIX XI – Relevant Agencies and Legislation

1) General

The guidance in this document spans several areas of legislation, each of which is regulated by different agencies.

This appendix outlines the roles of the relevant agencies and briefly discusses the key pieces of legislation which are relevant to the contents of this guide.

Note that there may be other relevant legislation which has not been included.

Note that the definitions for various terms may vary between the various pieces of legislation.

A distinction has been made between direct legislation and related legislation, as follows:

- Direct legislation/ policy is legislation/ policy which has a direct bearing on the design of waste storage areas and access to them. This guide has been designed to bring about compliance with direct legislation/ policy.
- Related legislation/ policy is legislation/ policy which is relevant to the management of waste or which may be breached as a result of problems arising from inadequate or unsatisfactory waste storage areas and access to them.

2) Department of Finance and Personnel (Building Standards Branch): Building Regulations

a) The Role of the Department of Finance and Personnel

The Building Standards Branch of the Department of Finance and Personnel (DFP) is responsible for the development and the implementation of policy and legislation relating to the Building Regulations for Northern Ireland.

b) Direct Legislation

i) The Building Regulations (Northern Ireland) 2000 - Part J (Solid waste in buildings)

These regulations apply to most building work and are made principally to ensure the health, safety, welfare and convenience of people in and around buildings. Part J of the Regulations is detailed in Appendix XII.



3) DoE Northern Ireland Environment Agency: Waste Legislation

a) The role of the Northern Ireland Environment Agency

The Northern Ireland Environment Agency takes the lead in advising on and implementing the Government's environmental policy and strategy in Northern Ireland. The Agency carries out a range of activities to promote the Government's key themes of sustainable development, biodiversity and climate change.

The Agency's overall aims are to:

- protect and conserve Northern Ireland's natural heritage and built environment;
- control pollution; and
- promote the wider appreciation of the environment and best environmental practices.

b) Direct legislation:

i) The Waste and Contaminated Land (Northern Ireland) Order 1997

This Order is designed to ensure that waste is properly controlled. It gives councils the powers to stipulate arrangements for waste storage, presentation and collection.

ii) Pre-treatment Regulations

The pre-treatment regulations require that all waste generated by businesses should be treated prior to being sent to landfill.

c) Related legislation:

i) The Controlled Waste (Duty of Care) Regulations (Northern Ireland) 2002

These Regulations articulate the powers provided in the Waste and Contaminated Land (Northern Ireland) Order 1997 in order to place a Duty of Care on any person who produces, imports, carries, keeps, treats or disposes of Controlled Waste.

The 2002 Regulations and a Code of Practice are available on the Northern Ireland Environment Agency website www.ni-environment.gov.uk or by telephoning the Duty of Care Helpline on 028 9056 9360.

ii) The Controlled Waste Regulations (Northern Ireland) 2002

These Regulations detail various categories of waste and explain under what circumstances a charge may or may not be made for collection.

iii) The Litter (Northern Ireland) Order 1994

This Order details the circumstances under which a notice may be served to enforce the prevention of littering.

4) DoE Northern Ireland Planning Service: Planning Legislation & Policy

a) The Role of the Planning Service

The Department of the Environment is responsible for planning control and the regulation of waste management in Northern Ireland. The Planning Service, an Agency within the Department, administers its planning function.

The planning system exists to regulate the development and the use of land in the public interest. The Department's functions, in relation to planning, are set out in the Planning (Northern Ireland) Order 1991. Planning Service is responsible for developing, and implementing, Government planning policies and development plans in Northern Ireland. The Agency carries out a range of activities which promote the Government's key themes of sustainable development and creating a better environment. The principle of sustainable development is reflected in the Regional Development Strategy and it is a key aim of the Waste Management Strategy to achieve fully sustainable waste management.

The management of waste is an important requirement of modern society. Storage space and waste management facilities within proposed developments should be developed to the highest standards so that waste can be dealt with in a way which minimises impacts on the environment. Arrangements for waste disposal from a development site are a factor to be considered in reaching a planning decision.

b) Direct Policy

i) Planning Policy Statement (PPS) 7: Quality Residential Environments

This PPS sets out DoE policy for achieving quality in new residential developments. Waste storage arrangements may be considered as material issues in terms of amenity, private space and sustainable development.

ii) The Addendum to PPS 7: Residential Extensions and Alterations

This sets out DoE policy for achieving quality in relation to residential extensions and alterations, including the private amenity space required for bin storage.

iii) Planning Policy Statement (PPS) 12: Housing in Settlements

This PPS sets out DoE policies to guide housing development, including layout considerations to facilitate waste storage and access.



5) Department for Social Development (Housing Division): Housing Legislation

a) The Role of the DSD Housing Division

The DSD Housing Division have overall control and responsibility for preparing and directing social housing policy in Northern Ireland, and work with the Northern Ireland Housing Executive and registered housing associations in implementing social housing policies.

b) Related Legislation

i) The Housing (Management of HMO) Regulations (NI)1993

These regulations require managers to keep their houses, yards and gardens free from loose rubbish and litter, and to provide and maintain adequate numbers of suitable waste receptacles for the residents.

6) Northern Ireland Housing Executive: Housing Legislation

a) The Role of the Northern Ireland Housing Executive

The Northern Ireland Housing Executive is Northern Ireland's overall housing authority. It is a non-Departmental public body which works to ensure that everyone has access to a decent affordable home in a safe and healthy community.

b) Related Legislation

i) The Housing (Management of HMO) Regulations (NI)1993

These regulations require managers to keep their houses, yards and gardens free from loose rubbish and litter, and to provide and maintain adequate numbers of suitable waste receptacles for the residents.

7) Chief Environmental Health Officers Group: Environmental Health Legislation

a) The Role of councils' Environmental Health Services

Councils' Environmental Health Services take a leading role in improving the quality of life now and for future generations by helping to create a healthier and safer place to live, work and visit.

Environmental Health Officers carry out inspections of food, commercial, and residential properties to ensure they comply with current standards. They provide advice to the public and businesses and in so doing help to promote and develop people's health and quality of life. They also investigate complaints and enforce various pieces of legislation.

b) Direct Legislation

i) The Food Hygiene Regulations (NI) 2006

These regulations require compliance with European standards which specify that adequate provision is to be made for the storage and disposal of food waste, non edible by-products and other refuse. Refuse stores are to be designed and managed in such a way to enable them to be kept clean.

c) Related Legislation

i) Public Health Acts (NI) 1878 to 1971

Under these Acts it is an offence to allow offensive rubbish to build up on private property.



APPENDIX XII: Part J of the Building Regulations (NI) 2000 (as amended)

This appendix contains Part J (Solid waste in buildings) of the Building Regulations (NI) 2000 (as amended by The Building (Amendment) Regulations (NI) 2010).

PART J
Solid waste in buildings

J1 Interpretation
In this Part -

INDIVIDUAL WASTE CONTAINERS means moveable containers for the storage of waste from a single dwelling;

COMMUNAL WASTE CONTAINERS means moveable containers for the storage of waste from more than one dwelling;

WASTE means solid waste; and

WASTE CHUTE SYSTEM means a system comprising of a hopper or hoppers; a waste chute or chutes; a waste container chamber or waste container chambers and associated ventilation provisions.

J2 Solid waste storage
(1) A building shall be provided with adequate space for the storage of waste in containers, and such space shall be -

(a) sited so as not to be prejudicial to the health of any person;

(b) sited so as to be reasonably accessible for use by people in the building for the storage of waste and for emptying or removing each container;

(c) of sufficient area having regard to the number of necessary containers and the frequency and method of removal; and

(d) reasonably accessible to the waste collection point.

(2) Every dwelling -

(a) on or below the fourth storey of a building shall have adequate space for individual waste containers or access to communal waste containers or a waste chute system; and

(b) above the fourth storey of a building shall have access to a waste chute system.

J3 Waste chute systems

A waste chute system shall -

(a) be of such size, layout and construction as will ensure the hygienic conveyance of waste to a waste container;

(b) be capable of facilitating the segregation of waste;

(c) be constructed of non-combustible materials;

(d) have non-absorbent inner surfaces;

(e) have adequate means of ventilation to the external air; and

(f) be so constructed as to prevent the ignition of any part of the building in the event of any waste within the system catching fire.

J4 Deemed-to-satisfy provisions for regulations J2(1)(b), J2(1)(c) and J3

(1) The requirements of regulation J2(1)(b) shall be deemed to be satisfied, in the case of a building specified in column (2) of Table J opposite the reference to that regulation, if-

(a) the waste container space is sited in accordance with the provisions specified opposite thereto in column (3); or

(b) the waste container space is sited in accordance with the relevant provisions of the publications specified opposite thereto in column (3), as amended by the publications specified opposite thereto in column (4).

(2) The requirements of regulation J2(1)(c) shall be deemed to be satisfied, in the case of a building specified in column (2) of Table J opposite the reference to that regulation, if the waste storage area is sized in accordance with the provisions specified opposite thereto in column (3).

(3) The requirements of regulation J3 shall be deemed to be satisfied, in the case of a building specified in column (2) of Table J opposite the reference to that regulation, if the waste chute system used in the building is designed and constructed in accordance with the relevant provisions of the publications specified opposite thereto in column (3), as amended by the publications specified opposite thereto in column (4).

Table J

(Solid waste in buildings)

Regulations (1)	Buildings (2)	Publications or provisions (3)	Amendments (4)
J2(1)(b) Solid waste storage	a dwelling not served by a waste chute system	the space for the waste containers is at a travel distance of not more than 30m from the dwelling and sited so that the waste containers can be removed without being taken through the dwelling or any other building, other than a garage, carport or other open covered space	-
	a dwelling served by a waste chute system	BS 5906: 2005	-
J2(1)(c) Solid waste storage	a dwelling not served by a waste chute system	a washable hard-standing base not less than 1.8 m x 1.2 m to accommodate the waste containers and provide reasonable access	-
J3 Waste chute systems	any building	BS 1703: 2005; and BS 5906: 2005	- -

APPENDIX XIII - References



1) Bibliography:

a) 'Waste and Recycling Storage Requirements: A guide for developers, architects and building contractors', (2005), Belfast City Council.

b) 'Towards Resource Management: The Northern Ireland Waste Management Strategy 2006-2020'.

c) BS 5906:2005 Waste management in buildings - Code of practice.

d) 'Fire Safety Risk Assessment – Factories and Warehouses', (2006), DCLG.

e) 'Good Practice Guide to Bring Recycling', (2006), DEFRA.

f) 'Clean Streets: Waste and Recycling Storage Requirements', (March 2007), City of Westminster.

g) 'Supplementary Planning Guidelines: Guidance Notes for Developers on the collection of Domestic Refuse', (Adopted December 2000, updated November 2003), Hertsmere Borough Council.

h) 'Waste & Recycling Storage and Collection Requirements: Guidance for Architects & Developers', (Updated May 2006), London Borough of Lambeth.

i) 'Planning Advice Note 3: Refuse and Recycling Provisions in New and Refurbished Residential Developments', London Borough of Barking and Dagenham.

j) 'Underground Banks Advice Note', (Not issued), London Borough of Barking and Dagenham.

k) 'Information for Developers and Architects – Provision of Domestic and Green Waste Collection Services, and Recycling Facilities for Flats', (October 2006), London Borough of Barnet.

l) 'Design Guide on Refuse Storage for New Residential Properties', (Draft for Public Consultation, July 2007), North Devon District Council.

m) 'Standard Waste and Recycling Requirements', (Updated 26-04-06), Chichester District Council.

n) 'Waste Storage and Collection Guidance for New Developments: For use by Building Designers and Managers', (Last amended 15-12-06), Manchester City Council.

o) 'Refuse and Recycling Bins at New or Converted Properties', (Last updated 24-10-07), Rushmoor Borough Council.

p) 'Information Note: Recycling for Existing Developments with Communal Facilities', (June 2004), London Borough of Richmond upon Thames.

q) 'Supplementary Planning Guidance: Recycling for New Developments with Communal Facilities', (June 2004), London Borough of Richmond upon Thames.

r) 'Advice Note: G23 Waste Management Plans', (January 2007), London Borough of Hackney.

2) The following documents/ sources are referred to in this guide:

a) 'Waste and Recycling Storage Requirements: A guide for developers, architects and building contractors', (2005), Belfast City Council.

b) 'Towards Resource Management: The Northern Ireland Waste Management Strategy 2006-2020', The Department of the Environment NI.

c) BREEAM (Building Research Establishment Environmental Assessment Method): Ecohomes (environmental assessment methods are available for a range of buildings; Ecohomes is the assessment method for dwellings).

d) 'Code for Sustainable Homes', (October 2007), Department for Communities and Local Government.

e) Review of Municipal Waste Component Analysis, (February 2008), DoE NI Environment Agency.

f) 'Good Practice Guide to Bring Recycling', (2006), DEFRA.

g) BS 5906:2005 Waste management in buildings - Code of practice.

h) BS 6642:1985 Specification for disposable plastics refuse sacks made from polyethylene.

i) BS 1703:2005 Specification for refuse chutes and hoppers.

j) BS EN 840:2004 Mobile waste containers.

3) Other useful documents:

a) 'Publication No.3: Advice on storage and on-site treatment of household, commercial and industrial wastes', Chartered Institution of Wastes Management.

b) 'Designing for Deliveries', Freight Transport Association - publication/CD-Rom design aid for engineers, architects and others involved in the design and construction of premises used by lorries and other commercial vehicles.

c) 'Duty of Care and Your Business: Legislation on Duty of Care', Northern Ireland Environment Agency.

4) Useful web addresses:

a)	www.bre.co.uk	Building Research Establishment
b)	www.bsigroup.com	British Standards Institution
c)	www.ciwm.co.uk	Chartered Institution of Wastes Management
d)	www.communities.gov.uk	Department for Communities and Local Government
e)	www.defra.gov.uk/environment	Department for Environment, Food & Rural Affairs
f)	www.dfpni.gov.uk/building-regulations	Building Regulations Northern Ireland
g)	www.environment-agency.gov.uk	Environment Agency, GB
h)	www.fta.co.uk	Freight Transport Association
i)	www.hseni.gov.uk	Health & Safety Executive Northern Ireland
j)	www.ni-environment.gov.uk	DoE NI Environment Agency
k)	www.planningni.gov.uk	DoE NI Planning Service
l)	www.wastewatch.org.uk	Waste Watch
m)	www.wrap.org.uk	WRAP website