



Appendix 5.7

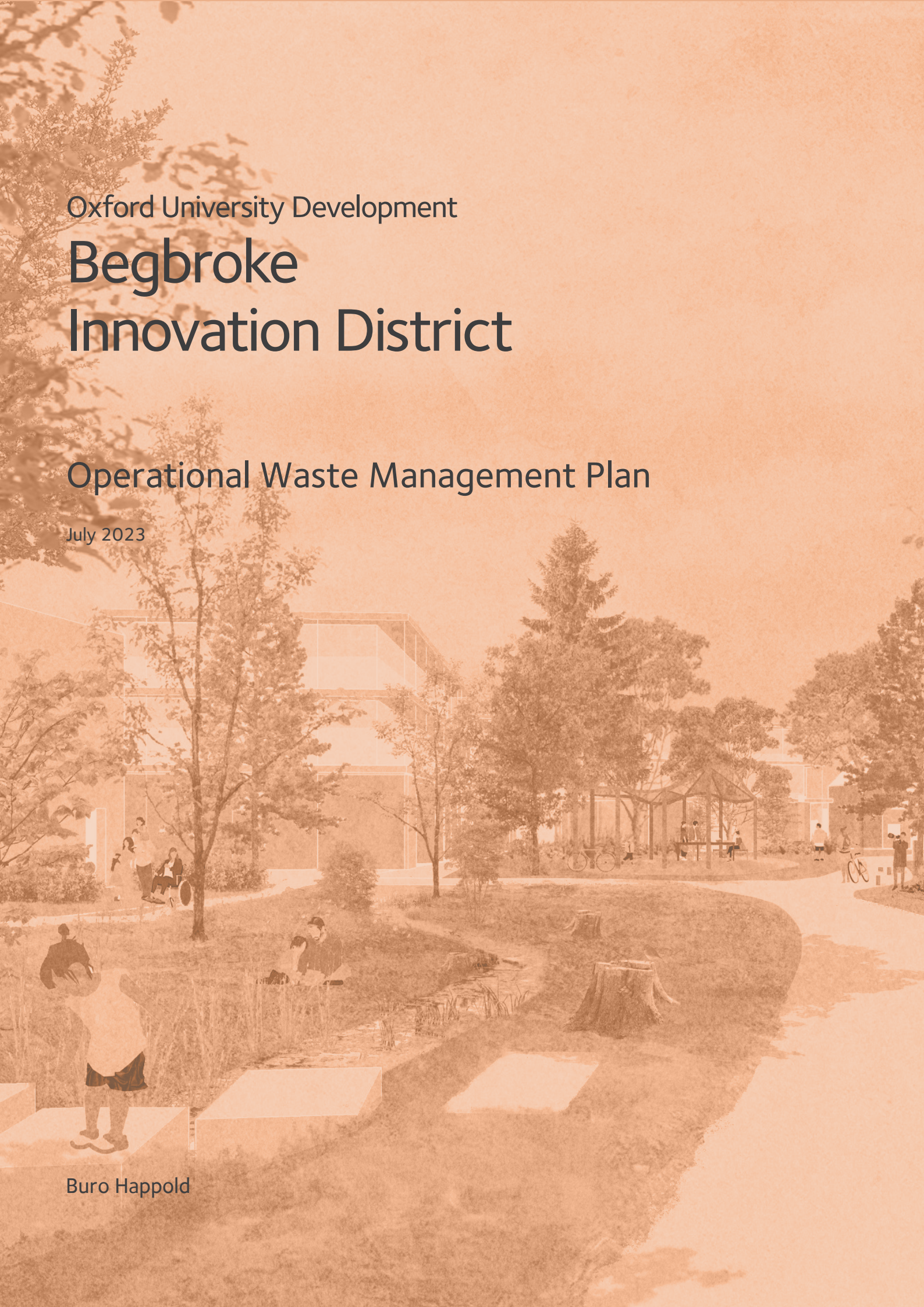
OPERATIONAL WASTE MANAGEMENT PLAN

Oxford University Development

Begbroke Innovation District

Operational Waste Management Plan

July 2023



Buro Happold

Begbroke Innovation District

Operational Waste Management Plan

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Contents

| | | |
|----------|---|-----------|
| 1 | Overview | 8 |
| 1.1 | Introduction | 8 |
| 1.2 | Project description | 8 |
| 1.3 | Site description | 9 |
| 1.4 | Waste Hierarchy and Circular Economy | 9 |
| 1.5 | Duty of Care | 10 |
| 1.6 | Consultation | 10 |
| 2 | Policy and Guidance | 12 |
| 2.1 | National policies and guidance | 12 |
| 2.2 | Regional policies and guidance | 12 |
| 2.3 | Local policies and guidance | 13 |
| 3 | Waste generation, storage and collection | 14 |
| 3.1 | Waste generation benchmarks | 14 |
| 3.2 | Waste generation | 14 |
| 4 | Waste management strategy | 17 |
| 4.1 | Residential | 17 |
| 4.1.1 | Residential houses | 17 |
| 4.1.2 | Residential apartments | 17 |
| 4.2 | Commercial | 18 |
| 5 | Waste collection and storage | 19 |
| 5.1 | Residential houses | 19 |
| 5.2 | Residential apartments | 20 |
| 5.2.1 | Residential land-uses | 20 |
| 5.3 | Commercial land uses | 20 |
| 5.3.1 | Commercial, education, and community land-uses | 21 |
| 5.4 | Communal waste stores | 21 |
| 5.5 | Waste collection vehicle requirements | 22 |

| | |
|--|-----------|
| 6 Summary | 24 |
| Appendix A | 25 |
| | |
| Table of Tables | |
| Table 3—1 Residential waste generation and composition benchmarks | 14 |
| Table 3—2 Commercial waste generation and composition benchmarks | 14 |
| Table 3—3 Residential waste generation | 15 |
| Table 3—4 Commercial waste generation | 16 |
| Table 4—1 Residential units % split | |
| Table 5—1 Bin requirements per house | 19 |
| Table 5—2 Commercial waste storage | 21 |
| | |
| Table of Figures | |
| Figure 1—1 Illustrative Masterplan of the Proposed Development | 8 |
| Figure 1—2 Waste hierarchy | 9 |
| Figure 1—3 Circular Economy principles | 10 |
| Figure 4—1 Residential houses waste flow | 17 |
| Figure 4—2 Residential apartments waste flow | 18 |
| Figure 4—3 Commercial waste flow | 18 |

Glossary

| Term | Definition |
|---------------|---------------------------------------|
| BoH | Back of House |
| BS 5906:20005 | British Standards 5906:2005 |
| F&B | Food and Beverage |
| GEA | Gross External Area |
| OUN | Oxford University Development Ltd |
| OWMS | Operational Waste Management Strategy |

1 Overview

1.1 Introduction

This Operational Waste Management Strategy (OWMS) report has been prepared by Buro Happold to support the outline planning application for Begbroke Innovation District. It outlines the estimated waste generation during the operational stage and the proposed strategy to segregate, store and collect waste. This document is intended to establish a framework for the wider Begbroke Innovation District. It is recommended that detailed waste management plans for the different plots are developed at a later stage.

1.2 Project description

Oxford University Development Ltd ('the Applicant') is seeking outline planning permission for a phased, mixed-use development, Begbroke Innovation District. ('the Proposed Development'). It will provide up to 155,000m² gross external area ('GEA') of new faculty, and research and development space associated with the expansion of the existing Begbroke Science Park, 215,000sqm GEA of residential floorspace (assumed to equate to 1,800 new residential dwellings) and approximately 21,000sqm GEA of other uses including retail, hotel, education. Construction is expected to commence February 2025 and be completed by January 2033.

The Illustrative Masterplan is shown in Figure 1-1.

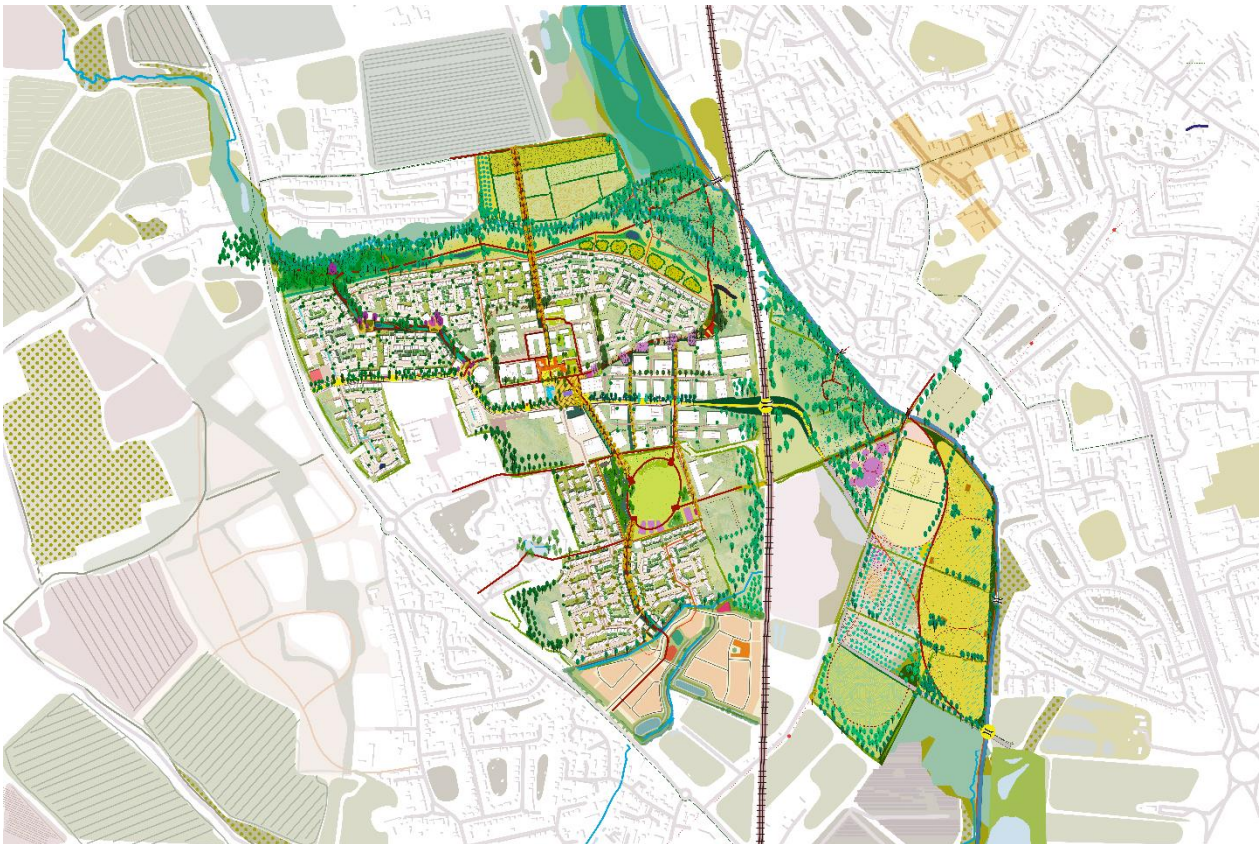


Figure 1—1 Illustrative Masterplan of the Proposed Development

1.3 Site description

The project site is located approximately five miles northwest of Oxford, in between the villages of Begbroke, Kidlington and Yarnton. It is within the planning jurisdiction of the Cherwell District Council, North Oxfordshire. The site is bound by the A44 to the West, Rowel Brook to the North and Oxford Canal to the East. The Cherwell Valley railway line intersects the site from north to south to the east of the site. The existing site mainly comprises of greenfield land with the existing Begbroke Science Park located at the centre. A number of individual dwellings are within the site boundary, and the Yarnton Home and Garden Centre sits within the site. Access to the Science Park is provided via the Begbroke Hill road connecting with the A44 to the West of the site. Oxford Airport is located to the north of the project site.

1.4 Waste Hierarchy and Circular Economy

The OWMS for Begbroke Innovation District has considered the waste hierarchy (Figure 1—2) and circular economy principles (Figure 1—3). This requires looking first to prevent waste generation, followed by re-using, recycling and recovering value from discarded materials. Only after these options have been deemed unfeasible should the safe treatment and final disposal of waste be considered.



Figure 1—2 Waste hierarchy

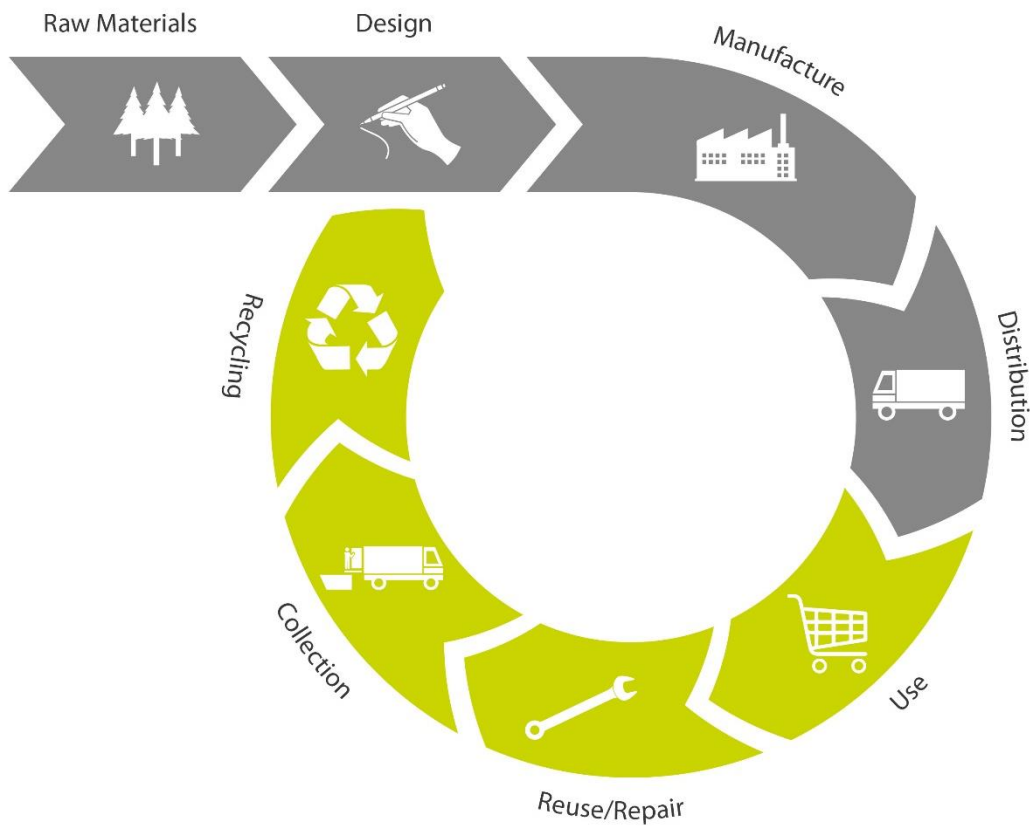


Figure 1—3 Circular Economy principles

1.5 Duty of Care

In line with the Environmental Protection (Duty of Care) Regulations 1990, 'the Applicant' has a duty of care to ensure that their waste is managed properly. All waste materials will therefore be stored safely and securely and, when collected, will be taken by a registered waste carrier to an appropriate permitted facility, with all relevant documentation completed.

1.6 Consultation

Consultation has been undertaken with the waste project officer from Cherwell District Council (CDC) between November 2022 and February 2023 to confirm the following:

- Waste generation rates and composition for residential and commercial properties as outlined in Table 3—1;
- Waste segregation and the collection frequencies for different waste streams;
- Bin storage areas should be a minimum 1.8 square metres per dwelling for houses/bungalows and 1.4 square metres per dwelling for flats or multi occupancy properties;
- Food waste collection in flats will use 140L food bins;
- Commercial waste collection service can be provided by the Council;

- Waste collection vehicle specifications (Appendix A); and
- Waste collection points should ideally be within 5m but less than 20m from waste storage points.

CDC provided the *Cherwell District Council Planning and Waste Management Design Advice, October 2009* on 17 November 2022 that outlines the operational waste storage requirements.

2 Policy and Guidance

The following national, local, and regional policies related to waste have been considered in developing this OWMS. Further details are outlined in [Appendix A](#).

2.1 National policies and guidance

- The Waste (Miscellaneous Amendments) (EU Exit) (No.2) Regulations 2019;
- The Waste and Environmental Permitting etc. (Legislative Functions and Amendments etc.) (EU Exit) Regulations 2020;
- Directive 2008/98/EC on Waste (Waste Framework Directive);
- Directive 1999/31/EC on the landfill of waste (Landfill Directive);
- The Environmental Targets (Residual Waste) (England) Regulations 2023;
- Environmental Permitting (England and Wales) Regulations 2016 (amended);
- Waste (England and Wales) Regulations 2016;
- Environmental Protection Act 1990 (Part II);
- The Waste (Circular Economy) (Amendment) Regulations 2020;
- National Planning Policy Framework 2021 (Ministry of Housing, Communities and Local Government, 2021);
- National Planning Policy for Waste (Department for Environment, Food and Rural Affairs, 2014);
- Environmental Improvement Plan (Department for Environment, Food and Rural Affairs, 2023);
- Our waste, our resources: A strategy for England (Department for Environment, Food and Rural Affairs, 2018);
- Waste Management Plan for England (Department for Environment, Food and Rural Affairs, 2021);
- Environment Act 2021;
- The Circular Economy Package: Policy Statement (Department for Environment, Food and Rural Affairs, 2020)
- Waste Prevention Programme for England (Department for Environment, Food and Rural Affairs, 2021); and
- Building Regulations 2010 Drainage and Waste Disposal 2015 Edition (HM Government, 2015).

2.2 Regional policies and guidance

- Oxfordshire's Resources and Waste Strategy 2018 – 2023;
- Oxfordshire Minerals and Waste Local Development Scheme (Twelfth Revision) 2021;
- Oxfordshire County Council 2020 Climate Action Framework; and

- Oxford City Council Technical Advice Note (TAN) 9: Waste Storage, 2021.

2.3 Local policies and guidance

- Emerging Draft Cherwell Local Plan 2040 (not currently adopted)
- Cherwell Residential Design Guide – Supplementary Planning Document, Master planning and architectural design guidance, Adopted 16 July 2018; and
- Planning and Waste Management Guidelines, Design Advice, October 2009.

3 Waste generation, storage and collection

3.1 Waste generation benchmarks

To estimate waste storage requirements for the Proposed Development, waste generation have been calculated using the benchmarks outlined below for residential and commercial. The residential and proposed commercial benchmarks were provided and confirmed by Cherwell District Council on 17 November 2022. It is noted that the Cherwell Residential Design Guide (October, 2009) provides a storage requirement that has been considered in Section 5 Waste collection and storage.

Table 3—1 Residential waste generation and composition benchmarks

| Land use | Unit | Benchmark | Waste Composition | | | |
|-----------|---------------------|-----------|-------------------|----------|----------|-------|
| | | | Mixed recycling | Organics | Residual | Glass |
| 1 bedroom | Litres/bedroom/week | 100 | 53% | 12% | 35% | - |
| 2 bedroom | Litres/bedroom/week | 170 | | | | |
| 3 bedroom | Litres/bedroom/week | 240 | | | | |
| 4 bedroom | Litres/bedroom/week | 310 | | | | |
| 5 bedroom | Litres/bedroom/week | 380 | | | | |

Table 3—2 Commercial waste generation and composition benchmarks

| Land use | Unit | Benchmark | Waste Composition | | | |
|--|--------------------|-----------|-------------------|----------|----------|-------|
| | | | Mixed recycling | Organics | Residual | Glass |
| Uses associated with the expansion of Begbroke Science Park | Litres/m2/week | 2.6 | 60% | 5% | 30% | 5% |
| Retail (Using average of retail, restaurants and food outlets) | Litres/m2/week | 7.5 | 50% | 15% | 30% | 5% |
| Hotel | Litres/m2/week | 7.5 | 20% | 25% | 40% | 15% |
| Non-resi and leisure institutions | Litres/m2/week | 5 | 60% | 5% | 30% | 5% |
| Halls and meeting places | Litres/m2/week | 5 | 60% | 5% | 30% | 5% |
| Sui generis uses | Litres/m2/week | 6.7 | 20% | 20% | 45% | 15% |
| Primary school | Litres/pupil/week* | 6 | 56% | 17% | 26% | 1% |
| Secondary school | Litres/pupil/week* | 4 | 63% | 9% | 27% | 1% |

*Conveted to litres from benchmarks

3.2 Waste generation

Based on the waste benchmarks outlined in Table 3—1 and Table 3—2, it is estimated that the residential areas will produce approximately 381,630 litres per week and the commercial areas 554,950 litres per week. In total approximately 936,580 litres will be generated per week as outlined in

Table 3—4 and Table 3—5.

Residential waste is proposed to be segregated into three streams (residual, mixed recycling and organics) in line with Council requirements. The Proposed Development is for 215,000sqm GEA of residential floorspace and includes a residential unit mix range that is set out in the Development Specification. For this assessment, it is assumed that 1,800 units are delivered and that will comprise 25% flats and 75% houses. To estimate the waste generation, the breakdown of residential units by the number of bedrooms in Table 3—3 has been used for the OWMS.

This represents a reasonable worst case scenario for waste generation based on the parameters throughout the outline planning application.

Commercial waste is proposed to be segregated into four waste streams: residual, mixed recycling, glass and organics.

Table 3—3 Residential units % split

| Residential | No. of units | Split (%) |
|---------------------------|--------------|------------|
| 1 bedroom | 360 | 20 |
| 2 bedroom | 540 | 30 |
| 3 bedroom | 540 | 30 |
| 4 bedroom | 180 | 10 |
| 5 bedroom | 180 | 10 |
| Total no. of units | 1,800 | 100 |

Table 3—4 Residential waste generation

| Phase/Building | No. of units | Waste generation / litres per week | | | |
|----------------|--------------|------------------------------------|-----------------|---------------|----------------|
| | | Residual | Mixed Recycling | Organics | Total |
| 1 bedroom | 360 | 12,600 | 19,080 | 4,320 | 36,000 |
| 2 bedroom | 540 | 32,130 | 48,660 | 11,020 | 91,810 |
| 3 bedroom | 540 | 45,360 | 68,690 | 15,560 | 129,610 |
| 4 bedroom | 180 | 19,530 | 29,580 | 6,700 | 55,810 |
| 5 bedroom | 180 | 23,940 | 36,252 | 8,208 | 68,400 |
| Total | 1,800 | 133,560 | 202,262 | 45,808 | 381,630 |

Table 3—5 Commercial waste generation

| Landuse | GEA/sqm | No. of Pupils | Waste Generation (litres per week) | | | | |
|---|---------|---------------|------------------------------------|-----------------|---------------|---------------|----------------|
| | | | Residual | Mixed Recycling | Organics | Glass | Total |
| Uses associated with the expansion of Begbroke Science Park | 155,000 | - | 120,900 | 241,800 | 20,150 | 20,150 | 403,000 |
| Retail (including F&B) | 3,500 | - | 7,880 | 13,130 | 3,940 | 1,320 | 26,270 |
| Hotel | 10,000 | - | 30,000 | 15,000 | 18,750 | 11,250 | 75,000 |
| Non-resi and leisure institutions | 5,600 | - | 8,400 | 16,800 | 1,400 | 1,400 | 28,000 |
| Halls and meeting places | 1,200 | - | 1,800 | 3,600 | 300 | 300 | 6,000 |
| Sui generis | 700 | - | 2,120 | 940 | 940 | 710 | 4,710 |
| Open outdoor recreation play, and sport space | - | - | - | - | - | - | - |
| Primary School 1 | - | 708 | 1,210 | 2,520 | 780 | 20 | 4,530 |
| Primary School 2 | | 472 | 810 | 1,680 | 520 | 10 | 3,020 |
| Secondary School | - | 1,100 | 1,190 | 2,790 | 430 | 10 | 4,420 |
| Total | | | 174,310 | 298,260 | 47,210 | 35,170 | 554,950 |

4 Waste management strategy

4.1 Residential

4.1.1 Residential houses

Waste generated in residential houses should be source segregated into individual receptacles for residual, mixed recycling, organic, and garden wastes in line with Council requirements. Further details on the receptacles are provided in Section 5.

Correspondance with Cherwell District Council confirmed that residual, mixed recycling, and garden waste will be collected fortnightly and organic waste weekly by the Council. Garden waste is an optional additional chargeable waste collection service. At the detailed planning stage, developers should provide 330litre home composters for properties at their own cost. The residential waste strategy is outlined in Figure 4—1.

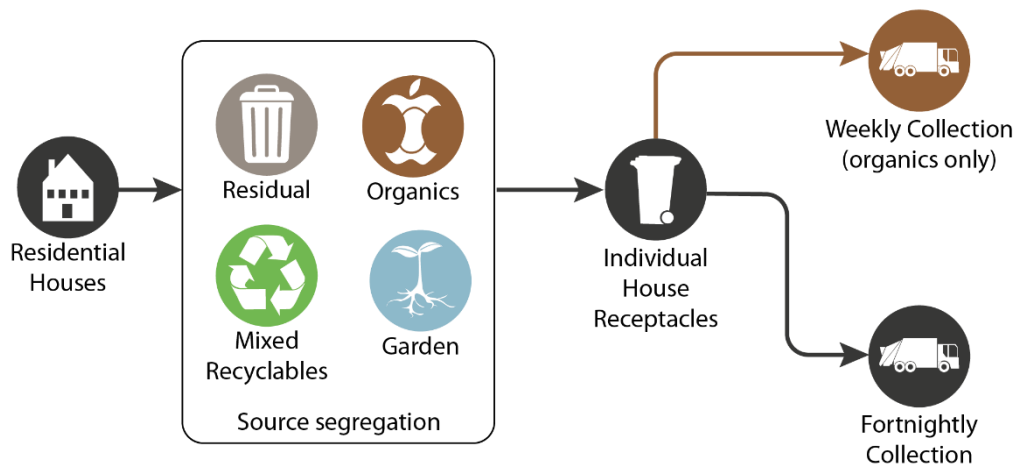


Figure 4—1 Residential houses waste flow

4.1.2 Residential apartments

Waste generated in residential apartments should be source segregated into communal waste receptacles for residual, mixed recycling, and organic wastes, which will be collected by the Council fortnightly. Further details on the receptables are provided in Section 5.

Developers should make provision for on site glass recycling banks to complement kerbside collection for developments of 100 residential properties or non-residential developments over 1000m² gross floor area. The residential apartments waste strategy is outlined in Figure 4—2.

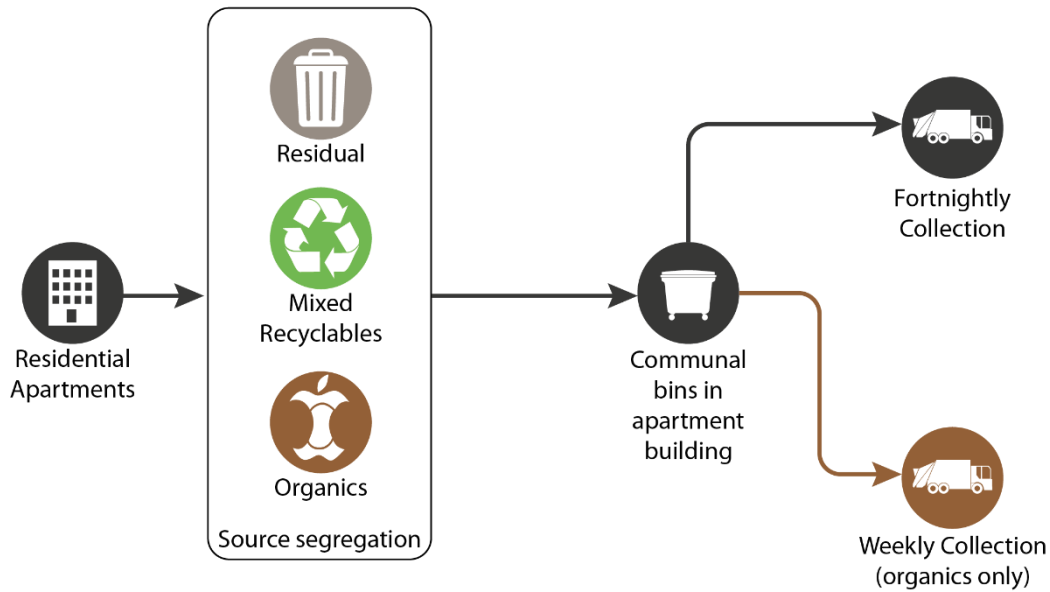


Figure 4—2 Residential apartments waste flow

4.2 Commercial

The proposed waste strategy for commercial uses that include offices, retail, hotel, leisure institutions, halls and meeting places, sui generis and schools. It is proposed that commercial wastes from these land uses are stored within their own Back of House (BoH) areas.

For the university commercial areas, several waste stores or a centralised waste storage area should be provided. This will be determined during the detailed planning stage.

The waste streams should be source segregated into four streams (residual, mixed recycling, organic, and glass). Wastes should be collected from individual buildings by a private waste contractor once a week. The commercial waste strategy is outlined in Figure 4—3.

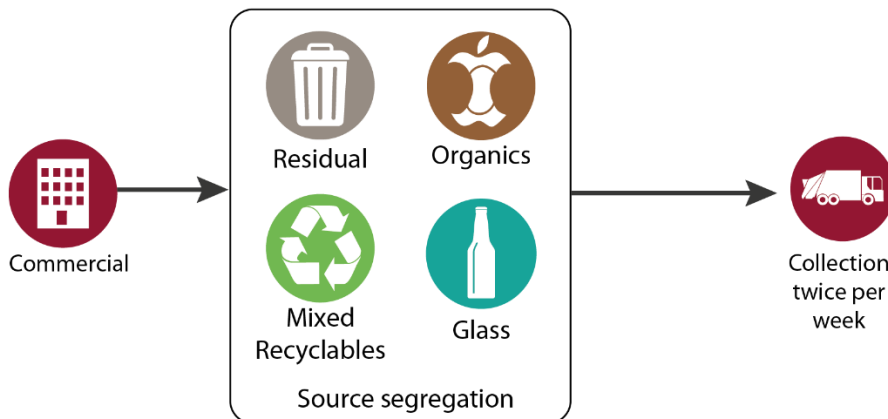






Figure 4—3 Commercial waste flow

5 Waste collection and storage

5.1 Residential houses

The Proposed Development includes residential units, which are a mix of houses and apartments. Waste generated by houses should be collected in receptacles specified by Cherwell District Council, as shown in Table 5—1. These receptacles should be stored within the front garden arrangement of properties. These requirements are based on the Cherwell Waste Guidance.

Table 5—1 Bin requirements per house

| Waste stream | No. of receptacles and capacity | Collection frequency | |
|--|---------------------------------|----------------------|--|
| Residual | 1 x 240L | Fortnightly |  A green wheeled bin with a lid, labeled 'Green bin' in green text. |
| Mixed material recycling (cans, foil, rigid plastic, glass & cartons, paper & cardboard) | 1 x 240L | Fortnightly |  A blue wheeled bin with a lid, labeled 'Blue bin' in blue text. |
| Food waste | 1 x 23L & 5L | Weekly |  A silver wheeled bin with a lid and a smaller 5L caddy, labeled 'Silver caddy' in grey text. |
| Garden waste* | 1 x 240L & 5L | Fortnightly |  A brown wheeled bin with a lid and a smaller 5L caddy, labeled 'Brown bin' in brown text. |

*Garden waste is an optional waste management service and is charged.

5.2 Residential apartments

Waste generated by apartments should be collected in communal bins on the ground floor, in receptacles as outlined by *Cherwell District Council Planning and Waste Management Design Advice, October 2009*.

- **Residual waste:** 660L or 1,100L wheeled bins;
- **Mixed recycling:** 340L, 660L or 1,100L wheeled bins;
- **Food waste:** 140L wheeled bins;
- **Bring banks** (glass and textiles only) for above 100 properties.

Indicative spatial requirements are outlined in Table 5—2 based on the waste generations outlined in Section 3 Waste generation, storage and collection.

Storage requirements assume that residual and mixed recycling wastes will be collected fortnightly, and organics will be collected weekly.

The *Cherwell District Council Planning and Waste Management Design Advice, October 2009* guidance has not provided provision for bulky waste storage. We have provided an indicative area of 20% for bulky waste spatial estimates.

Table 5—2 Residential apartments waste storage requirements

| No. of units | | No. Bins | | | Indicative Spatial Allocation (m ²) |
|---------------------|-----|-------------------|--------------------------|-------------------|---|
| | | Residual (1,100L) | Mixed Recycling (1,100L) | Organics (240L) * | |
| 1 bedroom apartment | 360 | 23 | 35 | 18 | 650 |
| 2 bedroom apartment | 540 | 59 | 89 | 46 | 980 |
| 3 bedroom apartment | 540 | 83 | 125 | 65 | 1,000 |
| 4 bedroom apartment | 180 | 36 | 54 | 28 | 430 |
| 5 bedroom apartment | 180 | 44 | 66 | 35 | 530 |

*Weekly collection.

5.3 Commercial land uses

Commercial waste should be segregated from residential waste. Commercial wastes should be stored in BoH areas. Indicative spatial requirements for waste storage are outlined in Table 5—3. However, this is indicative and will be determined during the detailed planning application.

Uses associated with the expansion of Begbroke Science Park the waste strategy will be determined at detailed design stage, that may include bins, compactors in either building storage areas or within a centralised location.

Residual and mixed recycling are proposed to be stored in 1,100L bins, and organics in 240L bins. Where waste generation is high, waste compactors may be considered during the detailed planning application. Waste is expected to be collected once a week by a private waste contractor.

Table 5—3 Commercial waste storage

| Land use | Indicative No. of Bins | | | | Total Indicative Spatial Allocation (m ²) * |
|---|------------------------|--------------------------|-----------------|--------------|---|
| | Residual (1,100L) | Mixed Recycling (1,100L) | Organics (240L) | Glass (240L) | |
| Uses associated with the expansion of Begbroke Science Park | 110 | 220 | 84 | 84 | 1,690* |
| Retail (including F&B) | 8 | 12 | 17 | 6 | 130 |
| Hotel | 28 | 14 | 79 | 47 | 410 |
| Non-resi and leisure institutions | 8 | 16 | 6 | 6 | 130 |
| Halls and meeting places | 2 | 4 | 2 | 2 | 40 |
| Sui generis | 2 | 1 | 4 | 3 | 30 |
| Open outdoor recreation play, and sport space | - | - | - | - | - |
| Primary school 1 | 2 | 3 | 4 | 1 | 30 |
| Primary school 2 | 1 | 2 | 3 | 1 | 20 |
| Secondary School | 2 | 3 | 2 | 1 | 30 |

*Note the spatial allocation is indicative as compactors may be used and shared waste stores provided

5.4 Communal waste stores

In line with the Cherwell Council Waste Guidance, communal bin rooms must also adhere to the *Building Regulations 2010 Part H6, and British Standards 5906:2005* that requires:

Residential communal bin stores

- Multiple bins should be situated together in a single location, and not separated;
- Bins should be located with a maximum horizontal distance of 30m for residents;
- Should be sited away from any domestic doors, windows or ventilators;
- All containers should be easily accessible to both the occupier and waste collector; and
- Bin stores should minimise the distance operatives have to travel from the road to collect communal bins. As an absolute maximum this should be no greater than 20m.

Residential and commercial bins stores

- A minimum clear space of 150mm should be provided between and around bins in bin stores;
- Adequate space should be provided for easy bin movement over smooth continuous surfaces;
- Floors should be capable of supporting up to half a tonne per square meter, with suitable drainage;
- Storage rooms should use double doors with a minimum width clearance of 1.5m;
- Arrangements should be made for washing down and drainage of bin room floors into a system suitable for receipt of foul water;

- Bins stores should be secured for access for residents/ staff and contractors only; and
- Bin stores should be compliant with any other relevant building regulations (e.g. fire regulations).

5.5 Waste collection vehicle requirements

All waste will be collected via the public roads within the Proposed Development. *Building Regulations 2010 Part H6, and British Standards 5906:2005*) guidance to waste vehicle access states:

To ensure a safe and efficient waste collection, any roads, bridges or ramps that will be utilised for waste collection must be:

- Built to at least the local highway authority standard;
- Be no more than 1:12 gradient / slope;
- Have a maximum turning circle of 20.3m. If reversing is unavoidable then the distance should not exceed 12m;
- Be capable of supporting vehicles having a gross weight of 26 tonnes;
- Enable vehicles enter developments and leave in forward gear; and
- Avoid height restrictions and leave good clearance for building overhangs, bridges, and loading bays.

Cherwell Council uses a Phoenix 2 Series -Smooth Body RCV, Euro 4 – wide track for the waste collection vehicle as outlined in the Cherwell Council Waste Guidance. Appendix A provides the waste collection vehicle specifications.

5.6 Detailed Design and Operational measures

To avoid, reduce and reuse waste it is recommended that the following initiatives should be considered during the detailed design and operational phase to help achieve this ambition.

5.6.1 Residential land-uses

- Make sure that every dwelling has access to the relevant waste information provided by Oxfordshire Council, such as leaflets or webpages that provide details about the Council's waste collection services. This includes information on which materials should be disposed of in each waste stream. This should be updated frequently to ensure residents are given the best opportunity to procure products and dispose of wastes responsibly;
- In the detailed planning stages, explore low-waste options such as reuse hubs, refill shops and shared tool libraries to promote reducing packaging waste, reusing rather than buying new, and sharing 'low-use' items such as DIY equipment;
- Engage and educate residents and visitors to encourage proper segregation of recyclables and to reduce the potential for contamination; and
- Provide clear signage with recycling and disposal guidance.

5.6.2 Commercial, education, and community land-uses

- Procure products from suppliers that allow for the backhauling of packaging waste or the re-use of packaging crates;
- Avoid disposable packaging, such as through retail outlets that provide refillable packaging options, and Food and Beverage (F&B) retail outlets that allow for 'eat-in' options;
- Educate visitors, students and staff on how they can reduce, reuse and recycle effectively, provide waste reduction targets combined with regular monitoring of waste management performance through waste audits;
- Train staff to ensure the waste management and disposal system is operated correctly;
- Provide clear signage with recycling and disposal guidance;
- Use colour-coded bins to make it easier to distinguish which bin should be used to dispose of particular items.
- Community led reuse and re purpose hubs where possible, i.e., swapping clothes corner, fixing workshops, library of things and pop up sale events;
- Community led re fill shops to reduce waste packaging;
- Deposit Return Scheme (DRS) machinery locations to reduce waste;
- Community led campaigns;
- Terra Cycle university recycling package to reduce hard to recycle waste;
- Onsite organic treatment; and
- A lab for innovative solutions to close the loop.

6 Summary

This Operational Waste Management Strategy outlines the proposed strategy to manage operational waste from Begbroke Innovation District in compliance with relevant national, regional, and local waste management policy requirements.

The waste management strategy looks to maximise recycling and re-use. The residential areas are estimated to produce approximately 381,630 litres of waste per week. Waste generated in residential houses and apartments should be source segregated into three streams (residual, recyclables and organics) and stored in individual receptacles for houses and communal bins for apartments. These will be collected fortnightly, and weekly for organics. Residential houses should also segregate garden waste that can be collected with an additional charge by the Council.

The commercial areas are anticipated to generate approximately 554,950 litres of waste weekly. Commercial waste should be segregated into four streams including glass where appropriate, and should be stored in back of house waste storage areas and collected by a private waste contractor.

Appendix A

A.1 National Context policies and guidance

The Waste (Miscellaneous Amendments) (EU Exit) (No.2) Regulations 2019

The regulations amend 12 domestic waste regulations which implement different European directives related to waste management to ensure the waste regime can continue to operate in the UK after leaving the EU, including the directives outlined below.

The Waste and Environmental Permitting etc. (Legislative Functions and Amendments etc.) (EU Exit) Regulations 2020

This includes amendments to EU Exit legislation to ensure that the waste and environmental permitting regimes continue to operate effectively at the end of the transition period.

Directive 2008/98/EC on Waste (Waste Framework Directive)

The Waste Framework Directive sets out basic concepts and definitions related to waste management, such as definitions of waste, recycling, recovery. It also sets out basic waste management principles: it requires that waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals, without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest.

The principles that the Waste Framework Directive introduces are “polluter pays principle”, “extended producer responsibility” and the “waste management hierarchy”. The Waste Framework Directive also requires that States adopt waste management plans and waste prevention programmes.

Directive 1999/31/EC on the landfill of waste (Landfill Directive)

The Landfill Directive aims to prevent and reduce any possible negative effects on the environment from the landfilling of waste. In order to do this, the Landfill Directive sets minimum standards for the location, design, operation and construction of landfills. It also sets targets for the diversion of biodegradable municipal waste and controls the nature of waste accepted for landfill (e.g. banning flammable wastes).

The Environmental Targets (Residual Waste) (England) Regulations 2023

This regulation specifies ‘the residual waste long-term target’ in section 1 of the Environment Act 2021. The target is a matter within the area of resource efficiency and waste reduction. It sets out a target that by the end of 31st December 2042 the total mass of residual waste for the calendar year 2042 does not exceed 287 kilograms per head of the population in England.

Environmental Permitting (England and Wales) Regulations 2016 (amended)

The Environmental Permitting (England and Wales) Regulations 2016 transpose fifteen directives of varying subject matters to set out an environmental permitting and compliance regime that applies to various activities and industries. To the extent of their relation to waste, they impose and regulate environmental permitting for activities such as landfill, incineration, mining and general waste operations. Before plans are finalised, the Environment Agency (EA) will be liaised with in relation to the environmental permits required.

Waste (England and Wales) Regulations 2016

The Waste (England and Wales) Regulations 2016 works towards implementing the revised EU Waste Framework Directive (2008/98) relating to some key components of waste operations; collection, recovery, transport and disposal of waste materials. From April 2016 it is not necessary to register in England as a hazardous waste producer if your premises produces or holds hazardous waste.

Environmental Protection Act 1990 (Part II)

Part II of the Environmental Protection Act 1990 sets out a regime for the regulation and licensing of the acceptable disposal of controlled waste (any household, industrial and commercial waste) on land. Unauthorised or harmful depositing, treatment or disposal of controlled waste is prohibited and enforced by criminal sanctions. Further, there is a broad duty of care on importers, producers, carriers, keepers, treaters or disposers of controlled waste to prevent harmful activities. The Proposed Development would fall under this duty of care. It also states that local authorities have a duty to collect controlled waste and to undertake recycling. Businesses who fail to co-operate with local authorities' arrangements will be subject to criminal penalties.

The Waste (Circular Economy) (Amendment) Regulations 2020

The Waste (Circular Economy) (Amendment) Regulations 2020 (SI 2020/904), transpose the EU's 2020 Circular Economy Package (2020 CEP) in England and Wales. These Regulations implement for England and Wales, and partially implement for Scotland and Northern Ireland, six amending EU Directives in the field of waste, namely Directives (EU) 2018/849, (EU) 2018/850, (EU) 2018/851, (EU) 2018/852, (EU) 2020/362 and (EU) 2020/363.

The amending Directives cover packaging and packaging waste, landfill of waste, end-of life vehicles (ELVs), batteries and accumulators and waste electrical and electronic equipment (WEEE).

National Planning Policy Framework 2021 (Ministry of Housing, Communities and Local Government, 2021)

The National Planning Policy Framework (NPPF) notes that the purpose of the planning system is to contribute to the achievement of sustainable development. The document identifies three dimensions to sustainable development, with an environmental dimension being one. As part of the environmental role, the document notes that efforts must be made to minimise waste generation and increase re-use and recycling. In the NPPF it is stated that during the planning stages of development, recycled or secondary materials should be prioritised over the use of primary material.

National Planning Policy for Waste (Department for Environment, Food and Rural Affairs, 2014)

This document sets out detailed waste planning policies and guidance to waste planning authorities in preparing their Local Plans. Of key importance is the requirement for waste planning authorities to identify sufficient opportunities to meet identified needs of their area for the management of waste streams. Particularly, waste planning authorities should work collaboratively in groups with other waste planning authorities and in two-tier areas with district authorities, through the statutory duty to cooperate, to provide a suitable network of facilities to deliver sustainable waste management.

Environmental Improvement Plan (Department for Environment, Food and Rural Affairs, 2023)

The Government's environmental improvement plan, spanning over a period of five years, outlines its policy objectives. Goal 5 emphasizes the aim of optimizing resource utilization and reducing waste generation, while Goal 6 focuses on the sustainable utilization of natural resources.

Our waste, our resources: A strategy for England (Department for Environment, Food and Rural Affairs, 2018)

The overarching aims of this strategy is to maximise the value of resource use and minimise waste and its impact on the environment. This strategy complements other government strategies such as the 25 Year Plan (2018), the Clean Growth Strategy (2017), the Industrial Strategy (2017), and the Litter Strategy (2017). This strategy will contribute to the delivery of five strategic ambitions:

- Work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025;
- Work towards eliminating food waste to landfill by 2030;
- Eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan;
- Double resource productivity by 2050; and
- Eliminate avoidable waste of all kinds by 2050.

Waste Management Plan for England (Department for Environment, Food and Rural Affairs, 2021)

The plan provides an analysis of waste management in England but does not introduce any new policies and aims to bring together existing waste management policies under one national plan. The waste hierarchy ranks waste management options according to what is best for the environment. This goes in the order of 'prevention, reuse, recycling, recovery and disposal', with disposal being the least preferred option.

At its core, the plan describes how the government intends to work towards a more efficient and sustainable approach to waste and resource use/management. The plan feeds off other policy documents including the 25 Year Environmental Plan (2018), the Resources and Waste Strategy (2018) and the Waste Prevention Programme for England.

Environment Act 2021

The Environment Act 2021 sets out how the UK is to protect and improve the natural environment. Regarding resources and waste management, the Environment Act introduces a series of measures which aim to change how the government, businesses and individuals produce and consume products, in line with targets set in '*Our Waste, Our Resources*' (2018). It contains powers to introduce clear product labelling, extended producer responsibility and establish deposit return schemes. Furthermore, the bill also stipulates a consistent set of materials that must be collected from all households and businesses, including food waste in order to make services more consistent across the country.

The Circular Economy Package: Policy Statement (Department for Environment, Food and Rural Affairs, 2020)

The Circular Economy Package identifies steps for the reduction of waste and the establishment of a credible long-term path for waste management and recycling. Many of the themes and provisions covered within the Circular Economy Package relate to areas of resources and waste policy where the UK nations are already actively involved through existing measures or work underway to take forward commitments made in their respective domestic waste strategies. Furthermore, the bulk of the 2020 Circular Economy Package measures are relatively small technical changes and/or the implementing legislation simply adopts the same wording as that of the Directive. The UK government has also stated that the departure from the EU will not weaken any current or future environmental protections planned.

Waste Prevention Programme for England (Department for Environment, Food and Rural Affairs, 2021)

The Waste Prevention Programme for England articulates the actions for government and for others which result in reduced waste arisings and increased resource efficiency. The aim of the Programme is to improve the environment and protect human health by supporting a resource efficient economy, reducing the quantity and impact of waste produced whilst promoting sustainable economic growth. This consultation is now closed and the feedback from all respondents is undergoing analysis.

Building Regulations 2010 Drainage and Waste Disposal 2015 Edition (HM Government, 2015)

The HM Government Building regulations detail waste disposal requirements and relevant legislation for both domestic and non-domestic land uses, including the relevant design requirements.

A.2 Regional policies and guidance

Oxfordshire's Resources and Waste Strategy 2018 - 2023

Oxfordshire's Resources and Waste Strategy 2018-2023 aims to reduce the amount of waste generated in the region and promote recycling and reusing. The strategy seeks to improve the efficiency of waste collection and treatment methods and aims to divert as much waste as possible from landfill. The strategy also includes initiatives to increase public awareness of waste reduction and encourage sustainable consumption habits. Overall, the goal is to create a more sustainable waste management system for the region.

Oxfordshire Minerals and Waste Local Development Scheme (Twelfth Revision) 2021

Replacing the Minerals and Waste Local Plan 1996, the document sets out Oxfordshire's vision, objectives, spatial strategy, core policies and implementation framework for the supply of minerals and management of waste in Oxfordshire over the period to the end of 2031. It is currently in its draft preparation stage and is set to be adopted in late 2024 and shall be delivered in two parts; core strategy and site allocations.

Oxfordshire County Council 2020 Climate Action Framework

In response to the climate emergency, Oxfordshire County Council have set out their climate action plan which highlights the need to work with the supply chain to decarbonise operations as well as working towards a more resilient and circular economy. Through their policies, Oxfordshire aim to maximise waste reduction and recycling, target zero growth in waste per person, and support more sustainable food practices.

Oxford City Council Technical Advice Note (TAN) 9: Waste Storage, 2021

This Technical Advice Note outlines guidance on waste storage for different types of developments (residential, non-domestic, change-of-use) within Oxfordshire. This includes the siting, design, requirements for access on roads, accessibility, movements, lighting and security, etc. of waste storage. This document has been prepared as a guide and is meant to be read in conjunction with national building regulations.

A.3 Local policies and guidance

Emerging Draft Cherwell Local Plan 2040 (not currently adopted)

The Emerging Draft Cherwell Local Plan 2040 includes policies and proposals relating to waste management in the Cherwell district. Some of the key points are:

- The plan aims to reduce the amount of waste produced in the district and promote waste reduction, reuse, and recycling.

- It proposes to increase the recycling rate in the district to 65% by 2035.
- The plan identifies sites for waste management facilities, including a new waste transfer station and household waste recycling centres.
- It proposes to support the development of new technologies for waste management, such as anaerobic digestion and waste-to-energy plants.
- The plan also sets out policies to ensure that new development in the district includes appropriate waste management facilities and promotes sustainable waste management practices.
- Overall, the Emerging Draft Cherwell Local Plan 2040 aims to promote sustainable waste management practices and reduce the environmental impact of waste in the Cherwell district. However, it is important to note that this plan is still in draft form and has not yet been adopted.

Cherwell Residential Design Guide – Supplementary Planning Document, Master planning and architectural design guidance, Adopted 16 July 2018

In response to a population growth and circular economy push, Cherwell has developed a Residential Design Guide which promotes energy strategies and a reduction in construction waste by using modern prefab technology.

After consultation with the council we understand that collection points should ideally be within 5m but less than 20m as jointly stated in the Planning and Waste Management Guidelines, and Cherwell Residential Design Guide. If bin stores are visible from the street; these should be of a simple design screened by vegetation or enclosed by walls of the same material as the property.

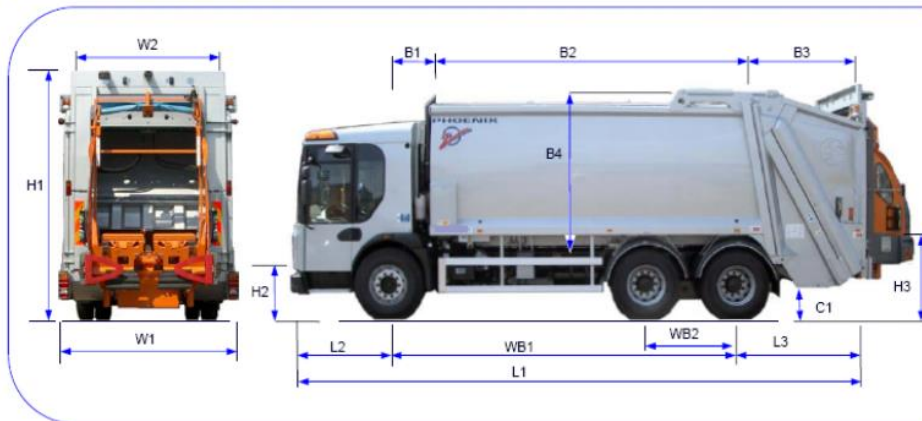
Planning and Waste Management Guidelines, Design Advice, October 2009

Currently Cherwell Council adopt a standard local authority waste collection service. Through consultation the Guidelines were provided by the Council on 17 November 2022. The document outlines the design requirements for solid operational waste generation, storage, and collection.

A.4 Waste Collection Vehicle

The waste collection vehicle specifications below were provided by the Council on 17 November 2022.

Phoenix 2 Series - Smooth Body RCV 6 x 4 Wide EURO 4 - WIDE TRACK



| Vehicle Model | Phoenix 2-18W 6x4 | Phoenix 2-20W 6x4 | Phoenix 2-23W 6x4 |
|--|----------------------|----------------------|----------------------|
| Compacting Body volume (m ³) | 19.45 | 22.20 | 24.07 |
| Chassis type | Elite 2 6x4 | Elite 2 6x4 | Elite 2 6x4 |
| Maximum GVW (kgs) | 26000 | 26000 | 26000 |
| Unladen weight - no options (kgs) (a) | 12720 | 13180 | 13280 |
| Front axle Plated Weight | 7100 kgs * | 8000 kgs | 8000 kgs |
| Rear Bogie Plated Weight | 19000 kgs | 19000 kgs | 19000 kgs |
| WB1 Wheelbase | 4750 | 5300 | 5600 |
| WB2 Axle 2 to 3 | 1385 | 1385 | 1385 |
| TWB Theoretical Wheelbase | 4200 | 4670 | 4840 |
| L1 Overall Length (excluding binlift) | 8490 | 9090 | 9390 |
| Overall length - tailgate raised | 9620 | 10220 | 10520 |
| L2 Front overhang | | 1665 | |
| L3 Rear overhang | | 2125 | |
| Rear overhang - tailgate raised | | 3255 | |
| W1 Overall width | | 2530 | |
| W2 Width inside hopper | | 2200 | |
| H1 Overall height at exhaust tip | | 3500 (nominal) | |
| Overall height - tailgate raised | | 5050 | |
| Overall height - at RCV body | | 3420 | |
| H2 Floor height (inside cab) | | 790 | |
| H3 Manual loading height - open-back | | 1050 | |
| B1 Axle 1 to front of RCV body | | 650 | |
| B2 Body floor length | 4660 | 5260 | 5660 |
| B3 Tailgate length | | 1515 | |
| B4 RCV body height from chassis | | 2455 | |
| C1 Ground Clearance - Rear unladen | | 410 | |
| Approach angle | | 15.5° | |
| Departure angle | | 16° | |
| Turning Circle - metres (b) | 16.5 | 18.9 | 19.9 |

(a) For 4 and 5 man crew seat versions, add 100kg to weight. Typical bin-lifting equipment will add up to 900kg
 (b) Turning circles quoted are kerb-to-kerb with standard tyres, for wall-to-wall figures add 1600mm.
 * In open-back form front axle plating at 8000kg required with 315/80R 22.5 tyres. # Optional Cycle guards shown for illustration purposes only

NOTE: Unless otherwise stated, all dimensions are nominal, in mm and represents an unladen condition. All specifications are subject to manufacturers tolerances. An allowance of +/- 2% should be made for all weights. All weights are in kgs and include AdBlue, 30 litres of fuel, oil and water. Additional equipment may alter dimensions and weights quoted. Weight data is based on Volvo D7E 290 bhp engine and Allison MD3000 series gearbox.

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