

WASTE MANAGEMENT SPECIFICATION

New Builds and Refurbishments

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PURPOSE

This document sets out the specification for internal and external waste containers for University projects. This specification ensures waste management planning:

- Meets the standard required to facilitate the University's waste and recycling targets,

- Provides the correct and consistent facilities across the campuses for building occupants.
- Provides sufficient information as early as possible in the project to allow design of waste management facilities which are appropriately and conveniently located, and are integrated with the overall project design.

It is recognised that some of the existing litter bins are not the best style to meet the needs of campus users. Therefore, as bins are replaced, or for new purchases of bins the following guidance should be followed. This is to ensure that over time the stock of bins moves towards a more accessible and acceptable design specification.

SCOPE

This waste management specification is applicable to the University's UK campuses. It covers:

- The creation of any new building on campus that will be occupied by staff, students or on a commercial basis (i.e. non-occupied spaces such as storage and substations are excluded).
- Any refurbishment of the existing portfolio of buildings on campus, which results in any of the following:
 - Significant change of building use or occupancy levels, which changes expected levels of footfalls or pedestrian traffic to/from buildings.
 - Significant alterations to the building layout such that new entrances/exits to the building are created and footfall patterns to/from buildings are altered.
 - Significant alterations to the building layout such that existing entrances/exits to the building are now expected to have significantly increased footfall.
- Office moves managed by the Estates Projects Team,
- Tenanted office areas managed by Property Services, where Cleaning Services manage the removal of waste from the internal containers.
- Projects to re-model external spaces on the University's campuses.

It excludes:

- Waste produced as part of the construction process, which should be considered within the design stage.
- Tenanted areas managed by Property Services, where Cleaning Services do not remove waste from the internal containers.
- Premises solely occupied by commercial tenants or subsidiary companies.
- The requirement for hazardous or clinical waste facilities which may arise from the above activities. Please contact waste@reading.ac.uk for more information

DEFINITIONS

Internal containers: These are recycling and general waste bins which are found within a building e.g. office environments, and are emptied on a regular basis by Cleaning Services.

External containers: These are the large recycling and waste bins located external to the building into which Cleaning Services place refuse collected from the internal containers. External containers for most University buildings typically consists of 1100L wheeled 'Eurocart' bins (wheelie bins).

Litter bins: These are fixed position external bins commonly found adjacent to footpaths and building entrances.

Desk-side bin: These are any small bucket or other type of small container used for any type of waste within an office. These are commonly spotted under or adjacent to desks, frequently within small offices.

Approved graphic: This is the graphic which has been approved by Sustainability Services which provides adequate written and pictorial information for staff and students. This approved graphic is flexible in its design and can be adapted to meet the needs of specific recycling stations.

Hazardous waste: Waste is considered hazardous when it could contain substances, or has a property which makes it, or might make it, harmful to health or the environment. This typically arises from laboratory activities, but common office items can also be classified as hazardous, such as batteries.

Clinical waste: also known as “healthcare” waste. Clinical waste is material which could cause disease in humans or other organisms, waste contaminated with medicines, or waste containing sharps, bodily fluids or other biological materials.

Paper cup recycling bin: an internal recycling bin specifically for the separation of waste liquids and paper cups. Referred to in this document as “cups bins”.

LEGAL REQUIREMENTS

Waste at the University should be managed in accordance with the Controlled Waste (England & Wales) Regulations 2012 (as amended). In the context of this specification, the requirements of these regulations is for wastes to be separated correctly and stored securely pending collection. The Waste (England and Wales) Regulations 2011 also enforces the requirement for businesses to consider the waste hierarchy as a priority.

PART 1: INTERNAL CONTAINERS

Placement and capacity specification

- Internal waste bins must be grouped together into “**recycling stations**” as per the following table.
- Consideration of whether bespoke, in-built waste facilities would be appropriate to ensure that waste bins are appropriately placed and do not detract from the overall design of the building.
- Allowance must be made in the project design for space in corridors, large teaching spaces and multiple occupancy offices for a recycling station.
- Desk-side bins are **not** to be provided.
- Placement of containers in corridors and communal areas is encouraged, but fire escape routes and safety areas need to be taken in consideration.
- Where paper cup recycling bins are specified, there must be a suitable sink within a reasonable distance into which waste liquids from the cups bin reservoirs may be emptied.

OCCUPANCY TYPE	WASTE STREAM PROVISION	TOTAL CAPACITY REQUIRED	LOCATION NOTES
Open plan office	<ul style="list-style-type: none"> • General waste • Mixed recycling • Paper and card • <u>Strictly no desk-side bins</u> 	150L per 10 occupants (50L per waste stream)	To be placed within open plan office. A combination of fewer large capacity bins, or multiple smaller capacity bins may be used as appropriate for the room layout.

OCCUPANCY TYPE	WASTE STREAM PROVISION	TOTAL CAPACITY REQUIRED	LOCATION NOTES
Individual offices, small multiple occupancy offices, break out areas or meeting rooms	<ul style="list-style-type: none"> • General waste • Mixed recycling • Paper and card • <u>Strictly no desk-side bins</u> 	150L per 10 occupants (50L per waste stream)	To be placed in corridors outside of offices to serve multiple rooms. A combination of fewer large capacity bins, or multiple smaller capacity bins may be used as appropriate.
Print rooms	<ul style="list-style-type: none"> • Paper and card only 	100L per room, unless served by corridor bins.	To be placed within room, ideally adjacent to printer.
Staff kitchenettes and common rooms	<ul style="list-style-type: none"> • General waste • Mixed recycling • (<i>Paper and card</i>) 	100L per room, or 150L with paper and card. (50L per waste stream)	To be placed close to either the entry/exit doors or the kitchenette area. Where a common room has a large seating/study area, paper and card is to be included.
Large classrooms (c. 30+ seats)	<ul style="list-style-type: none"> • General waste • Mixed recycling 	200L per 30 occupants (100L per waste stream)	To be placed in the corridor close to the entry/exit doors or additional stations may be placed towards the back of the room to meet capacity requirements.
Small classrooms (c. 30 or fewer seats)	<ul style="list-style-type: none"> • General waste • Mixed recycling 	100L per room occupants (50L per waste stream)	To be placed outside in the corridor close to the classroom doors. One larger station may be used to serve multiple rooms.
High traffic foyer areas (e.g. adjacent to large lecture theatres or cafes)	<ul style="list-style-type: none"> • General waste • Mixed recycling • Paper and card • (<i>Paper cups</i>) 	300L + 1 cups bin for high traffic foyers (100L per waste stream, plus cups bin)	To be placed within the foyer at main through routes. Paper cups bin required where the building contains a café, or if there is a hot drinks vending machine nearby.
Low traffic foyer areas (e.g. not main route/ School Foyer).	<ul style="list-style-type: none"> • General waste • Mixed recycling • Paper and card • (<i>Paper cups</i>) 	150L + 1 cups bin for low traffic foyers (50L per waste stream, plus cups bin)	To be placed within the foyer at main through routes. Paper cups bin required where the building contains a café, or if there is a hot drinks vending machine nearby.
Catering – café (seating areas)	<ul style="list-style-type: none"> • General waste • Mixed recycling • Paper cups 	100L + 1 cups bin per recycling station (50L per waste stream, plus cups bin)	To be placed within convenient distance of café seating.
Catering – restaurant (seating areas)	<ul style="list-style-type: none"> • General waste • Mixed recycling • Food recycling • Paper cups 	150L per 30 dining spaces	To be placed within convenient distance of restaurant seating.
Catering – food preparation areas	<ul style="list-style-type: none"> • General waste • Mixed recycling • Food recycling • Paper and card 	Consultation with Catering required.	Consultation with Catering required.

OCCUPANCY TYPE	WASTE STREAM PROVISION	TOTAL CAPACITY REQUIRED	LOCATION NOTES
Laboratory/ Workshops	<ul style="list-style-type: none"> • General waste • Addition bins for specific waste stream such as Clinical waste. 	1x open aperture (or pedal-operated) general waste container at hand wash stations only	One general waste container to service hand wash stations only. Consultation with Technical Services and lab users regarding provision of other bins within labs.

Internal container colour coding

The standard University colour coding is as follows:

- General waste: Black (or dark grey)
- Mixed recycling: Lime Green
- Paper and card: Pastel Blue
- Food waste: Brown
- Glass recycling (external bins only): Aqua (240L bins) or light blue (1900L bottle banks)
- Cup recycling: Pink with suitable graphics/signage to denote cups.

Recommended internal containers

Projects may wish to design in-built containers which fit more aesthetically with the existing building or project design. In this case, the approved graphics (see table below) must be used; this can be adapted to a certain extent to meet the needs of the built-in container.

Otherwise it is expected that containers from the choices below will be used by the project. All containers must have adequate signage using the approved graphic. This means containers must either have a sticker applied to the front, a wall mounted backboard or a freestanding backboard suitable for the types of waste.



Name: Glasdon Nexus 100
 W: 544mm
 D: 397mm
 H: 1007mm (without sign kit)
 Capacity: 100L



Name: Glasdon Nexus 50
 W: 295mm
 D: 510mm
 H: 680mm (without sign kit)
 Capacity: 50L



Name: Straight EcoSort
Midi

W: 295mm

D: 590mm

H: 700mm

Capacity: 60L

Name: Straight
EcoSort Maxi

W: 295mm

D: 590mm

H: 825mm

Capacity: 70L



Example of a bespoke in-built recycling station



Name: Glasdon Eco Nexus cup recycling station

W: 526mm

D: 343mm

H: 881mm (without sign kit)

Capacity: 100L



Name: Glasdon Nexus Evolution Duo

W: 956mm

D: 430mm

H: 851mm

Capacity: 2x80L



Example recycling station approved graphics for internal bins. These can be wall mounted backboards, freestanding backboards or applied as vinyl stickers to the bin or other surfaces. These are supplied by our waste contractor, via Sustainability Services



Example of approved graphic predominantly used on external litter bins and bespoke recycling stations. These can be supplied via the University's CPS design and print team – please contact Sustainability Services for assistance.

Supply of internal containers

To request further information on containers or graphics, or if there is a specific need not fulfilled by the container types above, contact Sustainability Services (waste@reading.ac.uk). Both Glasdon (Nexus range) and Straight Manufacturing (EcoSort range) are registered suppliers to the University. Projects are welcome to arrange orders directly, although Sustainability Services are happy to assist if required. For graphics, please contact Sustainability Services for assistance.

All new builds and refurbishments are expected to cover the cost of internal containers within the project, and arrange labour to install bins and associated graphics. Where additional containers are required to meet the capacity or colour coding specification, or retrofitting is required to bring containers up to standard, the project will need to meet these costs and arrange installation.

PART 2: EXTERNAL BINS AND COMPOUNDS

For external litter bins, see section 3.

Capacity specification

Approximately 50% of the capacity of the external bins should be for general waste and 50% of the capacity for recycling. Sustainability Services can advise on the combination of external bins required. It is assumed that in most cases 1100L (1.1m³) wheeled external bins will be used.

OCCUPANCY TYPE	CAPACITY REQUIRED
Office, classroom spaces, and small cafés	2.6m ³ of external bin capacity is required per 1000m ² floorspace.
Catering (large canteens or catering outlets with 20 or more seats)	1.5m ³ of external bin capacity is required per 20 seats. Catering areas (large canteens) must have additional space allowance in bin compounds for 240L food waste bins and glass bins (either 240L or large bottle bells).
Laboratory intensive areas	3m ³ of external bin capacity.

External container dimensions



1100L (1.1m³) bins for general waste, mixed recycling, paper and card. This is the most frequently used bin type:

W: 1260mm

D: 1120mm

H: 1295mm



240L (0.24m³) bins for glass and food waste (180L (0.18m³) bins also used for food):

W: 580mm

D: 720mm

H: 1060mm



1900L (1.9m³) bin (glass waste only):

W: approx. 1300mm

D: approx. 1300mm

H: approx. 1900mm

Supply of external containers

External wheeled bins are supplied under contract by the University's waste management company and are booked by Sustainability Services (waste@reading.ac.uk). Please provide at least 1 months' notice before bins are required.

Bin compound design

External bin compounds for wheelie bins must be constructed using the specification in the table below. Where large buildings require servicing by bulk skips or compactors, due to the quantity of waste likely to be produced, compound size and location will need to be discussed in more detail with Sustainability Services.

CHARACTERISTIC	SPECIFICATION
Distance from building	At least 10m away from the building (for insurance purposes to minimise fire risk).
Compound Size	<p>Minimum floor space required per type of external bin to allow for siting and access:</p> <ul style="list-style-type: none"> • 1500mm x 1500mm for a 1100L bin. • 900mm x 1000mm for a 240L bin. • 1500mm x 2000mm, plus unobstructed headroom (these bins are emptied by hoist) for a 1900L glass recycling bank (large catering outlets only). <p>Additional space in the compounds (or a separate compound) should be provided where cafes/ restaurants are present. Cafés and restaurants must be allocated their own set of external bins for recharge purposes.</p> <p>Bin compounds must be large enough to allow all individual bins to be accessed without having to move or rearrange any containers.</p>
Location and access	<ul style="list-style-type: none"> • Transit route of 10m or less between the compound door and refuse vehicle. • Transit route to contain a dropped kerb if required, to provide at-grade access between the compound and the refuse vehicle. • Transit route to be wide enough to accommodate 1100L bins with space to allow people to pass. • Transit route to have smooth finish (i.e. no cobbled surfaces). • Transit route between the door of the building and the compound door must be as short as practicable for staff bringing waste from the building to the compound. • Access should be flat, or slope down from the compound with a maximum gradient of 1:12. • Access slopes should ideally run perpendicular to the compound entrance, not parallel to the compound wall. This is to reduce the manoeuvring of heavy containers around corners.
Lighting	If the compound is not well lit by e.g. adjacent street lights, dedicated lighting will need to be provided to ensure safe access during low light levels.
Security	Bin compound doors must have a fastening which can be secured by a padlock.

Compounds should be covered by CCTV where possible. This is to deter fly tipping.

Doors Bin compound doors should open outwards and should be on the side of the compound closest to the refuse vehicle access point. Doors must not be allowed to open over an adjacent footpath as this can block pedestrian access and cause a safety issue.

Walls

- Walls of bin compounds must be constructed in material which will withstand the weather and adequately screen the containers from view.
- Wooden construction is acceptable, provided that the wood is protected (e.g. painted) and the frame of the compound is metal to increase durability.
- Block built or metal mesh components may also be used. The mesh must be sufficiently dense to screen the containers.
- Walls must be high enough to discourage climbing or looking over the top.

Floors

- Floors to be smooth (i.e. not cobbled) and impermeable
- Floors to be as flat as possible, with a slight slope towards the door to allow rainwater runoff.
- No drains to be located within the compound.
- Compounds for catering waste to have a kerbed edge to allow for containment in case of catering oil spillage.

Vehicle access

Technical specifications of the refuse vehicles can be provided on request by Sustainability Services for the design of access routes. In general it is expected that:

- Access roads must be designed to withstand traffic from large lorries with adequate visibility and an adequate turning space.
- Designs requiring refuse lorries to reverse along an access road to service bins must be avoided where possible for safety reasons. A turning head or dog leg should ideally be provided on dead-end access roads to allow refuse lorries to turn around.
- Where reversing down an access road cannot be avoided, refuse lorries are not expected to reverse more than 12m and the access road must have a pedestrian footpath.
- Hatching or other traffic management measures will be put in place to prevent cars parking and blocking bins or turning points (especially important where buildings are serviced by skips or compactors).
- Adequate headroom beneath items such as trees should be allowed.

Where large buildings require skips or compactors due to the quantity of waste being produced, access requirements will need to be discussed in more detail with Sustainability Services.

PART 3: EXTERNAL LITTER BINS

Placement and access

In general it is expected that:

- In the majority of areas litter bins must be accessible by pedestrians from areas of hard standing (e.g. sited on or adjacent to paths).
- If there is a need to have a litter bin in an area which is not accessible from areas of hard standing, please contact Sustainability Services to ensure that the location is suitable to be included on existing routine emptying rounds.
- Hard standing will be designed to withstand frequent access from a small vehicle (currently a small electric vehicle) for the purposes of emptying the litter bins.
- Bins need to be located at main entrances/exits to buildings, but should be at least 10m away to ensure insurance/fire safety requirements are met.
- Litter bins must be located such that they do not block designated vehicular access routes (e.g. access for fire tenders) or where they could be struck by vehicles.
- Litter bins must be located such that they do not block access for e.g. wheelchair users to buildings or other campus features.
- If there are areas of high footfall expected/primary routes across campus, then litter bins should be located on these.
- Adequate headroom beneath items such as trees should be allowed.

Recommended litter bins and supply of bins

The recommended litter bin is the [Derby Double Slimline Recycling Bin](#) by Broxap (765mm wide x 422mm deep x 1015mm high). Broxap is a registered supplier to the University. Projects are welcome to arrange orders directly, although Sustainability Services are happy to assist if required. For graphics, please contact Sustainability Services for assistance. Where litter bins are the result of new builds, refurbishments or other campus developments, the project are expected to cover the cost of these and to arrange labour to install bins and associated graphics.

Any other types of external litter bin will be considered but must be agreed with Sustainability Services before purchase and installation to ensure consistent facilities are provided across the University Campuses. Unless there is a significant case for a bespoke design, litter bins should be an “off the shelf” design from the supplier. This is to minimise purchase cost and future maintenance costs and ensures that future installations can use the same design.

Specification for litter bins

The Derby Double Slimline Recycling bin by Broxap has been chosen as it meets the following criteria.

Aperture design:

- No lids or flaps (research on campus has shown that users dislike litter bins where lids or flaps have to be lifted).
- Apertures on the side of the bin only (no apertures on the top – this helps limit entry of rainwater).
- Rectangular aperture for both sides (general waste and mixed recycling).

The main body of the bin should be as follows:

- Ideally a smooth surface, to allow easy application (and re-application) of weatherproof vinyl signage underneath all apertures (for information on signage, please see the labelling section below).
- Without laser cut writing/images on the sides. This will allow bins to be updated more easily. Manufacturer's pre-set labelling of waste streams does not always match with the University's waste streams.
- Made of a durable material which is weatherproof and does not rust.
- Any coatings should be durable and not flake off.
- Signage using a Sustainability Services approved graphic, which must be a minimum of 30cm x 20cm per waste stream, however larger sizes are preferred where possible.

Colour:

The overall colour of the litter bin should follow the current themes for campus street furniture, currently dark grey. Unless there is a significant case for a bespoke colour, litter bins should be a standard "off the shelf" colour from the supplier, to minimise purchase cost, maintenance costs and future issues of colour matching (Broxap Anthracite Grey RAL 7016).

Further requirements are as follows:

- Litter bins to have an integrated disposal point for cigarette butts.
- The capacity of the bins needs to be a minimum of 80L per waste stream, and the bin must contain internal metal liners. If bins are required to have a capacity of greater than 100L per waste stream, then please discuss this with Sustainability Services to ensure that the emptying of these can be accommodated.
- Litter bins must be firmly fixed to the ground to prevent unauthorised movement/tipping.

Waste streams

It is expected that the only waste streams collected within fixed external litter bins will be general waste and mixed recycling (e.g. bottles and cans). If the project foresees the need for other waste streams to be catered for, please discuss this with Sustainability Services to ensure that this can be accommodated on the existing routine emptying services.

Please note that external glass recycling bins are provided by Sustainability Services via the University's appointed waste contractor and so do not need to be provided as a fixed litter bin. However the project will need to provide space for glass recycling bins to be strategically located near vehicle access roads (to allow collection) and buildings with high footfall.

Labelling

Labelling requirements are as follows:

- Labels/graphics or signage must match the standard University colour coding:
 - General waste: Black
 - Mixed recycling: Green
- All containers must have adequate signage using a graphic approved by Sustainability Services to ensure that information on litter bins is consistent across the campus. This means

containers must have a large and visible sign applied underneath all apertures. It is expected that signage will be weatherproof vinyl which can be removed and re-applied in future, to allow bins to be maintained/updated. Examples of an approved graphics are shown below.

- To a certain extent, this approved graphic is flexible in its design and can be adapted to meet the needs of specific recycling stations, however, please discuss alterations with Sustainability Services. However, the signs must incorporate both pictorial and written information on the waste streams.



Example of approved graphics already in use.

Version control

VERSION	KEEPER	APPROVED BY	APPROVAL DATE
1.0	Sustainability Services	Dan Fernbank	11/08/16
2.0	Sustainability Services	Dan Fernbank	24/10/17
3.0	Sustainability Services	Dan Fernbank	06/01/23