

Waste management in office buildings



Advice for office managers on minimising and managing waste from commercial premises, and on the procurement of waste management companies

WRAP helps individuals, businesses, and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change.

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1.0 Introduction

This guidance document provides practical advice for office managers in reducing and recovering waste during building operations. The following opportunity areas are addressed: measuring and targeting waste reduction; developing a segregation strategy; and the appointment of a waste management company.

The Landfill Directive Pre-treatment Regulations¹, Landfill Tax escalator² and Duty of Care³ make it legally and financially important that office waste is well managed. In addition, central Government has applied the following targets for waste reduction by its own Departments, agencies and non-departmental public bodies in England:

- reduce waste arisings on FY2004/05 figures by 5% by 2010, and by 25% by 2020; and
- increase the proportion of waste arisings recycled to 40% by 2010 and 75% by 2020⁴.

A variety of case studies (see Appendix A for examples) and guidance documents have been published covering elements of operational waste management. However, there is little co-ordination between them. The following Sections do not seek to duplicate the information already available, but aim to provide a single point of reference on current policy targets, accepted good practice and practical delivery, in addition to signposting more detailed information.

2.0 The waste hierarchy

Good practice across the UK is based on the implementation of the "waste hierarchy":

The waste hierarchy illustrates that the most effective way in which to reduce waste production is to design it out. An example of this in an office could be the use of electronic document control, rather than reliance on hard copy. Disposal to landfill should always be a last resort.

Figure 1: The waste hierarchy



¹ These regulations require waste producers to pre-treat their wastes before sending them to landfill, or ensure others do so on their behalf.

² Landfill Tax is £40 per tonne of non-inert waste in FY2009/10 (inert waste is £2.50 per tonne) and this will increase by £8 per tonne per year until at least FY2013/14.

³ Defra consulted in 2009 on a revised Code of Practice for the Duty of Care of organisations which produce and handle waste. See <http://www.netregs.gov.uk/netregs/63197.aspx> and <http://www.netregs.gov.uk/netregs/95015.aspx> for more information on Duty of Care.

⁴ For further information on targets for Sustainable Operations on the Government Estate (SOGE), see www.ogc.gov.uk/sustainability_soge_targets.asp. The SOGE targets are being revised in 2009.

3.0 Steps for delivery

There are six steps to effectively managing office waste.



This Section of the guidance describes the key activities required for the successful delivery of an office waste management programme.

3.1 Step 1 – Gather data

A robust waste management scheme will be based on measuring improvements against baseline performance. Therefore, the first action required is to quantify the current waste arisings from each office; ideally this should include a breakdown of wastes from different floors or functional areas within each office. As well as providing a baseline for measuring success, this exercise will identify offices or areas that are generating above-average quantities of waste.

Guidance on carrying out waste audits is available from a number of sources. These provide generic information on waste arisings as relevant to offices, and indicate possible disposal routes for a number of typical waste streams. Two such sources are:

- British Council of Offices (BCO) Best Practice Guide to Environmental Management in Offices; and
- Waste Online⁵ “Waste at Work” Information Sheet.

Office managers can use the available guidance to develop their own standard format for measuring and reporting waste, to suit their organisation’s requirements. Whilst absolute waste arisings provide a core measure of both cost and impact, relative efficiency metrics such as tonnes of waste per full-time equivalent (FTE) or per m² of occupied office area will provide a better indication as to the relative performance of different areas and the potential for improvement. Understanding the relative performance of different office areas will be an important tool for determining where to focus resources to achieve improvement.

When establishing the baseline position it may also be useful to undertake or commission a waste stream quality audit. This will determine the content of each segregated waste stream and extent of contamination. Some waste management companies (WMC) will apply a penalty charge where waste streams are contaminated with non-recyclable materials. In some cases, this can be carried out on a regular basis as an additional service from the WMC.

3.2 Step 2 – Identify waste reduction options

Waste reduction programmes should reflect the findings of the baseline waste information and priorities will vary from office to office, e.g. depending on the activities being undertaken and the presence of facilities such as canteens. Waste reduction measures will fall into two broad categories: 1) raising awareness of waste and thereby encouraging occupants to reduce waste arisings; and 2) changing processes, technologies or products so as to prevent wastage.

Some examples of each approach are shown in Box 1, and numerous further examples can be found in the following sources:

- Envirowise website⁶;

⁵ www.wasteonline.org.uk/resources/InformationSheets/WasteAtWork.htm#_reduction

⁶ www.envirowise.gov.uk/uk/Envirowise-in-Scotland/Public-Sector-Support-in-Scotland/Council-Offices/Resource-Efficiency/Waste-Office.html (requires registration)

- Green Efficiency: Running A Cost-Effective Environmentally Aware Office CD ROM Toolkit⁷;
- the British Council of Offices (BCO) Best Practice Guide to Environmental Management; and
- Waste Online⁸.

Box 1: Examples of waste reduction initiatives

Awareness / operational measures

- Make waste a performance measure for a senior manager / director in each office
- Remove bins by each staff desk, thereby raising awareness of the quantities of waste that are being generated and the options for segregating waste streams for recycling
- Regularly check computerised mailing lists and remove duplicates and out-of-date addresses
- Form relationships with charities / other organisations that may have use for surplus furniture or could recondition it for resale
- Provide regular updates to staff in the form of posters / emails / intranet pages on waste and recovery rates
- Organise competitions between offices or office areas
- Bulk buy to reduce the amount of packaging
- Investigate composting of waste food, or look at central composting through the local authority
- Reuse out-of-date headed paper and wasted printouts as scrap / notebooks
- "Unsubscribe" from senders of junk mail
- Send toner cartridges for recycling
- Ring-fence savings achieved from waste reduction activities to contribute towards staff social activities or charitable donations

New processes, technologies or products

- Maximise the use of electronic media for dissemination of information both internally and externally (and consider how these should be designed to facilitate their being read on-screen and avoid the need for printing)
- Ensure that printing / copying equipment provides double-sided prints and set this up as the default option for photocopiers and staff computers
- Instigate a print release scheme (where the user has to formally 'pull' their printing to a specific printer); this will reduce wastage of printing that is not collected
- Raise awareness of software options to print more than one page to a side
- Where vending machines are used for hot drinks, arrange collection for recycling – and provide recycled plastic cups for use with the machine and/or encourage staff to use reusable mugs
- Work with in-house catering staff or contractors to identify opportunities (and contractual incentives) to reduce food waste through:
 - control of ordering for working lunches;
 - active management of the quantities cooked in canteens;
 - control of stock ordering; and
 - menus that make use of "leftovers".

⁷ www.envirowise.gov.uk/uk/Press-Office/National-Archive/New-CD-ROM-toolkit-guides-companies-towards-a-more-efficient-workplace.html

⁸ www.wasteonline.org.uk/topic.aspx?id=22

3.3 Step 3 – Determine segregation and storage strategy

The results from the waste audit carried out as Step 1 will indicate the waste streams generated in the office, which can be used as the basis for a segregation strategy. Typical waste streams may include the following:

- paper
- cardboard
- printer and toner cartridges
- plastic or paper cups
- metal drinks cans
- stationery
- food packaging
- furniture
- batteries
- electrical equipment.

For wastes that cannot be easily segregated and recycled, consider whether alternative products could be used that are more easily recycled.

The following guidance sources set out minimum requirements for recyclable waste storage:

- BREEAM Offices 2008⁹;
- the British Council of Offices (BCO) Best Practice Guide to Environmental Management; and
- Waste Online¹⁰ “Waste at Work” Information Sheet.

3.4 Step 4 – Set targets

Good waste targets meet SMART criteria in that they are:

- **Specific** – state the scope of wastes and operational activities that are included;
- **Measurable** – be clear about how progress will be measured, e.g. in tonnes or m³ of waste (per m² of floor space or FTE) that is sent to landfill;
- **Achievable** – the targets should reflect the findings of the baseline survey and be based on:
 - external benchmarks;
 - national targets (e.g. in the case of Government Departments); or
 - what is believed achievable based on the likely impacts of known measures;
- **Relevant** – reflect the impact of actions that the organisation will take; and
- **Time-based** – they include a date by which the target will be achieved.

The waste targets for Government Departments are shown in Section 1.0. An example from the private sector is the Land Securities¹¹ target for 2009/10 which is “*To divert 95% of office waste arising from our own head office premises from landfill (applies only to 5 Strand and 11 Strand; excludes hazardous waste but now includes catering waste)*”.

The Green Efficiency: Running A Cost-Effective Environmentally Aware Office CD ROM Toolkit provides further guidance on setting waste reduction and recovery targets.

⁹ www.breeam.org/page.jsp?id=17

¹⁰ www.wasteonline.org.uk/resources/InformationSheets/WasteAtWork.htm#_reduction

¹¹ Further information on the full range of Land Securities’ environmental targets is set out at www.landsecurities.com/websitefiles/Targets%202009%2010%20with%20metrics.pdf

3.5 Step 5 – Appoint a waste management company

The role of the WMC in the delivery of the waste management strategy will be primarily in the collection and subsequent processing of waste streams. There are, however, additional services which can be provided, assisting the office manager in the successful implementation and reporting of the strategy, such as:

- quality audits to ensure there is no contamination of segregated waste;
- guidance / facilities / information to support waste segregation;
- feedback on waste volumes collected; and
- confirmation of destinations for waste streams (e.g. waste to landfill, recycle/reused, incineration/energy from waste, hazardous waste).

Guidance on the appointment of a WMC is provided in Section 4.0.

The NHS Purchasing and Supply Agency (NHS PASA) provides a detailed model Contract Specification for the supply of waste management services¹². The wording includes the option for the Client to “explore potential profit/savings sharing initiatives with the Contractor” associated with waste reduction, reuse and increased recovery.

3.6 Step 6 – Monitor progress

The final step in the implementation of an office waste management strategy is in the calculation and reporting of the results.

Office waste disposal will typically provide the following data:

- **volume of waste collected by stream** – office waste is generally collected and measured at site in volume terms, and then mixed with the waste of other offices during a ‘milk-round’ style collection system; however, large offices may have a compactor and a single collection and therefore tonnage data may be available;
- **waste recovery rates** – rates will be different for segregated and mixed waste streams; for mixed wastes, the recovery rate reported will typically be an average of all waste received by a materials recovery facility.

There are a number of guidance sources available for reporting methodology, including:

- British Standards Institution Publicly Available Specification PAS402 ‘Waste Resource Management – Specification for Performance Reporting’¹³;
- draft HM Treasury guidance on ‘Public Sector Annual Reports: Sustainability Reporting’¹⁴; and
- Defra’s reporting guidance¹⁵ and Environmental KPI document¹⁶.

There are, however, a number of differences in terms of the units used in quantifying amounts of waste. Certain sources use tonnes of waste per million pounds in turnover, which is one way of normalising the data to allow comparison with other organisations.

¹² www.pasa.nhs.uk/PASAWeb/NHSprocurement/Sustainabledevelopment/Wastemanagement/Waste procurementguide.htm

¹³ www.bsigroup.com/pas402

¹⁴ http://www.hm-treasury.gov.uk/d/09_07_frem_exposure_draft_hmt_draft_sustainability_reporting_guidance.pdf

¹⁵ <http://www.defra.gov.uk/environment/business/reporting/>

¹⁶ www.defra.gov.uk/environment/business/reporting/pdf/envkpi-guidelines.pdf

4.0 Procurement of facilities management and waste management companies

This Section provides guidance on identifying suitable Waste Management Companies (WMCs), and on how to procure their services.

4.1 Considerations

When selecting a WMC, consider the following:

- their average recovery rates for the key wastes that are likely to be generated;
- their ability to collect segregated waste streams (such as paper¹⁷, food waste, plastics etc) and capacity to segregate mixed wastes off-site with high efficiency;
- collection frequencies offered (particularly in relation to available storage capacity for waste materials);
- their basis for charging, e.g. are costs based on numbers of collections, quantity of waste managed or simply an annual charge – always seek a contract where costs are based on a controllable element (ideally the quantity of waste) as this provides a direct financial incentive to reduce waste;
- their experience and capacity to support effective waste reduction and segregation (e.g. where the contractor is also a facilities management company).

To support the identification of a suitable WMC, WRAP has produced the following guidance:

- a tool to locate local WMCs¹⁸; and
- a leaflet detailing how to select a WMC that also contains information on Duty of Care requirements for office managers¹⁹.

4.2 Pre-qualification questionnaire

Using a short PQQ to obtain standard data on current performance and services can help office managers make an informed choice when selecting a WMC. Where it is the job of a third-party FM company to select the WMC, use of the questionnaire could be imposed by the office manager along with a grading system. Some examples of appropriate questions are:

- which waste streams do you collect?
- what are the destinations of each collected waste stream (e.g. energy from waste, incineration, reuse, recycle, landfill)?
- based on the completed Environment Agency Waste Returns, what percentage of the waste you process goes to: energy from waste, incineration, reuse, recycle, landfill?
- is your organisation certified under an Environmental Management System?

4.3 Model procurement clauses

Model clauses in this Section can be used by the office manager when procuring a WMC, either directly or through a facilities management company. Clauses in WMC contracts should require that feedback be provided on:

- the amount of waste collected;
- recovery rates; and
- destinations for waste streams.

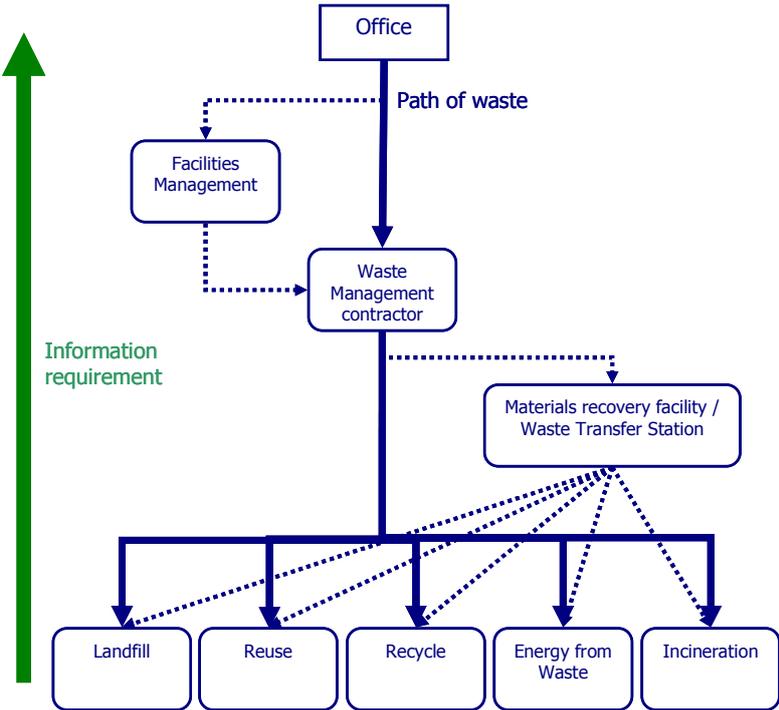
This information will allow office managers to report accurately on their waste performance and identify how to improve office waste management.

¹⁷ If there is no catering, the percentage of paper in the waste stream can rise to 80% according to a major property developer.

¹⁸ www.recycleatwork.org.uk/

¹⁹ www.wrap.org.uk/document.rm?id=5319

Figure 2: Information required for the operation of a waste management strategy



The above diagram illustrates the flow of information required for the operation of a waste management strategy. It is a legal requirement for each of the waste handling organisations shown to complete a monthly Environment Agency Waste Return Form. The EA Waste Return Form provides data on the amount of waste received and the destination to which it is sent. These are the data which the office manager requires.

A set of model clauses for invitations to tender and contracts is proposed below. These can be used as a basis for appointing contractors and amended as appropriate to the services in question. The clauses assume that the office manager will want a Waste Recovery and Reduction Plan at each location. Further clauses should be added to reflect specific requirements regarding collection times, frequency, etc.

4.3.1 Invitation to tender

“We expect our Waste Management Contractor to play a proactive role in helping us to reduce our waste arisings and the proportion of this waste sent to landfill. This will include working with us to:

- understand our key waste streams and the opportunities for better managing these in line with the waste hierarchy (i.e. waste prevention, reduction, reuse, recycling, and recovery (for energy), before disposal);
- set SMART (i.e. Specific, Measurable, Achievable, Relevant and Time-based) targets for reducing our total waste arisings and the proportion sent to landfill [*any existing targets can be included here*];
- implement initiatives that will help us meet our targets (please provide examples of suitable initiatives that you think will be effective and provide value for money);
- gather accurate data on the quantity, composition and destinations of our waste (see below); and
- verify your performance in a robust and efficient manner.

Specifically, the successful Contractor will develop and implement a Waste Reduction and Recovery Plan (WRRP) covering each site for which they are responsible. The WRRP will include:

- a forecast of the likely quantity and composition of wastes to be managed;
- proposed approaches to waste reduction, reuse and segregation/recovery for the most significant sources of waste together with plans for implementing these approaches;
- assessment of the value-for-money of investment in systems for reducing, reusing or better managing waste

- provide details (including dates) of those investments that will form part of your service if appointed;
- targeted waste recovery rates for each waste stream with evidence to demonstrate that this level of waste recovery is achievable; and
- processes for reporting (see below) and verification of waste arisings.

The WRRP should consider the full duration of the contract and set out how you will help us to achieve year-on-year reductions in waste levels and the amount of waste sent to landfill. This should include any training and information for our staff.

Each prospective Contractor should provide a draft of the WRRP for [*insert site or list of sites*]; we will wish to finalise the detailed actions of the plan prior to appointment, and the plan will form part of your contract with us.

We require, as a minimum, waste management contractors to report the total waste collected from each facility, broken down into different waste streams where these are known. For overall waste and each waste stream, we require information on the percentage of this waste that is:

- reused;
- recycled;
- recovered as energy from waste;
- incinerated without energy recovery; and
- sent to landfill.

Reports must be submitted on a [*monthly*] basis (within [*2*] weeks of the end of the [*month*]).

Each prospective Contractor should provide details of your systems for managing and sharing waste data and your processes for assuring the quality of these data.”

4.3.2 Contract clauses

“The Contractor will work with [*company name, department*] to plan and implement suitable waste management and recovery processes and then report on performance in line with the Waste Reduction and Recovery Plan (WRRP).

Implementation of the Waste Reduction and Recovery Plan

The Contractor will work in line with the measures agreed in the WRRP (and any agreed revisions thereof). This will include:

- fulfilling all statutory waste handling requirements, such as Duty of Care Regulations;
- implementing measures to reduce waste arisings and manage wastes so as to increase their potential for recovery; and
- achieving the plan targets of diverting a minimum of [*state target*] of overall waste from landfill [*and add other targets included in the WRRP, e.g. for waste reduction*].

Monitoring and reporting

The Contractor will report [*monthly*] (within [*2*] weeks of the end of the reporting period) in an agreed form [*insert reference e.g. template to be used*] the total waste collected from each facility, broken down into different waste streams where these are known. For overall waste and each waste stream, the Contractor will provide information on the percentage of this waste that is:

- reused;
- recycled;
- recovered as energy from waste;
- incinerated without energy recovery; and
- sent to landfill.

Review of the Waste Reduction and Recovery Plan

The Contractor will review the agreed WRRP for each facility on an [*annual*] basis and identify the need for revisions to the Plan to reflect performance, changes in occupancy and use patterns, and the availability of new systems for avoiding or better managing waste.

Revisions to the WRRP must be agreed in writing before implementation.”

5.0 Summary

There is a great deal of information and guidance available on waste management in offices. Considerable reductions in waste to landfill are achievable by prioritising key sources of waste. The model contract clauses described here will support the successful development, implementation and reporting of a waste reduction and recovery plan.

Successful waste reduction and recovery programmes at work need four key ingredients:

1. A motivated and informed workforce

- Staff will want to know why they are being asked to change their behaviour as well as how to adopt the new practices. They will also want to be told what difference their new behaviour is making. Incentives or rewards for groups of staff to recognise recycling achievements can help motivation. Clear communications about new systems and how they should be used will be essential. Recruitment of informal staff champions can also support change.

2. Practical and convenient facilities for the collection or separation of recyclable material

- Providing sufficient clearly-marked containers of the appropriate description for the recycling scheme in force is essential. The location of the containers needs to be carefully considered to maximise use and containers must be emptied regularly.
- Where office services are out-sourced, contractors need to be fully brought into the scheme; their staff should be trained and motivated in the same way as directly-employed staff.

3. A waste contractor who will arrange to collect and recycle the material from the premises

- Commercial waste recycling services are developing fast in response to rising Landfill Tax but different contractors offer different services and have different charging regimes. Some contractors may be prepared to offer an integrated recycling service for larger sites covering the provision of bins, the separation of waste and the provision of monitoring data.

4. Monitoring and reporting of progress to a named individual with responsibility for the targets

- Regular monitoring of the use being made of recycling facilities, the degree of contamination and the impact on residual waste arisings, will allow the effectiveness of communications campaigns and the design of recycling systems to be reviewed and adjusted to optimise the benefits of the programme.

Appendix A: Good practice examples

Many case studies exist that illustrate good practice waste minimisation and management in offices, based on a wide range of ideas and initiatives. Three examples are included below.

Abbotsford House, Falkirk Council

Abbotsford House²⁰ is the headquarters of Falkirk Council's Development Services Division, and is occupied by 275 employees.

An extensive programme of waste minimisation and management has been adopted by the Council, including:

- segregation and recycling of paper, cardboard, plastic bottles, glass, cans, toner cartridges and fluorescent tubes;
- disposal of lunch leftovers in "Green Cone" digesters;
- removal of general waste bins from under desks; and
- biannual audit of waste arisings.

As a result, over 67% of office waste generated in Abbotsford House is now diverted from landfill.

Scottish Government Agency

The Accountancy in Bankruptcy²¹ agency is based in an office in Kilwinning in the South West of Scotland, and has implemented a series of good practice initiatives to reduce waste, including:

- recycling office wastes;
- double-sided printing; and
- electronic document issue.

These practices have reduced the overall waste arising from the office by 80%.

Portman House, London

Portman House²² in London's West End is a multi-tenanted office development. The landlord has implemented a waste reduction strategy as part of a wider Corporate Social Responsibility commitment, which is being followed by all occupants.

The strategy is based on the segregation of waste streams at colour-coded collection points, and fortnightly collections by an appointed waste management company. The office Facilities Manager has had overall responsibility for the scheme, which has involved regular communication with the tenants.

The recycling scheme is currently delivering a 25% reduction in waste to landfill, which is expected to increase to 50%.

²⁰ www.envirowise.gov.uk/uk/Our-Services/Publications/CS887--Falkirk-Council-improves-office-resource-efficiency.html

²¹ www.envirowise.gov.uk/uk/Our-Services/Publications/CS916-Scottish-government-agency-achieves-business-benefits-through-office-efficiency.html

²² *BCO Best Practice Guide to Environmental Management in Offices*

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