



# Waste Minimisation & Recycling Plan

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# GCU Waste Minimisation & Recycling Plan

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# GCU Waste Minimisation & Recycling Plan

## Introduction

GCU operates an EMS to help improve its environmental performance by identifying, quantifying and managing environmental risks and opportunities.

Through the EMS, the University has identified wastes as an aspect of its operations with both risks and opportunities associated with them and as a result a number of measures have been implemented to manage them.

This Waste Minimisation & Recycling Plan (WMRP) reviews the evolution of GCU's waste arisings and the waste and recycling initiatives put in place to manage them. This WMRP also considers additional opportunities to reduce environmental impacts arising from the University's [commercially and industrial] wastes by considering waste management options further up the waste hierarchy.

Through this WMRP the University will align its waste management practices so that they support the Scottish Government's vision<sup>1</sup> for "a Scotland where resource use is minimised, valuable resources are not disposed of in landfills, and most waste is sorted into separate streams for reprocessing, leaving only limited amounts of waste to go to residual waste treatment, including energy from waste facilities"

The WMRP, and associated Implementation Plan, will be working documents subject to regular review by GCU's Sustainability Working Group (SWG) and other internal stakeholders and will be updated as and when required.

## Aim & Objectives

The aim of this WMRP is to deliver continual (a) reductions in the total quantity of waste produced by the University, (b) improvements in the proportion and quality of waste separated for recycling and (c) reducing expenditure in waste management services.

The WMRP objectives are to:

1. Identify key sources of wastes at the locations it operates in.
2. Develop a framework for monitoring waste arisings and recycling rates.
3. Understand its waste composition.
4. Identify and explore opportunities for reducing waste arisings.
5. Improve segregation of recyclable materials.
6. Raise awareness of waste minimisation and recycling opportunities.
7. Report on the performance of its waste management arrangements.

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<sup>1</sup> Scotland's Zero Waste Plan (2010): <http://www.gov.scot/Resource/0045/00458945.pdf> [accessed 20 May 2016]

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## Sources of Waste Data

The University does not have a waste composition analysis for its wastes and therefore it will be assumed that its waste arisings, despite the introduction of a number of measures to promote waste minimisation and encourage recycling, are comparable with those for Education Sector<sup>2</sup> in Scotland.

A number of data sources are available to help understand the evolution of GCU's wastes arisings and identify opportunities for minimising environmental impacts associated with their management. The following data sources have been used to develop this WMRP:

1. Waste contractor monthly returns – from July 2011.
2. HESA Estates Management Statistics<sup>3</sup> - historic data from 2008-2009.
3. Glasgow City Council – Estimates for Caledonian Court.
4. Tower Hamlets Borough Council/Veolia Waste Transfer Notes – Estimates for GCU London.

The above data include wastes from the following sources:

- GCU Campus – general and recyclables wastes, bulky wastes, electrical and electronic equipment.
- GCU London – general and recyclable wastes.
- Caledonian Court – general, recyclable and bulky wastes, electrical and electronic equipment.

Hazardous wastes produced by the School of Health and Life Sciences and the School of Engineering and Built Environment have been excluded from this WMRP because of the small quantities involved (less than 500kg/year).

## Historic & Current Arisings

Traditionally, GCU's approach to wastes management has been influenced by a commitment to maximise landfill diversion by maximising the amount of waste that was recycled.

To achieve this, the University has put in place a number of landfill diversion measures and as a result: the amount of waste produced at GCU fell by 36% (from 708 tonnes in 2008-2009 to 454 tonnes in 2015-2016 - Figure 1); whilst the University's recycling rate increasing from 4% in 2008-2009 to 17% in 2015-2016, with an additional 55% being processed for energy recovery in 2014-2015. During this period the proportion of waste landfilled fell from 96% to 28%. Waste arisings currently average 27.9kg/per FTE student and staff<sup>4</sup>.

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<sup>2</sup> Zero Waste Scotland - The Composition of Mixed Waste from Scottish Health and Social Care, Education, Motor, Wholesale and Retail Sectors in 2011 <http://tinyurl.com/zwshe wastecom p> [accessed 7 June 2016]

<sup>3</sup> HESA - Estates Management – Environmental Information:  
[https://www.hesa.ac.uk/index.php?option=com\\_content&view=article&id=2093&Itemid=634](https://www.hesa.ac.uk/index.php?option=com_content&view=article&id=2093&Itemid=634)

<sup>4</sup> Based on HESA data for 2011-2012, 2012-2013, 2013-2014 and 2014-2015 for "total non-residential waste" divided by sum (total) of Student FTE, Research Student FTE and Staff FTE.

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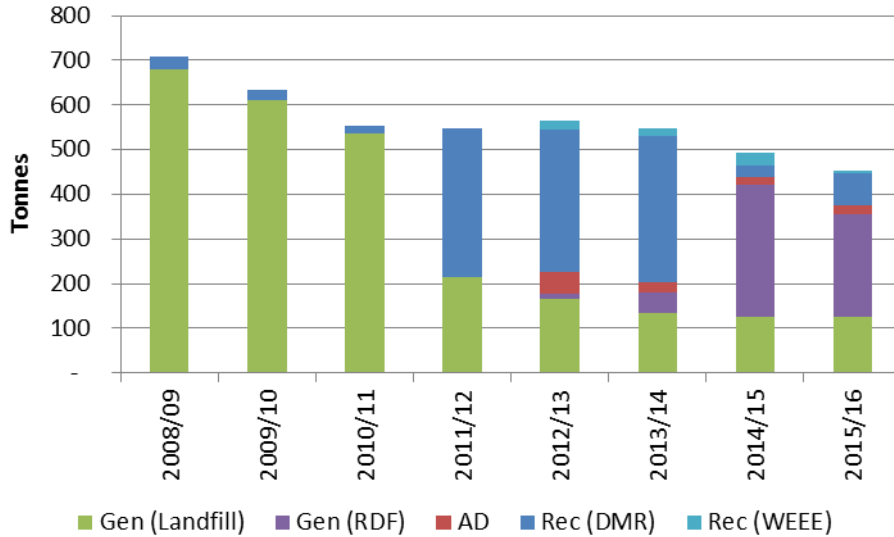


Figure 1 Evolution of waste arisings and treatment options for GCU's wastes (derived from HESA returns).

Waste produced by GCU arises predominantly at the Campus in Glasgow, Caledonian Court (the University's student residencies) and GCU London. Wastes from the Glasgow Campus and GCU London are classified as commercial and industrial wastes, whilst wastes from Caledonian Court are classified as domestic wastes. Figure 2 shows the proportional contribution each of these sources make to GCU's total waste arisings (in 2014-2015). Private waste contractors service the Glasgow and London campuses, whilst Glasgow City Council services Caledonian Court.

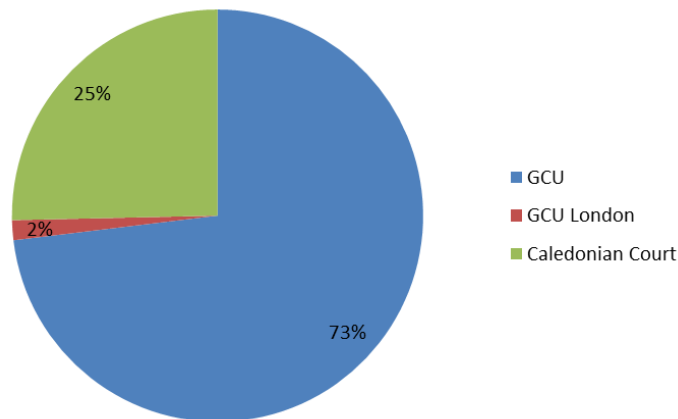


Figure 2 Sources of GCU's wastes (2014-2015).

As the bulk of GCU's waste arises in its campus in Glasgow, the majority of our focus has been on initiatives that can be implemented there (although many can also be adopted at our other locations).

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## Service Evolution

As part of its commitment to reduce its reliance on landfill, the University adhered to the principles of the waste hierarchy and approached the waste industry for practical solutions. As a result of this dialogue, the following changes to how waste was handled within the University and processed by its waste contractors were introduced:

- July 2011 – Switching from a landfill- to a recycling-centred waste management contract for the Glasgow Campus. GCU used the award of a new waste management contract as an opportunity to introduce a number of changes that catapulted its recycling rate from 4% to over 64%. This was achieved by collecting problematic wastes streams, such as food and glass waste, separately and processing the remaining dry-mix [recycling], which was primarily paper, card, plastic bottles and drink cans, into separate waste fractions at Material Recovery Facility. General waste (i.e. the fraction that could not be recycled) was collected separately from key locations and landfilled. Electrical waste continued to be handled by a number of specialist contractors.
- May 2013 – GCU's main waste contractor starts converting residual waste into a Refuse Derived Fuel (RDF) for use in power stations in mainland Europe (UK routes were not available).
- 2013-2014 – A number of measures were introduced to reduce the risk of non-recyclable materials 'contaminating' wastes collected for recycling: separate collection points for used batteries and printer toners were introduced and the number of contractors managing these waste streams was consolidated; bins for liquid wastes were also introduced at key locations across campus; a dual bin system for DMR and general waste and improved signage were also introduced.
- 2014-2015 - More stringent criteria for the amount of non-recyclable materials contained in DMR were introduced (by the Scottish Government) and as a result a significant proportion of DMR from the University had to be processed as RDF. Arrangements for separating WEEE were improved and the main contractor started pursuing some re-use options. GCU also launched a portal for staff to share surplus furniture and other resources.
- 2015-2016 – At the start of the new academic year, GCU worked with its catering contractor to reduce the amount of hot beverages sold on-campus catering outlets sold in single use paper cups by offering 10p off to anyone using a re-useable mug.

As a result of the changes described above, current waste management arrangements at GCU make provision for the waste streams detailed in Table 1 (overleaf).

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Waste Stream	Internal Collection	Treatment
Paper, card, plastic bottles and cans (DMR)	Twin bin for DMR and general waste in public areas. Bins with clear liners in offices. Production areas in catering outlets also segregate DMR.	Separation at a MRF for recycling at specialist facilities.
Food	Dedicated bins in production areas in catering outlets and some dept. kitchens/pantries. Otherwise in general waste bins.	Processed at an Anaerobic Digestion facility to generate electricity and an agricultural soil conditioner.
Glass	Dedicated bins in production areas in catering outlets. Everywhere else in general waste bins.	Recycled.
Batteries	Bins for used consumer batteries are available from key locations across campus. Batteries from maintenance operations are collected in a central location.	Recycled.
Lamps	Primarily from maintenance operations. Stored in a central location.	Recycled.
Electrical Waste (exc. computers)	Collected from maintenance operations and from individual depts. via requests from the Facilities Helpdesk.	Recycled.
Electrical Waste (printer toners)	Dedicated bins at key locations across campus.	Recycled.
Electrical Waste (computers)	Collected via IT Helpdesk.	Re-used.
Books	Dedicated bins at key locations across campus.	Re-used.
General Waste	Collected alongside DMR using a twin bins system.	Converted into refuse derived fuel.

**Table 1** Current waste management arrangements.

In addition to provision for the above waste streams, GCU has introduced the following waste minimisation projects:

- Furniture re-use portal.
- Return to send stickers for junk mail.

## Challenges & Opportunities

Whilst these arrangements have had a significant impact on GCU's waste arisings and recycling rate, there is still scope to:

- Further reducing the amount of waste produced at the University (from the 454 tonnes generated in 2015-2016).
- Reduce frequency/incidents of DMR contamination (from an average 32% of DMR compactor uplifts in 2015-2016).
- Increase the proportion of waste recycled (from 17% in 2015-2016).

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- Raise awareness of existing waste arrangements.
- Lowering waste management costs (from approximately £54,000 in 2015-2016).

## Actions & Measures

A number of activities and measures have been identified to achieve the aims of this WMP. The proposed activities and measures are listed in below (in Table 2) and expanded in Annex 1 (Implementation Plan<sup>5</sup>) to include details of implementation timescales, resources and implementation lead.

#	Action
WM_M01	Map waste sources and associated data.
WM_M02	Composition analysis
WM_M03	Upgrade waste compound
WM_M04	Random audits – bags
WM_M05	Random audits – procedures
WM_M06	Food waste collections – dept. kitchens/pantries
WM_M07	Glass waste collections – dept. kitchens/pantries
WM_M08	Awareness – stall at Freshers’ Week
WM_M09	Food & glass collections - nursery
WM_M10	Awareness – Leaflet – all staff
WM_M11	Awareness – Food waste – video – all staff
WM_M12	Awareness – Recycling – video –staff + students
WM_M13	Awareness – FAQ – all staff
WM_M14	Awareness – Good practice guides – staff
WM_M15	Awareness – Poster rotation on recycling bins
WM_M16	Awareness – Domestic - Tunics
WM_M17	Training - EMS - Waste Procedure
WM_M18	Training – Domestic & Catering Staff
WM_M19	Training – Contractors
WM_M20	Waste minimisation Initiatives
WM_M21	Environmental Intern
WM_M22	Reporting WM performance

Table 2 WMRP actions and measures (See Annex 1: Implementation Plan for more information).

## Management & Monitoring

An Implementation Plan (IP-Waste) accompanies this WMP. The IP details individual measures and actions and includes relevant metrics and associated targets against which progress delivering the WMP will be evaluated.

The WMP and IP-Waste will be reviewed annually by GCU’s Sustainability Working Group and progress reported University’s Executive Board (as appropriate).

<sup>5</sup> Available on request from [sustainability@gcu.ac.uk](mailto:sustainability@gcu.ac.uk)



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## Further Information

Please visit [www.gcu.ac.uk/sustainability](http://www.gcu.ac.uk/sustainability) or email [sustainability@gcu.ac.uk](mailto:sustainability@gcu.ac.uk) for further information about waste management at GCU.



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