

Waste Stream Audit Protocol for Green Star EBP projects

1. Introduction

This protocol was developed to assist project teams, facilities teams – and appointed waste management contractors – to conduct a Green Star EBP-compliant waste stream audit. This protocol is useful for any situation where the establishment of a baseline for types and quantities of waste leaving a building is required.

2. Waste Audit Process

A waste audit is a process for evaluating the materials in a building waste stream, and assessing whether materials are being disposed of correctly. Teams collect the waste during a designated collection period, physically sort through it and quantify the amount of each material type. The waste audit process allows building managers and appointed waste management contractors to identify opportunities for diverting waste streams away from landfill and toward recycling or composting or avoidance in the first place.

The steps below outline the process for conducting a waste audit:

- Conduct an audit of the building's entire ongoing consumables waste stream (exclude durable goods and construction waste from facility alterations or additions). **The entire ongoing waste stream includes both the material that is usually sent to landfill AND the material bound for recycling or composting facilities.**
- Use the audit results to establish a baseline that identifies the types of materials in the waste stream and the amounts of each type by weight or volume.
- On the back of this audit, building management teams can identify opportunities to increase recycling and waste diversion.

The waste audit protocol components include the following:

- Waste collection
- Sorting
- Weighing and data recording
- Reporting

Once the audit has been completed and opportunities for improving recycling practices have been identified, occupant education will be imperative for successful programme implementation.

3. Waste Collection

The waste assessed in the audit must be collected from a time period that is representative of the typical amount and type of waste produced at a building. Teams should consider the waste generation and collection cycle of the building and determine a collection period that will best represent the typical building waste stream. Collection periods generally cover a 24-hour period but can be extended depending on how a project building operates.

Building occupants should **not** be notified in advance of the audit so that the collection period is representative of typical recycling behaviors.

All ongoing consumables waste, including wet waste (food and bathroom waste), generated during the collection period must be included in the audit. Durable goods, construction waste, and landscape waste should be excluded from the audit.

Materials collected from recycling bins should be labeled and kept separate from materials placed in rubbish bins. To produce a more granular level of data, which will help develop more targeted suggestions for improvement, labeling of each bag of waste with its original location (e.g. restaurants/canteens, office floors, maintenance area etc.) is recommended. While it does not adversely affect the audit process (or Green Star compliance) if waste is audited together in a central location without being labeled, labeling will make it easier to identify spaces with low recycling rates and develop effective recommendations. This is particularly recommended for retail environments where waste generation may vary from section to section and tenant to tenant.

Once the materials have been collected, the waste must be stored in an area suitable for sorting and measurement. This activity requires considerable space, though the amount of space needed will vary depending on the size of the building.

4. Sorting

At least two people should sort the materials and record the data to ensure the process as efficient and accurate as possible. The team needs to determine the waste categories to track and then begin the sorting process. Waste categories and streams will depend on building operations of a particular building, but please note the following:

The following material categories must be tracked, at minimum: metals, mixed paper, cardboard, glass, and plastics. Also, record any durable goods or electronic waste (such as furniture, appliances, monitors, keyboards, power cords), batteries, and lamps that have been inappropriately discarded within the ongoing consumable waste stream. Food waste and bathroom waste should be weighed and included in the audit results, but it is not a requirement to physically sort through it. Any materials that do not fit the above classifications can be sorted, weighed, and reported separately or as “other.”

For wet waste, such as food waste, ensure that collection and storage bins are adequately sealed. As required, waste audit teams may need to be provided with goggles and gloves. Where a collection of wet waste poses a health risk for sorting and auditing, separation of that waste is not necessary.

Necessary and recommended equipment includes:

- Appropriate clothing, including rubber gloves, safety glasses, and a protective suits
- Scales (recommended) or buckets/bins suitable for weighing bags or containers of materials
- Plastic sheets for waste sorting
- Copies of this waste audit protocol and waste tracking forms
- Containers or bags for weighing sorted materials

5. Weighing and Data Recording

Data collected during the audit will allow the waste audit team to determine the percentage of each material category that is being successfully routed to recycling or landfill. This will allow the identification of the types and amounts of contamination being introduced into recycling containers, and the type and amounts of recyclables being incorrectly sent to landfill. The steps below should be followed to collect data during the audit:

- Determine whether to track waste by weight or by volume during the audit. Most buildings will use weight measurements, which is a more accurate unit of measure for this task.
- Measure and record the weight (or volume) of each material type found in the trash/landfill stream (e.g., collected from rubbish bins).
- Measure and record the weight (or volume) of each material type found in the recycling/diversion stream (e.g., collected from recycling bins).

6. Reporting

Sample Audit results

Waste Type	weight (kg)		Percentage of Waste Type Diverted	Percentage of total Waste Associated with Waste Type
	landfill stream	diversion stream		
glass	2	50	96%	5%
metal	2	150	99%	15%
plastic	1	50	98%	5%
mixed paper	20	400	95%	42%
cardboard	25	100	80%	13%
fluorescent lamps	0	0		0%
batteries	0	0		0%
wet waste	150	0	0%	15%
bathroom waste	50	0	0%	5%
miscellaneous	0	0		0%
totals	250	750	75%	

A waste audit report must be included in the OWMMP to summarise the process and findings of the audit.

The report should include:

- Information regarding the collection period and timing of the audit;
- A rationale demonstrating that the audited waste is representative of the building's typical waste stream;
- A description of the audit procedure/method, including an explanation for whether the audited waste is measured by weight or volume;

- Waste data, including: waste type, quantity in landfill stream, quantity in recycling/diversion stream, percentage of waste type diverted, percentage of overall waste;
- A description of opportunities to increase diversion rates and improve waste diversion practices based on the audit results.