



ENGLISH HERITAGE

Landscape Advice Note: Green Waste Management Policy for English Heritage Properties



www.english-heritage.org.uk/professional/advice/advice-by-topic/parks-and-gardens/

The management and composting of green waste has become an important issue as the UK Government is committed to reducing the amount of waste being sent to landfill sites. Compost also provides a valuable material of use in most gardens as a mulch or soil improver.

INTRODUCTION

The UK Government has targets to reduce the amount of biodegradable waste going to landfill in line with the EC directive 1999/31/EC on the landfill of waste and the Waste Strategy for England 2007. It requires that the amount of biodegradable municipal waste sent to landfill is reduced to 35 per cent of the 1995 level by 2020 (Defra 2007). English Heritage's funding agreement with DCMS also requires the organisation to develop and deliver a sustainability strategy.

Green waste management and composting can play a

major role in reducing the amount of green waste being sent to landfill sites. It also offers a more sustainable way of recycling the green waste generated by English Heritage properties and producing organic mulches and soil improvers that would otherwise need to be brought onto site.

LEGISLATION AND PERMITTING

Green waste management and composting is regulated by the Environment Agency under the Environmental Permitting Regulations, which allows various activities to be carried out under restrictions imposed through permits and registered exemptions to minimise damage to the environment and human health.

While some operations might be covered under Environmental Permitting Regulations basic rules, registered exemptions or environmental permits are needed for a wide range of green waste management and composting activities, including mulching, composting, and burning.

Depending on the scale of operation, many gardens will be able to work within the limits and conditions of registered exemptions. It should be noted that

Waste exemptions most commonly associated with green waste management and composting are:

- Waste exemptions: using waste
 - U10 spreading waste to benefit agricultural land
 - U11 spreading waste to benefit non-agricultural land
 - U12 using mulch
 - U13 spreading plant matter to provide benefits
 - U14 incorporating ash into soil
- Waste exemptions: treating waste
 - T5 screening and blending waste
 - T6 treating waste wood and waste plant matter by
 - T23 aerobic composting and associated prior treatment
 - T25 anaerobic digestion at premises not used for agriculture and burning resulting biogas
 - T26 treatment of kitchen waste in a wormery
- Waste exemptions: disposing of waste
 - D1 depositing waste from dredging inland waters
 - D7 burning waste in the open

01



02



FRONT COVER

Composting machinery at Audley End House © Alan North

IMAGE 01

Composting facilities at Walmer Castle © Christopher Weddell

IMAGE 02

Producing compost at Walmer Castle © Christopher Weddell

registering an exemption does not remove the need to apply for other permits or permissions. For example, planning permission may be needed for waste operations, or a water discharge permit.

If the operation or activity is not covered by the basic rules and does not qualify, or cannot meet the requirements for an exemption, then an environmental permit is required. If the conditions within the standard rules can be met then a standard permit is applicable, otherwise a bespoke permit would be required.

HEALTH AND SAFETY

It is essential for staff involved in composting operations to be given adequate briefing, training and equipment to ensure that the operations are conducted safely.

There are potential health risks from air-born microbes and infections through cuts and grazes. These risks can be reduced by ensuring protective clothing is worn at all times when handling green waste. All cuts should be covered to reduce the chance they will become infected. Any staff involved with composting operations should particularly ensure that their tetanus vaccinations are up to date.

The Composting Industry's *Code of Practice* (2005) outlines best practice to the overall approach to risk assessment and management as:

- Hazard identification
- Assessment of risk
- Appraisal of options for management of those risks
- Implementation of the most appropriate control measures for all of the identified risks

QUALITY PROTOCOL

The quality protocol is a voluntary and was introduced in 2007/08. The aim of this protocol is to allow producers who adhere to it, to produce compost which is no longer regarded as waste. This will mean it will no longer be subject to the regulatory requirements that apply to the handling, transport and application of waste.

In order for compost to be accepted under the quality protocol it must meet the PAS100 certification and the quality protocol requirements.

British Standard PAS100:2005 *Specification for Composted Materials* covers the entire process by which compost is produced from raw materials and production methods, through to quality control and laboratory testing. The specifics covered by PAS100 can be found at www.wrap.org.uk/downloads/Introduction_to_BSI_PAS_100-20052.2c9be7b8.2181.pdf

GUIDANCE ON THE BEST PRACTICE FOR THE COMPOSTING OF GREEN WASTE

GOOD WORKING PRACTICE

Composting needs to be a managed process, in order to produce good quality compost. It is vital to plan the type and location of the composting unit based on the volume, weight and variety of waste to be composted, staff resources and the intended end use. It is also important that staff should be given sufficient training to ensure the most up to date composting techniques are being used. Staff should also be given Health and Safety training in order to help reduce risks.

COMPOSTING METHODS

A number of different methods can be used to produce compost material. Each property needs to select a composting process which is appropriate to the needs of the site taking in to account the quantities of compost likely to be produced and the equipment/staff resources available.

The simplest methods for the quality and quantities of compost (which are likely to be produced by English Heritage sites) are to use aerobic composting techniques using either:

- Windrow system

Green waste is piled in a heap and turned by manual or mechanical means. The advantage of this method is it is quick to set up and easy to manage.

- Bin system

The composting facility is split in to a number of bins. Green waste can then be placed in a bin until it is full and then left to rot down. The advantage of this method is it allows the compost to be easily contained. It also provides flexibility as a number of bins can be filled at one time. This allows staff to select the type of waste which is placed in each bin to achieve a good balance of materials required for good composting.

Where possible both methods should allow for regular turning to be done mechanically using a tractor.

The entire composting infrastructure will need to be inspected and kept in good repair. Composting and the compost system should also be integrated into the conservation management plan, the maintenance schedule and contingency plan for the property.

RECORD KEEPING

In order to best manage the composting process, and be confident in the quality of the material produced, a system of monitoring and recording should be used to track amount and type of material composted, the number of turning operations and temperatures reached, and how and where the compost was used.

Record keeping is a condition of some registered exemptions, including UI0 and UI1 in regards to spreading of waste to benefit the land. The regulations requires records of the amount, nature, and origin of all waste spread on your land are kept for two years, and be available to the Environment Agency if they ask to see them.

POSSIBLE ADVERSE IMPACTS OF COMPOSTING

Although the composting of green waste is good conservation practice and helps reduce the amount of green waste sent to landfill sites, it also has the potential to cause environmental pollution, harm to human health and be a nuisance. The process can give rise to dust, fire, litter, leachate and liquor, noise, odours, pathogens, pests including rats, potentially harmful bio-aerosols, and it can be unsightly. To avoid these problems composting needs to be a carefully planned and well managed activity.

FACTORS AFFECTING THE LOCATION OF COMPOSTING SITES

Selecting the right location is a critical factor in establishing and operating a composting facility on a historic site. The impact on the historic landscape as well as staff, visitors and neighbours needs to be taken in to consideration when deciding on the location and composting technique. Large properties may need more than one composting area to help manage the volume of compost and to minimise movement of waste and compost around the site. The compost areas need to be an adequate size for easy use and management.

It is advisable when evaluating location to consider:

- Ease of access
- Visual impact
- Olfactory issues
- Proximity to others

If a facility is within 250 metres of a dwelling or workplace a risk assessment should demonstrate how it does not pose a risk to neighbours

- Proximity to water

Sites close to water will need to consider infrastructure to prevent pollution such as an impermeable

PROBLEMS YOU MAY HAVE

There are a number of problems which may occur during composting. The most common are:

COMPOST SMELLS LIKE ROTTEN EGGS

- Cause

There is too much water or the heap has not been turned enough.

- Remedy

Get as much air in to the compost as possible; add some dry material if it appears too wet. Cover during the winter / periods of heavy rainfall.

COMPOST SMELLS OF AMMONIA

- Cause

There is too much nitrogen in the compost e.g. grass clippings

- Remedy

Add carbon rich materials such as leaves, sawdust and mix frequently for a few days. Try not to add large amount of grass clippings in one go, mix with other materials where possible.

COMPOST ATTRACTS ANIMALS

- Remedy

Covering the compost with a heavy cloth or brown materials such as leaves and wood chip can help.

COMPOST DOES NOT HEAT UP

- Cause

Either the heap is too small or dry. Or it needs more nitrogen adding.

- Remedy

A compost heap should be at least 1m³ in size if not the pile should be made larger. If the heap is not moist add water and mix in to the pile. To increase nitrogen levels more activators such as grass clippings should be added.

HEAP TAKES TOO LONG TO BREAK DOWN

- Cause

The pile may not have the correct carbon:nitrogen ratio, balance of materials, or the pile may not have enough air or sufficient moisture.

- Remedy

Add moisture rich and nitrogen rich fruit and vegetables to speed up the process. Turn the pile in order to push air through the heap.

COMPOST HEAP IS A SLURRY MESS

- Cause

Either due to the heap becoming too wet, which results in it cooling down and thus stopping the composting, or too much nitrogen was in the heap.

- Remedy

Add prunings and leaves while turning the heap. Cover the heap after turning and ensure that any excess moisture can drain from the heap.

pavement. For example, a concrete base laid to a fall, with a dedicated sealed drainage system and blind slumps to collect and retain leachate and/or site run off. The Environment Agency advises that unless physically isolated (for example due to topography) selected locations should be 10-75m from any surface water (streams, rivers and ponds) and that sites with obvious routes for surface flow/migration of leachate to surface water features should be avoided.

FACTORS AFFECTING THE COMPOSTING PROCESS

The following will affect how quickly the material composts and the quality of the final product:

- Carbon : nitrogen ratio

The amount of soft green nitrogen-rich material added to the heap should be between 25-50% of the total volume of the heap. Good sources of carbon are leaves: good sources of nitrogen are fresh grass. If there is not enough nitrogen the process will be slowed, and can also cause an unpleasant smell. Letting one material dominate the heap should be avoided.

- Surface area

Increasing the surface area of material being composted can help to speed up the process. Chopping or shredding larger waste increases the surface area available for micro-organisms to break down the material. Although this helps to speed up the process it is not essential for herbaceous material, but is the only way to compost woody material.

- Aeration

Oxygen is needed for efficient decomposition. Regularly turning the piles helps maintain aeration, and could be as frequent as weekly or fortnightly depending on the mix of materials and the speed of composting.

- Moisture

The moisture content of a pile should be between 40-60 per cent. If moisture falls below 40 per cent it can slow the decomposition rate. If moisture goes above 60 per cent nutrients are leached and odours can begin to develop due to anaerobic decomposition. Should heaps become too wet, turning is a good way to reduce the moisture content. During winter and periods of high rainfall heaps should be covered to better maintain an even moisture content, and reduce leachate.

- Temperature

The temperature of compost heaps should be between 32°C and 60°C. Composting will always slow during winter months as the temperature drops.

Covering will help reduce this temperature reduction as well as protecting the heap from excessive rainfall

WHAT SHOULD BE COMPOSTED?

Registered exemption T23: aerobic composting and associated prior treatment, restricts the types of waste you can treat under the exemption and imposes limits on the amount of waste. However within this restriction, different vegetation can be used to manipulate the production of compost by helping to heat it. Such activators include:

- Young weeds
- Grass cuttings (but not large amounts in one go)
- Wood ash

Quality compost depends on using a variety of vegetation such as:

- Old flowers
- Bedding plants
- Old straw and hay
- Young hedge clippings
- Soft prunings
- Annual weeds

Slow rotting material needs to be well mixed with other materials and not added as one massive amount. This applies to such things as:

- Autumn leaves
- Tough hedge clippings
- Woody prunings
- Sawdust/ wood shavings

Examples of materials that cannot be composted include:

- Coal and coke ash
- Cat litter and dog faeces
- Disposable nappies or any non-organic waste
- Perennial weeds
- Diseased plant material
- Material recently treated with herbicides

USES FOR COMPOSTED GREEN WASTE

Composted waste can be used in a variety of ways depending on the type and quality of compost produced. Possible uses include:

- Soil improver and conditioner to
 - Increase nutrient levels
 - Build and improve soil structure

- Act as a slow release fertiliser
- Help to reduce soil compaction
- Help to increase the water holding capacity of the soil
- Mulch for flower beds to
 - Act as a weed suppressant
 - Help retain moisture
- Planting medium as
 - A potting mix component

ENGLISH HERITAGE POLICY

English Heritage's policy is to:

- Minimise the amount of green waste from our sites which is sent to landfill
- Compost green waste on site wherever the facilities and staffing levels permit
- Ensure that all composting facilities on our sites meet the minimum requirements of the Environmental Permitting (England and Wales) Regulations 2010 and all other relevant legislation
- Register for Waste Management Licence exemptions on sites where composting is undertaken
- Reach the standard set in the Quality Protocol for Waste Management, where this is appropriate

REFERENCES

Composting industry Code of Practice
organics-recycling.org.uk/dmdocuments/Composting_Industry_Code_of_Practice.pdf

Defra 2007 *Waste strategy for England 2007*
www.gov.uk/government/uploads/system/uploads/attachment_data/file/228536/7086.pdf

Defra 2011 *Government Review of Waste Policy in England*
www.gov.uk/government/uploads/system/uploads/attachment_data/file/69401/pb13540-waste-policy-review110614.pdf

Permits:

Check if you need an environmental permit
www.gov.uk/environmental-permit-check-if-you-need-one

Environmental permit: how to apply
www.gov.uk/environmental-permit-how-to-apply/overview
enquiries@environment-agency.gov.uk
 Telephone: 03708 506 506

Environmental Permitting: a summary booklet
archive.defra.gov.uk/environment/policy/permits/documents/ep2010booklet.pdf

Environmental Permitting Guidance - Exempt Waste Operations
www.gov.uk/government/uploads/system/uploads/attachment_data/file/69317/pb13631-ep2010exemptwaste.pdf

C directive 1999/31/EC on the landfill of waste
eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31999L0031:EN:HTML

Wrap (Waste & Resources Action Plan)
www.wrap.org.uk

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English Heritage is the Government's adviser on the historic environment with responsibility for all aspects of protecting and promoting the historic environment in England.

The role of English Heritage's Curatorial Department is to help everyone to be inspired and engaged by the Story of England through sites, artefacts and archives.

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