

SHEPHERDS HILL ALLOTMENTS COMMUNAL COMPOST

A REPORT ON THE AERATED STATIC PILE METHOD AUTUMN 2025 TO SPRING 2026



The Background

The idea for a communal composting area at Shepherds Hill Allotments grew out of a grant application submitted alongside the solar panels project. The application set out the following aims and objectives:

Aims

- To provide Shepherds Hill Allotments with a dedicated communal composting area.
- To reduce the volume of green waste leaving the site via household brown bins or the local recycling centre, thereby reducing the burden on NLWA's waste management.
- To reduce the burning of green waste on site and the associated harm caused by bonfire pollutants.

Objectives

- To clear a disused and overgrown part of the site.
- To construct six large composting bays.
- To purchase the necessary equipment, including a shredder, wheelbarrows, forks, sieves, and a shed to house them.
- To hold introductory meetings in the Community Barn to inform plot holders and encourage engagement.

- To establish a volunteer rota and provide induction training for those involved.
- To produce a plentiful supply of good quality compost for use by the plot-holder community.

Although the grant application was ultimately unsuccessful, it was felt that the project should go ahead regardless. Without funding, the site was developed without a shredder or purpose-built bays, and with an awareness that the volunteer hours required to manage the area effectively would be a continuing challenge. In many respects, what has been achieved since is all the more impressive for it.

Challenges (written July 2025)

The old plot has been cleared and divided into large bays, marked out using dead hedges. Over the past 18 months, plot holders have been depositing green waste into the bays — including invasive weeds such as bindweed and couch grass — and the volume of material has grown considerably.

Two significant challenges have prevented the site from functioning as effectively as it could. First, without a shredder, bulky and woody material cannot be broken down before entering the pile. Second, and perhaps more critically, the piles are too large to turn by hand within a realistic number of volunteer hours — and regular turning is essential for effective composting. Turning the pile reintroduces oxygen, which is what sustains microbial activity, maintains heat, and drives the breakdown of organic material. Without either of these things, the waste has largely been left to decompose slowly with minimal intervention, producing very little usable compost.

Slow Composting Advantages / Disadvantages

Slow composting is the simplest approach to composting, requiring little more than depositing waste and leaving it to decompose naturally over time. Its obvious advantage is that it demands very little labour or intervention, making it an appealing low-effort option.

However, there are notable limitations. For best results, invasive weeds should be removed before entering the pile, as the low temperatures generated by slow composting are unlikely to destroy their roots or seeds, allowing them to regrow. Slow composting also tends to break down material anaerobically — without oxygen — which produces harmful gases and unpleasant odours as a byproduct.

For a communal site dealing with large volumes of mixed green waste, including invasive species, slow composting alone is not sufficient to produce the quality or quantity of compost the site is capable of generating.

Potential solutions - Aerated Static Pile

Since turning the piles by hand is not a realistic option at this scale, an alternative method of introducing oxygen into the pile was needed. The solution identified was the Aerated Static Pile (ASP) method.

Originally developed by organic farmers who needed to maintain consistently high pile temperatures over extended periods — a requirement for achieving organic certification — the ASP method works by threading perforated pipes through the base or centre of the pile. These pipes allow air to flow freely through the material, supplying oxygen to the microbial community and helping to sustain the heat generated during decomposition, without the need for any mechanical turning.

It is a practical, low-cost, and low-labour approach that is well suited to the constraints of a communal composting site.

Natural Compost Activators

Activators are materials added to a compost pile to help kick-start the decomposition process by introducing or stimulating microbial activity. The following natural activators are all suitable for use in an ASP system:

- Comfrey
- Manure
- Coffee grounds and tea leaves
- Mature compost or soil
- Blood, fish and bone

Of these, a mixture of comfrey and chopped cardboard has proven particularly effective — the comfrey acts as a powerful activator while the cardboard provides a carbon-rich brown material, together creating ideal conditions for microbial activity.

Equipment Required

To get the best out of the ASP method, the bays need to be built to allow waste to be stacked as high as possible, with perforated pipes laid either horizontally or vertically through the pile to maximise airflow and help sustain heat throughout the active composting phase.

The following equipment would support the effective running of the composting area:

- Perforated pipes — standard waste pipes or large cardboard tubes such as carpet roll cores are both suitable options.
- Crates or frames to help structure and contain the bays.
- A compost thermometer for monitoring pile temperature.
- Sieves and containers for extracting and distributing the finished compost.

AUTUMN 2025

What We Did

As planned, two bays were set up, each fitted with two sections of perforated pipe. To help distribute airflow evenly, the pipes were covered with a layer of twigs and wood chips. The piles were then built up lasagne-style, alternating layers of green waste with a mixed layer of cardboard and comfrey — combining carbon-rich brown material with a natural activator — before finishing with a final layer of green waste.



Photo; perforated drainage pipes bought for the project



Photo; The pipes in situ to help improve oxygen level to stop the pile becoming anaerobic

Temperature

In a commercial compost pile, temperatures typically rise to between 60–70°C before falling back to ambient, usually within a couple of weeks. The pile is then turned to reintroduce oxygen, causing temperatures to rise and fall again. This process is repeated — typically around four times — until the pile no longer generates heat.

Without the ability to turn our piles, the aim was to use activators to drive the initial temperature rise, with the perforated piping extending the period the pile remained hot. The pile would then be left to cure for a minimum of three months.

Temperature Recordings

Date	Temperature	Phase
31st August	23°C	Baseline — pile construction
5th September	50°C	Peak temperature reached
8th September	42°C	Active phase
12th September	48°C	Active phase
14th September	42°C	Active phase
21st September	28°C	Returning to ambient

The pile reached a peak temperature of 50°C rapidly, then took just over three weeks to gradually return to ambient. While it is difficult to isolate the contribution of each individual element, the conclusion is that the brown material and activator helped drive the temperature up, while the aeration piping helped sustain the heat for longer.

Although 50°C is sufficient to destroy some weed seeds and accelerate decomposition, it fell short of the 60–70°C range needed to eliminate the majority of weed seeds. Experimenting with different activators may help increase temperatures slightly, but a significant improvement is unlikely without the use of a chipper or shredder — reducing particle size increases surface area, which in turn boosts microbial activity and heat generation.



Three Months On

After a three-month curing period, the majority of the material appeared well broken down. Unfortunately, limited volunteer time meant the compost could not be extracted and sieved at that stage. As for weed seeds, the compost is unlikely to be any worse than other homemade composts — and with the benefit of having reached a reasonably high temperature, a good proportion of seeds should have been destroyed in the process.

Any un decomposed material can be used to help start the next pile, where the resident microbial life will give the new pile a useful head start.



Photo; 3 months on the aerated pile appeared to be well decomposed

Other Observations

While the pile was at its hottest, there was a noticeable increase in insect activity in and around the area, along with a significant number of frogs — likely benefiting from both the warmth and the abundance of insects. The site is thought to have previously had a pond, and the frogs certainly appeared more active than usual during this period.

The heat generated by the pile also appeared to accelerate seed germination, with tomato seeds being a notable example. This suggests an interesting opportunity for the future — adapting the piles to function as hotbeds during the active composting phase, using the natural heat produced to help germinate seeds, particularly useful in the early spring when warmth is otherwise hard to come by.

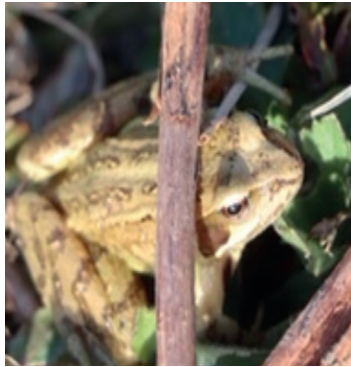


Photo: Increased wildlife and insect activity is a sign of a healthy pile — red wiggler worms, woodlice, and heat-accelerated germination were all observed.

SPRING 2026 - THE AERATED PILE AT SIX MONTHS

Although the pile was likely mature and fully broken down within 3–4 months, time constraints meant it wasn't emptied until March/April 2026.

The material was well decomposed overall, with only a small amount of twigs and woody material remaining, which was sieved out and added to the dead hedges. A few root fragments were also present, appearing to originate from either comfrey or Winter Heliotrope — an invasive plant that seems to have established itself around the composting area and is worth monitoring.

Encouragingly, the pile still contained a healthy amount of insect life, including red wiggler worms, larger earthworms, and woodlice. The presence of earthworms in particular is a good indicator that the compost had reached maturity.

Redesigning the Area



Photo: Map of the current compost area, with bay1 being designated the drop off area.

Following a successful experiment with aerated composting, the area has been redesigned to make it more practical and efficient to manage, as some level of volunteer supervision will always be necessary.

Two main approaches were considered for building and managing the piles:

- **Option A** — Plot holders deposit waste into a designated bay. Every few weeks, volunteers add a layer of brown material, activator, and perforated pipes (lasagne style). Once full, the bay is closed off for 3–4 months to cure before being sieved.
- **Option B** — Plot holders deposit waste into a designated drop-off bay. After around 3 months, volunteers build a new pile in a single working session, layering it with brown material, activator, and air pipes. The pile is then left to heat up and cure over 3–4 months before being sieved.

Option B is preferred, as the pile is more likely to heat up quickly and remain active for longer. The coarser material removed during sieving is used to help start the next pile. Currently, Bay 1 is being used as the designated drop-off bay for green waste.

Each cycle — collecting waste, building a new pile, and emptying a mature one — is expected to take 3–6 months depending on the season, meaning roughly 2–3 working parties per year should be sufficient to keep pace with the volume of green waste produced. This will naturally vary depending on the time of year.

Currently Bay 1 is being used for people to deposit their waste and bay 4 is being used to form a new pile. Bays 2,3 and 5 are still being worked on, with bay 2 currently full of large branches and wood which we may get shredded.

How Best to Use Homemade Compost

A large amount of the compost was removed from the mature pile, with volunteers taking their share and a large amount left at the Wood Vale entrance for communal distribution.

In his book *The Living Soil Handbook*, Jesse Frost identifies four main types of compost, each serving a distinct purpose:

- **Mulching Compost** — applied as a top dressing to protect the soil surface, retain moisture, and slowly release nutrients over time.
- **Inoculating Compost** — used to introduce and stimulate microbial activity within the soil.
- **Fertilising Compost** — primarily applied to deliver high levels of nitrogen to the soil.
- **Nutritional Compost** — used to replenish trace minerals and other missing soil nutrients.

Homemade compost is well suited to all four of these applications. It can be applied directly as a mulching compost, protecting the soil surface while gradually improving its structure. Given the typically high levels of microbial life present in well-made homemade compost, it can also be sieved and used as an inoculating compost, helping to restore and enrich the biological activity of the soil.

With the addition of the right ingredients, homemade compost can also be developed into a fertilising or nutritional compost. Incorporating amendments such as worm castings or fish, blood and bone will significantly boost nitrogen levels, making it suitable as a fertilising compost. For a nutritional compost, the addition of any minerals identified as deficient in the soil — whether through testing or observation — will help create a more complete and targeted feed for plants.

The coarse material discarded during the sieving process need not go to waste. It can be used in much the same way as wood chips — applied as a surface mulch to suppress weeds, retain soil moisture, and gradually break down to further enrich the soil over time. Ideally, finished compost should be stored out of direct sunlight, as prolonged exposure can damage the beneficial microbes within it.



Photo: The finished compost after sieving, ready for use on plots.

Moving Forward and Conclusions

The composting area has been very widely used — in some ways a victim of its own success, with the volume of green waste deposited making it increasingly difficult to process effectively. Nevertheless, the aerated static pile method has proven to be a real success, demonstrating that large-scale composting is achievable on site without electric machinery or an unrealistic demand on volunteer time.

Sourcing a Shredder - A significant volume of branches and woody material would benefit greatly from shredding.

Trialling Different Activators - Comfrey played an important role in driving the pile's temperature up, but may not always be available in sufficient quantities. Trialling alternatives — such as commercial activator from the trading shed, coffee grounds, or blood, fish and bone — could help push temperatures closer to the 60–70°C range needed for more effective weed seed destruction. Biochar could be trialed as alternative source of brown material.

Setting Up a Monitoring Log - Recording key metrics such as volume in versus compost out, and volunteer hours, would help identify seasonal trends and improve planning over time.

Developing the Hotbed Idea - The observation that pile heat accelerated seed germination is an exciting opportunity. Adapting the bays to double as hotbeds during the active composting phase — particularly in early spring — is well worth exploring further.

A Note of Thanks

None of what has been achieved here would have been possible without the time and enthusiasm of our volunteers. A sincere thank you to everyone who has been involved.

Feedback

If you have used compost from the communal composting area, we would love to hear how it has performed on your plot. Whether your experience has been positive or negative, your feedback is really valuable in helping us to improve the composting process. Please get in touch with Nevil Yildiz at nev49@aol.com with any observations.

