

# HMP Styal - Recycling food waste

Styal has a comprehensive food recycling programme in place that turns nearly all food waste into compost for use in its extensive gardens. Its part of its overall recycling programmes and is very successful. Custodial Review visited in early October to find out more.



Eddie Tarry

Eddie Tarry is the Gardens and Recycling Manager at HMP Styal. He joined Styal in 1980 with the Works Dept and stayed there until 2001 when his role as a plasterer became redundant. He then became took on a role as industrial Cleaner until 2009 when he moved and was based at the gardens. Soon after the Gardens Manager retired he was asked to take over the gardens on a day to day basis and eventually promoted to his present role. He admitted to me he had absolutely no idea about gardening at all when he took the role!

**CR** Gardens and Recycling Manager, that seems an unusual title, does it accurately reflect the role?

**ET** Yes it does, the title of Gardens and Recycling Manager came about because the recycling side of the prisons life has always been carried out by the Gardens Dept. Years ago recycling did not have the emphasis placed upon it that it does now and the prison only used to recycle 11% of its waste 3 years ago, its now up to 61.4%.The title reflects the importance we place on that part of the job. It changed to its present form when we installed all the food recycling equipment.



The composting machine and the raw material.

**CR** What other materials are recycled besides food waste?

**ET** As much as is possible, we are targeted by NOMS on the role so we also recycle plastics, cardboard, metals, ink cartridges, paper and wood. Batteries and a number of other items are sorted by the works department. However if you work on the principal that if something can be recycled then we will do it.

**CR** Why was the food recycling project started?

**ET** The beginning of the project occurred before I joined the department, so I am not conversant with all the facts. However it was done to save money and reduce waste. So reducing our carbon footprint and the amount of waste we sent to landfill. All government agencies have to look at waste recycling and also look to cut costs where possible. This is a



The wood pellets that are added to 'start' the composting process.

prime area for both of those reasons.

**CR** Before the food recycling machinery was installed what was done with the waste food?

**ET** Some of the food was disposed of by using one of the three macerators in the prison, the rest was put in the bins and then sent to landfill with all the other prison waste. We used to send 24 large 1100 litre wheeled bins to landfill every week via a private contractor. This has now been reduced to 20.

**CR** How did the food recycling programme get under way, what was needed and purchased?

**ET** Pressure to achieve targets was the catalyst, we already knew that quite a lot of prisons had these systems in place where a machine takes waste food and process it into compost. So we were following a well trodden path. A bid was put in to Northwest Regional Office for the money to install a Big Hanna IVC composter unit, the buildings that would house it plus all the ancillary equipment, like a de-waterer unit and sorting benches, that is required to sort the waste before its composted.

**CR** How much food now goes into the general waste?

**ET** A little, however it's the minute amount that is left on the plastic bags when the waste food is inadvertently thrown away on the wings. There are boxes on each wing into which waste food is supposed to be emptied

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The bins that the inmates save waste food into.





into when a meal is over. However some prisoners don't see fit to do this and scrape the food into the general waste bins. We have a system here in the recycling sheds that recovers this waste. All the rubbish bags the prisoners generate are sorted through to separate out the recyclable waste and during this process any waste food that is found is transferred into the food composting process.

**CR** How much compost does the machine produce? And is the heat recaptured for instance?

**ET** We only produce compost, it is possible to capture other by products such as heat but that was deemed not to be an economic choice here. We turn four 1100 litre wheeled bins of food waste into compost each week. It sounds a huge amount however it should be seen against the background information that we have 450 prisoners eating 3 meals seven days a week. We produce approximately 250 to 300 litres of compost a week as a result. Therefore, we are reducing it by volume by about 90%. Much of the food is mostly water and it's the de- watering unit that we process the food through first which reduces the volume very quickly.

**CR** What is the compost used for and can you sell it for cash?

**ET** It goes onto some of the gardens within the prison. We cannot sell it because the Environmental Agency Certificate that we have only allows us to use the compost within the prison. This is due to the possibility of cross contamination, the reasoning being is that the compost contains food waste such as meat and fish and some bacteria may survive the composting process. We cannot use it on vegetables that we sell to staff as they will take them outside the prison. The compost is used on the flowerbeds around the prison. There are also economic reasons why we cannot sell it direct to the public.

**CR** It seems strange to me that all over the UK countryside there are millions of acres of fields full of crops and there are animals of all types with a huge range of bacteria on them wandering about then dying and their carcass is rotting and the plants are feeding off it which we eat. Yet you cannot use compost produced in a controlled environment to grow food?

**ET** That's the rules; we are governed by the Environmental Agency that's what they tell us so we have to work with them so our hands are tied. However, I am informed we could sell it but we would have a lot of red tape to get through.

**CR** The compost itself is it like the stuff you buy in a garden centre and what do you do with such a huge amount?

The paper shredder.



The finished compost straight out of the machine.



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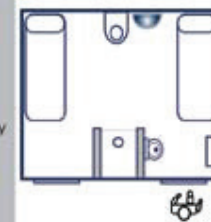
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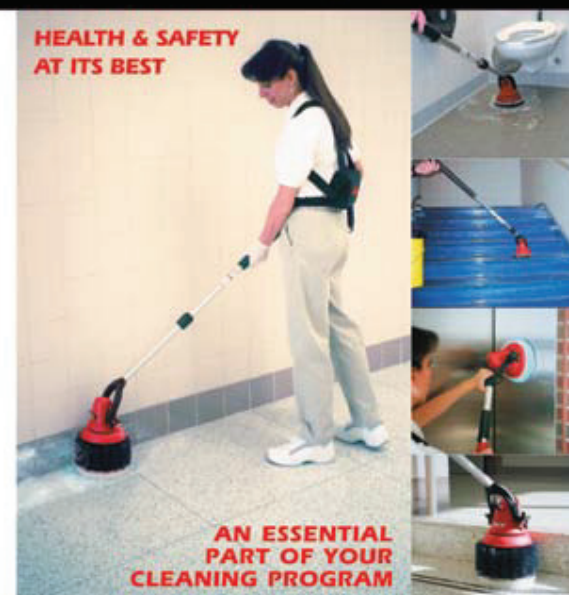
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The bins that send waste to landfill.

## HMP Styal

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**ET** It looks nothing like the compost you buy in bags from the garden centre! I don't like it, but that's a personal opinion. It's not rich dark mulch compost. It looks more like large grains of sand or sawdust. The trick seems to be to leave it to mature for as long as possible before it's used on the plants. It seems to improve that way. It takes about 6-10 weeks to transform the food into the compost within the machine. If you then leave it for a year it improves considerably. We had it tested and it's a neutral Ph so it's ideal for general use. It grows beautiful plants and is easy to handle. It just doesn't look like compost as we usually know it!

*Thanks for talking the Review Eddie.*

*Richard Heys*



Richard Heys is the Horticultural Trainer at Styal; he works for Manchester Collage who is the suppliers of training services to HMP Styal. He started as an Instructor in the gardens two years ago, contributing in firstly, delivering an educational course and secondly, assisting in landscaping projects throughout the prison. This partnership between the Prison Service and Manchester College is working positively to educate and help in the rehabilitation of prisoners in horticulture.

He spent 27 years in the NHS as a Facilities Manager and then formed his own landscaping business. He also taught adults at Further Education College as he loves acquiring and passing on knowledge. He joined Styal after a while spent at Buckley Hall and moved to Styal because of his knowledge of horticulture, teaching and composting with the Big Hanna system.

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His role at HMP Styal is to deliver NOCN qualification's in gardening skills to the prisoners. It requires them to be able to identify and care for a wide variety of fruit, vegetables and flowers in a variety of soil conditions. They are soon moving onto the NPTC City and Guilds qualification, as it's a far more widely recognised one in the industry as it involves far more practical skills in the course. Richard has done extensive experiments mixing different amounts of the compost with soil or conventional peat free mulch and found that if he uses 100% compost you get

fantastic results with sunflowers and other blooms. Other mixes work well for other plant groups. So it works very well, it just doesn't look that good!

**CR** What effect does the composting machine have on your role?

**RH** An enormous effect! We use the compost from the recycled food mixed with a larger amount of multipurpose compost to grow plants and flowers in. It's a superb medium that produces fabulous results. The food waste compost doesn't have the volume or body, that traditional compost has, however



The 'Station' in the reflection garden



when combined together they are very good growing medium! We cannot use 100% food waste compost to grow food products in. Not just from a cross contamination point of view but also because it doesn't, in my opinion, have the 'body' to do the job properly. One part food waste compost to 5 parts conventional compost seems to produce the best results, but we are still fine tuning that split.

**CR** You are not allowed to use this compost in its 100% form to grow food, how do you compost the vegetables you do grow?

**ET** We buy in small quantities of compost



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from the local nursery for this type of use.

**CR** Are there any sorts of hidden costs to this composting system?

**ET** The only ongoing costs are the pellets and a small amount of electric for the de watering equipment and the composter. The pellets are used as a starter for the composting process as they contain the bacterium that does the work. If we just put the food waste into the machine and turned it on we would just heat up the waste food. The bacteria are the organisms that do the job of converting the dried food waste into compost. The pellets are nothing special and are purchased in large plastic bags; they are usually beech wood and about 1 cm square. Unfortunately, as the pellets are wood they are classed as fuel, so they go up and down in price as the cost of oil fluctuates! When we first started it cost us £280 for 55 15kg bags, the same amount is now £320.

**CR** Are there and unexpected benefits of the system? Other than filled potholes!

**ET** The prisoners are now fully on board with the recycling issue. Prisoners being somewhat sceptical by nature will try to buck the system. We have had to re educate them

all so they understand how important it is and it seems to have stuck. When we first started it was an uphill battle to get them to put the waste food into the separate container. Now it's done as a matter of habit because their fellow prisoners are advocating doing it properly because they are the ones who have to sort out the wrongly mixed rubbish. Its peer pressure together with encouragement from the wing staff that has enabled the system to become effective. We expect that the habit of recycling will go with them once they leave. Another benefit was that we were finding that food products were being thrown away that didn't need to be, such as condiment sachets and packets of biscuits. We don't recover them for reuse but we were able to inform the kitchen where the waste was taking place and they were able to take appropriate action to reduce the loss.

**CR** What is the plan over the next 2 years to carry forward the Manchester College with Styal?

**RH** The plan is to full roll out the NPTC City and guilds qualification level one, with progression to level two if appropriate and time is available. We already have over 100 people through the qualification. Hopefully

we will be putting a garden up at the RHS show that is held at Tatton Park. We are hoping to base the garden concept around the 'Reflection' garden that we have created.

It's an area behind the Gymnasium that has been designed and built by the Horticultural trainees. It's a place of peace and tranquillity that encourages visitors to think about the paths that led them here and the opportunities that the future holds. It has scented flowers and quiet areas; it also has a mock up of a train station to remind people that this is a stepping off point not a final destination.

**CR** What jobs could the NPTC City and Guilds in Gardening qualification enable inmates to obtain once they left?

**RH** There are an increasing number of jobs in grounds maintenance, both employed and self employed, Garden centres, Landscape gardeners and nurseries all need qualified and skilled people. The National Trust and English Heritage also need these people. It is a huge area for employment and recently one of our leavers obtained a job with a horticultural company near Preston.

**Thanks for talking the Review.**