

FOOD RESIDUE COMPOSTING AT ANNIESLAND CAMPUS



Early in 2010, while the second phase of the new Anniesland College was still under construction, Dumbarton Road Corridor Environment Trust, in partnership with the College, secured funding from the Scottish Climate Challenge Fund for a food residue composting facility on the College site, producing high quality compost for use by the landscape course on projects in the College grounds. The award allowed for the purchase of an A900 "Rocket" in-vessel composter (IVC) as well as a temporary part time post to develop the food collection and composting systems in conjunction with the College.

In terms of dealing with food residues, the College is therefore compliant with the Waste (Scotland) Regulations 2012 which started to come into effect on 1 January 2014. (The main requirement of these regulations affecting the College is the requirement to present separated dry recyclables (metals, plastics, paper, card and glass) and food waste of more than 50 kg/week for collection from 1 January 2014. There is also a ban on the use of conventional macerators/waste disposal units connected to the drainage system.

The project became operational in September 2010, coinciding with the opening of the new College canteen operated by Inspire Catering. Food residues are collected (mostly on a daily basis) from five locations – the canteen, the training kitchen, the coffee bar, the special needs kitchen and the nursery. It is then added to the Rocket IVC along with equal volumes of a bulking agent – wood chip, wood shavings etc. where it is processed to produce compost in about 10 to 14 days. At the College a significant proportion of the bulking agent consists of wood shavings produced by the joinery workshops, thus further reducing waste and saving on costs of disposal.

The process works by aerobic bacteria breaking down the organic material and generating heat which in turn contributes to the decomposition process. As the name indicates these bacteria require oxygen to do this. They are also known as thermophilic, i.e. heat loving bacteria working most efficiently at a temperature of over 60degC. The food residues are mixed with wood chip for two reasons, firstly to provide a source of carbon which the bacteria require, and secondly to give structure to the mix enabling air to be retained. Without oxygen the bacteria would soon die off and be replaced with anaerobic bacteria which produce methane and other hydrocarbons - the process which takes place under controlled conditions in an anaerobic digester.

In order to keep the bacteria oxygenated the Rocket has a shaft running up its centre with blades attached which turn the mixture over while gradually pushing it towards the outlet. This process is automated and can be adjusted so that turning takes place at intervals of from half an hour to three hours. Each turning involves a backward turn of 30 seconds followed by a forward turn of 3 minutes. There is also a thermostatically controlled heat blanket near the input end which is required to ensure the perimeter stays at the same temperature as the core. In practice very little heat comes from this source - most of the heat is generated by the bacteria breaking down the organic material. To date (April 2014) 25 tonnes (40 cu. metres) of food residues have been processed to produce compost used by the landscape students.

The Rocket is also capable of composting grass cuttings and other green waste. Very little grass cuttings go into the Rocket at present - in fact only those produced by the landscape students from a small area in the College courtyard. Currently the majority of the grass is cut by a contractor who takes the material off site. It is to be hoped that when new procedures for ground maintenance are drawn up, this will change so that grass cuttings can be composted in the Rocket, as it has substantial surplus capacity in the summer holiday period which would enable it to be used to create even more high quality compost for use in the grounds.