An overview of the Anaerobic Digester process

(1) Organic material extracted out of wheelie bin waste by the ball mill is transported to the Anaerobic Digestion Plant and tipped into the RECEPTION HALL. The material is fed by conveyor into a mixing tank, where water is added to produce a slurry.

(2) The slurry is fed into a SAND SEPARATER, which is a system of weirs that takes out the heavy material contaminants in the slurry.

(3) From here the slurry passes through a de- watering system which removes fibrous materials to produce a high quality organic liquid.

(4) This liquid is then pasteurised in the HYDROLYSIS TANKS. There are two such tanks that process on a batch basis and are heated up to 71 degrees Celsius for several hours, killing harmful bacteria.

(5) The liquid is then passed through heat exchangers to cool it before being fed into DIGESTERS. As this is an anaerobic process, no oxygen is allowed into the digesters. Natural bacteria which thrive in this environment will grow and feed off the organic liquid and break it down into a product known as 'cake'. Methane gas is also produced in this process.

(6) The organic liquid known as DIGESTATE is passed through DECANTERS which squeeze the moisture out of the material. This moisture is recycled back into the process again to conserve water. The material remaining is known as 'Cake' and is used as a soil improver.

(6b) This 'cake' is then stored into a concrete pad for 14 days to allow it to become aerobic again. It is then ready to be used in land reconciliation projects.

(7) The methane gas is stored in a gas tank before being sent to the gas engines to generate electricity. This renewable electricity is exported to the National Grid, and enough is generated in this process to power 1500 Homes per day. Finally, the waste heat from the generators is reused to heat the hydrolysis tank so we aim to waste nothing.