Dear Sir,

I have in the past raised concerns with respect to the proposed Eco Park at Charlton Lane Shepperton, with Mr John Hazeldean, the last correspondence was in March/May, shortly before his retirement. He advised that my concerns would be addressed by a colleague who would be taking over from him, however, I have heard nothing since this last communiqué.

Since last May as more details have emerged the situation has become more worrying, and I would appreciate HSE addressing my concerns.

As background, the project calls for the establishment of an Anaerobic Digested and a Municipal Waste Combustor on the existing Waste Transfer Station site and to be located alongside the existing Community Recycling Centre.

Recently published amendments to the original plan calls for 43 changes included amongst which is a waste pre-treatment complex and a two stage combustor, with first stage gasification followed by combustion in the same chamber. This is to replace the now aborted Batch Oxidation System.

I can find no proven example of waste pre-treatment, waste storage, gasification, combustion ash handling, steam generation, power generation and flue gas treatment in the same building. For a building which relies upon the combustion forced draft fans for ventilation, it would have to be kept under negative pressure to prevent odours escaping into the atmosphere. The combination will most certainly produce unacceptable exposure levels to bio-aerosols, dust, noise, high humidity and heat, resulting in working conditions that are unlikely to satisfy the requirements of 'Workplace (Health, Safety and Welfare) Regulations 1992. Approved Code of Practise and Guidance.'

The storage of waste in the same building as the combustion facilities is not supported by Intelligent Energy Europe (with input from the HSE) whose guidelines calls for material to be stored in a separate building. This appears to be a sensible instruction given that nationally a fire occurs at a waste storage site every 24 hours.
The same guide lines call for the gasification building to be well ventilated and flows monitored or verified across critical operating areas. As pointed out this is not possible with this building set up.

The drawings supplied do not specify the hazardous area zones inside the Municipal Solid Waste (MSW) building. These will probably be a combination of 2, 21 and 22 zones. Dependant upon the extent these could prohibit the planned vehicle access into the MSW building.

The subject building will also include administration offices, a public education centre and the plant control room, which will be located on the **fourth floor** of this building. No details have been supplied of the control room construction, air inlet or emergency exit, etc.. Intelligent Energy Europe guidelines state 'For safety reasons, the control room and staff (admin) rooms must be separated from the remainder of the plant due to fire ,explosion and toxic gas release.

Anaerobic Digester

AD hazardous zoning

Hazardous areas are defined in 'Dangerous Substances and Explosive Atmospheric Regulations (DSEAR) .

There is a 6 metre radius area around the AD Flare and the AD Gas Holder, which is classified by DSEAR as a Zone 2 area. An area in which an explosive gas atmosphere is not likely to occur in normal operations and, if it occurs, will only exist for a short time.

DSEAR calls for special equipment in a Zone 2 area - e.g. electrical equipment to BS EN 50021, 1999 and non- electrical to EN 13463 -1, 2001. All ignition sources including vehicles must be excluded from Zone 2 areas.

The latest AD drawings shows that the Zone 2 areas around the Flare and the fabric Gas Holder protrude into the access road, which is not permitted under DSEAR regulations.

Other Flare concerns

The EA Guidance on siting of flares states: 'Flares should not be located near to trees or other structures and there must be safeguards to ensure that atmospheres that could asphyxiate are not given the opportunity to do so and it is advisable to avoid placing flares near hollows.

The Flare on the latest AD layout drawing shows that the Flare will be close to trees and the adjacent public footpath, which passes through a hollow at this point. It is predicted that the Flare will be operated for more than 35 days per year, during routine plant maintenance. No dispersion analysis for Flare gases nor radiation analysis has been made, so its impact on dwellings and human habitation has not been assessed.

AD plants are prone to foaming problems, no assessment has been made of the consequences of foam carry over into the Flare.

Bunded Area

The AD plant tank bunded area now has a 3.2 metre high bund wall, this is very unusual and has been forced on the designer by the lack of available space to contain the mandatory 110% of the largest tank capacity. As a result the bunded area does not comply with accepted requirements for secondary containment:

1. The high bund walls under still atmospheric conditions could result in the build up of a deadly gas trap in the bund, the asphyxiant gas being produced by the AD digestion process.
2. The tanks are situated close to the bund walls and any tank leak above 4 metres and in the arc facing the bund wall would result in uncontained spigot flow over the bund wall.
3. In the event of the bunded area becoming flooded, any other empty tank(s) inside the bunded area would be subjected to hydraulic forces, and if not substantially anchored would result in the tanks floating, leading to damage to the tanks and any connecting pipework.
4. In addition the high bund walls would inhibit fire fighting, plant inspection and maintenance.

Fire Hazard

Surrey Fire Service has confirmed that there has been **no** analysis of the fire risks associated with the plant. A particular concern is the trees and scrub immediately surrounding the plant, especially on the West (M3 Motorway) side, should this catch fire it would pose a high risk to the AD plant especially the very large fabric Gas Holder.

Domino effect
Because of the restricted site area there are no safe separation zones between the CRC, the AD and the MSW building.

Please note that these, along with other lesser health and safety issues have been brought to the attention of the Applicant, however there appears to be a lack of understanding of the potential problems and no attempt has been made to gain your approval.

Your sincerely

PWH Francis C.Eng. MIChemE.