Your QUESTIONS

1. A full description of the process from start to finish, including the lifecycle of the flies and the breakdown of the food waste, similar to what you presented yesterday. Any background details such as the type of fly, where its coming from etc. It would be helpful to have plans that show where the cages would be and the different rooms (I think you said there would be 9), diagrams of how the racking and floor plates would work.
2. The history of the application site.
3. Temperature control of the building, how this would be managed and details of the systems.
4. Emergency procedures,
5. An Odour Assessment,
6. Pest and vermin control
7. A Noise Assessment,
8. Vehicular movements – please could you include calculations to show how this would be less than the vehicular movements associated with the flower packaging plant, radius of where waste would be sourced,
9. Waste delivery and handling arrangements,
10. Travel Plan,
11. More details of the lighting, including positions,
12. Would the process specifically have any collaborations with higher education establishments?

ANSWERS

A full description of the process from start to finish, including the lifecycle of the flies and the breakdown of the food waste:

1.Layout and functionality of the plant

There are essentially 4 main work areas operating in the site:

1.1. Surplus Food (Feedstock) reception and mixing: In this area, we receive former foodstuff from vegetable, fruit or grains plus bread that has originated from the cold chain or food processing plants, we have a dedicated chillable area for reception and storage plus a dedicated area for shredding / macerating and insect diet formulation.

1.2. Production Rooms: There are 9 dedicated and sealed controlled Production Rooms (33m *4m high*5m) with 2 vertical high grade aluminium racking systems with 7 levels. Each level is covered in a movable, breathable matting system. On each level 3 MT (Metric Tonnes) of feedstock is laid 10cm deep with appropriate dosing of 4-day old neonates (1.5kg in total for whole room). On day 1 of laying the crop, each shelf receives 3m starter larvae or neonates. The crop length is 9 days, meaning we load and empty one room per day making the production system linear in output. The production Rooms have dedicated HVAC systems that are electronically controlled by a bespoke PLC (Programmable Logic Control) interface. This interface monitors RH (Relative Humidity), T (Temp) and Gaseous Emissions. The system has automated alarms and shut-offs. These alarms are fed to Insect Operators Mobile Telephony and Management Lap-Tops.

1.3. Breeding: Individual sealed and HVAC (Heating ventilation and Air Con) controlled Insect breeding cages with a dedicated area for flies to mate and lay eggs; the cages are temperature and humidity controlled. They are also equipped with special breeding lights that enable them to mate and fertilize the eggs. In a further sealed HVAC controlled room we have Broodstock growing: a dedicated space to grow the broodstock (Larvae destined for reproduction) as they are fed on a different diet than the larvae destined for production. The larvae are grown in 600*400mm plastic trays and fed a mixture of grains mixed with water. The total population of Broodstock equates to about 1-2% of the daily produced larvae. Nursery – there is a dedicated area for newborns upbringing - We grow them for 4/5 days in plastic 600*400mm stackable trays. The newborns (commonly called Neonates) are very small and they're aptitude to ingest organic waste is limited. This process step enables them to grow to a point where they are ready to be in the main Production or fattening phase.

1.4. Processing areas: HACCP (health and Critical Care Planning) and APHA (Animal Plant and Health Agency) ABP (Animal By Product) processing compliant areas. The whole site is divided into two sections, a so called "wet area" which includes

all of the farming, foodstuff reception/processing, Larvae and frass separation activities. A so called "Clean area" where all of the animal by products (Larvae and Frass) are processed into products. The term processing areas refer to only the ABP related operations or post-farming process steps.

Brief Biological Description of the Insect

The black soldier fly (BSF), Hermetia illucens Linnaeus, is a large Stratiomyidae fly (13-20 mm in size) found worldwide, but it is believed to have originated in the Americas. It is frequently found in the tropics and temperate regions throughout the world. Although adapted primarily to these regions, it can tolerate wide extremes of temperature except when ovipositing. They are considered beneficial insects and non-pests. The adult fly does not have mouthparts, stingers, or digestive organs; thus, they do not bite or sting and do not feed during its short lifespan. They feed only as larvae and are, therefore, not associated with disease transmission. BSF larvae (BSFL) are voracious eaters of a wide range of organic wastes, decomposing and returning nutrients to the soil. Additionally, BSFL is an alternative protein source for aquaculture, pet food, livestock feed, and human nutrition.

See attached lifecycle of BSF.

2. History of the building

For building / planning history the local authority only have records online dating back to 1993.
JZ Flowers / former Intergreen site at Washway Road, Fleet, Holbeach, PE12 8LT.

What the site was originally described as:

A commercial property brochure for “Intergreen Premises – Distribution Centre, Washway Road, Fleet… PE12 8LT” describes a substantial flower packing/distribution facility and states the warehouses are steel portal frame and were “built in 1993, with a purpose-built office block to the front”.

Planning history at the same location (South Holland DC)

South Holland District Council planning records for “JZ Flowers SuperFlora, Washway Road… PE12 8LT” show recent permissions and—critically—an embedded “Relevant History” list confirming earlier consents:

H05-0567-23 (Approved 22 Aug 2023): new concrete area / internal roadway extension, drainage connection, 1.8m boundary fence & external lighting at JZ Flowers Superflora, Washway Road.

H05-0837-23 (Approved 14 Nov 2023): discharge of conditions (landscaping/tree planting + surface water drainage) tied to H05-0567-23 at the same site.

Relevant historic permissions listed in the council report:

H05-0319-95: packing/forcing house extension (Approved 04 May 1995)

H05-0223-98: demolish office/packing shed; erect new office (Approved 27 Apr 1998)

H05-0540-99: erect bulb store (Approved 26 Jul 1999)

H05-0166-01: change of use from horticulture + new buildings for flower/bulb packing, storage & distribution (Approved 15 Mar 2001)

The last addition / planning application with regards to the building was in 2014 as below where planning was granted for a side extension.

The owner (Intergreen UK Ltd) had previously operated from the building from 1993 and Intergreen UK Ltd was acquired by JZ Flowers / Super Flora UK Ire Company.

This is the previous planning application in detail.

Reference	H05-0076-14
Status	Approved
Proposal	Proposed chiller extension
Location	INTERGREEN UK LTD WASHWAY ROAD FLEET SPALDING PE12 8LT
Parish	Fleet
Case Officer	Robin Forrester
Received	30-01-14
Validated	31-01-14
Decision By	28-03-14
Decided	07-04-14
Applicant	Intergreen UK Ltd Washway Road Holbeach Spalding Lincs PE12 8LT
Agent	Sidebottom Richardson Cheng Ltd 15 High Street Spalding Lincs PE11 1TW

3. Temperature control of the building

All growing rooms are equipped with Air handling units linked to boilers, chillers and air extraction systems operating on a closed loop with an ammonia washer at the end of the line. The production room temperature is kept in the range suitable for each particular stage with the average is around 28-30 degrees Celsius, Humidity is kept at around 55-75%. The control of the system is automated using sensors for T, RH and NH3 calibrated sensors feeding data to a PLC (Programmable Logic Controller) that coordinates the different elements of the system according to pre-determined setpoints (View attached diagram and pg 31-33 of Equipment specifications brochure.

4. **Emergency procedures** – See HACCP Plan attached

5. **An Odour Assessment**

No odour assessment carried yet, but it's planned to be done once we are up and running. We proactively acquired an ammonia control system to reduce and control the emissions from our rearing activities. The ammonia control system is linked to all production room HVACs and consists of an ammonia bed using woodchips and lactic acid. The ammonia control system yields no more than 3ppm of gas. This assessment will be carried out by Lucion consultants when the site is in full operation.

6. **Pest and vermin control**

We have implemented a pest and vermin control system managed by a local external contractor, Jack Russel Environmental LTD is carrying out, data driven proactive pest, rodents and fly control in our facility providing us insights over risks and current status.

7. **Noise Assessment**

This can only be carried out when the site is fully operational. This will be undertaken by Lucion Consultants.

8. **Vehicular movements**

This will be limited to 4 large HGVs per day (2 delivering and 2 for end product distribution. Prior to this when the Building was used as a Flower Packaging warehouse there were over 12 large HGV movements per day. Our haulier is H.Z Logistics based next door.

9. **Waste delivery and handling arrangements**

All waste deliveries are either carried on by Fairman Knight staff or H.Z Logistics as a third party contractor. Both these parties have the required licensing to operate. See attached Fairman Knight Tier 1 Waste Handling Permit. Fairman Knight also has an AB 117 issued by the APHA for handing of ABPs (attached).

10. **Travel Plan** – see attached