Guidelines for the Development and Structure of
Small Cutting Plants.

Prepared by

MLCSL Consulting

Basic Design Requirements and Costs.

1. Requirements for Cutting Plants

1.1 Introduction.

From 1 January 2006 new EU food hygiene legislation has applied throughout the UK. All premises slaughtering, cutting, processing or retailing meat and meat products are covered by these regulations. The new hygiene regulations replaced 17 directives, including eight relating specifically to meat. The new regulations of specific reference to the meat sector are:

- 852/2004 (H1) This regulation lays down general rules for food business operators (FBO's) on the hygiene of foodstuffs.
- 853/2004 (H2) This regulation lays down specific rules on the hygiene of food of animal origin for food business operators.

Full information on meat hygiene regulations is available from the FSA industry guidance document on the FSA website. The link is:

http://www.food.gov.uk/foodindustry/meat/guidehygienemeat

The new regulations clearly state the duty of the FBO and also introduces a new approach to food safety by including primary production (e.g. farmers), often for the first time. The regulation calls for a flexible HACCP (Hazard Analysis and Critical Control Point) based approach founded on HACCP principles and good practice. It is hoped that if an FBO is able to demonstrate that good hygiene controls and practices are in place, the level of official intervention and inspection will eventually be reduced.
In so far as these regulations affect the structure and operations of meat cutting plants, a detailed guidance manual (Cutting Plant Design Manual), has been prepared by MLCSL Consulting (part of AHDB) and is available from MLCSL at a price £55), to assist those involved in the construction or modification of meat plants intended to comply with the standards required for premises operating to EC Regulations.

Separate manuals are also available relating to:
1. Slaughtering - best practice design and equipment for abattoirs to meet operational and hygiene requirements.
2. Meat processing - best practice design and equipment for small meat processing facilities to meet operational and hygiene requirements.

1.2 Implications for Very Small Cutting Plants

All premises have to be approved (licensed) by the FSA, except for certain small scale facilities operating under specific restrictions.

Such facilities can include premises that are cutting meat for sale through a retail shop, or via a farmers market stall, or are involved in direct sale to consumers (e.g. mail order or through such as a box scheme), where this is being carried out in either a facility that is part of the shop or in a small facility that is separate to the retail outlet.

All such facilities currently have to be registered with the relevant local authority environmental health section. They are subject to Environmental Health Officer (EHO) inspection and have to operate under the H1 regulations e.g. they need to have a HACCP plan in place that is monitored and inspected by the EHO.

1.3 Basic Layout and Areas of Cutting Plants

Within the EU regulations introduced into the UK in 2006, there are few prescriptive standards as such (e.g. concerning structures and finishes). In practice, even more important than the word of the regulations, is the interpretation placed on them at any particular time by the appropriate authority.

The following is MLCSL Consultings interpretation in brief, of what, based on our experience, the FSA look for as basic requirements for a small plant operating under an FSA license. (this is given in more detail is in the Design Manual referred to above).

These are also in MLCSL Consultings experience, the basic requirements for an EHO controlled facility, although, in practice what is considered appropriate in such cases can vary by local authority, as in practice the exact requirements are not prescriptive.

a. Boundary:
All premises must have a clearly defined boundary i.e. what is licensed.
b. **Product Intake/reception Chiller:**
Good practice requires a suitable sized chiller to hold exposed product prior to cutting operations. To hold product at temperatures of or below 7 degrees C for red meat or for offal at or below 3 degrees C.

c. **Packed Product Chiller:**
For the holding of received packed product prior to cutting, wrapped/packaged meat must be stored separately from exposed meat (this could mean two chillers or a suitably subdivided large one). All packed product must be either de-boxed or exposed from wrapping in a specific area all waste material to be disposed of in a hygienic manner (i.e. stored for disposal in a separate area to that where meat is being cut and stored).

d. **Handling during unloading:**
All exposed meat must be handled hygienically during unloading; best practice implies that this requires protection from the elements at the entrance to the reception chiller (see Dispatch). Exposed meat must not touch walls, floors and is best hung from rails. A dedicated inspection point is required. A larger facility would be expected to have a hygiene station (hand wash basin operating at a temperature of 45°C, knife sterilizer, operating at a temperature of 82 °C).

e. **Cutting Area:**
Suitable sized cutting room to allow operations to be performed in a manner so as not to contaminate other product. All work stations to be kept clean and operations should progressively get cleaner. Sufficient clean bins to store fats, bones, etc; prior to removal from area.

A suitable hygiene station is required (hand wash and steriliser facilities). In larger premises this would be a separate area that operatives have to pass through before entering the meat preparation area and when exiting.

Small cutting areas need not necessarily be temperature controlled, provided that they are laid out and ventilated so that during the cutting process there is no appreciable rise in temperature (above 7 degrees C for meat) in the product (in larger areas this will usually require more sophisticated temperature control – e.g. room chilling equipment).

f. **Packing area:**
Preferably separate area from cutting room or separated by a division screen, to reduce airborne contamination from cardboard box material. Separate room for the storage of packaging material and box make up prior to entry to packaging room.

g. **Processing area:**
Must be in a separate clearly defined room or may be allowed in the same area on a time separation basis (i.e. after cutting and packing fresh meat the area and packing equipment should be thoroughly cleaned before meat processing/preparation and packing begins.

In larger plants separate packing equipment for fresh and processed meat (e.g. vacuum packing equipment) is insisted upon and it is recommended that this approach should be followed by smaller plants.
( also see 2. below)
h. Storage:
Wrapped and packed meat must be stored while awaiting dispatch in a suitable chiller (if only wrapped and packed meat is handled the reception chiller can be used, otherwise exposed and packed meat need to be separated).

g. Dispatch:
Dispatch area for the loading of vehicles. Loading of exposed product to be carried out on a time separation basis from packed product. All exposed meat to be handled hygienically during loading to reduce the risk of contamination (ideally this should be done using a sealed loading dock).

i. Amenities
Toilet facilities should be available to staff and located and accessible in ways that do not compromise the hygiene requirements implied by the above. Other facilities are at the discretion of the owner.

j. Cost
The average building cost of a small cutting plant, excluding site cost, is difficult to quote, as each has a unique set of circumstances (e.g. it depends on the site, the services available and what the plant is being designed to do, what equipment is required and the quality).

As a guide, a cost range of: £ 150,000:00 to £ 200,000:00 (depending on throughput), is not untypical; this is for the construction of a small plant with all new materials (including professional fees) on a new site to give a 10 year depreciation life (excluding site and services connection costs).

In practice, depending upon the individual circumstances, there can be ways of reducing these costs (e.g. converting redundant buildings, using second hand equipment, using own labour).

Similarly costs can sometimes be significantly increased if there are specific site related issues that have to be overcome (e.g. in the MLCSL Consultings experience, environmental issues are today becoming more problematic, such as wash down water treatment requirements, waste disposal)

Blending all of the above elements together into a plant where the product flow and the staff flow is both optimized and meets regulations, particularly where plants are created in refurbished existing buildings, can be difficult.

If you have a problem this is where MLCSL Consulting can advise you, comment on existing plans, even design a facility from scratch that is best for your existing needs and able to cope you’re your developing future requirements. We recommend that any new or upgrade designs are forwarded for comment to the relevant government departments and liaison maintained from the initial design stage. It is important to understand that effective meat plant design is about producing an efficient operation within the terms of the legislation.

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2. Activities Other Than Cutting

Like butchers shops, many small cutting facilities also wish to add further value to meat by simple fresh processing e.g. making sausages, curing. As discussed above this is best done in a separate room or in a clearly separated area.

Any cooking of product (e.g. making of pies, ready meals) is considered to be an even higher risk activity and needs to be carried out so that clear separation can be demonstrated between the preparation of fresh and cooked meat, the movement and storage of this product and the movement and operation of the staff involved (e.g. a separate room with its own hygiene entrance/exit).

Such activities if carried out within premises that are also involved in the cutting of fresh meat, have structural design and layout and operational implications that need to be taken into account in any plans.

The cutting of poultry and game are also covered by H2, but require separate approval to red meat. Such activity within premises that are also involved in the cutting of fresh meat, also has structural design and layout and operational implications that need to be taken into account in any plans.

3. Recommended Procedures To Be Followed In Planning Small Cutting Plant Projects

This assumes that the market research required to support any project has pointed to the need for a new facility.

1. Identification of throughput of stock in species, and/or quantities of meat to be processed
2. Identification of range of processing activity e.g. cutting, further preparation, cooking etc;
3. Identification of the site location e.g. open site, or building for modification;
4. Consideration of possible environmental issues, and any environmental impact study requirements, contact with relevant environmental protection bodies
5. Establishment of waste disposal routes and resolution of issues,
6. Consideration of requirements of water treatment facilities at the plant.
7. Preparation of initial outline plans (for submission to the following)
   a. Local authority planning and environmental departments.
   b. Food Standards Agency – Veterinary Meat Hygiene Advisor (VMHA) responsible for the area
8. Preparation of outline budget costing
9. Consideration of source of funding.

10. Preparation of Project Proposal and Outline Business Plan – a key document for any grant application, bank loan, information for potential partners/co-operators/investors – this together with any additional market study or market research required to support the project, will also form the basis of any ‘feasibility study’ that may be required

11. Preparation of detailed plans with full performance specification for proposed project - sufficient for interpretation by architects (for buildings) and engineers for the design and installation of equipment; collection of quotes for groundwork, buildings and equipment.

12. Commencement of construction; supervision that engineering works are completed as per requirement.

**MLCSDL Consulting**, can help with any or all of the above. Our charges are based on a daily rate of £600, but we usually work within an agreed total cost to cover all of what is required. For example a typical small job would take:

- Advisory only - half to one and half man days of our time *
- Advisory, outline design work and liaison with officials – 3 to 5 days of our time
- Complete service – 6 to 20 days of our time, involving initial discussions/work to address all of the issues above 1) to 6), then 7) and 11) preparation of design plans, liaison with environmental bodies, planners and FSA, revision of plans as required and production of those showing details of equipment, drains and services, liaison with architect/building to produce building specification plans, 8) preparation of costings.

The preparation of Project Proposals and Outline Business Plans 10) and 12) supervision of works, are normally quoted for separately but normally require 5 to 10 days of our time (depending upon how much of the work above has been covered.

*(Note * if the project involves English pig meat, BPEX may on request cover 1 day of our time – contact BPEX on 02476 692 051)*

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ANNEX : Licensing Large and Small Plants

Licensing covers the process not just the building structure - it is not possible to have a licence based on the inspection of the plant alone. The FSA vets also want to see it operating to make sure that there are no cross contamination risks between product flows and people flows.

What are the Exemptions from Approval?

To quote : 7.13 Regulation 853/2004 provides certain exemptions from approval.

A. RETAIL ESTABLISHMENTS

The exemption is for retail establishments that supply food of animal origin to the final consumer, or supply other establishments (including caterers) on a 'marginal, localised and restricted' basis (853/2004 Article 1 Scope point 5).

Recital 13 of Regulation 853/2004 interprets 'marginal' as 'a small part of the establishment's business', but subsequent EU Commission guidance provides that it may also be interpreted as 'a small amount of food of animal origin in absolute terms'. Following consultation, the UK is interpreting the terms 'marginal', 'localised' and 'restricted' in relation to meat as follows:

- **'Marginal'**: supply of food of animal origin:
  - (i) up to a quarter of the business in terms of food; or
  - (ii) in relation to: fresh or processed meat, (but not wild game meat)

  up to 2 tonnes a week, subject to the establishment having a genuine retail outlet

  supplying the final consumer(*) with part of its production of meat;

  and

- **'Localised'**: supply of food of animal origin within the supplying establishment's own county plus the greater of either the neighbouring county or counties or 50 km/30 miles from the boundary of the supplying establishment's county;

  and

- **'Restricted'**: supply of food of animal origin is limited to certain types of products or establishments. In the meat sector, the restrictions are in relation to the amounts of meat supplied and the requirement for a 'genuine' retail outlet (see 'marginal' above).

[Note: *supply to a final consumer can include mail order, internet and other direct delivered sales.]
EXAMPLES:

A1. WHOLESALE BUTCHERS

A butcher supplying retailers (e.g. butchers shops, restaurants, pubs) as well as final consumers from his own premises, may be exempt from approval as a cutting plant if the wholesale element of the business is 'marginal, localised and restricted' exemption (see 'A' above). For example

1. A butcher cutting 12 tonnes a week, supplying 3 tonnes to caterers and 9 tonnes to the final consumer, would be exempt from approval because the 3 tonnes does not exceed a quarter of his production.

2. A butcher cutting 3 tonnes a week, of which 2 tonnes goes to caterers, would be exempt because, although it is 70% of his production, it doesn't exceed 2 tonnes.

A2. FARMERS MARKETS

The 'marginal, localised and restricted' exemption (see 'A' above) allows a butcher to cut meat on a farmer's behalf and return it to the farmer for onward sale, provided this is a marginal part of that butcher's business and the farmer being supplied is local.