LECTURE 6

CONSTRUCTION OF FACTORY BUILDING

Construction Materials and Chemicals

- All construction materials, packaging materials and chemicals used to build and operate the plant must be acceptable for use in a food plant. This includes paints and coatings intended for use in food production and storage areas.
- Acceptable construction materials, packaging materials and chemicals may be listed in the Reference Listing of Accepted Construction, Packaging Materials and Non Food Chemical Products published by CFIA

Traffic Flow

- The plant layout must be designed to accommodate the movement of people, ingredients, packaging materials and finished products so there is no cross contamination to compromise the finished product.
- The layout should progress logically in a linear fashion from areas of high risk to successively lower risks
- Where possible, employees should be restricted from moving between raw and pasteurized product handling areas. However, where this is necessary, adequate measures must be in place to control potential cross contamination.

Walls

- Walls must rest on a concrete curb 15cm (6") above the floor.
- Walls need to be finished in a smooth, non-porous cleanable material. All panel seams, including corner junctions and wall to ceiling or wall to floor junctions, must be sealed and watertight.

All wall panels need to be secured to the underlying walls so there is no air space behind. All fasteners need to be completely sealed to prevent moisture from seeping behind walls.

Ceilings

- Ceilings should be finished in a smooth non-porous cleanable material and any open frame structures must be non-corrosive.

Floors

- Floors in the plant's production and storage areas must be smooth, non-porous and cleanable.
- Where there is a risk of liquid accumulation, floors must have an adequate slope for drainage to prevent fluids from pooling (generally a 1 to 2 per cent slope is recommended).
- The floor finish should continue into a smooth coving at the junction with walls to ensure a watertight transition between the floor and the wall.

Drains

- Where there is a risk of liquid accumulation, there must be an adequate number of floor drains (minimum of one) in production and product storage areas.
- Drains must be individually trapped directly below the floor surface.
- Processing drains must not connect with sanitary (e.g. washroom) drains within the confines of the building. After exiting the plant and with proper backflow prevention, processing and sanitary drainage may be combined into one disposal outlet.
- Drains should have an inner basket to catch large debris where applicable and an easily removable cover for access and cleaning. The basket and cover should be of non-corrosive material.

Doors

- All doors leading in or out of processing and storage areas must be self closing.
- Door surfaces must be finished in smooth non-porous cleanable materials.
- All production rooms must be equipped with hand-washing facilities and an adequate supply of potable hot and cold water.

Windows

- All windows must be of safety glass or other shatterproof material.
- Any windows that open to the outside must be properly screened.

Ventilation

- The plant must have sufficient ventilation capabilities so that sensitive areas, such as post pasteurization processing and packaging areas, remain under positive pressure. Ventilation should cascade to successively lower pressures as you move away from these areas until raw receiving areas are under negative pressures.
- Ventilation systems need adequate filters to eliminate microbial contamination.
- Ventilation must have adequate air exchanges to ensure excessive moisture is removed from processing and storage/aging areas to prevent the accumulation of moisture on ceilings, walls, overhead lines and overhead equipment.
- Laboratories should be separately exhausted or, at minimum, under negative pressure relative to post pasteurization processing and packaging areas.

Lighting

- There must be adequate lighting in each room to meet the need of operations in those rooms and all lighting must be shielded or shatterproof.
- Lighting must be adequate to allow for effective inspections.

Washrooms

- There must be a minimum of one washroom as per the building code and, where there are more than ten workers, a washroom for each gender.

  Washrooms must have self-closing doors and not open directly into processing areas

Equipment Location/Processes

- Incompatible processes should be physically separated from each other.
- Equipment should be positioned so there is adequate space for employee and inspector access around the equipment and sufficient space to properly clean and sanitize all parts of the equipment.

Equipment Specifications

- When available, manufacturer specifications should be clearly visible on all equipment.
- Specifications should include what the equipment is made of and the standards that the equipment meets (e.g. 3-A equipment standards for dairy equipment, calibration and testing requirements, preventative maintenance and detailed dismantling and cleaning instructions).

Chemical Storage Area

There should be a separate area with good ventilation to the building exterior for chemical storage.