



FACILITY DESIGN PROJECT.

Don Chepe Coffee

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Facility Design Project

Roasting Factory and Warehouse

As the leader on high quality coffee in Alberta, Don Chepe Coffee Co, require a Factory and Warehouse that meats the company needs.

In this proposal for the design of the facilities, we will work with more than just a place to store the coffee, but to a complete development of a high quality roasting factory, proper receiving area, quarantine area, storage of raw material, roasting and packaging and storage and distribution of finish product.



To accomplish this, we need to understand all the production steps and needs. Let's start with what kind of warehouse facility we require, as we know warehouses can be:

- Heated or unheated warehouse
- Refrigerated or not.
- Humidity Controlled or not.

Also, the layout is very important for the success of the company, offices area should allow an easy communication flow with the warehouse and factory, safety factors need to be implemented, and the comfort of the worker will be take into consideration.

Type of Warehouse

The warehouse will be a combination of receiving and quarantine area for raw material, processing and packaging and storage and distribution of final product, and office spaces, the type of warehouse is a special designed warehouse, where we can accommodate all the need of the company.

Facility Characteristics

The design of the warehouse need to accomplish multiple functions, while providing a safe and comfortable environment for the process. A well design warehouse will increase the productivity and reduce the overall cost. All the aspect of this new facility need to be contemplate, including office spaces, factory area, in and outbound areas, and social areas.

Type of Spaces

The facilities will be design by type of spaces, this will allow us to focus in the need of every area.

- ✓ Office space: This area will include the president office, the accountant office, the warehouse manager office, an open area with multiple desk for our procurement and sales department, a reception area, a cafeteria, and an area for display our history and new products.
- ✓ Lab space: This area is design for testing and quality control of our products.

- ✓ Receiving area: Landing docks for receiving raw material, a space to sort and inspection of the product, and a quarantine room to keep raw material before storage with the rest of the stock.
- ✓ Storage area: An area where storage the raw material before processing.
- ✓ Factory area: waiting area for raw material, roasting area and packaging area.
- ✓ Shipping area: Area to inspection the product and a landing dock for deliveries.

Design of the Spaces

Knowing the requirements of the company, the spaces need to be design based on those needs:

OFFICE AREA:

This area will consist in:

- A reception area, with a “L” shape desk for 1 person and a sitting area.
- A cafeteria area, with a table for 10 persons, a kitchenet area with sink, fridge, microwave and coffee matching.
- 4 Offices with desks and office equipment
- 2 open areas with cubicles for 10 person each.
- 1 area for the computer server. (cold room)
- Bathroom areas.

RECEIVING AREA:

Located after the laboratory area, the receiving area have its own loading dock for unloading the raw material. This area is also convenient located in front of the warehouse manager office, allowing the proper communication between



the receiver and the area manager. As equipment this area counts with a pallet jack, a tool box with safety cutters to open boxes, and a garbage container for the disposal of unnecessary packaging.

QUARANTINE AREA:

Raw material is move from the Receiving area to a quarantine room, this because Coffee as an organic product cannot be storage right away with the rest of the stock until is confirm that will be safe. This area has 3 shelves (see attachment for shelves specs), and the process is complete by hand, allowing the worker to sort the product by country of origin. This area has a clime control system, keeping the freshness of the product.

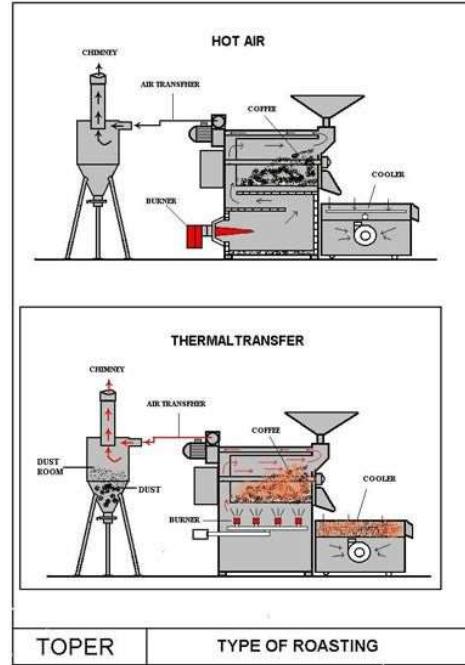
STORAGE AREA:

After the quarantine process is complete, the raw product can be move to a more permanent storage area, with clime control. Here the raw product is separated by country and farm of origin. Also, every bag is label with the date to ensure always use the older first. This area has 12 shelves (see attachment for shelves specs)



FACTORY AREA:

The factory area, is divided in 3 areas, the first one where the product is move from the storage area to a bin container with a capacity of 50 lbs. each. The bins are inline following the customer order. The second area is the roaster room, where our Coffer Roaster machine is located (see equipment attachment - Roaster Machine). The Roaster has a capacity of 50 lbs. per batch and takes 15 minutes average from loading to unloading. The machine is complete automatic and can follow any roast profile from our center computer, and the third area is the



packing area. This area is semi-automatic, waiting and separating the product, and dumping it inside the pre-loaded packaging. The loading of the machine is manual, and the seal of the package is manual as well, allowing the worker to verify consistency.

LABORATORY AREA:

The Laboratory has multiple functions, ensuring quality and consistency, but also is where the profiles (recipes) are created and loading into the center computer. In this area we have a sampler roaster machine with a capacity of 1 lbs. to roast samples, and record the profile, brewing machines, to taste the recipes.



SHIPPING AREA:

The shipping area is considerably smaller than the storage area, this because we deliver the final product as soon as possible. Our Coffee is famous for its freshest, in this area we only keep products of the day, waiting to be picked up or delivered. In this area we have 3 shelves, packing material, 1 pallet jack.



Safety Factors:

The design of a warehouse or factory, include no just layouts and factor of productivity, but safety requirements as well. In my design safety is consider in extremis, safety exists are market and clear of obstructions, eye wash and first aid stations are in multiple places, as indicated in the layout attached, PPE is in the storage room next to the warehouse manager office. A copy of the MSDS is in the warehouse manager office, fire extinguitors are located next to every door, and next to the roaster machine.

Human Factors:

The design of a warehouse no only need to focus in the equipment and layout design, but also in how these factors will interact with the workers. For this my design is intended to create a fresh, comfortable and safe environment for the workers, and at the time allowing the company to grow. Aspect that we consider are:

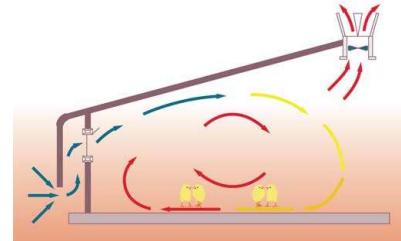
- Illumination (natural and artificial)
- Air circulation and A/C requirements
- Safety areas
- Social areas
- Expansions areas

ILUMINATION:

The warehouse includes a combination of natural light, true skylights and windows for the natural illumination and the artificial illumination we are using LED illumination, providing no only great day light sensation, but reducing the heat generated by regular illumination systems, creating saving on electricity.

AIR CIRCULATION:

Receiving and shipping area are natural air ventilated, with air circulation produce by worldy birds installed in the roof, 1 for every 400 sqf. Office areas will be using an air force furnace system, that delivery hot and cold air as required. Storage area will be refrigerated, and roasting and packing area A/C control it.



SAFETY AREAS:

Safety areas are areas designated for a safe traffic, clearly mark on the floor, also the office next to the warehouse manager will be use as storage for safety material like high visibility vests, hard hats, safety glasses, additional fire extinguisher, first aid kids, extra copies of the MSDS, and any other article required by law.

SOCIAL AREAS:

The warehouse will have 2 social areas, one in the reception area. This area will have a sitting area, with a coffee table area design for the customer. The second area is the employee cafeteria, with a kitchenet, a table for minimum 12 person, and the bathrooms for males and females.

EXPANSIONS AREAS:

Is important to design the warehouse/office area to accommodate future expansions in personal and in productions as well. For these we leave areas that can accommodate more workers, extra storage for more raw material. For the capacity of the fabrication, the equipment utilize will be working initially at 45% capacity, allowing future expansions.



DON CHEPE COFFEE CO.

PREMIUM COFFEE

Attachments