

LECTURE 5

DESIGN OF A FACTORY BUILDING

The following factors should be considered while planning a factory building:-

1. Nature of Manufacturing Process
2. Flexibility
3. Expandability or Future Expansion
4. Service Facilities
5. Employee Facilities
6. Lighting
7. Heating
8. Ventilating
9. Air-Conditioning
10. Other Consideration

Nature of Manufacturing Process:

1. Buildings required to house continuous or intermittent production processes differ quite a lot in their design. Seldom is the same building suitable for both these types of productions.

2. Building design varies with the type of product to be manufactured and the equipment utilized

Flexibility:

Suppose a factory owner is interested to leave his original product and decides to manufacture another product which he feels is probably more profitable. He cannot construct another building and thinks of using the same old factory building for making the new product

Expandability or Future Expansion:

Keeping provision for future expansion has become very necessary because of the enormous expansion of industry in recent years. Due consideration is being given to future expansions while designing a new building; but before that a plant site size large enough for current needs and for future expansion requirements should be purchased. While designing the factory building, it is thought of carefully that in future, whether the building will expand length or breadth-wise or more number of floors will be constructed

Service Facilities:

Service facilities such as firefighting equipment, sewage-treating systems, emergency and standby power equipment, compressed-air equipment, heating, lighting, ventilating and air-conditioning equipment, etc., should be housed separately and suitably.

Employee Facilities:

Good employee facilities are incentives to the employees of an organization and they build up the morale of the employees. Adequate provision should be kept as regards washroom and toilet facilities, dispensaries, cafeterias, recreation rooms, parking areas etc

Lighting:

One of the most important environmental factors is lightning which increases productivity, reduces accidents and adds to employee satisfaction.

Advantages of Good Lighting:

- (i) Increased output, therefore decreased costs,
- (ii) Reduced accidents,
- (iii) Improved product quality,
- (iv) Better visibility, therefore less strain on the eyes,
- (v) Less spoilage and consequent rework,

(vi) Better floor space utilization and improved house-keeping,

(vii) Plant neatness and cleanliness can be better maintained.

Ventilating:

Ventilating is basically replacing stale air (of the factory building) by fresh air. If the stale air is not removed, it will smell bad and the concentration of carbon-dioxide, humidity and temperature will rise. Inadequate ventilation results in discomfort and fatigue. Modern plants provide ample ventilation by increasing the number of air changes per hour.