



Facility Requirement Planning

5-6th week

What is FRP?

- Facilities are a physical element of an activity, that will need a space to arrange on the floor.
- Physical facilities are equipment, machine, land, buildings, utilities, and room/space.
- These will be performed of the production activities in the plant.
- The performance of production system will be affected by the arrangement of the facilities.

The importance of FRP:

- To increase of the operation efficiency
- The efficient operation should minimize of production cost
- Minimum production cost should result in maximum profit

Stages of FRP

1. Design of product
2. Design of operation
3. Design of process
4. Calculate of capacity
5. Calculate of facilities requirement
6. Calculate of floor requirement

Classification of facilities

1. Production facilities (equipment, machine, material handling)
2. Production and Physical Plant services
3. Administration area
4. Personnel area

PRODUCTION FACILITIES

- The all of facilities (equipment, machine, material handling and other facilities) that should be used to perform of operation to transform of the raw material to the end product
- The facilities requirement are affected by the capacity planning of production and themselves.

Stages of facilities production requirement

- Calculate of the necessary of each facilities on each operation through the operation stages. Calculation should be done base on the capacity of production planning or the facilities capacity. OPC should use to analyze it.
- If the operations use the same facilities, the MPPC could use to calculate it.

Production services:

1. Receiving
2. Storage
3. Warehousing
4. Shipping
5. Tool room/ toll crib
6. Production (supervisor) office
7. Handling equipment storage
8. Workshop (maintenance facility)

Factors for consideration in planning of receiving and shipping:

1. Material received/ product shipped: types, physical characteristic, receipts
2. Space: external and internal
3. Building characteristics
4. Space layout
5. Equipment: handling and movement, storage, general
6. Location

Factors for consideration in planning of storage and warehousing:

1. Commodities: types, physical characteristics, receipts, storage unit, activity, orders, issue unit
2. Space: general, storage, services (external and internal)
3. Equipment: handling and movement, storage, picking, general
4. Building
5. Operations
6. Receiving and shipping
7. Costs
8. Other factors: flexibility, adaptability, expansion, maintenance, capacity, intangibles, long range plan, obsolescence, manpower requirements.

The objectives of good storage methods: (both in storage & warehouse)

1. Maximum use of building cube
2. Effective use of time, labor, and equipment
3. Ready accessibility of all items
4. Rapid and easy movement of materials
5. Positive item identification
6. Maximum protection of materials
7. Neat and orderly appearance

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Plant services:

1. Parking area
2. Handling equipment storage
3. Waste processing unit
4. Power room
5. Scrap area/room
6. Workshop/maintenance
7. Parking facilities

Administrative and personnel services

1. Offices
2. Meeting room
3. Health and medical facilities
4. Food service
5. Locker room, lavatories
6. Miscellaneous personnel services (recreation facilities, babies care, chapels/"musholla", etc.)

Factors on space/floor square of:

1. Storage and warehousing :

type, size, amount and height of material and or product that should be stored, and allowance of material/product, manpower and material handling facilities

2. Receiving/shipping:

characteristics of material/product, amount, method of unloading/loading, handling methods, office space, location, design of dock

Factors on space/floor square of

3. Production Facilities:
amount, size, allowance of (facilities, manpower, materials)
4. Personnel service: the amount of personnel
5. Plant service: production facilities
6. Administrative service: work load of administrative activity.