

# Plant layout

# Plant layout

- Plant layout is physical arrangement of industrial facilities. It is placing d right equipment with right method in right place to permit d processing of a unit in the most effective manner.

## **Objectives of good plant layout**

- Material handling is minimised
- Max utilisation of floor area
- A good layout permits material to move thru the plant at d desired speed at d lowest cost

- Increased productivity
- To reduce internal transport from one operation to other
- Minimization of worker movement
- Better utilization of machinery
- Less work in progress
- Less supervision
- Fewer accidents
- Space for further expansion
- Avoidance of prodn delays
- Proper prodn control

# Advantages of plant layout

- Better work conditions
- Minimization of material handling
- Minimization in damage
- Minimization in congestion of material : as everything is going to be well organized, adequate space is provided for every activity.

# Types of layout

- **Line or product layout:** in a line layout, all the equipment required is grouped together in one department in the sequence of the operation performed, so that one part is completed there and does not have to be moved from one department to another. It is good for **automobile ind**. In product layout, workmen are required in less number which automatically reduces cost and leads to higher productivity as the whole process is automatic.

# Advantages

- Less inspection
- Labor cost decreases
- WIP reduces
- Lower material handling cost
- Quality control is effective

## Disadvantages

- High capital cost
- Very high stoppage cost
- Delay in work if any machine breaks down
- The machine may not be used to d fullest

# Process or functional layout

- **Process or functional layout:** A layout in which all the equipments performing similar tasks are grouped together is called process layout. It is useful in such plants where manufacture volume is low and variety of job is high. It is just dividing the whole work place in small units helps in faster production and better utilisation of work place.

# Advantages

- High degree of variety of products
- Machine breakdown do not cause damage
- Coordination is simpler
- Helps workmen to expertise in a particular machine as each workman is assigned a particular machine

# Disadvantages

- Higher flow time of product
- Large no. of material handling
- Inspection cost increases as inspection of product is reqd after each operation is passed to the next deptt.
- High WIP

# Project or fixed position or combination layout

- **Project or fixed position or combination layout** : d layout in which d raw material r placed in fixed position is called project layout it is useful when d no of equipment is less.it is called as d fixed position layout , as the prodn operation is performed at one fixed position.it is recommended when labor, machine and tools r moved to raw material not other way round eg dam construction

# Advantages

- **Advantages**
- Reduces movement of machinery
- Minimize damage
- **Disadvantages**
- Movement of people & material to and from the place may be expensive