WAREHOUSE PLANNING

① → Site Selection

→ 1st step → identify the general area which focuses on the broad geographic area from
- a service
- economic &
- strategic perspective

→ 2nd step → identify the specific building site
typical areas for locating warehouses r
- commercial developments
- outlying areas &
- suburban areas

→ the site must:
- have adequate room for expansion
- have necessary utilities available
- be sufficiently high to ~~provide~~ offer proper drainage.
- soil must be capable of supporting the structure

→ other factors to consider:
- procurement costs
- operating expenses
- transport access
- taxes
- insurance costs

② → Design Specifications

→ warehouse design must consider product movement characteristics

→ 3 factors 2 b determined

(a) ~~no~~ nr of floors to include
general rule = to design warehouses as 1-floor operations
2 facilitate handling
∴
eliminating the need 2 move products vertically

(b) Cube utilisation Plan
- warehouse design must maximize cube utilization
- maximum effective height = limited by
safe lifting capabilities of handling equipment
such as lift trucks, rack design etc.

(c) Product Flow
- warehouse design should facilitate continuous straight product flow through the building
∴
- prod(s) should b received @ one end of the building
- stored as necessary in the middle &
- shipped from the other end.

③ Product Mix Analysis.

→ The design & operation of warehouses are dependent on the product mix

→ Each product should be analysed ito
- annual demand
- weight
- cube
- weight of average order 2b processed through the warehouse.

→ This data provides information for determining
- warehouse space
- design + layout
- handling equipment
- operating procedures &.
- controls

④ Expansion.

→ Future expansion should be considered in the initial planning phase.

→ Ito = common to establish 5-10yr expansion plans.

→ Building ~~plans~~ design should also accommodate future expansion

⑤ Handling

→ The handling system = the basic driver of warehouse design

→ product movement + assortment r the main functions of a warehouse

→ The handling system must be selected early in the warehouse development process

⑥ Size.

→ Several techniques are available to ~~determine size~~. help estimate warehouse size

→ Each method begins with a projection of the total ~~max~~ volume & max throughput thru warehouse during ~~the~~ given period.

→ The projection = used to estimate
- base +
- safety stock

for each product to be stocked in the warehouse

→ Rule:

allow for 10% additional space 2 account for
- increased volume
- new prod(s)
- new business opportunities

Warehouse Planning

(7) Layout:

→ the layout & handling system are integral.
→ special attention must be given to:
- location
- # number
- design of receiving + loading docks.

1st step.

↳ warehouse layouts are designed 2 accommodate specific handling requirements.

- If pallets r utilised, the determine the appropriate size.
- Management should adopt a ~~1-size~~ 1-pallet size throughout the warehouse.

Final Step.

↳ the handling equipment must be integrated 2 finalize layout.

- the path & tempo of product flow depend on the handling system.

2nd Step

↳ involves pallet positioning.

- the most common practise = 2 position pallets @ 90° | square placement (pallet = placed perpendicular 2 the aisle) 2 the aisle
- the placement of specific packs) in selected pallet locations = called slotting.

∴ the key 2 a efficient layout = a well developed slotting plan.