

Warehouse and Inventory Planning

Storage and Handling Equipment

by

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Chapter Description

- Expected Outcomes



Content Description



Warehouse Operations

Main Activities:

Handling

Storage

Information
transfer



Warehouse Operations Consist of Three Main Activities



Handling

Storage



Information Transfer



Handling



Receiving—Unload goods or material from vehicles



In-Storage— move goods from receiving area to warehouse for storage or for picking activity (order selection)



Shipping—verify orders and load into the departing vehicles



Storage Equipment

Selective Pallet Rack

Drive-in Rack

Driving Through rack

Rack Support Building

Gravity Flow Rack



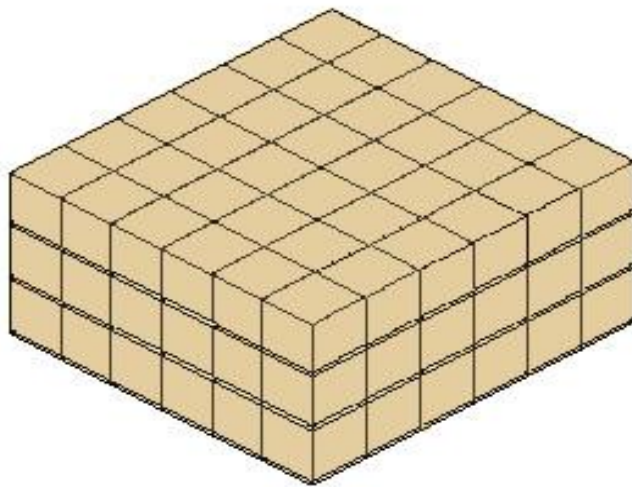
Storage Options

- **Bulk storage** - storage in an open floor area
- **Rack systems** - structure with racks for pallet loads
- **Shelving and bins** - horizontal platforms in structural frame
- **Drawer storage** - entire contents of each drawer can be viewed

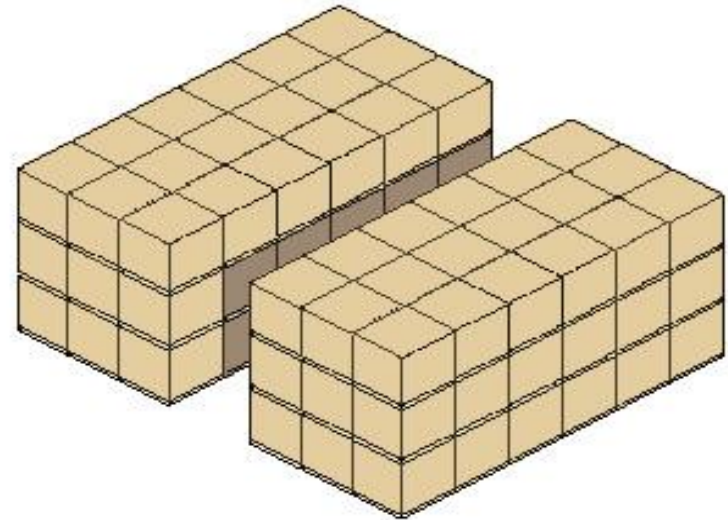


Bulk Storage

Bulk storage - storage suitable at open floor area



(a)



(b)



Pallet Rack System

Rack systems - structure with racks for pallet loads

Pallets placed on racks in multi-rack structure.
It's a low cost storage, good storage density
and accessibility



Drawer Storage

Contents easily visible, good accessibility and costly.

Suitable for small items (tools, repair parts, bolts and nuts)



Automated Storage System

- Automated storage equipment which to decrease the human resources costs.
- Level of automation varies:
 - Mechanized systems – involve operator participates
 - Automated systems - loads and retrieve under computer control



Objectives and Reasons for Automating Storage Operations



2 Types of Automated Storage System



Automated Storage/Retrieval System (AS/RS)



Carousel Storage System



AS/RS



Unit load on
pallet AS/RS



Carousel Storage Systems

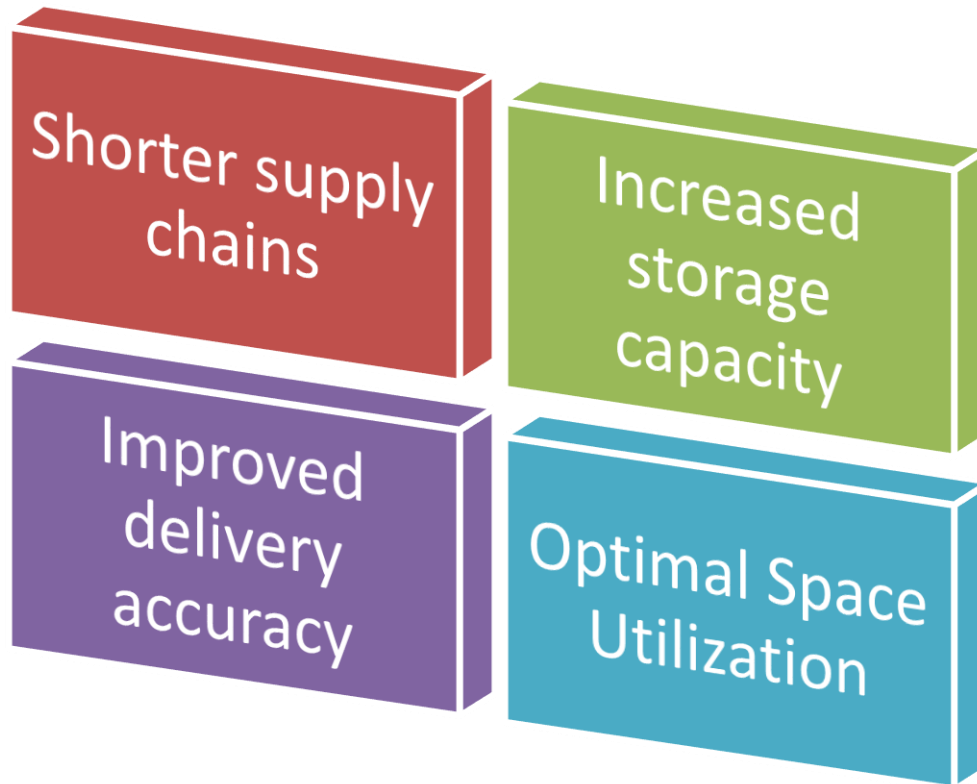
Divided into types:

Horizontal

Vertical



Advantage High Bay Warehouse



High Bay Warehouse



Conclusion

- Conclusion
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