



FACILITY DESIGN/RETROFIT DESCRIPTION OF PROJECT – 16 STEPS

A. DATA GATHERING

1. Measure building, material handling equipment, heights, columns, obstruction, yard.
2. Create AutoCAD drawing with all details.
3. Calculate physical storage capacity (cube, pallets, etc.).
4. Gather historical files as available (52 weeks).
 - Item movement, inventory, units of measure, physical dimensions, weight, cases/pallet, etc.
 - Customer order files.
 - Vendor purchase order files.
 - Warehouse/plant transfers.
 - Returns processing transactions.
 - Basically, all in and out flows of product.
5. Growth rates (3, 5, 10 years)
 - Product variety.
 - Sales.
 - Anticipated changes to existing business model, e.g., changes to inventory turns, new product lines.

B. STUDY

6. Summarize physical capacity of building.
 - Storage capacity (cube).
 - Pick facings (ground level, other).
 - Throughput capacity.
7. Summarize current operations.
 - Inventory levels x 52 weeks (cube, pallets).
 - Product variety.
 - Movement out volumes x 52 weeks.
8. Compare capacity to operational data to develop current constraints.
 - Products vs. facings.
 - Movement (average and peak) vs. throughput capacity.
 - Inventory (average and peak) vs. storage capacity.
9. Apply growth rates to current operations to develop projected operations at design year. Use design year parameters as the basis of facility layout and design.

10. Using proprietary software programs developed by Kom International:
 - Analyze each item's design year profile to identify the material handling equipment most suited to store the inventory., e.g., rack type, flow rack, shelf.
 - Analyze the movement characteristics of each item to identify the material handling equipment most suited for order picking the item, e.g.:
 - Try to keep 1 – 4 weeks in the pick slot.
 - In/out nature of product may dictate a crossdock strategy or alternate approach.
 - Analyze the order history to identify the profiles of orders to evaluate the best material handling systems to most productively select orders.
 - Order selection/checking/packing typically accounts for 60% of warehouse labor hours and is, therefore, a critical aspect of the operation to optimize.
11. Develop at least three alternatives to review with the company as no one answer is necessarily the right one. Different constraints drive solution.
 - For each alternative layout, the solution is described in terms of:
 - Storage capacity.
 - Throughput capacity.
 - Product variety – pick facings.
 - Capital investment.
 - Labor productivity rates.
 - Return on investment.
 - Develop final solution with client which usually ends up as a series of refinements on the original theme. This is very much a team approach between the client and the consultant.

C. IMPLEMENTATION

12. Develop the final slotting.
 - Using proprietary slotting software, Kom International assigns each item to its final pick location(s) (as applicable).
13. Conduct/implement productivity measurements.
 - Record productivity pre-transition.
14. Tear down equipment and install or reconfigure new equipment.
 - Every effort is made to eliminate disruption of service to customers.
15. Conduct product moves to transfer merchandise from its existing location to the final assigned pick location.
16. Post audit of implementation.
 - Physically this involves reviewing post-transition productivity figures until targeted objectives are achieved or exceeded.
 - Final refinements to slotting/layout are solutions implemented.