

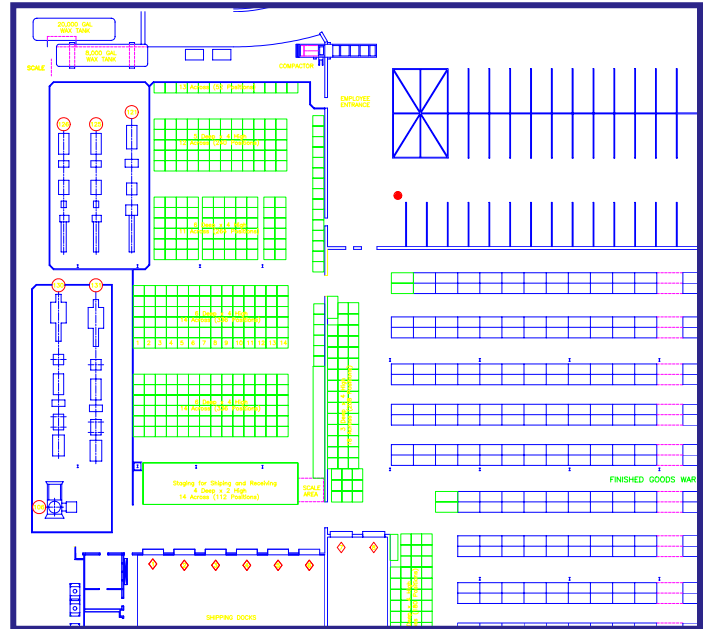
Bag Manufacturer

Chicago, Illinois

Facility Planning & Analysis Services

- Warehouse Layout Design
- Simulation Modeling

A Chicago based manufacturer of paper bags and wrappers for the food and restaurant industry shipping warehouse was overcapacity. The project team studied, observed, modeled and analyzed the capacity of the current shipping warehouse and provided a detailed process improvement plan that increased their storage efficiency and reduced their overall storage requirements. After implementing the process improvement plan, the manufacturer was able to move out of a leased facility, saving them over **\$500,000** annually.



Improved Facility Layout

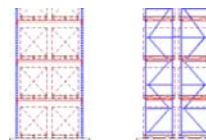


Simulation Screen Capture

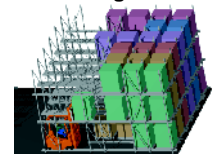
The project team developed a sophisticated simulation tool that determines both the number of pallet locations and pick faces required to store inventory. The illustration to the left is a screen capture of that model. With the data from the model, we then determine the combination of rack types, layout and operational standards that allowed the manufacturer to reduce their warehousing needs by as much as **27%**.

The four illustrations to the right show the typical warehouse storage equipment. Each type of equipment has its advantages and disadvantages based on the effects of product mix, SKUs, batch sizing, order sizing, and quantity discounts. The optimal storage layout developed for this client included a combination of selective racks, pushback racks and bulk storage.

Selective Racks



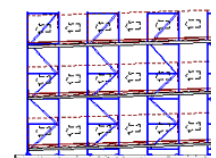
Drive-Through Racks



Push Back Racks



Flow Through Racks



Storage Devices