

# Making Do With Limited Space: Footprint Optimization

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In a tight economy, many manufacturers need to make do with limited space. A first-class footprint optimization strategy can make or break a business in today's competitive market conditions. With the ability to dramatically improve operations and reduce costs, optimizing a building's footprint allows manufacturers to gain valuable office, storage, or manufacturing space at a fraction of the cost of new construction — and often with a significant tax depreciation advantage. Approaching footprint optimization with specific goals in mind can help manufacturers remain competitive, and position a company for future growth by creating a more efficient operation.

## Growing Up

“Putting existing space to good use benefits the environment by optimizing land use, lowering emissions by eliminating employee travel between facilities, and reducing overall operational costs,” says Hue Schlegel, director of marketing with Wildeck, Inc., manufacturer of work platforms/mezzanines, vertical lifts, and safety guarding products in North America. Industrial work platforms, or mezzanines, are often selected in industrial manufacturing facilities to provide additional space, since they can be added to an existing facility at a significantly lower cost than new construction. A mezzanine can provide the flexible space that manufacturers need for product assembly, materials storage, or in-plant offices — overhead work areas that can adapt and grow with the needs of the facility — with minimal interruption to working floor areas, and can often utilize existing facility HVAC systems.

Schlegel stresses that achieving a Lean mezzanine design requires a careful examination of workflow, placement, the availability of raw materials, and the optimum throughput of work-in-process. “For any manufacturer, the ultimate goal is to manufacture a quality product that will ultimately satisfy the customers' needs.” Work platforms can be custom-designed to help address a manufacturer's specific goals and budget constraints, while adaptable designs, such as bolt-together construction mezzanines, can be modified or expanded to respond to future market changes. Citing the MezzCrane system, Schlegel says that “some mezzanine manufacturers offer innovative hybrid designs that incorporate an overhead 3-axis bridge crane on each level of a mezzanine structure, as well as Jib Cranes on columns, to further optimize material handling efficiency and increase worker safety when handling heavy parts, sub-assemblies, or finished goods.”

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Mezzanines may also qualify for accelerated capital depreciation: “Seven years, versus 39 years for new building improvements,” Schlegel explains, “and there may also be additional cost benefits and government rebates for ‘green’ building designs.” Numerous sources of funding for green building are available at the national, state, and local levels for local, expanding manufacturers — and mezzanines can count toward LEED credits through the purchase of certified post-industrial recycled content floor panels or eco-friendly, phosphate-free paint treatments.

Other mezzanine options include code-compliant railings, stair systems, stair towers, crossovers, catwalks, safety ladders, mezzanine access gates, and a variety of decking options. Moisture-resistant roof deck and resin board, bar grating, and specialty panels are a few of the decking options available, and a variety of paint finishes (both for aesthetics and durability) make the mezzanine a completely customizable option for expanding manufacturers. With all the mezzanine options available today, Schlegel stresses that “most importantly, manufacturers should select a mezzanine supplier that has extensive industry experience in design, manufacturing, and installation support.”

“Many manufacturers have recognized the advantages and benefits of ‘going up’ with a mezzanine,” says Schlegel, “instead of building out.” While many manufacturers can see the advantages of incorporating work platforms into their footprint optimization plans, not all have had the opportunity to act. The economy, and subsequent lower demand for goods, may have postponed some expansion plans. But work platforms are not the only choice manufacturers have to efficiently utilize limited space. When space is at a premium, inventory management can also play a key role in a manufacturer’s footprint optimization plan, and has a direct impact on a manufacturer’s bottom line.

### **Managing Inventory**

“A good inventory management system will help maintain proper inventory levels,” says Larry Harper, president of CribMaster, a company committed to providing solutions for today’s manufacturing inventory problems. “By reducing the amount of inventory, footprint optimization is indirectly affected.” With overall footprint optimization in mind, frequent deliveries and point-of-use dispensing devices are two major ways manufacturers can manage the tool crib stock while reducing inventory on the manufacturing floor, oftentimes utilizing distributor services to do so. “Developing distributor relationships is a key area in supporting efficient inventory management for manufacturers,” Harper stresses.

A reduction in inventory levels “definitely” affects a manufacturer’s bottom line, he says, as well as reduction of uses, and the correct costing of items. “In today’s market conditions,” Harper says, “many distributors are doing consignment inventory.” Consignment inventory is inventory that is in the possession of the customer but is still owned by the supplier, and is becoming more and more common as manufacturers continue to look for new ways to cut costs and optimize existing facilities in an uncertain economy. Companies that at one time had \$2 million of inventory on a shelf may have zero today; and companies may have less

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than \$100,000 in spare parts because the distributor takes ownership of the part and the responsibility of managing it. The result is often lower consumption, which is based on the accountability factor of knowing who's taking what and where the tools are being used. "Additionally, with point-of-use vending," Harper says, "the unproductive walk-and-wait time for mechanics to get their products is greatly reduced." By dispersing inventory, the mechanics can easily, and more quickly, get the product they need to do the task at hand while remaining in the vicinity of the work area. For more on inventory management, see page 36.

### **Plan Ahead**

"Industrial manufacturers need to determine what they want to accomplish in the space available," says Schlegel. "An experienced material handling equipment manufacturer can provide a cost-effective design solution," he adds, "not only to meet the industrial manufacturer's needs today, but in the future as the economy expands and the demand for goods increases."

Harper reiterates the fact that manufacturers need to determine what they want to accomplish in the available space before they set out on a footprint optimization plan. "By examining what it is that you really want to accomplish and ensuring that the distributor will help you achieve your goals, you will have a roadmap to successful inventory management while at the same time limiting plant floor space," he says. "You should have a sustainable, backend system that provides process control of purchasing patterns, and one that drills down on inventory usage by cell, work area, machine, employee, or bay."

"Installing just a vending machine on a plant floor is basically the same as allowing the distributor to have a 24-hour salesman who stands there selling their product," Harper explains. Installing a vending machine without focusing on the process and what a manufacturer wants to achieve with a good inventory management program won't provide the control, the mechanisms, or the cost and space savings that a true inventory control system can provide.

A tight economy has forced many manufacturers to make do with limited space, but the silver lining may be the opportunity to optimize that space. Space logistics and inventory optimization can provide both yield and quality product improvement, but also a Leaner, more efficient plant footprint. Mezzanines can provide a second chance for manufacturers who think they have outgrown their existing facilities, while inventory management solutions provide a cost-effective area management that can decentralize a large and inefficient operation. Manufacturers have made many changes in a slow economy, but a slowed economy provides an opportunity to prepare for the next upturn in sales.

"Companies that are taking the time now to invest in their business, redesign facilities for Lean operations, and prepare for growth," Schlegel says, "will be the ones that succeed in the future."

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