

WHITE PAPER



MEZZANINES:

Myths about
Survey findings about
mezzanine benefits

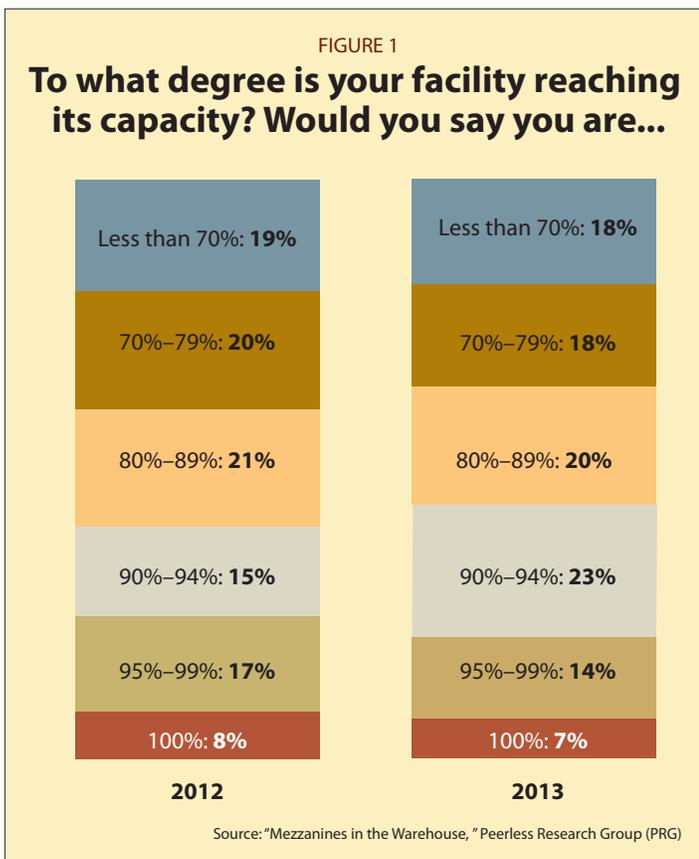
Myths about Mezzanines: Survey findings about mezzanine benefits

Mezzanines are a cost-effective way to add safe and productive space to a warehouse or other industrial building. By going with a high quality, pre-manufactured mezzanine system that is engineered and customized to meet user needs, the objectives of adding useable space without sacrificing durability or cost efficiency can be met.

These objectives and other findings were revealed in the survey, “Mezzanines in the Warehouse,” conducted by Peerless Research Group (PRG) for Cubic Designs, a provider of custom mezzanine systems. The 2013 survey of 406 people involved with designing, running or managing warehouses provides insights into how mezzanines are being used, the selection criteria, and the top benefits of mezzanines.

One key finding is that many companies are in need of more warehouse space. Fifty-one percent of respondents said they will need more space within the next two years, and when asked how close they currently are to full capacity (see Figure 1), 44 percent said they have reached at least 90 percent capacity or more, with 7 percent of these saying they were at full capacity.

By pointing out the market realities around mezzanine use, criteria, and benefits, the survey brings up myths that might exist about pre-manufactured mezzanines. Here are a few of the concerns and myths to be examined:



- *Safety and durability.* The myth that a pre-manufactured mezzanine system is less “heavy duty” than a mezzanine system designed by an engineering firm and then fabricated on site by a contractor.
- *Time and cost concerns.* The notion that custom, pre-manufactured mezzanines are costly or take a long time to design, build and install.
- *Productivity/access concerns.* The myth that mezzanines limit access and hurt productivity.
- *Flexibility and capacity concerns.* The notion that mezzanines cannot easily accommodate special needs such as uniquely heavy loads or future expansion.

Let’s take a look at these myths and how they relate to survey insights. First, however, it’s important to note the options involved in meeting space needs and the basic approaches to building mezzanines.

In any space expansion, notes John Moore, vice president of Cubic Designs, “You can either ‘expand out’ by building or leasing additional building space, or ‘expand up,’ by finding a way to use vertical space in an existing facility. When expanding up, the key solution is a mezzanine or platform that makes better use of the full height or ‘cube’ volume of a warehouse.”



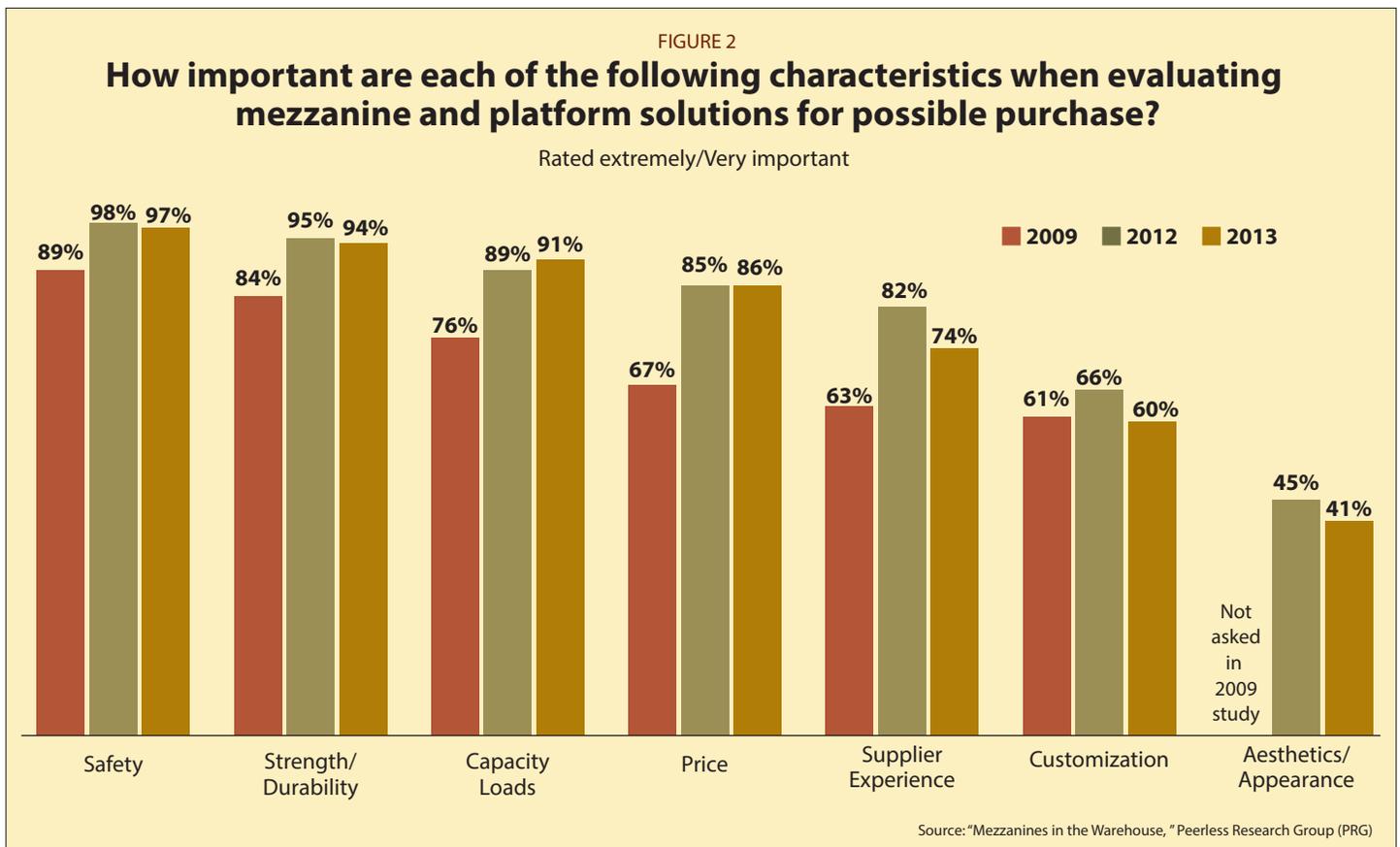
Structural mezzanines can be built in two basic ways. One way is to have the mezzanine designed by an engineering firm, then separately built on site by a contractor. The other approach is to choose a pre-engineered mezzanine system that is pre-manufactured and then bolted together on site.

Safety and durability

Characteristics such as strength and durability are the leading concerns with mezzanines. According to the survey (see Figure 2), safety consistently ranks as the top selection criteria, followed by “strength/durability,” and issues concerning “capacity loads.”

One common misconception in the market is that a mezzanine needs to be designed by a contractor and then built on site to deliver strength and durability. A pre-manufactured mezzanine can deliver on safety and strength if it is designed and manufactured under a rigorous, high-quality process, with materials and other design choices that ensure ample safety and durability.

“We don’t want to design in more steel than is necessary, but we will always provide enough steel to properly support what the customer needs and to meet building code requirements,” says Moore. To meet local or state codes, Cubic Designs’ mezzanines are always designed and stamped by a licensed professional engineer (PE). In this way, a company choosing a pre-manufactured approach can have a high comfort level that the structure will surpass all safety requirements, even in the highest seismic zones. At Cubic Designs, the engineering staff covers all 50 states with PE licenses.





Time and cost concerns

While a pre-engineered, pre-manufactured mezzanine is a strong and safe option, the perceived downside is that this approach can take considerable time to design, bid and construct. However, Moore notes that in most cases Cubic Designs can design, manufacture and install a custom mezzanine in about eight weeks.

The key to the time and cost efficiencies of a pre-manufactured approach is repeatability. By using common components, materials, parts, and manufacturing methods, but still custom designing each system, a pre-manufactured approach reduces both time to completion and costs. “Efficiencies are gained through repeatability of key materials and designs, without compromising strength and durability commonly associated with a ‘stick built’ approach,” says Moore.

Because the mezzanine manufacturer uses common subcomponents and proven techniques, the manufacturer becomes efficient at designing and building what will go into each mezzanine system. “We have been able to optimize and ‘productionize’ the manufacture and installation of custom mezzanines, and that’s how we are able to make a custom product with consistent lead times at a very competitive price,” says Moore.

Productivity/access concerns

A pre-manufactured mezzanine can be configured to include the optimal amount of access points such as stairs and lifts to minimize travel and ensure productivity.

According to the 2013 survey, the most frequently mentioned potential drawback of a mezzanine is “accessibility/stairs to climb,” named by 24 percent of respondents, while 13 percent marked “causes inefficiencies” as a concern.

Local building codes require a certain minimum number of access points, says Moore, but the design for a particular customer’s mezzanine can include as many stairs, ladders, or other access points as the customer wants or needs. Additionally, the design can include lift equipment such as a vertical reciprocating conveyor (VRC) to move loads up and down. “Accessibility is a concern that can be addressed by using more stairs or a VRC lift,” says Moore. “Lifts and mezzanines play very well together to bring efficiency to the movement of people or goods between levels.”

Of course, when evaluating productivity when adding space, the alternative scenarios should be weighed. While a mezzanine inevitably means some climbing of stairs or use of a lift, that should be compared to the option of using another area that might be 50 or more yards away from the main warehouse.

Flexibility and capacity concerns

Just as pre-manufactured mezzanine designs can include numerous access points, they can accommodate many other needs. This is an important factor in the marketplace. In fact, 60 percent of respondents to the 2013 survey called customization “extremely important” (see Figure 3 on page 5).

With flexibility in the way that common components can fit into a design, a pre-manufactured mezzanine can easily accommodate needs such as wrapping around large pieces of equipment. Mezzanines also can be expanded, and in some cases, moved from a facility and reinstalled at a new facility.

A mezzanine also can be designed to handle the capacity requirements of uniquely heavy pieces of equipment, or to support or be serviced by conveyors. “We build to whatever size, strength, shapes, or capacities are needed,” says Moore. “People are sometimes

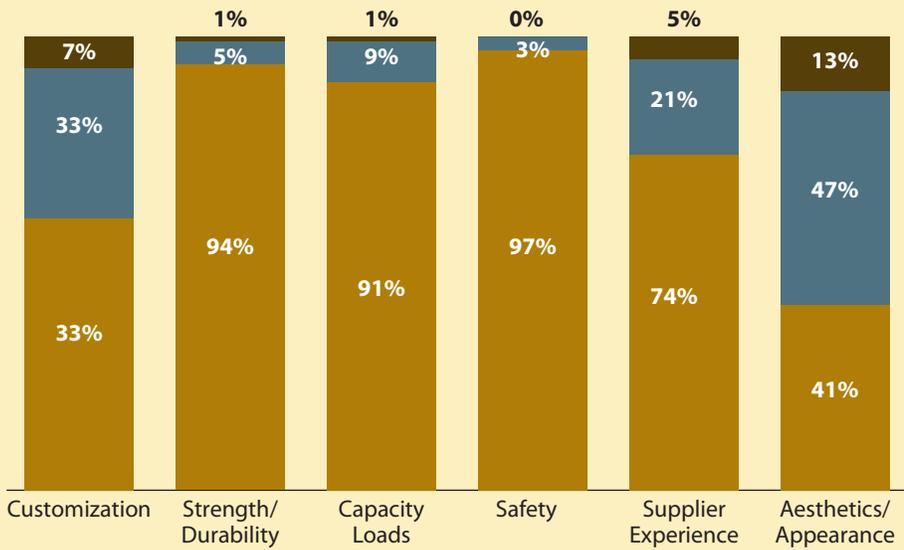
“Time and cost efficiencies are gained through repeatability of key materials and designs, without compromising strength and durability commonly associated with a ‘stick built’ approach.”

—John Moore,
vice president,
Cubic Designs



FIGURE 3
How important are each of the following characteristics when evaluating custom mezzanine and platform solutions for possible purchase?

■ Extremely/Very important ■ Somewhat important ■ Not very/Not at all important



Source: "Mezzanines in the Warehouse," Peerless Research Group (PRG)

surprised when they learn how a pre-manufactured approach can accommodate their custom needs."

The special needs of the food industry are met through Cubic Designs' food-grade platforms, which have closed shapes and minimize catch points. These features can be essential for food and beverage facilities that must meet clean design requirements.

Cubic Designs works through a network of partners with expertise in warehouse layout and materials handling systems, who help clients envision the most productive use and layout for a mezzanine. "There are many possible applications," says Mark Strong, a sales representative with HOJ Engineering & Sales, a Cubic Designs partner based in Salt Lake City, Utah.

"Some facilities use mezzanines for office space, which puts supervisors much closer to work processes than a separate office building would. Another common use is to utilize a mezzanine

for piece picking, kitting, assembly, or other labor-intensive tasks that don't require much clear height, making these ideal activities for a mezzanine," says Strong.

"Many times, a client doesn't immediately see the full potential of their floor space," says Strong. "Our role as a partner is to help clients see the most productive uses, whether it's moving some value-added services up to a mezzanine, using the extra floor space for storage, or even using a mezzanine to locate heavy or bulky equipment overhead, like compressors or tanks used for production, which is going to give them more working space down below."

Respondent feedback from the survey confirms the diverse uses for mezzanines. Several respondents noted their mezzanines were used for picking, returns processes, or other value-added work, while use as office space was cited multiple times. Others are using mezzanines to hold process equipment, conveyor equipment, sorters, or bulk chemicals.

Conclusion

With the need for more space in many warehouses, and market consensus that mezzanines are a cost effective means of adding space, perhaps it's no surprise that 43 percent of companies surveyed in 2013 already have a mezzanine within one of their facilities.

As companies look more closely at mezzanines as a solution for their space needs, it's important to remember that a pre-manufactured structure can be just as sturdy and safe as a site fabricated project. It's also important to realize that a high-quality, pre-manufactured mezzanine can be customized to meet many needs—from very heavy loads, to strength for high seismic zones, to use of multiple access points and lifts to enhance productivity. □