

"Start by determining the needs and flow of the operation and then look for underutilized areas within the cube," says Lou Cerny, vice president of Sedlak (216-206-4700, www.sedlak.com). "Mezzanines maximize space and allow growth within the four walls of the facility. They help an operation do more with less."

"A potential mezzanine user must also review existing building specifications and operational requirements to determine whether a mezzanine is a suitable investment," says Becker. He identifies three areas of concern:

- **Existing floor-to-ceiling clearance.** Clearances, and the location and elevations of any obstructions, must be calculated to determine whether there's sufficient headroom for a successful installation.
- **Floor load capacity.** Buildings with insufficient floor construction or soil density will be incapable of supporting a mezzanine system without structural modifications.
- **Clear span limitations.** Mezzanine designs that have relatively short clear spans typically create limited functional open floor space under the mezzanine. This significantly reduces flexibility and potential use of the area below.

When considering the installation of a mezzanine, Jensen reminds potential customers to consider lighting and sprinkler systems underneath the mezzanine, as those required components directly impact the cost. In many cases, mezzanines can use existing lighting, power, HVAC and fire protection systems. But if that's not the case in your facility, make sure to factor the costs of incorporating those systems into the overall price tag of your mezzanine structure.

One-third rule and compliance

"A mezzanine structure should not cover more than one-third of the total footprint of the building, or it will likely be treated as a multiple-floor structure and require compliance with much more extensive and expensive code requirements," Cerny says.

Mezzanines are subject to their own set of standards. "Potential users should consult with a mezzanine design engineer for compliance with relevant IBC, OSHA, BOCA, egress, seismograph and local regulatory requirements prior to the installation of a mezzanine structure," says Becker. "ADA certification is not necessary for storage mezzanines. However, ADA compliance should be evaluated based on the type and amount of work personnel are performing on the mezzanine."

Accessories and features

A number of customizable accessories are available to outfit your mezzanine, all of which are designed to ensure the safety and usability of the structure. Required accessories or special features include access staircases and ladders (they may have open or closed risers and treads); landings; two-rail, three-rail or welded mesh safety railings; swing gates, sliding gates or lift gates for pallet access; safety guarding to prevent materials from accidentally falling to the lower level; support columns and/or uprights to support the building floor loading restrictions; oversized base plates to accommodate the building floor loading restrictions and to prevent digging footers.

Decking is a key component. Since the use of pallet jacks and the installation of storage and processing equipment on a mezzanine deck can significantly reduce the life expectancy of the mezzanine deck surface, it's important to choose the right deck material. Decking options include b-decking (corrugated metal) and wood or composite overlayment, diamond plate, lightweight concrete, expanded steel and bar grating.

Business benefits

"Because mezzanines can depreciate like equipment, unlike capital-intensive build-outs, the installation of a mezzanine can be the most economical way to increase the use of available building cube. This is especially critical when operations occupy leased space and permanent alterations or expansion of the property is disallowed by the lease agreement," says Becker. "In rapidly expanding operations, mezzanines offer a potential short-term alternative to capital investment, especially for those who may be planning to relocate to a larger site within five years or less."

Mezzanines can be tailored for almost any end user, and that's exactly why the up front thinking and analysis of the design are so critical. "Always start with the fundamentals and strategy. Even though mezzanines are modular, like big erector sets, they're still tough to move, so be careful with design and placement," says Derewecki.

