

# Flooring Considerations: Facts Under Foot

*Early decisions can have affects over the life of the building, so managers need to carefully consider their options*

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A building's appearance and even its feel says something about its owners and occupants. But when entering a building and walking the halls, most people often do not think about the materials under foot. Occupants, visitors and even people designing the building often overlook the types of flooring in a building. Yet no surface in a building gets as much use as the floor surface.

Nonetheless, it is imperative for maintenance managers make informed and prudent choices about the types of flooring installed in a building during its design stage or during a retrofit. Failure to do so can produce with tragic results.

For instance, one building next to a coal-fired power plant had light-colored carpeting installed right up to its exit doors. Every time someone entered, they carried residual dirt and dust from the power plant onto the carpet.

Needless to say, the carpet did not last long. It got dirty fast, and the fibers became embedded with coal-dust particles. There was nothing wrong with the carpet; the environment was not right for the carpet.

Likewise, wood floors have been installed in places with low water tables. So whenever heavy rains came, the

moisture would seep into the building, damaging the wood flooring. Nothing was wrong with the wood flooring in and of itself, but its location was wrong. In the cases above, the product installed was not appropriate for its location or intended use.

## **Factors in Play**

Selecting flooring is critical for the long-term success of a building and for its ease of maintenance. Flooring options available today are far superior to those of 50 years ago. Common flooring options of the past are available, such as carpet, vinyl, wood and stone, a category that includes granite, slate and marble. Joining those choices are synthetic woods, high-performance rubber and even bamboo.

Obviously, not all floor finishes are ideal for all locations. Proactive managers will partner with industry professionals, such as architects, interior designers and manufacturers, to determine the right flooring for each location. They must take into account numerous factors when planning to install flooring:

- **The function of the space.** For instance, a cafeteria at an elementary school might prefer to use vinyl composite tile (VCT) over carpet, since it might be easier to wipe food and drinks spills off a VCT floor than a carpeted floor. But carpet squares also could be used, and when a spill occurs or a tile is damaged, the tile could be removed, cleaned or replaced.
- **Repair flexibility.** Close observation of a hallway indicates that a vast amount of walking takes place in the middle of the hallway. So that is the place the flooring will wear out first. In the case of carpet, one might notice wear in the center of a carpet, such as when located in a high-traffic hallway. But if the carpet was installed with inlaid components and borders, it might be possible to only remove the worn portion down the center of the hall. The borders remain,

since rarely anyone walks along the side of a hallway, and the center strip is replaced.

- **Traffic levels.** High-traffic areas require flooring that can withstand heavy traffic. So airports, university buildings and public-congregation areas often feature terrazzo, marble or even granite flooring. These hard surfaces are long wearing and will withstand heavy traffic for years.
- **Ease of maintenance.** Many types of flooring need significant attention. Spills on carpets need to be removed as soon as possible, and VCT often has to be stripped of old floor finish and replaced with new. Terrazzo might require regular buffing, and marble might require polishing. Over time, the cost of labor to maintain flooring acceptably will be many times higher than the initial installation cost per square foot.
- **Rated service life.** This issue relates to a floor type's life expectancy. One industry source indicated that wood flooring has a rated life of 25 years, terrazzo 25 years, vinyl 15 years and carpet 10 years. Another industry source rated the life expectancy of vinyl at 10-15 years and that of carpet 5-20 years.

But the life expectancy of any floor surface often depends on issues that the manufacturer cannot predict, such as the level of maintenance for that finish. Some carpet lasts many years because the cleaning and maintenance, while other handsome carpet has worn out or dirtied out just because of lack of appropriate cleaning.

- **Recycling or reusing the flooring.** Some flooring, fibers and glues have higher levels of volatile organic compounds than others do. The contents of flooring not only have a direct impact on indoor air quality but also on the ability to recycle the end product and the industry's ability to reuse the end product. Some manufacturers now can take back pieces of the flooring, refinish it and reuse it, while other types of flooring can be recycled into other end products.

## **A Matter of Money**

Pricing purposely has been omitted from this discussion so far. The old saying about being penny-wise and pound-foolish might be appropriate to consider when selecting a floor type. One industry study drew significant conclusions when considering the life-cycle cost of flooring types:

- Over the life cycle of flooring, products with lower initial costs did not remain cheaper than products with higher initial costs.
- Products with a higher initial cost proved to be less expensive to own over a 15-year period.

Many industry sources understand the benefits and liabilities of each type of flooring and can help managers make wise and informed long-range choices about the flooring. Among the comparison points for different floor types:

- life span and durability
- care and maintenance
- comfort
- life-cycle costs
- installation
- slip resistance
- chemical resistance
- sound absorption
- anti-fatiguing
- color and color resistance.

In basic terms, choosing inexpensive flooring during the design phase of a building might be false savings. It might save dollars on the initial installation, but costs to the building owner might be higher down the road. The best rule of thumb is to consider installing flooring that closely mirrors the life expectancy of the use of the space in question and that delivers reasonable economies at the same time.

For instance, if the life expectancy of an office space is 15 years, and if the owners anticipated that its function will change, installing high-cost flooring that might last 25 years or longer might not make sense. But if the corridor of a building will always have to handle high traffic for the life expectancy of the building, it might be prudent to install a flooring type that will last the life of the building or as close

as can be projected. Managers also should give considerable deliberation to the overall cost of ownership, not just to the installation of the flooring but for the life of the flooring.

One industry expert summarized the issue of cost this way: Look for a product with low maintenance and cleaning costs. These two costs typically account for more than 50 percent of the total cost of ownership.

Selecting and installing flooring is a complex process that starts during design and affects the building as long as the building exists. Each day, walking through the building, the building owner and occupants will see the floor surfaces and the results of choices made even before construction began.

Every day, they will be able to see the facts under foot. Did those involved in design make the right selection and install the appropriate floor type? Managers should thoroughly evaluate the life expectancy of flooring types and calculate the total cost of ownership before they select flooring types to be installed in new construction or renovations.

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