

## **Expect the Unexpected: How to Manage the Hidden Costs of Upgrading Old Buildings <sup>1</sup>**

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To remain operational, periodically buildings need to be upgraded. Changes to laws and building codes require renovations to remain in compliance. Structures deteriorate, fire alarm systems become outdated and ventilation units become inefficient. As technology progresses, sprinkler systems are upgraded, and once commonly used materials, like lead and asbestos, are found to be environmental hazards. While there are a variety of reasons to update an aging facility, these and other renovations come with unique challenges.

Upgrades can be divided into two camps: optional and mandatory. Optional upgrades improve the building's function or aesthetics but are not required by any legal authority. Such improvements may include expanding a lobby or installing air conditioning.

Mandatory upgrades, on the other hand, carry a penalty for noncompliance. These changes are required by building codes or local regulations. For example, when New York City passed Local Law 26, it sparked a rush of retrofitting as businesses scrambled to comply. The law, passed in 2004, established retroactive safety requirements, including requiring business buildings 100 feet or taller to be fully protected by a sprinkler system. The city's property owners had to install sprinklers in hundreds of buildings. The original plans for many of these buildings were long lost, leaving architects to guess what may be behind the walls.

### **Lay of the land**

Missing or incomplete plans throw an extra wrench into the already complicated process of bidding on facility renovations. Contractors base their bids on original plans, feedback from facility managers and a site walk-through. Some problems, like lead or asbestos, are hidden, uncovered only once construction is under way. That puts contractors in a difficult position: they can't bid what they can't see.

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Here's another example. If a wall is opened as part of an optional upgrade and asbestos is discovered, the contractor can't just ignore it and carry on with the original project. Asbestos remediation is mandatory. Once the problem is known to exist, legally, it must be addressed. What starts as an optional improvement may lead to a chain of mandatory upgrades.

Both the owner and contractor need to be prepared for such surprise situations and leave room for them in the budget. Contracts can be structured to allow contractors to submit invoices for actual costs plus a fee, usually up to a predetermined cap. These contracts can protect the owner from budget-blowing expenses and assure the contractor he or she will get paid.

### **Select the right contractor**

In an effort to get a job as the lowest bidder, some contractors lowball their bids. Instead of building in an allowance for the unforeseen, they rely on change orders to cover the difference. While this strategy may work as a quick-and-dirty means of getting paid, it will tarnish a contractor's reputation in the long run. When owners watch their budget being swallowed up by change order after change order, they start to feel like they are being scammed or at least like the person they hired was not experienced enough to know what they were getting into.

Past experience is the best qualification to look for in a contractor. As a building owner or facilities manager, get contractor references from past jobs where they retrofitted older buildings. Contractors experienced with retrofits know what they are likely to encounter and build an allowance for unexpected expenses into the budget. A knowledgeable contractor will also factor in the cost of working around a building's occupants. To avoid disrupting the tenants as much as possible, the work will probably be broken into phases. Evening and weekend work, and the accompanying labor premiums, may be required.

An experienced contractor will also know how to create and implement a site safety plan, which outlines health and safety risks to people on the job site and how they will be managed. An effective plan is critical to keep occupants, workers, and bystanders safe. New York City, for example, recently revised its building code to mandate a site safety plan for any job requiring a registered construction superintendent.

## **Are teardowns an option?**

Daunted by all of these unknowns, some facility owners wonder if it wouldn't be easier to simply tear down the building and start over. The answer is no. Teardowns have their own concerns. In high-density areas, they are almost impossible to carry out. Furthermore, they are expensive. While costs can vary widely depending on location, the national average for commercial demolition is from \$4 to \$8 per square foot. That comes on top of permit costs and does not include the cost of hauling away and disposing of debris. Once the building is down, a new permit process begins to construct the new building.

It is better in most cases to perform only the work needed to bring a facility up to date, especially if the building is structurally sound. Bringing a facility up to code and bringing it up to date are not necessarily the same thing. Once a building owner has committed to performing mandatory improvements, it is worthwhile to research optional updates to make the building more sustainable in the long term.

Inefficient older buildings consume massive amounts of energy through lighting, heating, air conditioning, and more. Replacing old-fashioned utilities with newer, sustainable systems may never be easier than when the building is already under construction for other upgrades. For example, energy audits are one of the guiding principles when improving a government building. Energy consumption at U.S. government facilities has been in steady decline since the federal government began actively implementing the U.S. Green Building Council's Leadership in Environmental Energy & Design (LEED) standards. As government buildings undergo routine updates, they are also retrofitted to make them more energy efficient.

## **Create a wish list**

Sustainability upgrades can be added to building owners' wish list of facility improvements. This list is likely to include both optional and mandatory upgrades, and it may grow once facility managers, contractors and architects have given their input.

The renovation budget may not be able to accommodate every project on the wish list at once. The projects need to be prioritized with main project drivers and mandatory upgrades at the top of the list. Optional and less-urgent upgrades are relegated farther down the list, perhaps to be tackled in a future renovation.

Under the right circumstances, even otherwise mandatory upgrades can be shifted to a lower priority. For example, asbestos insulation is not dangerous so long as it remains undisturbed. If a building owner knows there is asbestos in the walls but none of the planned upgrades will open the walls and disturb it, remediation can wait until a later time.

An upgrade is often the best thing that could happen to an outdated building. Old industrial buildings that can no longer serve their original purpose are often retrofitted and subdivided into new uses like shops, apartments and restaurants.

Renovation breathes new life into disused structures and sometimes into whole neighborhoods. Carrying out these transformations can be challenging, but with careful planning outdated structures can be retrofitted to meet current codes, modern aesthetics and sustainability goals.

### **Planning Building Upgrades**

Remember these key points when upgrading a building:

- Identify, evaluate and prioritize the scope of work
- Define the main project drivers and prepare cost and schedule estimates
- Pay attention to the details of building codes
- Develop a site safety plan
- Work with subcontractors and building owners to develop effective methods and strategies to minimize disturbing occupants of the building or neighborhood, especially if the work takes place during regular business hours
- Expect the unexpected. Plan to work during off hours and leave room in the budget to accommodate unforeseen work

## About the Author



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