

Pitfalls of Planning Construction Projects at Existing Facilities

Defining the challenges and determining the best solution to continue operations at a facility with ongoing construction.

■ By Jeff Eriks

Expanding or remodeling a facility is a difficult task. Equally difficult is to determine whether to stay in operation during the construction or not. Just the thought of shutting down or impacting the operations of the current facility due to an impending construction project could cause anxiety. There are many factors that must be considered when beginning to plan a project, however, there are less issues to deal with if the facility is already shut down.

If you are looking to do work to an existing facility it is important to take into consideration the impact on the workforce, current operations, the existing building structure itself, the overall cost, and duration of the construction project and the potential risks of any remodel or expansion project.

The Impact on the Workforce

Employees are going to be impacted by the construction project no matter what. If the facility is being shut down for part of the project,

they will either be furloughed or let go. If the facility is not being shut down, then it should be determined how the operations would need to change in order to accommodate the construction project. This could lead to additional shifts, changes in how people work, and changes in where the office is located, take breaks or other factors that could impact their overall productivity. Like all operations, employees are the most important asset you have, and any change in how they operate leads to a change in their engagement and morale. The most important tool to properly manage this is communication. Clearly outlining what will happen and when is very important. In addition, providing proper accommodations during the work period is important. If offices or locker rooms are being renovated, provide temporary trailers or similar areas to preserve those amenities. You must properly plan for this and work with them to ensure the transition period is managed properly in order to maintain an engaged workforce at the end of the project.



Operations and impacting the workforce.

Images courtesy of Cambridge Companies.



Top: Repairing an existing facility.
Right: Determining the overall cost and duration of repairing an existing facility.



The Operations

There will always be an impact to operations during modifications of an existing building. Whether the facility shuts down or remains open, operations will need to modify the way that they do things to accommodate the construction project. Oftentimes, there are construction and equipment phasing plans that must be put into place so that the construction company can work safely in various areas in order to allow the operations to continue, even at a reduced capacity. Also, construction companies always needs some type of staging area that houses materials, parking and temporary facilities for their staff. The phasing plan is an important part in the planning process and needs to be thought through and prepared before the drawings are completed. It will need to be incorporated into the sequencing of the project as part of the design package. All team members, including the design team, construction team and the owner, need to buy-in to this phasing plan and agree on the final version. A good phasing plan is key to the success of any project at an existing facility. This is also a living document that must be dynamic and updated as the project moves forward in case issues come up and audibles have to be called. It is important to develop critical path milestones so that work tasks that are prerequisites for later phase work are completed in the proper order. Should any critical tasks fall behind schedule, the phasing plan will need to be updated to accommodate the revised schedule and work phases. The

owner will also take this phasing plan and develop an operations plan based on it so that they can properly prepare for all operational changes prior to the start of the project. This will be very important if temporary equipment may be needed, as that will need to be sourced and onsite when it is needed.

The Existing Structure

The existing structure is one of the biggest risks of the project. Prior to starting the design, it is recommended to have a registered architect of engineer evaluate the building to make sure it is structurally sound and can handle the remodel or expansion. Design professionals can help to identify potential pitfalls that could, ultimately, kill the project or increase costs dramatically. Examples of pitfalls are major code violations based on updated building codes, ADA compliance violations, structural issues, or zoning or other compliance issues, as well as an insufficient fire protection system. Any of these factors could come up during the design and permitting process and lead to additional project costs in the tens of thousands to hundreds of thousands of dollars. By evaluating the structure on the front end, the project team has the best information to make informed decisions on the project parameters and budget impacts. As a project team, you want to identify as many of these up front so that the owner is well informed of the risks they could be facing as the project moves forward.

The Overall Costs

As with any construction project, the overall cost is always at risk until you are a good portion of the way into the construction project. With an existing building, there are additional risks that are not always identifiable at the outset of the project—such as pipes hidden in walls or underground, asbestos or other environmental issues, or assumptions made about footings and other buried structural items that end up being incorrect when they are uncovered. You can do all the research and investigation that you are able to do, but until you uncover things, you cannot be 100 percent certain. To help manage this process, you may want to generate a Risk Register to list all known project risks, as well as potential risks that your team has identified, but has not quantified. This could include an entry for poor soil conditions under a building area—you might know the soil is not great, but will not know the full extent until excavation. The goal is to clearly list and define the risks to keep the unknowns to a minimum. The project budget should always have contingencies built into it to account for unknowns. The amount of this contingency is based on the inherent risk in the project and agreed upon by all team members.

The Duration

The last factor that can be a pitfall on the project is the duration. During the planning process, certain assumptions are made and built into the plan for the project. This is all factored into the phasing and operations plans. If these durations change, and they will likely move around, it affects all parts of the project from the scheduling of construction activities to the ability of the owner to plan what they need to do. With an existing building's unknown, there are more issues and potential for changes that can arise, which lead to these schedule changes. With an expanded project duration, costs will rise for construction management as well as the increased construction costs to the owner with less operational revenue for a longer shutdown. The project team must build these contingencies into the project schedule in order to help alleviate major problems that could be brought on by changes in the schedule.

Knowing the Risks

While the process of building a new building is much cleaner and carries less risk, it is not always practical or financially feasible to go this route. This leads to the need to remodel or expand an existing building. Understanding and knowing the risks in modifying an existing facility will allow you to better plan for the project and build in the contingencies necessary to manage the risks and realities of this type of project without drastically impacting the project schedule or budget. |WA

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