Williams Notaro & Associates, Inc.

MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION CONSULTING ENGINEERS

Ten Practical Suggestions for a Successful Tenant Renovation Project

Part 1: Project Planning & Set-Up

These suggestions can be implemented by tenant representatives, facility managers, construction managers, or anyone that manages construction projects to make your next project more predictable, organized, and successful.

1. Evaluate the existing tenant space and base building systems before selecting a space.

Not all buildings and tenants are a good fit. Many buildings do not provide the mechanical and electrical capacities required by all tenants. This can be an issue when a tenant wants a large conference or training room, or a computer room. Will the building system provide adequate cooling and outside air to the conference facilities? Can the electrical system accommodate the data center power requirements? Most likely new duct risers or penetrations through the side of the building will be required for outside air, and new electrical risers, or a service upgrade will be required to meet the power needs. These major upgrades will result in unanticipated costs, require landlord approval, and will prolong the schedule.

Architectural features can also affect the viability of the space. For example, if a tenant wants nine foot ceilings, is it possible? If there is existing mechanical and electrical equipment in the area, what will it cost to relocate or modify these systems? Who will pay for it?

If these issues are determined before signing a lease, the tenant and landlord can work together to manage the associated costs, schedule delays, and adverse impact to the building. The tenant's design team should perform an assessment of each potential facility to identify deficiencies that could affect the project.

2. Prepare the initial project budget using a space plan and engineering considerations.

Often a preliminary budget is prepared based on a cost per square foot for typical projects either with or without an architectural space plan. Then the project is designed and the actual bid cost exceeds the project budget. How does this happen? It happens because the mechanical, electrical, and plumbing (MEP) systems may not have been adequately considered when the budget was prepared.

MEP costs are often higher than all other costs combined, so it is critical to consider input from the design engineers when preparing the budget. This applies to even the smallest projects since they are easily affected by small additions to the MEP work. Ask the engineers for conceptual design information you can use to develop your budget. There are many ways to determine this information including simply relying on the engineer's knowledge of the building or preparing conceptual pricing documents. A good engineering team will work with you to provide the necessary information in the most economical manner.

3. Set a reasonable schedule. If the schedule must be accelerated, make sure everyone understands the implications.

A reasonable schedule allows for proper design, comprehensive pricing, well conceived selection of contractors, lead times for equipment, and all the other processes that are part of a construction project. It allows for projects to be built correctly, delivered on time, and within budget. Usually the expectations for a fast track project are the same as a project with a reasonable schedule. However, when a schedule is accelerated, quality and/or cost are inevitably affected.

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For example, in a fast track project, programming may be cut short, designs are rushed, material and equipment selections may be based on lead times, and submittal review is sacrificed. Eliminating or altering these tasks will lower the quality of the project design and construction.

Costs are also higher with an accelerated schedule. There may be design fee premiums, contractor overtime costs, equipment quick ship charges, and expedited plan review costs.

Being realistic about the affect of a compressed schedule on a project and ensuring coordination between the tenant, design team, contractors, and vendors will relieve some of the quality concerns associated with an accelerated schedule.

4. Select the design team based on qualifications, not the lowest price.

If you start with a poor, error filled design, it will likely result in a difficult construction process. Bad design drawings lead to excessive problems during construction, increased paper work, and disorganized projects; all resulting in increased costs, lower quality, and schedule delays.

All architects and engineers are not created equal. Investigate and select a team that will perform, not a team that just gives you a low fee. Ask prospective design teams about their suggestions for a successful project, their attitude toward change orders, their definition of quality, and their history of repeat clients. Ask them to present a set of drawings from a recent project and explain the critical aspects of that project. Ask to meet the proposed project team members. This exchange will help define their capabilities.

Would you select the least expensive accountant because they promised you the biggest tax refund? Would you hire a doctor or lawyer because they have the lowest fees? Apply the same sensible values to the design professionals you select and you will be more likely to have a successful project.

5. Properly program the space including the needs of all required vendors.

Proper programming is essential for a successful project, and is typically accomplished by the architect and a group of tenant representatives. However, the vendor systems such as telecom, data wiring, audiovisual, and security are often overlooked.

Identify and select vendors early in the programming phase. This will allow the architect and engineer to coordinate directly with them and include any infrastructure required to support the vendor systems before the architectural and engineering design begins. Otherwise, the design team will spend hours coordinating this information during the design phase, the construction documents will lag, or the requirements may not be included in the construction documents.

Part 2: Design & Construction

Commercial construction is a complicated process that requires the skills of many people working together. These last five suggestions will help make your project more predictable and organized.

6. Insist that the design team visit the site during the design phase before completing the construction documents.

This should be a 'no brainer.' However, we have seen situations (usually when we are asked to review projects that have gone wrong), where it was obvious that the architect and/or engineer did not visit the site. Why would this happen? Maybe the site visit was sacrificed in an effort to be the low priced design team or maybe the designer did not understand the value of a pre-design site visit. Architects and engineers should always visit the project site before finalizing the design documents. Relying solely on 'as built' drawings for existing conditions will result in problems, since as built drawings do not depict all existing conditions.

Insist on site visits, and be wary of a design team that indicates site visits are not required.

7. Include bid review services in the contract with the design team.

Bid proposals from the different contractors asked to bid a project will rarely include the exact same scope of work. This is particularly apparent when reviewing sub-contractor bid proposals. Each contractor will typically submit a list of exclusions, and each list will be different. One contractor may assume another trade will perform certain work while another may include it. If the general contractor is closely managing the sub trade bids, they may review the bids and ensure that excluded work is included elsewhere. Unfortunately, not all general contractors do this, and there may be other omissions in the scope that the general contractor does not discover. The result is that work is left out or priced incorrectly, and the client will pay for it through a change order during construction.

The goal of the design team's bid review is to try to ensure that the bids include an equal scope of work. The design team can identify differences between the different bids, and equalize them so the client can make a decision based on truly equal bids.

After a bid review, it may turn out that the high bid is no longer the highest and the low bid in no longer the lowest. The small cost invested in bid review services can provide a payback in multiples by providing a true picture of which bids are the lowest

and by helping to reduce change orders during construction.

8. Select the general contractor and the sub contractors based on qualifications, not the lowest bid.

Ask to meet the general contractor's project manager and job site superintendent. They are two key people. If they are strong managers, then the project will be better. Also, ask to be involved in the selection of sub contractors.

Even better, contract with a general contractor during the design phase and get the benefit of their construction, budgeting, scheduling, and planning expertise right from the start. Let the general contractor develop a bidders list for sub trades and manage the sub contractor bidding process.

9. Include construction phase services in the contract with the design team.

No matter how detailed the drawings are, even the best contractor cannot build solely from a set of two dimensional design drawings, without interaction with the designers. The architect and engineer have designed systems to meet your needs and specific parameters. Many factors including field conditions and misinterpretation of the contract documents may lead to incorrect installations, resulting in systems that do not perform as intended.

It is important that the architect, engineers, and contractors work together throughout the project to ensure that the contract documents are interpreted and applied correctly. A contractor may decide to proceed differently than shown on the documents because it appears that installations other than those shown on the drawings will still satisfy the intent. However, there are usually specific reasons why the architect or engineer designed the installation shown on the documents. These reasons should be discussed with the designer before any modifications are made.

Shop drawing review, site observation visits, and requests for information (RFI) procedures for communicating throughout construction are all processes developed to help the construction go smoothly. Sacrifice these to save money, and you sacrifice important safeguards that will adversely affect the project.

10. Ensure that the client, design team, contractor, facilities staff, and vendors communicate throughout the project.

Communication is critical to the success of any venture, especially a construction project. Some of the most important communication requirements are:

- The client communicates the overall intent and goals for the project to the design team, contractors, and vendors. This can be accomplished through a well written 'request for proposal', programming with the design team, and project meetings.
- The design team communicates the design concepts and associated reasons for the design to the client, and the client reviews the design before construction begins. This step is often omitted but can be instrumental in eliminating surprises during construction or after occupancy. The design team can accomplish this by preparing a written description of the system design (a Design Criteria document) including decisions made during the design process.
- The design team communicates with the Facilities staff to learn as much about the operation of the existing building as possible.
- The contractors communicate any questions to the design team. This is usually accomplished through an RFI process but can also be done through phone calls and on site discussions, with proper documentation as required.

Effective communication on a construction project should involve detailed discussions to resolve issues and not just ineffective back and forth correspondence where details are inadequately described or incorrectly interpreted. It is usually better and more efficient if problems are resolved through discussion, then briefly documented for the benefit of the rest of the team. Most importantly, if in doubt, ask. No one should assume they understand an issue until the appropriate people are consulted.

The Bottom Line:

Will implementing the above suggestions increase the project cost and schedule? Initially it may seem so, since performing the tasks described above must be included in the initial budget and schedule. However, these efforts usually result in a lower total project cost and a more timely completion of the project because problems are reduced.

Even if you believe these suggestions will increase the cost of the project or are otherwise burdensome, consider that the tenant and landlord will live everyday with the problems resulting from a poorly executed project, and any perceived cost savings will be long forgotten. Put extra effort into the design and construction phases of a project and the benefits will be apparent at the end.

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