

Pre-Design

PLANNING

by William F. Merck II and Ksenia Jaroshevich

For the little things we plan in life we follow commonsense rules to avoid problems. The carpenter tells us to "measure twice, cut once." However, for the larger undertakings in life, we seem much more willing to put the outcome in the hands of fate. Perhaps that is because the larger things come into our life infrequently and we have no simple rules or prior experience to guide us. We forge ahead, uncharacteristically optimistic, thinking that others manage to succeed with big projects, so once we get into ours, we will figure things out. True, but for multi-million dollar building projects, by the time one "figures things out," hundreds of thousands of dollars are wasted, months of staff time misdirected, and serious thought expended on the best way to explain to the boss why this disaster is really not so bad.

There is a time between the boss announcing that you will be in charge of a new, large building project, one that will "transform the institution," the "watershed building that will make the future" (no pressure here), and the point where you bring on board the architectural firm (internationally recognized of course) to prepare the construction design documents.

It is our experience that this period is the absolutely crucial time for setting a course that will lead to success. The follow-

ing points will help you develop a building program that will get your design consultants off to a correct start in developing a design solution. The discipline will add years to your career!

From the Original Idea...

Once the original idea for a project has been passed to you for implementation, the only two questions your boss will have for you from that time on will be "How much will it cost?" and "When will it be complete?" A natural survival instinct immediately suggests hiring an architect to share the risk with you for this newly acquired assignment. Succumbing to this inclination is not good. In a long footrace, a moderate pace in the beginning allows a runner to pick up speed later, shortening the total time to the finish. Similarly, a slower, more deliberate beginning in a building project will lead almost inevitably to increased speed later in the project, less cost, and a better building.

The following points form the outline for the planning that should precede any architectural design drawings on a building project. This planning will give a solid base for all that comes later.

1. Define precisely the problem to be solved by the proposed building project—in writing.
2. Define the goals that will be achieved by solving the problem—in writing.
3. Identify the people most appropriate for this project and specify their role.

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4. Have the newly identified team review and refine the assumptions and conclusions reached in #1 and #2.
5. Brainstorm potential strategies for solving the problem.
6. Identify the most promising potential strategies and develop detail.
7. Select the best strategy.
8. Develop a written work plan for the project that, among other things, includes a detailed program to be used by an architect/engineer to prepare design documents.

Define the Problem

Defining the problem would seem to be elementary. It is. What unfortunately happens in many projects, however, is that the project initiator attacks symptoms rather than the problem. The possibilities that can flow from this mistake are frightening. Another potentially damaging blow to effective problem definition is poor communication and misunderstandings between the originator of the idea and the person designated for implementation. These problems can be alleviated by allowing sufficient time for thinking through the root causes of the exhibited problem and reducing the conclusions to a clearly written statement.

A bookstore expansion project undertaken a few years ago provides a good example for illustrating how being deceived by symptoms can allow a project to go seriously awry. The symptoms prompting a perceived need for expansion were too little storage space, not enough retail floor area to display all that was desired, cramped aisles, and not enough room to add extra cash registers to handle book rush. A careful analy-

and report their observations and recommendations to university management. Surprisingly, after their visit, the consultants concluded that the basic space envelope of the existing store was adequate to comfortably support not only the current volume of sales, but as much as 33 percent more.

One of several observations that led to their conclusion was that the store's display fixtures were not up to current standards for efficiency. Upgrading the fixtures alone could add significantly to the amount of merchandise that could be displayed in the same square footage of retail area. Displaying clothing on hangers, rather than folded on shelves, cut labor costs. By using "slat wall" fixtures on the exposed walls and columns, more merchandise could be displayed in the same area. More effectively designed shelving for office and school supplies was recommended to lower the shelf profile for better visibility, while allowing space for a greater amount of merchandise. These improvements had the added benefit of reducing the need for costly back of the house storage, since more merchandise was actually on the retail floor—where it could be sold!

The consultants further observed that senior employees had, over time, managed to carve out and convert valuable retail floor space into private offices for themselves. Their recommendation was an obvious one. These spaces should be reconverted to retail floor area. Employees must be accessible to customers, not hidden away in offices. Necessary work space to replace the offices would be designed to be open to the sales floor or provided by desks in the (smaller) store-room. Exceptions to private office elimination would be for supervisory privacy to discuss personnel matters or to provide the necessary security and distraction-free environment for accounting and bank deposit preparation.

An analysis of buying practices revealed the lack of a disciplined system for inventory levels. Much more merchandise was on hand than was needed to cover reorder lead times. The superfluous merchandise took up valuable space. Another discovery was a practice of allowing vendor sales representatives to place "spinner" racks around the store, constricting aisles in an already crowded store. Impulse merchandise was allowed to clutter the cashier's

countertop in ever-increasing quantities. Newer counter designs were recommended by the consultants to support the cash registers, allowing impulse merchandise to be displayed above or below the register level. This recommendation allowed for more cash registers in the same linear footage of counter space allocated to the old configuration.

An analysis of sales revealed that some merchandise inventory being displayed was turning at an unacceptably low rate.



sis of the symptoms and an honest search for the root causes revealed a much less expensive solution to the problem than adding square footage to the store. Every added square foot would not only be expensive to construct, but would require additional continuing expenses for staff to cover the new sales area, heating, cooling, lighting, and cleaning.

Consultants with extensive experience in bookstore operations were brought in for a few days to review the situation

This slow moving merchandise was eliminated in favor of products that were more popular, resulting in increased sales and profits within the same square footage of display space.

When the review was completed, and the real problems defined, it became clear to management that a store addition was not an appropriate alternative for further consideration. The more appropriate alternatives were for improvements in operational practices, with construction limited to remodeling and replacing inefficient fixtures.

Define Goals to be Achieved

After the problem is defined and alternatives considered, all too often the solutions sought—goals to be achieved—are left hazy. It is important to quantify what the goals are. In our bookstore example, in what ultimately became a renovation project rather than new construction, one goal was to shorten the customer's wait in the cash register lines during book rush. Good goal, but not yet clear enough. To determine the needed number of registers, a standard must first be set, such as not allowing a customer to wait more than seven minutes in line. Then, through a review of past customer counts at peak times and an analysis of typical transaction times (using new, efficient equipment and properly trained cash register operators), the exact number of cashiering stations was found to meet the goal of no more than seven minutes in line during rush. This exact requirement was then given to the architect for inclusion in the floor plan drawings for renovation.

Identify Planning Participants

When the planning process has sufficiently progressed to the point that it is certain that a construction project is an appropriate solution to the problem and the goals of the project have been at least cursorily determined, it is time to identify a building committee. At this point in the planning process, enough is known to choose people with the requisite knowledge and interest to contribute to the success of the project. Each person identified should be assigned a specific role in the future work of the committee. In a library project, for example, the archivist may be responsible for analyzing volume requirements for the material being presently stored in archives and to supply the committee with projections of future needs. These projections must include sufficient detail to persuade other committee members, with their own priorities for the limited construction budget dollars, that additional archive space should be included in the final plan.

The number of participants should be kept to a manageable size, yet large enough to provide sufficient ideas and information. Five people are usually a minimum, and eight to ten is

about right. Groups larger than ten suffer scheduling problems and have difficulty keeping absentees up to speed on what they have missed. The committee chair should be someone experienced in the institution's capital outlay process.

The first priority of the committee is to develop a written planning schedule, identifying milestone events to mark progress. The role each person on the committee is expected to play should be stated by the chair at the first meeting to avoid confusion later.

Check Assumptions

An early order of business should be a session devoted to a critical review of the assumptions and conclusions made before the building committee was formed. For example, a committee member may know about severe environmental problems specific to the proposed building site. Refining assumptions at this early stage is inexpensive. Changes later in the process become ever more costly.

Brainstorming Potential Strategies

A task of the building committee should be to spend some meeting time brainstorming alternative strategies for accomplishing the goals identified. It is entirely possible that the larger group, with collectively more expertise, can come up with an entirely different and better idea as to how the problem should be solved. They may, for example, decide that the activity to be housed in the proposed building could be more appropriately and less expensively handled by renting a building from someone else.

Another example of an alternative strategy can be found in a project proposed to provide additional housing for students. The university

administration had a goal of continuously working to "improve the housing services offered students." In pursuit of this goal, lack of adequate housing for a growing student body was identified as a problem. A committee was quickly formed to oversee planning for a new on-campus residence hall. Once the building committee began meeting, however, discussion revealed that a new apartment complex was being planned for construction on the fringe of campus by private developers. When complete, this project would eliminate the current need for additional housing capacity.

The committee decided that there was a better strategy than new construction to improve the housing services offered students. That better strategy would be to use the financial resources that had been earmarked for new dormitory construction to accomplish needed renovation in existing residence halls. As a result, student housing services would be improved, and the university would have the added advan-

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tage of having nicely upgraded facilities that would be more effective in keeping currently housed students from electing to move to the new off-campus apartments.

Usually, strategies will have been sufficiently thought through and a sound conclusion reached before appointing a building committee. Radical changes in direction such as those described earlier will rarely occur. However, the point is that in a major building project, millions of dollars are going to be spent. It is worth the time for a building committee to double check the strategy and correct any flaws before going to the next step in the process. The next step is to hire an architect.

The Building Program

Once the architect is hired, the building committee has one last major task to accomplish before the selected architect begins work on the design drawings. The task is to define the building program. This effort should be accomplished in partnership with the architect, who will largely guide the process based on questions generated through experience. The committee's participation in this process will be very important because of each committee member's personal expertise and

understanding of the project goals gleaned through participating in the earlier planning. A successful building committee will, however, be open-minded and receptive to the suggestions and recommendations of a design professional who is entering the process as a neutral party, unconstrained by institutional habits and notions.

Following completion of the building program, the architect's design work begins. Because of all the planning that has preceded the architect's development of a design solution, the probability is great that the architect will successfully create just the building design the university wants and needs.

Conclusion

Every building project has its own personality. People involved in building projects have different degrees of experience and expectation. The basic elements of effective pre-design planning are problem identification, goal statement, and strategy formulation. Seems simple, but in practice, projects often get into the design phase too quickly, with too little time spent on these basic elements. If adequate time is spent in pre-design planning, the rewards will be great. ■

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