
Introduction

What is Construction Program Management?

The systematic application of management and construction expertise to the planning, design, and construction process for the purpose of controlling the time, cost and quality of the project, and improving the educator's satisfaction with the process.

What's it all about?

Educators, first of all, must be more accountable for the educational success of the young people in their charge. Second, good well-planned facilities make that responsibility more possible. Someone must become accountable for ensuring that the allocated resources are used properly to develop the needed facilities. That accountability should be to the educational policy makers that allocate resources.

Third, construction management is concerned with delivery. A capital construction project requires the participation of a variety of players, including policy makers, educational program planners, administrators, financial advisors, architects, engineers, planners, programmers, construction managers, maintenance personnel, and the end-users (pupils and teachers). Each group has different motivations and perspectives. Someone needs to lead, coordinate, and assume responsibility for integrating this array of talents into a successful project delivery team.

Components of Construction Management

Educational Management

Services provided by architects and construction management firms that guarantee that educators' facility desires and needs are accommodated and met in light of time, place, budget limitations, and quality control.

Program Management

Services provided to a school district having a single major project or more than one project underway at the same time, and desiring to have a

degree of criteria standardization, control consistency, reporting, and contract administration.

Project Management

Services provided to a district during the planning design, and construction phases of a single project when the district intends to utilize contractor(s) to perform the construction.

Construction Management

Services provided to a district during the stages of pre-referendum, design, bid/award, and construction phases of a project when the district holds a number of prime contracts with trade contractors who are managed by the Construction Manager on behalf of the district.

Elements of Construction Management

The following paragraphs list elements of effective construction management. These elements should be addressed regardless of whether the services are provided by district staff or a private sector firm. As each project is unique, there may be other project or district specific requirements to be met that should be added to the list. The important thing is to realize there are many objectives your project delivery team needs to achieve. A systematic plan with adequate resources must be implemented to accomplish these objectives.

Planning Phase

1. Educational Goals and Objectives - Organizational Analysis, Public Agency Review, Public Election Campaign Strategies

Develop an analysis of what the project should provide and accomplish, plus a listing of specific characteristics the project should possess to ensure fulfillment of the goal. These statements, sometimes recommended by advisory groups, set the criteria by which the project's success can and will be measured. In public issues, finance demographics, curriculum, program organization, existing facility review and tax impact, must all be reviewed by advisory groups and public boards. The stages of funding

public issues are complex. More and more, construction management firms are expected to lead the way in getting approvals from agencies charged with maintaining proposed expansion with a public anxious for tax restraint.

2. Project Definition

Develop a description of the facility you want to build. Although this may change during the development process, it provides direction to the project team and establishes a basis from which to proceed. This is often referred to as an educational specification.

3. Program/Budget Compatibility

From the initial educational specification, a realistic budget is developed. It is important that all direct and indirect costs required for the completion of the project are addressed. It is modified and evaluated continually through out the planning process.

4. Master Schedule

In order to effectively manage the time element of your program, an overall schedule that includes all major activities and milestones must be developed. This is an important tool used to achieve on-time completion of your projects.

5. Management Plan - Who/What/When/How

Develop a formal document for review and approval by various advisory groups and top management that clearly states the project goals and objectives, project description, the project delivery team members and their roles and responsibilities, and the project schedule and budget. This is the baseline document for the delivery of an end product satisfactory to all the partners in the endeavor.

6. Team Building

Begin the process of developing a real team from the group of diverse talents, such as the Educator, Architect and Construction Manager, involved with the project. Consider using proven strategies, such as partnering workshops and regular team meetings to accomplish this objective.

7. Management Information System

Develop an effective project Management Information System (MIS) for the project. Information is truly the “lifeblood” of a project—it has to be available, accurate and must flow smoothly. It should also be able to communicate with affected users by means of a web page option and

various sorts of publications. Communication with the general public, which ultimately funds most projects, is a must in today’s complex educational systems.

8. Agreement of Goals and Objectives

From time to time, schedule a few minutes to be sure everyone on the team knows and understands where the project is going and how it will get there. Document the results and update top management when appropriate, weekly, bi-monthly, or monthly.

9. Community Information System

Set-up a community information system that conveys the progress of the project(s) to the general public. Signs, bulletins, and sites on the web are all essential.

Design Phase

1. Team Management/Coordination

Provide a single point of construction management responsibility for the team. A good team leader performs like the conductor of a symphony orchestra.

2. Cost Control

The Construction Management staff will develop systems and procedures for controlling the cost of the project being designed. The maximum opportunity for controlling the cost of construction lies within the development of the educational plans and specifications. Once these are finalized, the majority of the project cost is established.

3. Time Control

Time should be considered as a resource to be allocated and used to support specific project activities. Budget time realistically and stick to the budget judiciously. The Construction Management role makes this component manageable.

4. Quality Control

Plan for the quality you want and can afford to buy! You can't get maximum quality for minimum cost; it just isn't possible. But you can and should set acceptable levels of quality for both products and services; budget appropriately, that these criteria are met and a quality construction management firm will demand.

5. Constructibility

Something that is "easy" to build generally costs less and goes up faster than something that is difficult to build. But there are usually many ways to design and build the "same" thing. Constructibility reviews are needed to ensure what is shown on the drawings is constructed in a timely and cost effective manner.

6. Approvals

"Everybody has a boss"—including projects. Except, projects often have multiple bosses. Approvals must be identified early and obtained in a timely fashion from policy makers, users, state agencies, and building departments. As your Construction Manager, the need to plan, schedule, and ensure that all required approvals are obtained is critical.

Bidding Phase

1. Compliance with Rules

While public bidding for construction work may not always be the best way to procure construction, law for most public school projects requires

it. It is imperative that the process used for your project complies with all applicable laws, rules, and regulations.

2. Competitive Prices

Contractors generally set the bid prices, not owners. With the guidance of the Construction Manager there are things the owner can do during the bidding to cause lower bids. Early advertisement of bids, educating contractor organizations about the project, and assisting bidders to understand the sometimes complicated bidding process, will help create the impression that the district plans to be fair and reasonable and that the work will be effectively managed.

3. Clear Direction

Bid documents should be complete and easy to understand. Addenda should be clearly written to eliminate the contractors' tendency to inflate prices to cover the cost of ambiguous or unclear items in the drawings and specifications.

4. Timely Communication

Bidding is a "timed" event; it is also expensive, complex, tedious, and not fully under the control of the various contractor(s.) Try not to make any changes in instructions. You can't expect "good" bids if you change direction at the last minute. However, alternate or fast track bidding is a technique often used to get quality bids in order to maintain project budget integrity.

5. Bid Date

Plan the date of bid opening, don't just set it. If there is another project with the same bid date as yours, and your prospective bidders want to bid it too, then you won't have their full attention in "refining" their bid for your job. On time and under budget are hallmarks of a quality management construction company.

6. Timely and Informed Decision

Establish a realistic schedule for the district's decision on awarding the contract, and then make sure the schedule is followed. It shows good faith and establishes a tone for the district's intent and management style.

Construction

1. Schedule Control

Construction projects that aren't completed on time can mean significant additional cost to the district. Construction schedules should be realistic, actual progress should be compared to the baseline schedule on a regular basis, and techniques, such as short interval scheduling and critical path analysis, can help avoid delays and make up lost time if necessary. The Construction Manager is a major factor in accessing various contractors for different phases of the project.

2. Cost Control

School projects are seldom considered "successful" when there are cost overruns. Cost control actually begins prior to construction, in the pre-referendum or pre-design phase. During construction, cost control consists of effective enforcement of the contract documents and change order management. Potential change issues should be clearly documented, reasonable costs should be assigned to the changes, and all changes should be resolved in a timely manner by the Board of Directors of the Educational agency.

3. Quality Control

The quality of construction for a project is defined by the plans and specifications, but may not be delivered unless checks and balances are in place. Effective control of inspections and testing services and timely responses to the contractor's questions or problems will help to ensure that the agency gets the quality it is paying for, on a time basis.

4. Timely Communication

The old adage "time is money" certainly applies to construction, because it's such a labor-intensive process. Anticipating problems before they

create delays and providing clear and easily understood responses to the contractor's questions or problems will help the project progress without unnecessary and costly delays. The weekly site meetings are essential to timely progress and connecting issues to concern.

5. Effective Decisions

A full-time, strong site superintendent, experienced in the construction of educational projects, or other projects in the public sector, makes the difference in most projects. An effective decision-making process outlining responsibilities and authority should be defined during the planning phase of the project. During construction it is important that the procedures are followed and that a cumbersome and ineffective problem-solving process doesn't become a costly and time-consuming bottleneck to progress.

6. Claims Prevention

There is no way to guarantee that a contractor will not file a claim. Many projects do, however, finish without them, and that should be the goal.

The best preventative measures are good contract documents, an adequate budget, and a reasonable schedule, along with fair, reasonable, timely dispute resolution, and strong leadership, everyday at the project site.

7. Project Credibility

School projects are subject to public scrutiny and criticism. Keeping the public's perception positive can be accomplished by regularly reporting to concerned parties, such as the School Governing Board and neighborhood groups, responding quickly and effectively to concerns and problems as they occur, and drawing special attention to the successes.

Close-out and Occupancy

1. Final Completion

The completion of all construction activities must be judiciously monitored during the final stage of a project to assure that all the "little" items are finished and don't fall through the cracks.

2. Contract Closeout

In order for the project to closeout cleanly, specific contractual and legal requirements must be completed.

3. Document Turnover

Guarantees, warranties, operations and maintenance manuals, as-built drawings, and inspection records are just a few of the documents that must be turned over to the district at the completion of the project. It is not only important that these be provided; they must be accurate and complete.

4. Transition to Occupancy

A significant amount of planning and coordination must take place prior to the district assuming full responsibility for the maintenance, operation, and occupancy of a new or renovated facility. This must be planned and started early for a smooth transition to occur. Where training of staff is necessary to operate new systems, it is essential to start the process early. As the building rises above the ground, new facility staff should be oriented.

5. Post-Occupancy Evaluation

People hate to “reinvent the wheel,” and yet we all keep trying to build a slightly better one. Few take the time to evaluate the process used or the results obtained when we build the last one! The post-occupancy evaluation is extremely valuable—don’t neglect it! An 11th month walk-thru after project completion is a common goal to guarantee warranty fulfillment.

Types of Services Provided

Now that we have described the elements of good construction management, there are numerous tasks or services that must be provided to ensure successful project completion. These services may be provided by the district's in-house staff or by a private sector firm. The services shown on the chart above should be regarded as a "menu" of services that may be required. Each project is unique; so all the services listed may not be required for every project.

Conversely, there may be special project requirements that dictate the need for other services.

The bottom line is that adequate personnel, expertise and resources must be devoted to the planning, design, and construction effort in order to achieve the desired goals and objectives.

Why Use a Construction Management Firm?

Key Word: Quality Control

If the district does not have adequate or appropriate staff to support the specialized need for services in the planning design, and construction effort, it makes sense to augment and supplement those capabilities with services from a professional construction management firm. There are firms all over the country that spend their professional lives, every day, providing these kinds of services. The good ones will be willing to sit down and discuss your needs and assist you in determining the staff that should be required to achieve the project goals and objectives. You can develop a proposed Scope of Services with your own judgment of your needs for services from a construction management firm. The only “sin” is *not* to act early enough in the process if you have concerns about your capability to provide all the required services with in-house staff.

Typical reasons for needing support:

1. Insufficient internal staff
2. Insufficient internal expertise
3. To provide one point of coordination and/or control between all parties
4. Need for specific type of services
5. Limited resources of time or money

What to Look for in a Construction Management Firm

First, recognize and define your needs

1. Evaluate your needs
2. Evaluate your process
3. Identify the gaps

Evaluation Criteria

1. Prior relevant experience - educational projects
2. Understanding the process
3. History of successful relationships - checking references
4. History of successful projects
5. Chemistry between the firm and your personnel
6. Experience of individuals assigned
7. Commitment from senior management

How to Hire a Construction Management Firm

1. Develop project information
2. Publish/advertise Request for Proposal (RFP)
3. Meet with potential proposers
4. Identify/brief the RFP Review Team
5. Review Statements of Qualifications
6. Develop short-list of firms
7. Notify all proposers of short-list
8. Interview short-listed firms
9. Select firm(s)
10. Notify short-listed firms of selection
11. Negotiate contract with selected firm
