

# CONSTRUCTABILITY REVIEWS

## *Why do them? Who gains?*

When owners and their hired professionals set construction project goals, they expect completion without problems or issues. This expectation is established by the mere fact that construction drawings and specifications have been produced.

The ultimate construction project goal is to build a functional, aesthetically pleasing, affordable facility that has a reasonable life expectancy and manageable life cycle costs. Although the documents have been prepared by professionals, have the drawings and specifications for this structure been thoroughly cross checked through all design disciplines as well as construction?

We would suggest not.

## HOW TO SAVE ON EVERY PROJECT

Coordinated construction documents are desirable and expected on construction projects. If no one is tasked with coordinating the drawings and specifications between and among the different disciplines and across the various construction activities this expectation can not be met. Experience teaches this does not happen by magic!

This coordination exercise is typically performed through a **Constructability Review**. When constructability reviews are conducted throughout design phases, construction documents that are comprehensive, complete, and biddable are produced. In executing this review, buildability and life-cycle maintenance are also addressed. All of these factors contribute to the successful completion of project goals.

### **Goals of Constructability Reviews:**

- Ensure accuracy and completeness of construction documents
- Increase the accuracy of contractors bids while reducing their need to build in contingencies
- Identify over-budget costs
- Enhance functionality
- Minimize addendum and bulletins and the time and cost of producing them
- Reduce direct and indirect costs of change orders. Often forgotten are the indirect costs to the owners, professionals and contractors in the time and cost of dealing with them.
- Increase probability the schedule will improve or shorten
- Improve manpower efficiencies
- Minimize public and user inconvenience
- Confirm that the Owner's requirements are being met
- Maintain the Owner's goals and budget

## COSTS RELATIVE TO CONSTRUCTION

Constructability reviews, while increasing A/E costs, will realize a 2% to 5% reduction in construction costs. This can result in millions of dollars saved relative to the minor costs of a comprehensive constructability review. The Los Angeles Unified School District (LAUSD) received a 10 to 1 pay back on the constructability analysis costs when they started a building program of over 150 new schools with a combined budget of \$1.5 billion.

Savings are not only related to direct costs. It is important to recognize the many indirect costs associated with errors and omissions and inefficient construction approaches (inefficient phasing, building layouts, etc.) The paper work alone adds considerable cost.

Any impact on the schedule is not free and the schedule will be affected due to the paperwork and approval process. Keep in mind that the owner, the professional, and the contractors will each experience increased indirect costs. Each entity creates a paper trail which results in increased “un-budgeted costs” to manage and record these unforeseen changes to the project. Manpower to process design changes, paperwork, approvals and extra material handling are all extra costs that could have been eliminated in the design stage with a comprehensive constructability review.

And now, back to the obvious direct costs (labor and materials) associated with adding that which was forgotten, rebuilding that which was incorrect or turning that which started as a turnkey type building project into a design build project because nothing fits (or because too many of those little things were lost due to a lack of proper review of the project prior to construction).

Elizabeth Bowers Construction Services uses the following to save you time and money:

- Single source with the ability to perform multi-discipline technical reviews.
- Liaison function among owners, professionals and contractors.
- Objective knowledge of the limits of crafts and trades with regard to the assignment of work.
- Current knowledge of present technologies.
- Awareness of changes and approach to design and construction.
- Field experience and expertise. (Collectively 160 years).
- Design experience. (Collectively 75 years)
- Independent set of eyes, ears and experience in coordinating the various design elements.
- Recommendations will improve phasing, labor and material allocation without change to functional or aesthetic design.
- Budget-consciousness.
- Knowledge of contractor’s means and methods and their need to maintain standards.
- Cost control experience in both pre– and post construction activities — i.e. value engineering, change orders and claims.
- Life cycle review.

Elizabeth Bowers Construction Services  
118 Marlin Drive West, Suite 3B  
Pittsburgh, PA 15216  
412-571-2423 ph. / 412-343-7465 fax  
ebcs@eb-cs.com