



Construction manager/general contractor: Perspective on impacts of each delivery method - by Marc Heiman

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The question has often been asked about the different impacts in retaining a contractor utilizing alternate project delivery methods (PDM's); two primary ones being the general contractor being secured by a lump sum bid (GCLS) or the construction manager secured by a guaranteed maximum price (CMGMP). More specifically, which of these delivery methods,

- A.) Aids in preserving design;
- B.) Allows for more highly qualified subcontractors;
- C.) Impacts the quantity of change orders;
- D.) Provides a better financial result for the client;
- E.) Fosters a more successful value engineering process; and
- F.) In general, produces better results for a given project.

We have spoken to a few in the industry to gain more knowledge.

To understand the present day, let's take a look at their evolution. PDM's can be traced back to the days of the ancient master builder, approximately 1500 AD. One definition of the master builder being, "ONE [emphasis added] responsible for the design and construction of the built environment." Here, there was accountability, a high level of responsibility and the truest form of the word "collaboration." By the 19th century the "general contractor" emerged. A leading figure named Sir John Soane arrogantly insisted that the architect completely "separate" himself from the building activity. Soane wrote of the architect saying, "With what propriety can his situation and that of the builder, or the contractor be united?" (Spiro Kostof, ed. *The Architect* [Oxford Univ. Press, 1977], p.194).

What evolved was the philosophy that there was,

- 1) The architect—responsible for design only, but having no genuine knowledge about how a building is really built; and

2) The general contractor—responsible for construction only, but having no genuine knowledge about design.

A CMGMP is chosen typically when drawings are still in design and the project is on an accelerated process. The construction manager is engaged as part of the “team” early on in the pre-construction process (the entire period prior to the construction phase and where all of the true work is done to set up the project properly). This role is non-existent in the GCLS. The CM’s input on means and methods, phasing issues and constructability, logistics, value engineering (among many other benefits) will increase accountability and add tremendous value to a project (note, as with anything, there are those who have marred the process and tainted clients improperly.) This opportunity for early involvement is not existent with the GCLS. The role of the CM’s involvement in the process determines the efficiency and effectiveness of “value engineering” (not design elimination) and many other vital processes. All of the trades are bid out “open book” by a CM and vetted properly with the architect/owner before, and during, the bid process. This allows for a much higher level of confidence. The CM’s indirect costs (GC’s, fee and insurances) represent approximately 20% of the overall costs. The trades, which represent approximately 80% of the overall budget, is based on a low qualified bid and is vetted out to ensure competitiveness. Thus, the perception of the lump sum bid being more competitive and completeness leaves only the indirect costs as the “x” factor. The indirect fees are bid out in a rather straight forward RFP process where the emphasis is primarily focused on the contractors qualifications.

The GCLS bids out a project when the drawings are 100% complete (theoretically speaking). They have one goal—to submit the lowest possible bid. If it is not on the drawings, it is not included. Each GC receives the majority of bids from the subcontractors bidding to the other GCs. If a low price is received from an unknown subcontractor, the GC would have to carry the number or they will not be competitive. Here the prequalification for quality, financial, manpower, etc. are secondary. It is a pure gamble. There is not even time to properly review their scope as bids are received from subcontractors just hours before the GC’s bid is due. A typical response is that the GC has to deal with it. However, it becomes everyone’s problem if this affects the project. To compound matters, hours before the bid is due bids are received, unqualified, from other GCs. If some of these bids are lower, they must be carried or the GC will not be competitive.

As time evolves, economics continue to play a strong role in dictating which PDM method is utilized. The economics often supersede what is best to preserve design and that which will truly deliver a project to the owner’s satisfaction. While these “economics” have also taken the toll on architects fees and their ability to put out “100%” CD’s, the failure in not having the builder and the architect work hand in hand through the drawing developmental stages is the epitome of the having driven such a wedge between the two.

The majority of people we work with are proponents of construction management. In speaking with them, they have dabbled in lump sum bidding because some CMs take advantage of the process. (The few who are minorities and ruin it for the majority). Yet they also state, by majority, that the GC produces more change orders than the construction manager. Similarly, when asked about which produces more qualified subcontractors, the answer again was the CM. The question about which

one helps to perform better value engineering, again, the CM. The questions that yielded similar results pertained to whether the GC or CM better preserves design and which method yields the best financial results for the client.

The obvious answer, assuming the right builder, is construction management with a GMP. Why? Having the architect and CM work as a team throughout pre-construction phase and focusing on producing construction documents that include them and will produce better details assuming that the CM can look at a given detail in 4D, while building it in his/her head and translating that on to paper. Like the ancient master builder.

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