
CONSTRUCTION MANAGEMENT



An Open-Book, Team-Oriented Approach to Project Delivery

Undertaking a construction project these days is no small task. Material and labour costs are escalating, building regulations are becoming increasingly complex, and schedule and budget overruns are always lurking just around the corner.¹ When a project involves coordinating multiple providers of goods and services, it is likely that a few obstacles will appear along the road to completion. Project schedules may be delayed by changes in scope, an overwhelming number of design decisions, and/or long lead times for the delivery of materials.

So how can owners maximize their project's potential for success? In today's construction market there are essentially three options for managing a project:

Design/Bid/Build

In the Design/Bid/Build scenario, the owner hires a design team to design the building, and then a comprehensive set of construction documents are provided to general contractors (GC), who will in turn, submit a fixed lump-sum price to build it. The lump-sum price submitted by the contractor is presented as the total cost of the project, from project commencement to move-in, and it includes the contractor's overhead and profit.

Design/Build

The design/build approach blends the roles of designer and builder into one all-inclusive package. Owners who are planning to build several structures of identical design, and who want a single point-of-contact for the duration of the project, often take this approach. Overhead and profit are included as part of a lump sum price, covering the project from design development through construction (though construction phase costs may not be finalized until the final stages of design development).

Construction Management

In contrast to the GC, construction managers (CM) typically

get involved in projects at a much earlier stage (though they do not assume the design development responsibility like a design/build firm). The CM serves as an agent of the owner, overseeing the planning, design, construction and move-in phases of a project.² The CM is responsible for project management, asset management, material and trade management, finance management and cost and quality control. CMs typically operate on a cost-plus-a-fixed-fee basis, rather than a lump-sum tender that may be provided by a GC or design/build firm.

Today approximately 50 percent of all building projects make use of the GC/lump-sum tender format of project delivery. Design/Build firms generally specialize in turnkey solutions, so they are not usually a suitable choice for a custom project. The construction management model is a relatively new concept in comparison to the others, but is gaining favour as its benefits are becoming more apparent. According to the *1997 How-To Book: A Supplement to Business in Vancouver*, "many industry experts believe construction management is the most intelligent way to build, because it incorporates all elements of the process into a flexible, team-oriented framework."

The traditional GC/stipulated sum construction delivery format has remained relatively unchanged for decades, but has been in need of significant reform for some time. The construction management format is the answer to that need, using several unique features to transform the nature of project delivery.

Construction Management's Unique Features

Owners are increasingly looking to CMs to handle their projects because the CM specializes in planning and coordinating the whole construction process—from design development through to project close-out. Beyond this capability, construction managers offer a variety of other

equally valuable benefits. But what makes it possible for the construction management format to have so many strengths? Fee structure has a lot to do with it.

Cost Plus Fixed-Fee vs. Lump-Sum Tender

In the design/bid/build format, GCs work for a lump-sum price based on construction documents that are often less than 100 percent complete. Under the lump-sum structure, a GC's overhead and profit are added to the base cost of construction—a fixed number. A GC must also build in a contingency for unknown costs. The result is a contractor who is more concerned about protecting his bottom line than protecting the actual goals of the owner.³

If a contractor's tender is too low, he will try to reduce costs by selecting inferior trades and materials, and cutting corners in project management and administration—possibly by reducing the on-site presence of a superintendent and thus putting established deadlines and project quality at risk.⁴

The cost-plus approach is the fairest way of doing business.

Ultimately, the lump-sum tender is only suitable when there is significant certainty concerning the project scope. Anything less invites greater risk, and with it greater profit margins required by the GC, or a greater incentive to reduce services in order to maximize profit margins.

CMs, on the other hand, provide their services as a fixed fee. This fee (a CM's overhead and profit) is usually time-related—being based on the project schedule—and therefore is significantly more stable than a GC's mark-up (in that increased construction costs won't impact on a CM's profit margin). This approach is sensible in any situation, but is particularly suitable for projects without clearly defined scopes of work.⁵

The cost-plus approach is the fairest way of doing business. Since CMs' profits aren't dependent on the cost of construction, they can focus on the interests of their client and not on their bottom line. It ensures that CMs will receive the fees they deserve, and clients receive the level of attention they expect for their projects. A Guaranteed

Maximum Price (GMP) can be built into a construction management agreement to give a client some protection from rising construction costs. However, clients must still maintain self-discipline to keep costs under control.⁶

A common misunderstanding is that CMs are more expensive than general contractors. This usually stems from differences in approach to tendering. GCs submit a lump-sum price that includes their fee, while CMs present their fee separately from the construction cost. The problem with a GC's price is that the owner has no idea what percentage of the price is the contractor's fee. CMs present two prices, but both are clear and transparent, so the client can easily see how much of their budget will go towards a builder's fee. Essentially, the construction management model allows for a sharing of the risk between the CM and the client – and the lower the risk, the lower the fee.

Moreover, having a CM involved during design development can save money. A CM can identify potential conflicts between the architectural and engineering elements of a project, generate projected budgets and schedules, and use value engineering to indicate areas for cost savings through the use of alternative materials or construction methods.

While this difference in fee structure doesn't account for a CM's ability to manage a project, it does change the entire nature of the client/CM relationship that has far reaching effects.

Multiple-Prime Contracting

The cost-plus contract changes the way trades are brought to a project. When dealing with GCs, trades operate as subcontractors, submitting their pricing to contractors, who in turn place a mark-up on that price. Subcontractors work for GCs. In such circumstances, subcontractors are hesitant to provide their best price, knowing that GCs will likely attempt to cut their numbers when awarding the contracts.⁷

The cost-plus contract and the construction management format eliminate this arrangement and introduce the concept of multiple-prime contracting. Now, rather than submitting tenders to a GC, the trade contractors submit pricing directly to the client via the CM. Since they know their prices are less likely to be compromised or shopped around by the CM, they are more likely to provide their best possible pricing for the goods and services to be provided.⁸ The client/owner will also have unrestricted access to the financial administration of the project—trade tenders, contracts, construction documentation, and a history of project expenditures.

The Non-Adversarial Relationship

Money is notorious for causing stress in relationships, and many general contractor/client relationships have gone sour because of money issues. Construction management

operates on the premise of transparency in financial and overall project management. With everything being handled openly, a project's players—owner, architect, engineer, consultants, CM and trade contractors—can work together as a team toward developing and constructing a building that meets the client's needs and vision. As John Hiebert states in his article *Someone on Your Side*, "A good construction manager... should be both a team player and a team leader. If he is a professional, he will work with the designers and contractors to facilitate their work — as opposed to interfering with them."⁹

The Owner's Agent

CMs do not build projects as GCs do, thus they do not operate in conflict with an owner's interests. Rather, they serve as client advocate, protecting and promoting a client's goals. Centralizing the management controls for the project team, CMs monitor project progress and foster communication between project team members and monitor project budgets, schedules and adherence to the client's stated criteria.¹⁰

Design Assist Methodology

GCs assume their role in a project once design development is done and construction commences. As construction progresses, a contractor may discover conflicts in the construction documents, such as engineering features impacting on aesthetic features. This slows down construction, forces designers to develop solutions as quickly as possible, and increases construction costs.

Design-assist methodology enables a construction manager—as a member of a design team—to work towards minimizing these construction phase dilemmas. The premise of the design assist model is to build a partnership between the major contributors to a project—owner, architect, consultants and CM—and bring them together during the design development stage of the project. It is at this point that a CM can begin reviewing design documents and identifying possible conflicts well before construction commences.

CMs can also develop budget and schedule projections through detailed quantity surveying and estimating, and through preliminary input from selected trade contractors. Trades can be valuable for forecasting material or labour shortages, and for their opinions regarding the feasibility of the specified building materials.

When the project contributors are brought together in this fashion, problem solving becomes proactive, rather than reactive. Nothing benefits a project more than removing obstacles before they become problems. The proactive dynamic of the design-assist method leads to

additional benefits within the construction management format for project delivery.

The client/owner will also have unimpeded access to the financial administration of the project...

Additional Benefits of using a CM

CMs take on the responsibilities of planning and coordinating the construction process from start to finish. This is the true role of a CM, and it brings with it a number of significant advantages:

- The owner/client has unfettered access to the financial and management records for the entire project.
 - Full-time CM involvement reduces the risk of legal claims.
 - Competitive tendering opens up access to smaller, qualified local firms who might be unable to compete in the design/bid/build scenario, which brings subsequent cost savings.
 - A single entity managing all aspects of the project—budget, scheduling, accounting, and administration—gives the owner greater control over the project.
 - Potential cost savings as a result of direct negotiations with trades and suppliers.
 - CMs are typically more responsive to changes during construction.
 - The designer and builder communicate directly during the design development stage.
 - As a client's agent, the CM will be free to discuss and offer constructive criticism of proposed plans, as well as alerting that client to any potential pitfalls.
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- The CMs involvement in all phases of the project allows the project to be fast-tracked, meaning the pre-construction and construction phases can overlap, increasing efficiency and allowing construction to commence earlier than it would if a GC were used.
- Trade contractors are generally paid in a more timely fashion, as compared with the design/bid/build format.¹¹

The Preference for Construction Management

Construction management is nothing new. It originated in the U.S. and has evolved there over the last 40 years, leaving a significant mark on its construction industry. While it has become a widespread method of project delivery, in some U.S. states it has become the only method of delivery. Canada has watched this development and, seeing its benefits, has been gradually shifting its support to construction management. Support of the construction management format has grown substantially in British Columbia as a result of its considerable success.

Some of the most successful projects completed in British Columbia over the last few years were delivered via the construction management format. The Ministry of Finance has used construction management on several of its pilot projects, and it has been used extensively in school construction throughout B.C.

The design/bid/build approach will probably be around for some years to come, but the construction management model is gaining significant ground. As more owners and developers come to see the advantages of a proactive, engaged approach to construction, GCs will be forced to reassess the validity of traditional delivery methods.

Endnotes

1, 9, 10. John Hiebert, "Someone On Your Side: The whys to hiring a construction manager to look after your own best interests," *Directory for the Lower Mainland 1997* (BIV Publications, October, 1997).

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5, 6. J. Marc Mac Ewing, "Cost Plus not a Blank Cheque: or a goose laying golden eggs," *Journal of Commerce* (April 2, 2001).

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