



Construction Management

**An Owner's Guide to Using the
'Construction Management'
Project Delivery System on
Alberta Infrastructure Funded Building Projects**

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Introduction

Construction Management is one of the three major categories of project delivery systems in common use for building construction projects, the other two being the traditional Design-Bid-Build system and the Design-Build system.

The relationships, roles, and responsibilities of the parties involved vary considerably under different project delivery systems. Consequently, selection of the project delivery system is one of the most important decisions affecting the success of a project. It is a decision that needs to be made very early in the process.

Each of the major project delivery systems has its advantages and disadvantages in different circumstances and may be more or less suitable for a particular project. Construction Management has increased in popularity in recent years. It can be the best choice under the right project circumstances, if properly executed and potential pitfalls are understood. It is not necessarily the best choice for all types of projects, particularly from a public sector owner's perspective, and if improperly executed, can have less than satisfactory results. The purpose of this document is to:

- Explain what Construction Management is, including its two most common forms (Construction Manager as Agent and Construction Manager as Constructor).
- Provide guidance to Owners on when Construction Management may be beneficial, what its disadvantages may be, how some of these disadvantages can be mitigated, and guidance in choosing the most appropriate form of Construction Management.
- Provide guidance to Owners on how to procure the services of a Construction Management firm.
- Convey Alberta Infrastructure approval requirements that Owners (funded entities) are expected to comply with when using Construction Management for an Alberta Infrastructure funded building project (schools, post-secondary educational institutions, hospitals, seniors' lodges, etc.)

Alberta Infrastructure does not hold any particular bias either for or against the use of Construction Management on projects funded by the department. However, Owners are expected to have given careful consideration to the benefits, as well as the shortcomings of Construction Management in its various forms, as they may apply to a particular project. In determining whether or not approval will be given to use a particular form of Construction Management for a particular project, Alberta Infrastructure will examine the Owner's rationale for selecting the proposed delivery system. A well reasoned rationale that recognizes and takes into account the guidelines outlined in this Guide, and which demonstrates that the positive factors are expected to outweigh any negative ones, is likely to be favourably received.

What is Construction Management?

Under the traditional Design-Bid-Build system, the Owner contracts first with a design consultant to 'design' the project, then solicits 'bids' from general contractors based on the completed design and, finally, contracts with a general contractor to 'build' the project. Under the Design-Build system, the Owner solicits proposals based on a statement of requirements and then contracts with a single entity to both 'design' and 'build' the project under a single contract.

The Construction Management project delivery system is different from the other two systems in that the Owner contracts separately, but somewhat simultaneously, with a design consultant and with a firm whose primary expertise is construction (the Construction Manager). The Owner procures the management services of the Construction Manager (in most cases a general contracting construction firm) early in the design phase. This enables the Construction Manager to provide significant cost, schedule, constructibility, and serviceability input to the design, as an additional member of the design team.

Under Construction Management, trade contracts may be entered into sequentially. As soon as a specific part of the design is complete, bids for that trade package can be solicited and construction can commence. This overlapping of design and construction is known as 'fast-tracking', a process with which Construction Management is often associated.

However, Construction Management may also be used when there is no intention to fast-track, i.e. the trade contracts are entered into only after the design is complete. After construction commences (with or without fast-tracking) the Construction Manager manages the trade contract work and functions much as a general contractor does under the traditional Design-Bid-Build system.

Construction Management should not be confused with Project Management. Project Management implies a much broader set of responsibilities than Construction Management. Project Management is the overall management by, or on behalf of, the Owner of all aspects of a project from its inception through design, construction and use. An Owner's Project Manager makes decisions on the Owner's behalf and is, amongst other things, typically responsible for procuring, for the Owner, the services of the design consultant, other specialty consultants, and the Construction Manager. Some firms may be capable of providing both Project Management and Construction Management services, although usually not on the same project.

A contract for the provision of Construction Management services, as initially defined above, will usually take one of two significantly different contractual approaches:

- **Construction Manager (CM) as Agent** is a form of Construction Management under which the Construction Manager acts as an agent of, and advisor to, the Owner. The *Owner* enters into multiple trade contracts with the trade contractors and suppliers. The Construction Manager is retained on a fee for service basis and acts on the Owner's behalf in managing and coordinating the trade contracts in the best interests of the Owner. The Owner retains all of the contracting risks inherent in each of the trade contracts. It essentially involves the Owner acting as its own general contractor, with the assistance of a Construction Manager. This form of Construction Management is sometimes also referred to as the 'CM as Advisor' or 'owner contracted' form of Construction Management.
- **Construction Manager (CM) as Constructor** is a form of Construction Management under which the *Construction Manager* enters into multiple trade contracts with the trade contractors and suppliers. The Construction Manager assumes responsibility for the performance of the trade contracts (subcontracts) much as a general contractor would under the traditional method, and is paid for the trade contract work on a cost reimbursement basis. The Construction Manager may, or may not, also provide a guaranteed maximum price and schedule to the Owner under a cost plus type of arrangement, or enter into a stipulated price contract, when the design is sufficiently complete. When this is the case, this form of Construction Management is sometimes also referred to as 'CM at Risk'.

CM as Constructor services are invariably provided by construction companies which are experienced in and capable of providing general contracting services under the traditional Design-Bid-Build system. CM as Agent services are commonly provided by construction companies as well, but are also provided by consulting firms possessing specialist expertise in construction management.

Unsophisticated Owners sometimes use an individual or small firm which has neither the capabilities and resources of a full fledged construction company, nor the capabilities of a consulting firm possessing proper construction management expertise, to manage multiple trade contracts on the Owner's behalf (by definition, CM as Agent). The rationale for this approach is usually seen to be cost savings. However, this approach may end up costing more in the long run, through the increased assumption of risk by the Owner. This approach is particularly risky when the person acting as the CM as Agent is an employee of the Owner and is managing multiple trade contracts as an adjunct to other responsibilities. This Guide assumes that Construction Management services will be procured, by contract, from firms that are properly qualified, experienced and have the necessary resources to provide such services. Procuring Construction Management services from individuals or one or two person firms holding themselves out to be Construction Managers is not advised.

In some cases under CM as Agent, usually when the Construction Manager is other than a construction company, the Construction Manager's authority under the agency relationship may extend as far as being permitted to sign the trade contracts (as the Owner's agent). This should not be confused with CM as Constructor.

What Services does a Construction Manager Provide?

The basic services that typically are (or should be) provided by a Construction Manager are summarized below. The Construction Management contract for a particular project will usually include a more detailed and comprehensive scope of services, which may vary from this listing.

Design Phase:

- Assists in development of overall project concept.
- Provides advice on availability of materials, equipment and labour.
- Evaluates alternative design concepts, materials and systems, taking into consideration construction methods, cost,* schedule, quality and performance, including durability, serviceability and maintainability issues (value analysis).
- Prepares a work breakdown structure and updates it as the design progresses.
- Prepares a project schedule and updates it as the design progresses.
- Prepares a construction cost estimate* and updates it as the design progresses.

Construction Phase:

- Arranges for and provides temporary services and site facilities.
- Establishes procedures for materials delivery, storage and handling (particularly for congested sites and user occupied facilities).
- Ensures that all necessary construction permits and approvals are obtained.
- Provides advice on and coordinates the packaging and sequencing of trade work for bidding.
- Solicits, receives and evaluates trade contract bids and makes award recommendations to the Owner.
- Arranges for the execution of trade contracts and ensures that required bonding, insurance, etc. is in place.
- Establishes and administers a health and safety program for the site, usually assuming the role of "prime contractor" as defined in the Occupational Health and Safety Act.
- Coordinates and supervises work of all trade contracts.
- Performs 'own forces' construction work to the extent permitted by the Owner.
- Expedites the processing of product data, shop drawings and other submittals.
- Expedites the processing of trade contractor and supplier invoices.
- Negotiates and processes changes in the work, in consultation with the design consultant and Owner.
- Submits progress reports, including construction cost* and schedule updates, to the Owner on a regular basis.
- Ensures that record drawings, operating and maintenance data, etc. are properly delivered to the Owner.

*One of the primary services provided by the Construction Manager is provision of cost estimates at various stages. Notwithstanding this, for medium to large, or complex, projects, Owners are strongly advised to also retain an independent cost consultant, particularly to provide functional and elemental cost estimates and value analysis in the early design phases, which the Construction Manager may be somewhat less adept at providing. These services should be coordinated to avoid any unnecessary duplication.

Post-Construction Phase:

- Inspects the work for defects and deficiencies.
- Assists the Owner's operating staff to ensure a smooth take-over.
- Administers warranties provided by trade contractors and suppliers.

When Is Construction Management Beneficial?

The type of input that can be provided by a Construction Manager during the design phase is potentially beneficial to the Owner on virtually any project. However, considering that this input will be a cost to the project, the question is more accurately stated as: when is the Owner most likely to receive good value in return for what the Owner is paying for this service? Construction Management is most likely to provide good value to the Owner, and is therefore worth considering, when one or more of the following conditions exist:

- When the project is a complex, multi-phased renovation of an existing user occupied facility, particularly a complex use-occupied facility (e.g. a hospital). For these types of projects, early and ongoing advice from a contractor's perspective with respect to work sequencing, packaging, and scheduling as well as site coordination during construction can be very beneficial.
- When time is critical and it is essential to attain a completion date earlier than that attainable by the traditional Design-Bid-Build system, or when an earlier completion date will result in significant operational cost savings. Construction Management can be expected to result in a shorter overall project delivery time than Design-Bid-Build, mainly as a result of fast-tracking (overlapping design and construction).
- When the design will be extraordinary or innovative, and early, unbiased, advice on constructibility, construction methods, costing and scheduling is required.
- When the Owner's needs and requirements are in a state of flux or are difficult to determine in the early stages of a project. Fast-tracking permits some of the design work for later phases of construction to be deferred.
- When market conditions are rapidly changing in the locality of the project, particularly if labour is in short supply. A good Construction Manager uses knowledge of market conditions to provide advice on alternative materials and methods.

One recent U.S. study that compared Construction Management (assuming CM as Constructor and fast-tracking) with the other major project delivery systems showed that the most significant advantage of this form of Construction Management over Design-Bid-Build is with respect to time (13.3% faster delivery speed) rather than cost or quality which were shown to be the same or only slightly better than Design-Bid-Build¹

When there is no intention to fast-track, one of the most significant benefits of Construction Management (namely faster delivery) does not apply to nearly the same degree. The question of whether the use of Construction Management without fast-tracking provides good value and a net benefit to the Owner may therefore be more difficult to ascertain and there are conflicting views in this regard. It may well depend on variables, such as:

- the extent to which the other conditions listed above, which do not necessarily call for fast-tracking, apply,
- the extent to which a project lends itself to alternative design solutions (and thus the extent of opportunity for the Construction Manager to have a positive influence),
- the dynamics of a particular Construction Manager/Consultant/Owner team and a particular Owner's experiences with particular Construction Managers, or
- the allocation of risk and the method by which the Construction Manager is remunerated under a particular contracting arrangement.

What are the Disadvantages of Construction Management?

While Construction Management may be beneficial in some circumstances, Owners should recognize that it may also have some disadvantages compared to the traditional Design-Bid-Build system. It should be mentioned here that the traditional method has its disadvantages as well, however a complete discussion of all of the pros and cons of all of the major project delivery systems in comparison to each other is beyond the scope of this Guide. Also, the disadvantages identified here are primarily related to the contracting arrangements by which Construction Managers are typically remunerated. These disadvantages are commonly seen in Construction Management, but are not necessarily inherent to this project delivery system. They can be mitigated by means of more creative contractual arrangements specifically designed to address these issues.

The most significant disadvantage of many Construction Management contracting arrangements is that significant portions of the *total* services for which the Construction Manager is remunerated are not subject to competitive bidding. Consequently, it is much less likely that the Owner will be charged the lowest possible 'market rates' for these services (as is otherwise the case for so-called 'hard bid' construction contracts under Design-Bid-Build).

¹ Victor Sanvido and Mark Konchar, *Selecting Project Delivery Systems* (Pennsylvania: the project delivery institute, 1999), p. 13-18

A second commonly seen disadvantage is the open-ended nature of many Construction Management contractual arrangements, which unnecessarily expose the Owner to the risk of unanticipated cost increases. Depending on how the Construction Manager is to be remunerated, there may be a built-in disincentive for the Construction Manager to minimize costs (e.g. if there is a cost plus a percentage component in the Construction Management services contract). There can also be a built-in disincentive to complete the work as quickly as possible (e.g. if the Construction Manager is paid additional money for additional time spent on the project). Contractual arrangements that may have this effect should be avoided.

Alternatively, under CM as Constructor, and especially when no fast-tracking is intended, these concerns can be mitigated by establishing a guaranteed maximum price, or by converting the Construction Management services contract to a stipulated price construction contract prior to the commencement of construction. Unless and until this happens, Owners should be aware that the Construction Manager is not contractually committed to the construction cost estimate and that there exists the potential for significant unanticipated cost increases. (This may be somewhat offset however by the Construction Manager's desire to maintain a reputation for meeting budgets.)

While the security provided by a guaranteed maximum price, or a stipulated price, is often attractive to Owners, it should be borne in mind that this security comes at a price, since the guaranteed maximum price or stipulated price will invariably include a 'cushion' to cover risks which may or may not materialize.

Which Form of Construction Management?

Concurrent with the decision to use Construction Management, a decision must also be made on which form of Construction Management to use: CM as Agent or CM as Constructor. This decision must be made before any steps are taken to procure the services of a Construction Management firm, since the type of contract entered into, the scope of services, and the method of remuneration are highly dependent on the form of Construction Management to be used.

Failure by the Owner to clearly articulate which form of Construction Management is intended to be used can lead to confusion and a serious misunderstanding of roles, responsibilities and risk allocation.

Each form of Construction Management has its relative advantages and disadvantages, which Owners are advised to carefully consider when choosing the most appropriate form for their project.

Under CM as Agent, the Construction Manager has less risk, in that although responsible for coordination of the trade contracts, the Construction Manager is not contractually responsible for any of the trade work itself. Virtually all of the Construction Manager's efforts can be devoted to acting solely in the best interests of the Owner, since the Construction Management fee is not usually affected by the decisions the Construction Manager makes. However the CM as Agent form of Construction Management also has some inherent disadvantages:

- The Owner assumes all of the contracting risks under each individual trade contract.
- The Owner assumes a potentially onerous administrative burden, due to the large number of individual trade contracts entered into, each of which must be administered separately in terms of contract signing, payment, holdback, warranty, etc.
- The CM as Agent is not in a position to provide, at any point in the process, a contractually guaranteed maximum price or stipulated price for the project. The Owner assumes the risk of cost growth.
- When a trade contractor contracts directly with an Owner on a one-time basis, rather than with a general contractor with whom there may be numerous other contracts (past, present and future) there are some significant differences in the relationship, which may ultimately be detrimental to the Owner.

Under CM as Constructor, the Construction Manager carries the risk and administrative burden associated with the trade contract work, for which the Construction Manager is contractually responsible. But it should be understood by Owners that, with this form of Construction Management, there is also a greater likelihood for the Construction Manager to act in self-interest, to the detriment of the Owner's interests.

CM as Constructor has, in recent years, become the more common of the two forms and is the form that most Owners and Construction Managers prefer.

Whether or Not to Fast-Track

This is, again, a very important decision that must be made by the Owner early in the process. The major advantage commonly associated with Construction Management, namely faster delivery, is primarily attributable to fast-tracking. But fast-tracking also carries certain inherent disadvantages:

- The Owner must irrevocably 'commit' to undertake construction work at a point in time when the final cost of construction is still largely unknown (because much of the construction work has yet to be designed or bid). This contributes to an increased likelihood of cost growth compared to Design-Bid-Build².
- Additional fees typically charged by design consultants for additional services in preparing multiple trade packages, etc.
- Early design decisions are literally 'cast in concrete' and are often extremely difficult or impossible to change later on as the design progresses (unlike a design on paper).
- Because the design of various components is often not very far ahead of its construction in the field, incomplete or insufficiently detailed drawings and specifications can lead to numerous changes, rework and other inefficiencies that can lead to claims for additional costs and delays.
- The Owner must be in virtually constant communication with the design consultant and Construction Manager and may often be forced to make critical decisions under extreme time pressures.

Construction Management with fast-tracking should only be considered when time is of paramount importance and achieving an earlier completion date than what would otherwise be possible outweighs all of the disadvantages described above.

How Should Construction Management Services be Procured?

The services of a Construction Management firm can be procured using either of two methods:

- **'Best value' method:** A Request for Proposals (RFP) is issued to prospective Construction Management firms. Qualifications, experience, and various other relevant factors (including price) are taken into consideration in selecting the successful Construction Manager.
- **'Low bid' method:** The terms of the Construction Management services contract are provided to prequalified Construction Management firms and the contract is simply awarded to the firm submitting the lowest valid bid. Price is the only selection factor.

'Best value' is the more commonly used method for Construction Management services.

² Sanvido and Konchar, p.17

With the possible exception of a CM as Agent contract for a relatively small project, most Construction Management contracts will be subject to the Agreement on Internal Trade (AIT). The thresholds for the so-called 'MASH' sector (municipalities, academic institutions, schools and hospitals) are:

- \$100,000 for a services contract (applicable to CM as Agent) and
- \$250,000 for construction contracts (applicable to CM as Constructor -- the total value of the trade contracts is part of the value of the Construction Management contract).

If the estimated total value of a Construction Management contract exceeds the AIT threshold amounts, the opportunity to compete for a Construction Management services contract must be publicly advertised. This may be done at the pre-qualification stage, if there is a separate Request for Qualifications (RFQ). Otherwise, it must be done at the Request for Proposals (RFP) or request for bids stage. A notice should be placed electronically on CoolNet or MERX (or both) in which case a newspaper advertisement is not essential.

Regardless of whether the AIT applies or not, sole source selection of Construction Management services without a competitive process of some kind is not acceptable for publicly funded projects. A pure qualifications based selection process for Construction Management services, which does not take price into account at all, is similarly unacceptable.

When and How Should Construction Managers be Prequalified?

Although virtually all general contracting construction firms will suggest that they can provide Construction Management services, some firms have much superior qualifications and experience in the Construction Manager role than others. If the 'low bid' procurement method is to be used, a separate pre-qualification stage is essential.

If the 'best value' approach is used, and if qualifications and experience are factored into the RFP evaluation methodology (as they should be) a separate pre-qualification stage preceding the RFP is not essential. If desired, pre-qualification can however be used to limit (or shortlist) the number of respondents to an RFP that need to be evaluated.

A Request for Qualifications (RFQ) should list *all* of the primary criteria that will be used in evaluating the respondents. These criteria, and the information requested in the responses should be stated in such a way as to minimize the amount of subjectivity required in the evaluation. Also, a conscious decision should be made, and RFQ documents should specify, whether the intent of the prequalification is simply to prequalify *all* respondents that 'pass' a certain level of specified criteria, or whether it is to shortlist a pre-determined number of the 'best' qualified respondents. In the latter case, the pre-determined number of respondents that will be prequalified should be specified (should be no less than three).

RFP Evaluation Criteria and Process

A Request for Proposals (RFP) should disclose *all* of the primary criteria that will be used in evaluating the proposals. Following is a listing of the criteria that might typically be used in evaluating proposals for Construction Management services (assuming no prior prequalification). Additional criteria could be added to the list or these criteria could be further broken down into subcategories. However, the criteria should be limited to those which can be characterized as either 'very important' or 'having some importance'. Generally, the fewer the criteria (beyond the following list) the better.

- Fee proposal
- Experience as a Construction Manager (number, size and type of projects)
- Experience as a Construction Manager on projects similar in type and size to the one under consideration (number of similar projects)
- Present workload; availability of resources
- Relevant qualifications and experience of personnel available to be assigned to the project
- Safety record; safety program; safety certification
- Financial strength and stability; bonding capacity
- *Cost management abilities (meeting budget)
- *Time management abilities (meeting schedule)
- *Ability to be innovative, solve problems, and provide value added design input
- *Ability to cooperate and function as a team player
- *Administrative abilities

* These factors are difficult to evaluate based solely on information provided in the proposal submissions. They are best evaluated by contacting references that the proponent has been requested to provide, by contacting other owners or consultants known to have worked with the proponent, or from the Owner's own experience with the proponent on a previous project.

The RFP should assign a weighting indicating the relative importance of each primary criterion (or each major group of criteria). This is mandatory for contracts subject to the Agreement on Internal Trade. It is particularly important to state the weighting that the fee proposal (price) will have in relation to the other criteria. The weighting given to the fee proposal should be sufficiently high, relative to the other criteria, to ensure that pricing remains competitive.

The fee proposal should be required to address all aspects of the fee, including lump sum amounts, percentages, unit rates for labour and other items, mark-ups on reimbursable costs and own forces work, etc. The evaluation methodology that will be used (e.g. any minimum or mandatory criteria, the point scoring system, etc.) should also be clearly specified.

The selection decision should be based strictly on the criteria and methodology set out in the RFP. No additional subjective factors that were not disclosed to the proponents should be considered. The evaluation should be performed by an evaluation team comprised of at least three people, with at least one person representing the Owner and at least one representing the design consultant. (If requested, Alberta Infrastructure staff may also be available to participate in the evaluation.)

Requiring the fee proposal to be submitted in a separate envelope, and evaluating it only after completion of the evaluation based on all of the other criteria, is a good practice. It ensures that the fee proposal does not unduly influence the evaluation of the other factors unrelated to the fee.

If an interview is required as part of the process, its purpose should be to obtain additional information to be factored into the previously established evaluation methodology. An interview should not be used to override, on a purely subjective basis, the results of the evaluation methodology. Any negotiation of minor terms of the Construction Management contract should be with the successful proponent only, after that proponent has been selected through the formal evaluation process.

It is advisable to give unsuccessful proponents the opportunity for a debriefing, to explain to them why they were unsuccessful. However, care should be taken not to disclose detailed information about competitors' proposals or how competitors' proposals were evaluated.

How Should the Construction Manager be Remunerated?

Invariably, a Construction Management services contract, be it *CM as Agent* or *CM as Constructor*, will have one or more 'fixed price' components and one or more 'cost reimbursement' components, with some of the services covered by the fixed price(s) and others cost reimbursable.

- A 'fixed price' component is based on a pre-determined estimate of the Construction Manager's costs for items covered by the fixed price, plus an allowance for overhead and profit. This 'fixed price' may be based on a lump sum stipulated price, units (e.g. wage rates on an hourly or monthly basis) or a percentage (e.g. percentage of total project cost), but its defining characteristic is that it is paid by the Owner *irrespective of the Construction Manager's actual costs*.
- A 'cost reimbursement' component is paid *based on the Construction Manager's actual costs*, with or without a mark-up (usually a percentage) added on.

It is essential that there be a clear understanding between the parties with respect to which particular services will be covered by 'fixed fees' and which will be 'cost reimbursable'. The importance of this cannot be overemphasized. Owners should bear in mind that it is in the Construction Manager's interest to maximize the 'cost reimbursable' items to which a percentage fee may be attached, and to minimize the services covered by a 'fixed fee', because this reduces the Construction Manager's risk. The opposite is in the Owner's interest, because it reduces the Owner's risk of unforeseen additional costs.

However, this understanding should not necessarily lead to the conclusion that it is in the Owner's interest to have most of the services covered by a fixed fee. The more risk that the Construction Manager is required to assume under a fixed fee, the greater that fixed fee will necessarily have to be. This is because the fixed fee will include an allowance for the Construction Manager's risks. These risks may or may not materialize. If they do not materialize, the Owner will have paid more than if the Owner had assumed the risk.

Ideally, the risk associated with each service and cost item should be assessed and a decision made by the Owner (or design consultant) as to whether it is best to include it in the fixed fee or as a reimbursable cost. The Owner and design consultant should pay particular attention to this and ensure that the basis for remuneration is clearly set out in the RFP or bid solicitation documents. This ensures that price proposals can be fairly compared and evaluated. It becomes even more important for it to be clearly stipulated in the Construction Management contract. Otherwise the Owner may be at a significant disadvantage and it may lead to disputes.

Own Forces Work by Construction Manager

The Construction Management firm usually performs a limited amount of construction work with its own forces. Typically this includes temporary facilities and services (e.g. hoarding, temporary heat, site office, power, water, security, hoisting, etc.) clean-up, miscellaneous cutting, patching, blocking, and other similar items not usually included in trade contract work. Requiring each trade to provide its own services in this regard would be inefficient and impractical, as would retaining a separate 'trade' contractor to perform this kind of work.

This work is typically remunerated on a 'cost reimbursable' rather than a 'fixed price' basis, and because it is performed by the Construction Management firm's own forces, is not subject to competitive bidding. For this reason, it is often in the Construction Manager's interest to maximize the amount of work performed by its own forces, and to provide as own forces work other types of work typically performed by a general contractor's own forces (e.g. cast-in-place concrete work). This is not, however, necessarily in the Owner's interest, so the Construction Management contract should strictly limit the kinds of work permitted to be performed by the Construction Manager's own forces, and maximize the amount of work that can reasonably be put out for competitive bidding by trade contractors and suppliers.

If, for example, the Construction Manager is permitted to do cast-in-place concrete work for a large project with the Construction Manager's own forces, it should be made clear that the concrete supply and the reinforcing steel (supply and placement) is to be competitively bid. This effectively leaves only the formwork and concrete placing and finishing to be performed by the Construction Manager's own forces.

In summary, cost reimbursable construction work performed by the Construction Manager's own forces, and which is not competitively bid, should be kept to a practical minimum. As a rule, it should never exceed 10% of the total construction cost of the project.

The Construction Management Services Contract

It is essential that the services contract with the Construction Management firm be finalized and executed by both parties before the Construction Manager provides any services or any trade contracts are awarded. To do otherwise is exceedingly poor business practice and fraught with risk.

The contract itself will differ significantly, depending on the form of Construction Management being used. Each is discussed separately below:

CM as Agent

The Canadian Construction Association publishes an industry standard model form of contract entitled Canadian Standard Construction Management Contract Form Between Owner and Construction Manager CCA Document No. 5 -1988. There is also a companion form of contract entitled Stipulated Price Contract for Trade Contractors on Construction Management Projects CCA 17 – 1996 which is intended for use by the Owner and trade contractors when entering into the various trade contracts.

Use of CCA 5 is recommended when CM as Agent is used, subject to modification by means of Supplementary Conditions. Supplementary Conditions should be used as necessary to more appropriately balance risks between Owner and Construction Manager and to address some of the remuneration issues previously discussed.

It is essential that the contract clearly address the following issues, some of which may require extensive modification of CCA 5 by means of Supplementary Conditions:

- Delineation of the extent of the Construction Manager's authority under the agency relationship.
- A comprehensive description of the services to be provided by the Construction Manager (and costs that may be incurred) that will be covered by the fixed price(s).
- A comprehensive description of the services and costs that will be cost reimbursable, and the mark-ups applicable thereto.
- The scope of work permitted to be performed by the Construction Manager's own forces and a requirement for the Owner's prior approval of any own forces work outside of this scope.
- A requirement for the Construction Manager to maintain a valid accreditation in a relevant safety certification program and an explicit statement requiring the Construction Manager to assume 'prime contractor' responsibilities as defined under the Occupational Health and Safety Act.
- Roles and responsibilities of the Owner, Consultant and Construction Manager with respect to soliciting, receiving and evaluating trade contract bids and preparing trade contracts for execution by the Owner and trade contractors.
- Construction Manager's responsibilities with respect to coordination, scheduling, etc.
- Alternative dispute resolution provisions, e.g. mediation and arbitration. (It is recommended that the 'Dispute Resolution Process for Government of Alberta Construction Contracts' be incorporated into the contract by reference. Copies are available from the Queen's Printer.)

The above list only highlights a few of the most significant issues that must be addressed. There are numerous other important issues that need to be considered and addressed in the Construction Management services contract. A design consultant experienced in the CM as Agent form of Construction Management should be able to assist in the preparation of the contract and appropriate Supplementary Conditions.

CM as Constructor

The CCA forms of contract described under CM as Agent (CCA 5 and CCA 17) are specifically written for CM as Agent and are not suitable for use under CM as Constructor. The introduction to CCA 5 warns against its use for this form of Construction Management. Unfortunately, there is presently no Canadian standard form of contract available for the CM as Constructor form of Construction Management (there are in the U.S.).

Some Owners or their consultants attempt to modify CCA 5 to suit this form of Construction Management, but the modifications required are extensive and caution is advised. Legal or other expert advice should be sought when taking this approach.

Knowledgeable owners who intend to use the CM as Constructor form of Construction Management on multiple projects usually develop their own custom written form of contract designed specifically for this form of Construction Management. The Capital Health Authority, for example, has developed such a form of contract.

Allowing the Construction Manager to propose and prepare the form of contract may put the Owner at a significant disadvantage.

It is essential that the CM as Constructor contract clearly address the following issues, as a minimum:

- A comprehensive description of the services to be provided by the Construction Manager (and any costs that may be incurred) that will be covered by the fixed price(s).
- A comprehensive description of the services and costs that will be cost reimbursable, and the applicable mark-ups.
- The scope of work permitted to be performed by the Construction Manager's own forces and a requirement for the Owner's prior approval of any own forces work outside of this scope.
- A requirement for the Construction Manager to maintain a valid accreditation in a relevant safety certification program and an explicit statement requiring the Construction Manager to assume 'prime contractor' responsibilities as defined under the Occupational Health and Safety Act.
- A requirement for all trade subcontractor and supplier contracts to be competitively bid and to be subject to the Owner's approval prior to award. The bidding process, the bids, the subcontracts and other records of the Construction Manager must be open to scrutiny by the Owner at all times.
- Alternative dispute resolution provisions, e.g. mediation and arbitration. (It is recommended that the 'Dispute Resolution Process for Government of Alberta Construction Contracts' be incorporated into the contract by reference. Copies are available from the Queen's Printer.)

If the Construction Management contract is to be superseded in some fashion by a stipulated price contract (typically CCDC 2) the rights and obligations of both parties under the original Construction Management contract must be properly carried forward into the new contract and the original contract must be properly closed out. Owners are advised to seek legal or other expert advice in this regard. In particular, the Owner should insist on a detailed cost breakdown, the total of which equals the stipulated price. The breakdown should show the value of:

- each trade contract, based on the lowest valid bid prices received,
- all own forces work to be performed by the Construction Manager,
- all 'general conditions' items,
- any contingency or cash allowance amounts, and
- the Construction Manager's overhead and profit, including how it was arrived at, particularly if some or all of this number was a part of the original Construction Management contract.

Before the new contract is signed, there should also be an accounting and confirmation of how much the Owner has paid under the original Construction Management contract, and how much, if anything, will remain to be paid under the original contract after entering into the new stipulated price contract.

What Approvals are Required from Alberta Infrastructure?

Owners of funded building projects to be delivered using Construction Management are required to obtain the following approvals, in writing, from Alberta Infrastructure, at various stages of the process.

- **Use of Construction Management:** Approval is required to use the Construction Management project delivery system for a given project. Submit with the request for approval a rationale explaining why Construction Management will best meet project objectives, which of the two forms of Construction Management is proposed, and whether or not fast-tracking is intended. This approval is required **prior to** the preparation of any documentation for the purpose of soliciting proposals or bids for Construction Management services.
- **Solicitation of Proposals/Bids:** Approval is required to solicit proposals or bids for Construction Management services and of the documentation proposed for this purpose. Submit with the request for approval a copy of the documentation proposed to be used to solicit proposals or bids. This approval is required **prior to** issuing RFP or bid documents to Construction Management firms.
- **Award of CM Contract:** Approval is required to enter into the contract for Construction Management services (and any subsequent stipulated or guaranteed maximum price contract that supersedes the original Construction Management contract). Submit with the request for approval:
 - A copy of the final RFP or bid documents issued to proponents/bidders, including any addenda (if not previously submitted).
 - A summary of the evaluation process and the results thereof (point scores) supporting the proposed selection.
 - A copy of the proposed Construction Management services contract.
 - A cost breakdown and summary of the Construction Manager's total anticipated remuneration under the contract (fixed price and reimbursable cost components) using estimates where actual costs are unknown at time of approval.
 - If available, provide a detailed cost breakdown of the estimated value of all trade contract work and all own forces work by the Construction Manager. If not available, provide an estimate of the total cost of such work.

This approval is required **prior to** issuance of a contract award letter or contract to the successful Construction Management firm.

- **Award of Trade Contracts:** For each trade contract whose value exceeds \$100,000, approval to enter into the contract is required (in the case of CM as Agent) or approval for the Construction Manager to enter into the contract (in the case of CM as Constructor). Submit with the request for approval:
 - List of all bidders and their respective prices (including base bid prices and alternative/separate prices where applicable).
 - Copy of the bid or proposal submission (including all attachments) for which approval to award is requested.
 - If applicable, copy of any contract changes negotiated after bid closing and prior to award.

This approval is required **prior to** award of the trade contract.

- **Change in Contract Price:** Approval is required **prior to** any payment being made under a Construction Management services contract (CM as Agent or CM as Constructor) that would cause the *actual* total value of the contract to exceed the *estimated* total value of the contract (as submitted with the request for approval to award the CM contract) by more than 10%. Alternatively, approval to increase the estimated total value of the Construction Management services contract may be requested at any time. Submit with the request for approval justification for the increase.

These approval requirements are intended to apply in principle to all Alberta Infrastructure funded Construction Management projects. However, for funded entities which have significant, on-going, construction programs and proven project management capabilities, blanket approvals or additional thresholds below which the above approvals would not be required, may be agreed to on an exception basis.

Alberta Infrastructure staff are available to provide assistance and input at any stage of the process, including review and comment on proposed RFQ, RFP or contract documentation. Owners of Alberta Infrastructure funded projects are encouraged to take advantage of this available resource.

Further Reading

The Technical Resources and Standards Branch Library at Alberta Infrastructure contains considerable information on project delivery systems in general, including Construction Management in particular, as well as information on contracts and contracting, procurement methodologies and other related topics.

Following is partial listing of available resources, and the source for much of the information contained in this guide document:

- Asner, Michael. The Request for Proposal Handbook. 1995.
- Construction Management Association of America Standards of Practice. 1986.
- Guide to Construction Management Contracts CCA 26 2000. Canadian Construction Association, 2000.
- Handbook on Project Delivery. American Institute of Architects - California Council, 1996.
- Masterman, J.W.E. An Introduction to Building Procurement Systems. 1992.
- Sanvido, Victor, and Konchar, Mark. Selecting Project Delivery Systems. 1999.
- Trauner, Theodore J., Jr. Managing the Construction Project. 1993.
- Which Builder? Tendering and Contractual Arrangements. The Aqua Group, 1975.