

## CONSTRUCTION

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## CM'S AND INSURERS USING PEER REVIEW SERVICES AS A RISK MANAGEMENT TOOL

Early in my "original" career as a design architect, the use of construction management ("CM") services only surfaced on very large, complex projects. Construction managers, and the role they played evolved through the years into a service that became very valuable. Today the value of CM services has expanded on most projects – an expansion driven primarily by cost efficiencies.

### CM BRIDGES THE GAP BETWEEN OWNER & DESIGN TEAM - "BETWEEN BUDGET & DESIGN"

The CM, if hired at the correct point in the design process, provides real time valuable cost data and value engineering services to the entire team prior to the completion of the contract documents. From the point of view of an architect, having the CM at design meetings was both a blessing and a curse. The CM was not interested in design. He was, however, attempting to protect the Owner's interests from the standpoint of constructability, cost, and to some degree, logistics. Cost savings put forth by the CM are what enabled the CM to justify its fee and value to the Owner. As Owners began to recognize this value, construction management services started to be utilized on the not so complex projects as well and demand for CM services seemed to increase to a point where today they are commonplace.

But the one item that both the CM and the Owner do not always have control is the quality and accuracy of the construction documents being produced by the design team. Every construction project has complexities that requires a team of somewhat unrelated professionals to work together for the common good of the project. And each of these professionals have a role to fill that does not always meet the expectations of the other team members. The thought of *not* having a thorough set of contract documents is what keeps the CM awake at night.

To further complicate the matter, many public agencies now use a method of construction contracting known as CM at Risk ("CMAR"). One would think that just the term "at risk" would be enough to scare even the most sophisticated CM from accepting the project. This method of contracting shifts some of the cost risk usually borne by the Owner to the CM. CMAR gets the CMAR involved in the project early or even prior to the design process. The CMAR becomes an agent of the Owner in helping to manage

the design process and, in exchange for a fee, gives the Owner a price guarantee.<sup>1</sup> There are advantages and disadvantages for both sides with a CMAR arrangement but one thing remains constant; the need for thorough and well-coordinated contract documents. With a CMAR arrangement, the CMAR has much more input into the design process but still faces the reality that its work flow, and now bottom line, can be substantially hindered by a poorly coordinated and detailed set of contract documents.<sup>2</sup>

## THE DILEMMA

Under either CM arrangement, once the contract documents are complete and the project goes to bid, it is still incumbent upon the CM to be the catch all. They are expected to fill the void of a poorly detailed or coordinated set of contract documents. It is then a reflection on them if, during construction, an inordinate amount of change orders become necessary and costs escalate. The owner expects the CM to pick up these deficiencies prior to the project going to bid. But the CM expects and relies upon the design team to do its job and produce a fully code compliant and coordinated set of documents. Rightfully so, the CM should be able to concentrate its efforts on what they do best. They should not be relied upon to pick up design conflicts, code deficiencies and coordination issues between the various design professionals. This is customarily the role of the architect.

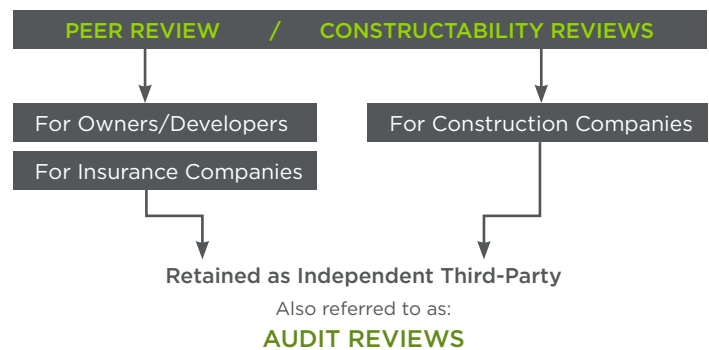
## WHAT THE CM & OWNER CAN DO?

Construction managers are well aware that a poorly integrated set of construction documents can doom a project and as such are demanding a third party audit or peer review on the quality and content of contract documents. A Third-party audit or peer review is defined as *an audit by an auditor independent of the firms responsible for the design.*<sup>3</sup> As one might imagine, third party peer review services are becoming especially important to the CMAR because it is now the CMAR who has some control of the design process and has money on the line. While the CMAR cannot make the design team do its job better, they can bring in a third party to point out areas where there may be deficiencies that can possibly delay or derail a project. By doing so, the CMAR is not only protecting its company's interests, but those of the Owner and by default, even the design team.

A peer review is an advisory service that consists of a skilled study of the contract documents with the ultimate goal of eliminating design defects and omissions; minimizing cost overruns; and the likelihood of litigation. A good peer review seeks to:

- Identify any code violations that, though they may be missed by Building Inspectors and Examiners during construction, may become issues during final inspection, and/or the final permit inspections necessary to obtain a Certificate of Occupancy;
- Inject quality control process during contract documents development;
- Minimize change orders;
- Identify issues that have an adverse effect on the construction schedule and cause delays; and,
- Minimize the likelihood of costly arbitration or litigation.

The primary goal is to help mitigate costly litigation, both for the owner and other parties including the CMAR and design professional. Arbitration or litigation costs have become a huge variable in any construction project and a good peer review should help contain or minimize these incalculable costs.



## THE PEER REVIEW

An effective peer review should be done at defined stages of schematic design and design development or when critical milestones are reached. It is best to start the peer review process during schematic design and then again at the 75 to 100 percent design development stage. These schematic and design development reviews are meant for the peer review team to get an overview of the project and to make certain that some of the basic design assumptions made by the design team during the schematic design phase are valid code and zoning compliant.

The peer review team upon review of the contract documents should produce a report of its findings to the Owner and CM or CMAR. This report should clearly state the design or constructability issue and identify where the issue is located in the documents or what code section is violated but specifically should not attempt to provide or offer solutions to the issue. It

1. The Risk in CM "At-Risk", CM eJournal, Warner Strang, Page 1.

2. The Risk in CM "At-Risk", CM eJournal, Warner Strang, page 6.

3. The Architect's Handbook of Professional Practice, Fifteenth Edition, Page 687.

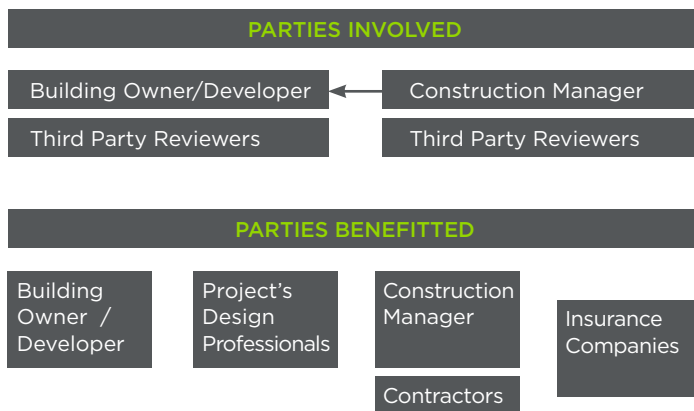
is the task of the design team to devise solutions and provide closure to each identified item to the satisfaction of the CM and Owner. Peer reviews are generally not an exhaustive review and should not be assumed to have identified every omission in deficiency in the documents.<sup>4</sup>

## INSURER'S REQUIRING THIRD-PARTY PEER REVIEW?

While third Party peer review services provide numerous benefits for all involved with a construction project, insurers are particularly interested. Any service that can contain or minimize the insurers risk is a service worth performing. Insurers, and specifically their underwriting team, always seek methods to minimize or contain their risks. Needless to say, insurers of construction projects are beginning to utilize and in some cases make it a condition of insurability. Some insurers have in-house teams or a list of preferred vendors that they rely on to provide such services. According to Leonardo Garzon, of Liberty International Underwriters,

“The inherently risky nature of large-scale infrastructure projects require insurers and insured alike to recognize potential risk upfront so it can be allocated in an equitable and transparent manner. Sometimes retaining a specialist to review a particular portion of the project (e.g. budget, construction methodology, construction schedule, etc.) could be beneficial to gain the level of confidence necessary to move to the next stage in the underwriting process.”

Other than the fees paid to the review team, there is no other downside.



## THE THREE “C’S” OF A PEER REVIEW

An affective peer/constructability review should prioritize tasks such that those that can have a significant detriment to the project should be given the highest priority and completed at the earliest stages of the review. A good guideline is to follow the three “C’s” method.

### Code

The highest priority are those issues that involve code or zoning. Code issues are the impetus of most construction litigation and tend to involve both the Owner and the design professionals. Code issues are extremely difficult and costly to rectify once discovered after substantial completion of a project and they may lead to serious delays and even business interruption if they hold up a Certificate of Occupancy. As such, code is the first “C”.

### Constructability

The second tier priority involves constructability. Constructability is generally done by both the third party peer reviewer and the CM or CMAR but each look at it from a slightly different standpoint. The peer reviewer looks at constructability first from the level of completeness of the documents. They then move on to the specific construction details, evaluating their effectiveness; determining if they cover each condition; comparison to industry standards; etc. The second “C” is Constructability.

### Coordination

The third tier, or least troublesome tend to be the coordination issues. Every set of construction documents has coordination issues and even a good peer review is not going to catch every coordination issue. But today there are programs that can provide assistance with coordination issues. But a good peer review seeks to point out coordination issues between the architecture, MEP, structural, civil engineering that can cause delays or change orders. So the last “C” is coordination.

## THE PEER REVIEW PROCESS

An effective peer review should be done at defined stages of design development or when certain milestones are reached. Examples of what to look for at the design development stage peer review are the following:

- Required building codes or zoning compliance;
- Proper classification of the construction type contemplated;

4. The Architect's Handbook of Professional Practice, Fifteenth Edition, Page 688.

- Occupancy compliance;
- Proper use groups designations and code required separations;
- Building area and height requirements based on construction classification;
- Building height compliance based on zoning approval;
- Building area between firewalls;
- Materials compliant with building classification (combustible/non-combustible);
- Proper selection of wall, floor and roof assemblies;
- Fire separation distances from adjacent properties;
- Proper egress design;
- Correct parking analysis and parking design;
- ADA/Accessibility requirements and compliance;
- Travel distances/Common path of travel compliance;
- Egress and life-safety;
- Stair geometry;
- Fire areas;
- Building systems including HVAC, Plumbing, Electrical and Fire Protection; and,
- Structural design requirements.

While the above bulleted items may seem basic, it is surprising how often certain aspects are missed or misinterpreted.

As an example, a recent design development stage peer review of a new residential high-rise building revealed that certain residential units, because of their floor area, were required by code to have two exit doors. Most units within the building were only required to have one exit door so finding the few that required two was fairly complex and unlikely to have been picked up during a municipal permit review. But to follow this one example through, the architect clearly missed this code requirement during the schematic and design development phases of the project. Chances are without it being pointed out by peer review, it would have been missed completely through the construction document phase as well. However, the ramifications of such an error, if built according to the incorrect design, could have been devastating for all involved but especially the architect and Owner. The Owner might expect the CM or CMAR to catch such errors beforehand but it is extremely unlikely that the CM or CMAR would possess such detailed code knowledge. It is clearly outside the purview of a CM or CMAR. In the example, an astute peer reviewer caught the error,

brought it to the attention of the Owner and CM, who relayed the information to the design team. The architects were able to make the necessary design changes prior to the production of the construction drawings thus avoiding a major crisis down the road.

## THE PEER REVIEW WRAP UP

Peer reviews should also be performed at the 75 to 95 percent construction document stage. Assuming all of the reported deficiencies in the design development documents were corrected and closed out, the construction document review should be more technical in nature and should specifically concentrate on proper detailing and the coordination of the various architectural and engineering documents and specifications. The construction document stage peer review seeks to minimize change orders or conflicts within the contract documents that could cause delay or add unanticipated cost to the project. Some items or deficiencies frequently found during the contract document review include the following:

- Improper fire protection/ fire ratings;
- Lack of coordination or conflicts between the various engineering disciplines (MEP, Structural, Fire protection, Civil, landscape) and architecture;
- Building envelope deficiencies including waterproofing, roofing, flashings, expansion joints, etc.;
- Insufficiency of construction details;
- Proper selection of assemblies for sound transmission; and,
- Coordination issues between plan and specifications.

Often the peer review team becomes so knowledgeable about the project that they are asked to provide additional construction phase services on behalf of the Owner. Such services may include an independent review of submittals such as shop drawings or even periodic field observations. Those performing these added construction phase services should be cautioned that their role is *not* meant to be a substitute for the appropriate design professional. Any agreement for these added services should be structured such that they are specifically advisory to the Owner and/or CM or CMAR and not taking over the construction administration duties of the design team. The design professional still maintains all control and decisions regarding submittals. Similar to construction management, peer review services come as an added cost to the Owner but it is also one of those services that should pay for itself many times over.

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## CONCLUSION

Third party peer reviews are becoming a service like construction management that pays for itself. The value it brings to a construction project is often not measurable since its main goal is to minimize the potential for litigation. It is becoming quite common and sometimes mandated by insurers to do peer review services for public projects and state agencies as well.

A good peer review seeks to find the major problems while still on paper or on the computer screen before they get to the critical stage and is not meant to eliminate each and every change order or conflict. In the eyes of a developer, CM, CMAR or Owner, the value of a good peer review is intangible because that value is only realized when there is no lawsuit or the suit is due to minor construction defects as opposed to issues that are difficult to rectify. As an Owner once put it, he would rather pay a known peer review fee up front than an unknown amount (the lawsuit) on the back end of the project.

While peer reviews are becoming more common, the source of the peer review initiation is changing. More CM's and CMAR's are recommending the peer review process to Owners, developers and public agencies because it takes some of the risk and burden off of them and allows them to concentrate on the actual construction. Insurers of construction projects are requiring more third party review and observation as a condition of insurability which is certainly a trend to watch. One other positive effect of a peer review is that it tends to keep the design team quite focused. As one can imagine, if the design team knows that another professional will be scrutinizing and commenting on its work for the sole purpose of pointing out deficiencies and errors, then it is more likely that additional time will be spent on quality control.

Just as construction management developed into a true value added service, peer review services are starting to be utilized more often and becoming more common in construction projects. There are certain clients that just simply budget for the peer review because they do not want to pay the high cost of litigation on the back end. Even design architects and engineers are becoming less intimidated by the peer review because in the long run, issues uncovered in a peer review could save them the drudgery of an error and omissions suit.

## ABOUT THE AUTHORS

**Richard Vivenzio** is a Director in Navigant's Global Construction Practice. He is a forensic architect with more than 32 years' experience in both design and the construction industry. He has extensive capabilities in the resolution of complex technical construction disputes involving property owners, design professionals, constructors and their insurers. Rich has served as a testifying expert in matters involving architectural standard of care, water intrusion, and exterior building envelope issues. Rich possesses a thorough working knowledge of Codes including the International Building Codes and ADA. Rich has participated in numerous peer/constructability reviews and has managed teams that include structural, mechanical, and civil engineers and a variety of specialty engineers and architects to assist with the performance of such reviews.

**Mona Mahal** is an Associate Director in Navigant's Global Construction Practice. She has more than 15 years of experience in both design and construction. She has extensive experience in capital project management from planning through construction including architectural design and dispute resolution involving residential, commercial, educational and institutional projects. This experience includes leading pre-construction, construction and operations meetings with all parties, establishing lines of communication between the Owner and its stakeholders, Contractors and the Design team, overseeing construction activities, logistics planning, budget tracking and coordinating project closeout. Mona has provided advisory third party constructability review of construction documents on healthcare and high rise residential projects.