

# ***CM-at-Risk: Contracting for Owners, Consulting Engineers, and Contractors***

## **Purpose and Background**

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In the past decade, the pressure to deliver construction projects at a faster pace has grown and with it has come the use of alternative project delivery methods that furnish the ability to overlap the design and the construction process, thus compressing the project delivery period. Each of these methods has its advantages and its disadvantages. It is critical that engineers, architects and owners understand the fundamentals of each method and how it can potentially impact the quality of both the design and the construction. Each has its own technical distinctions, contractual models and potential ethical challenges. Hence, an early step in most capital project development processes is to decide which project delivery method is best suited for the given project.

When a project's success depends on the means and methods of the construction contractor, owners and their consultants need to get early contractor involvement in design and select some a method that retains a construction manager (CM) in some capacity to preform pre-construction services during design.

This seminar will boil each project delivery method down into its essential components from concept through design to construction and discuss the relative benefits and potential pitfalls of each. Case studies from current project delivery method research by the instructor will be presented to synthesize the theory that will be presented and illustrate its implementation. The following delivery methods will be covered:

- Construction Manager-as-Agent (CMA) Also called Agency-CM
- Construction Manager-at-Risk (CMR)
- Construction Manager/General Contractor (CMGC)

## **Seminar Instructor**

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**Douglas D. Gransberg, Ph.D., P.E., C.C.P., F.RICS, M.ASCE**, is the president and founder of Active Continuing Education Systems, LLC., a firm that specializes in providing professional continuing education services using a variety of delivery mediums from in-person to guided online modes. Gransberg has been an ASCE instructor since 1996. ACES offers a full-range of project management and construction engineering curricula and has furnished coursework to public and private clients in the US and overseas.

He is also the president of Gransberg & Associates, Inc. a construction management/ project delivery consulting firm. The firm was founded in 1996 and provides RFQ/RFP development services to public agencies, as well as CMGC and DB proposal development services to engineers and consultants. G&A, Inc. has been called on to assist with projects throughout the U.S. and Canada, as well as in New Zealand, Okinawa, Latin America, Europe, and the Middle East. The firm specializes in the development of project management services for complex mega-projects.

Dr. Gransberg retired in 2017 as a professor of construction engineering at Iowa State University, where he held an endowed research chair for 5 years. He received both his B.S. and M.S. degrees in Civil Engineering from Oregon State University and his Ph.D. in Civil Engineering from the University of Colorado at Boulder. He is a licensed Professional Engineer in Oklahoma, Texas and Oregon, a Certified Cost Engineer, a Designated Design-Build Professional, and a Fellow of the Royal Institution of Chartered Surveyors in the UK.

Before moving to academia in 1994, he spent over 20 years in the U.S. Army Corps of Engineers, retiring at the rank of lieutenant colonel. In his final posting, Dr. Gransberg was the Europe District's Area Engineer stationed in Ankara, Turkey where he managed an annual design and construction program that exceeded \$200 million. He teaches courses in integrated project delivery, cost estimating, project controls, and project management. His research is centered in the delivery of infrastructure/ transportation projects.

Dr. Gransberg led the efforts to develop the AASHTO *Guidelines for CMGC project delivery* and *Guidebook for Alternative Quality Management*. He was one of the co-authors of the AASHTO *Guide for Design-Build Contracting*, and is currently developing the AASHTO *Guide for Managing Geotechnical Risk in Design-build Projects*, and the second edition of the AASHTO *Partnering Handbook*. He is the author of 4 books on construction management topics and over 200 articles, conference papers, and other publications.

- For group training, contact John Wyrick ([JWyrick@asce.org](mailto:JWyrick@asce.org)) or Stephanie Tomlinson ([STomlinson@asce.org](mailto:STomlinson@asce.org))

## Seminar Benefits

- Participants will be able to select a CM-based project delivery method that best suits the characteristics of a given project.
- Participants will learn how to draft the solicitation documents to procure a CM-based contract, including how to modify the design contract to accommodate CM project delivery and draft the pre-construction services contract.
- Participants will understand the pitfalls of CM-based project delivery and when not to use it.
- Participants will understand the mechanics of developing a guaranteed maximum price (GMP) on a CM-based contract.
- Learn to select projects that will potentially benefit from CMGC, CMR, or CMA delivery.
- Find out how to develop a CM-type contract pricing structure that leads to a guaranteed maximum price (GMP)
- Understand the complex relationships between design and construction in each of these delivery methods.
- Learn how to accrue both time and cost savings by properly implementing a CM-based project delivery program.

## Who Should Attend?

- Construction project owners
- Design consultants
- Construction contractors
- Attorneys

## Summary Outline

### DAY ONE

- Introduction to CMGC, CMR, and CMA
- Project selection parameters
- Developing the CMGC/CMR/CMA solicitation and design contract
- Evaluation and award procedures
- Vertical (building) case study

### DAY TWO

- Pre-construction services
- Developing design and construction work packages and sequencing
- Developing a project pricing structure and/or GMP
- Horizontal (highway case study)
- Summary and wrap-up

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