

APWA WA ★ 2023 FALL CONFERENCE

RISE UP!
REACH OUT!

October 4-5, WENATCHEE

Building Better Construction Managers

Nicholas Soto, CAE
Vice President, Professional Development
CMAA

LEARNING OBJECTIVES

Objective 1

- Explain why working with the right people is important to your project's success.

Objective 2

- Outline the steps to achieve and identify talent to lead construction projects.

Objective 3

- Discuss training opportunities to develop current and rising talent.

CMAA

- Non-profit formed in 1982 for the Construction Management industry
- 17,000+ members:
  - CM/PM practitioners
  - Corporate members
  - Owners: public and private
  - Academic and associate members
- 6,000+ Certified Construction Managers
- 30 regional chapters nationwide

CMAA MISSION

To promote, support, educate, and develop professionals who lead the delivery of programs and projects within the built environment.

CMAA VISION

CMAA is the voice of the program and construction management industry and the premier resource for professionals working in the built environment.

Tagline

CMAA Builds Better…

CMAA Builds Better *Communities*
CMAA Builds Better *Projects*
CMAA Builds Better *Professionals*
CMAA Builds Better *Relationships*
CMAA Builds Better *Teams*

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The Challenges

- Need Expert knowledge
- Workforce shortage
- Supply chain issues
- Specific experience and trained professional is required
- Workload fluctuates
- Scope of work is specific to a project or the program
- Financial constraints
- Lack of responses to RFPs



Whether in-house or outsourced, professional construction management can help.

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The Challenges

- Inflation at a 40-year high
- Construction demand remains high, further strengthening is expected
- Supply chain issues continue
- Construction budgets established before the pandemic are obsolete
- Escalations of 20%-30% since early 2021
- No guarantees that prices will drop significantly even with economic downturn

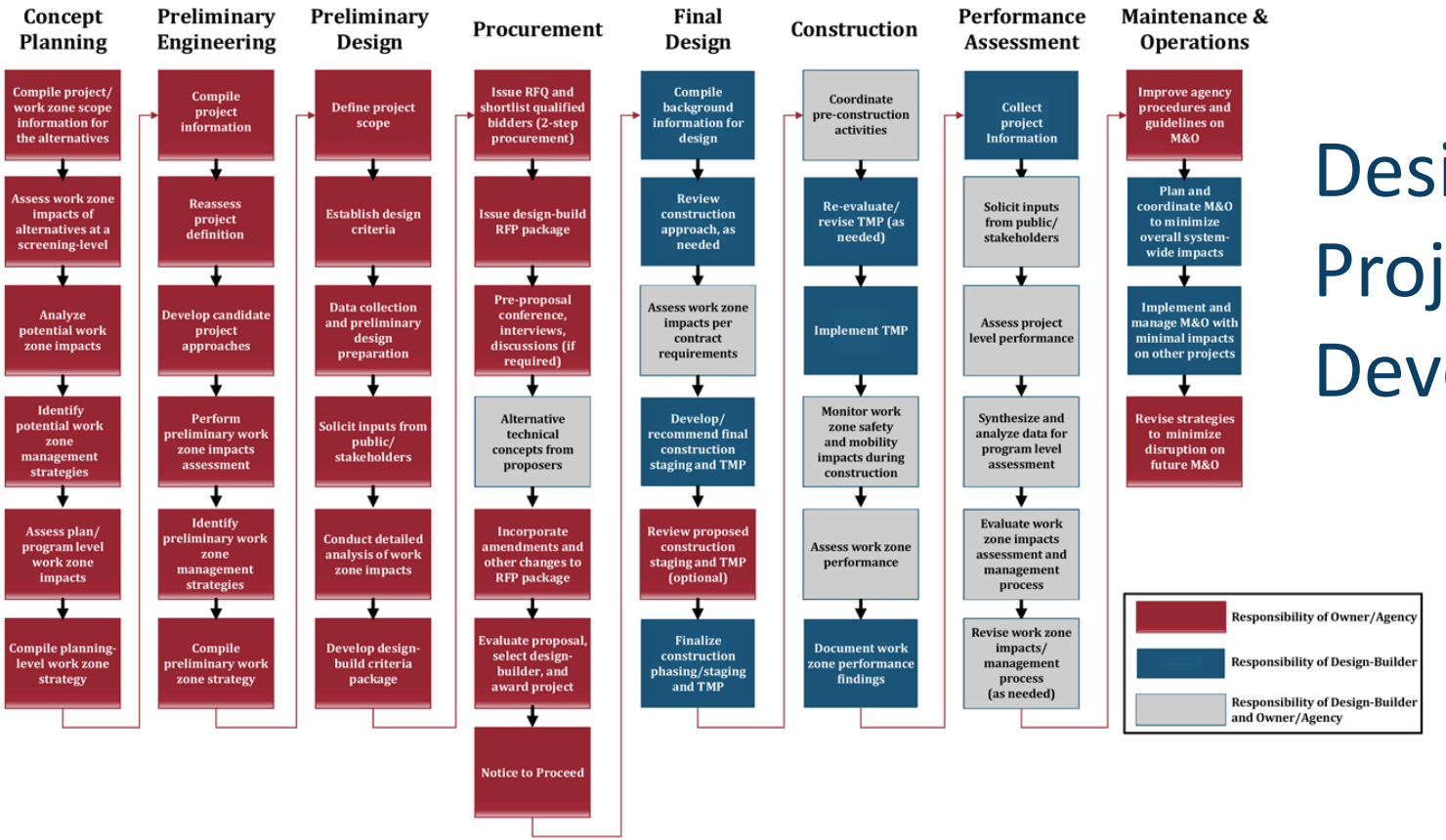


Building Considerations

Trends and Standards

- Budget and Timelines
- Population
- Technology
- Risk and Safety Management
- Community and Equity
- Codes, Guidelines, and Standards
- Sustainability, Resiliency, and Delays
- Maintenance and Operations





Design Build Project Development



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What is Construction Management?

A professional service that applies effective management techniques for the planning, design, and construction of a project from inception to completion for the purpose of controlling time, cost, risk, and improving quality.



Construction Management is a discipline and management system specifically created to promote the successful execution of capital projects for owners.

Where CMs Add Value

- Upfront Planning
- Program Controls
- Design (Preconstruction)
- Procurement and Delivery
- Construction
- Project Closeout
- Operations and Maintenance

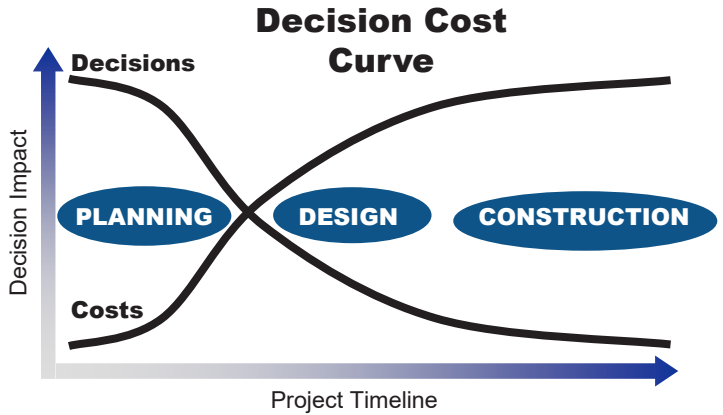


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Benefits of CM

1. Upfront Planning:

- Scope-to-budget verification
- Assisting in site selection
- Developing phasing plans for working in occupied space



The Later the Decision, the Higher the Cost!

The Right Start for a Successful Finish

Benefits of CM

2. Financial/Funding Strategies

- Budget validation – what's missing?
- Cost modeling of total project hard and soft costs
- Financial analysis/scenario development
- Assistance with State Funding Applications or Matching Grants



Benefits of CM

3. Community Outreach

- Assistance in consensus building
- Manage communications plan:
  - Project website
  - Town Hall meetings
  - Regular updates to principals, staff, businesses and community leadership
- Development of local and minority businesses.

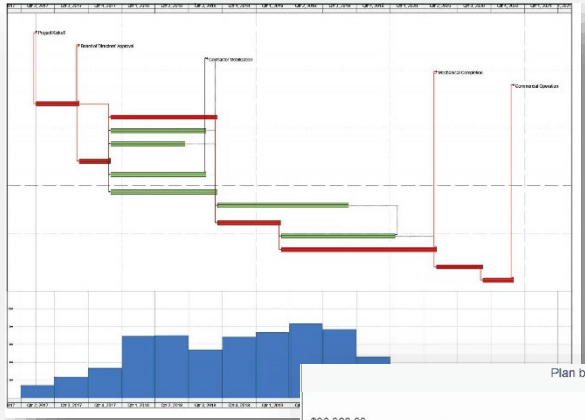
Good Communication Builds Trust

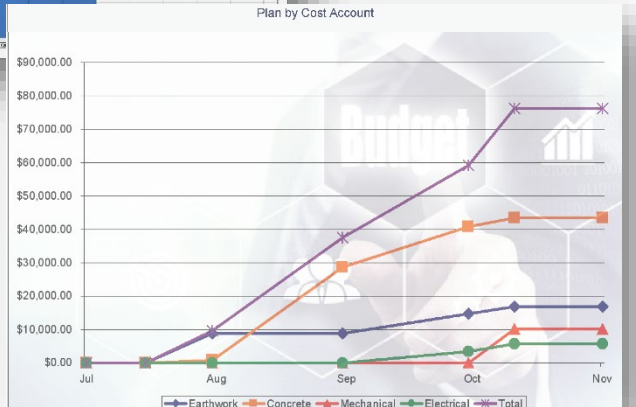


Benefits of CM

4. Program Controls

- Using project control systems for more than cost and document tracking.
- Web-based capabilities for broad-based progress and status communications.



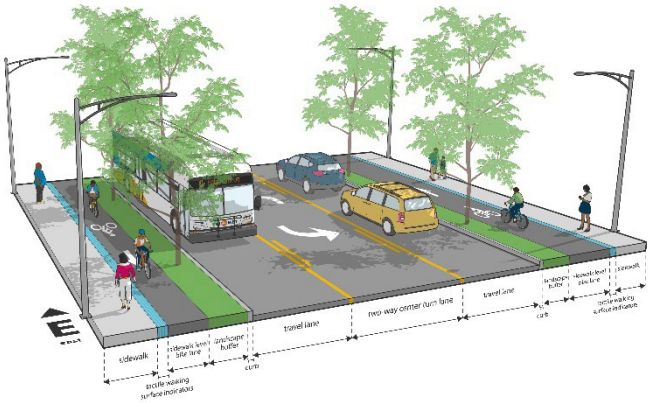


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Benefits of CM

5. Design (Preconstruction)

- Keep the design on schedule – incorporate key milestones
- Frequent updates and validation of project cost estimates
- Value analysis and value engineering
- Quality Assurance/Constructability reviews of design documents



Better Design Documents = ***Fewer Construction Issues*** = ***Lower Project Costs***

Benefits of CM

6. Procurement and Delivery

- Delivery strategy
- Bundling and bulk purchasing
- Permitting coordination and response support
- Outreach to develop market interest.



Grows Resource Base and Assures Quality Delivery of Projects

Benefits of CM

Project Delivery

- Traditional design-bid-build
- Design/Build
- Public Private
- Partnerships (P3)
- CM-at-Risk
- Multi prime



Benefits of CM

7. Construction

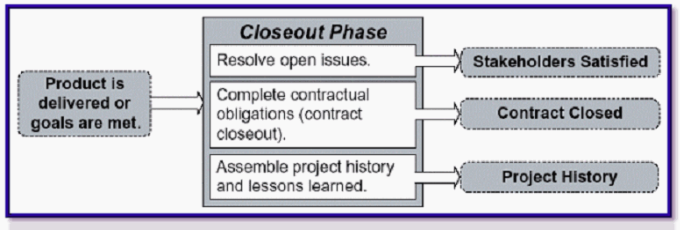
- Safety & Risk Management
  - Student Safety Programs
  - Logistics and Access
  - Education/Training
  - Pro-active Management
- Pro-Active Site Management
  - Project “first” with respect to issue resolution
  - Maintain clear communications between all stakeholders
  - Coordination of separate vendors and franchise utilities
  - Detailed records of activities and site conditions
  - Quality Assurance inspections



Benefits of CM

8. Project Closeout

- Enhancing Project Closeout
  - Start planning closeout strategy before design starts
  - Requiring a detailed schedule of closeout tasks
  - Breakout detailed schedule for each closeout activity
  - Maintain a dynamic, cost-loaded, Incomplete Work List from start of construction



Smooth Transition to Department Maintenance

Benefits of CM

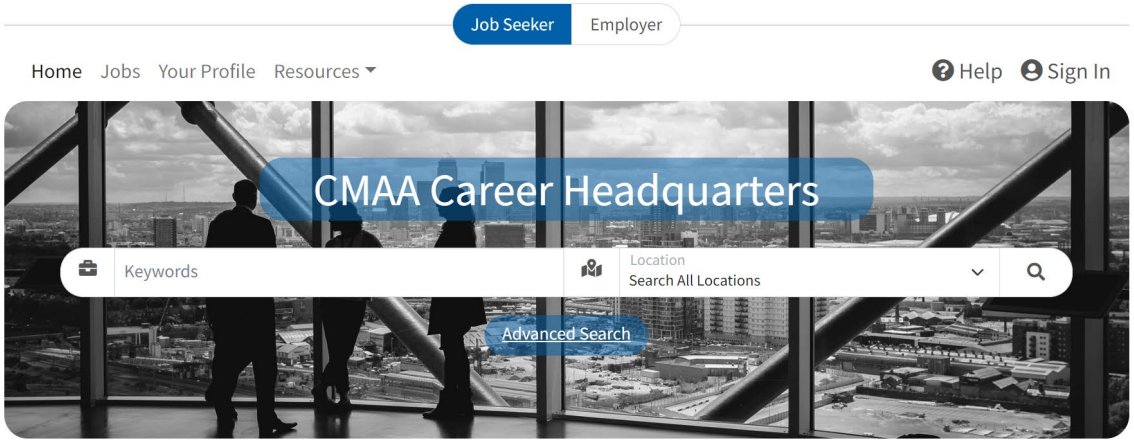
9. Commissioning

- Assistance with the placement of staff
- Providing interim staff
- Training for O&M personnel
- Extended OEM warranties and service agreements



Where to Find Qualified CMs?

Career Center



CMAA Career Headquarters Account Benefits

Post Your Resume

Apply For Jobs

Get Job Alerts

Get Started!

Job Listings

42 Job Listings

28 Employers Hiring

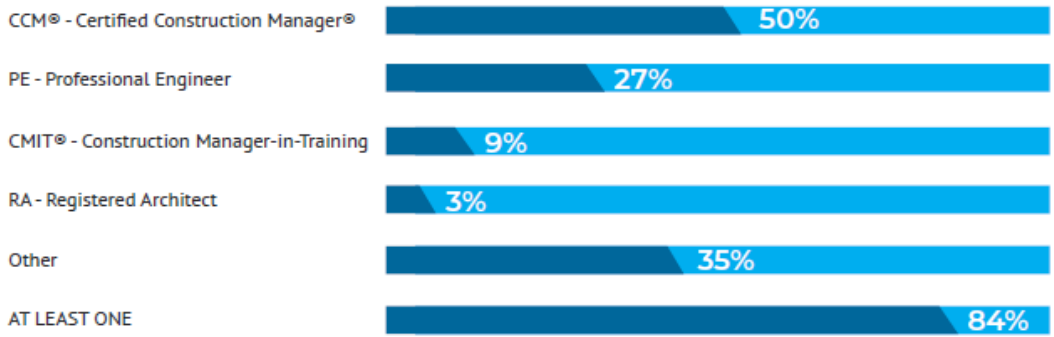
Featured | Newest

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? Licenses/Certifications Held

What professional licenses or certifications do you have related to the construction industry?

A majority of respondents (84%) hold at least one professional license or certification related to the construction industry, most commonly CCM (50%) and/or PE (27%). About a third (35%) of respondents indicated that they hold a certification other than those listed.



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Why do organizations hire professionals with credentials?

- ✓ Increases their marketability
- ✓ Identifies their top talent and experts
- ✓ Recertification requirements for continued or enhanced competence to help ensure safety and best practices
- ✓ Demonstrates commitment to public safety and/or consumer protection
- ✓ Attracts and retains the best talent
- ✓ May reduce risk, accidents, and legal liability





- At least 18 years old
- Supervisor, instructor, or superior officer signs letter of support.
- Pass Level 1 exam on basics of construction management
- Basics of construction management:
  - Role of the CM, project delivery methods, and legal issues



- Completed Level 1
- Pass Level 2 exams:
  - Professional Practice
  - Quality Management
  - Cost Management
- Completed Soft Skills training:
  - Emotional Intelligence in the AEC Industry: Part 1
  - Killer Communication Skills
  - Emotional Intelligence in the AEC Industry: Part 2
- Supervisor(s) verify the candidate has 6 months of experience in Professional Practice, Quality Management, and Cost Management



- Completed Level 1
- Completed Level 2
- Pass Level 3 exams:
  - Contract Administration
  - Time Management
  - Safety and Risk Management
- Completed Soft Skills training:
  - How to Present with Power and Influence
  - Primal Safety: A Gut Level Approach
  - Time Management Using Lean Principles
- Supervisor(s) verify the candidate has 6 months of experience in Contract Administration, Time Management, and Safety and Risk Management



- Completed Level 1
- Completed Level 2
- Completed Level 3
- Pass Level 4 exams:
  - Project Management
  - Sustainability
  - Value Engineering
- Completed Soft Skills training:
  - Stress Management for Peak Performance
  - 12 Steps to Great Relationships
  - From Head to Heart: How to Differentiate Yourself in the Marketplace
- Supervisor(s) verify the candidate has 6 months of experience in Project Management and Sustainability, with some experience in Value Engineering



- 12 months of RIC experience in any area or 4 years of construction experience
- Minimum of 2 references to verify experience
- CMIT L1-4, degree, or additional construction experience
- Passed CACM Exam
- Renew every 3 years



- 48+ months of RIC experience
- Minimum of 2 references to verify experience
- CACM, degree, or additional construction experience
- Passed CCM Exam
- Renew every 3 years

A PATHWAY TO SUCCESS

The CMCI credentials programs are divided into various levels, with each level demonstrating a credential holder's growing professional competence and experience in construction management.

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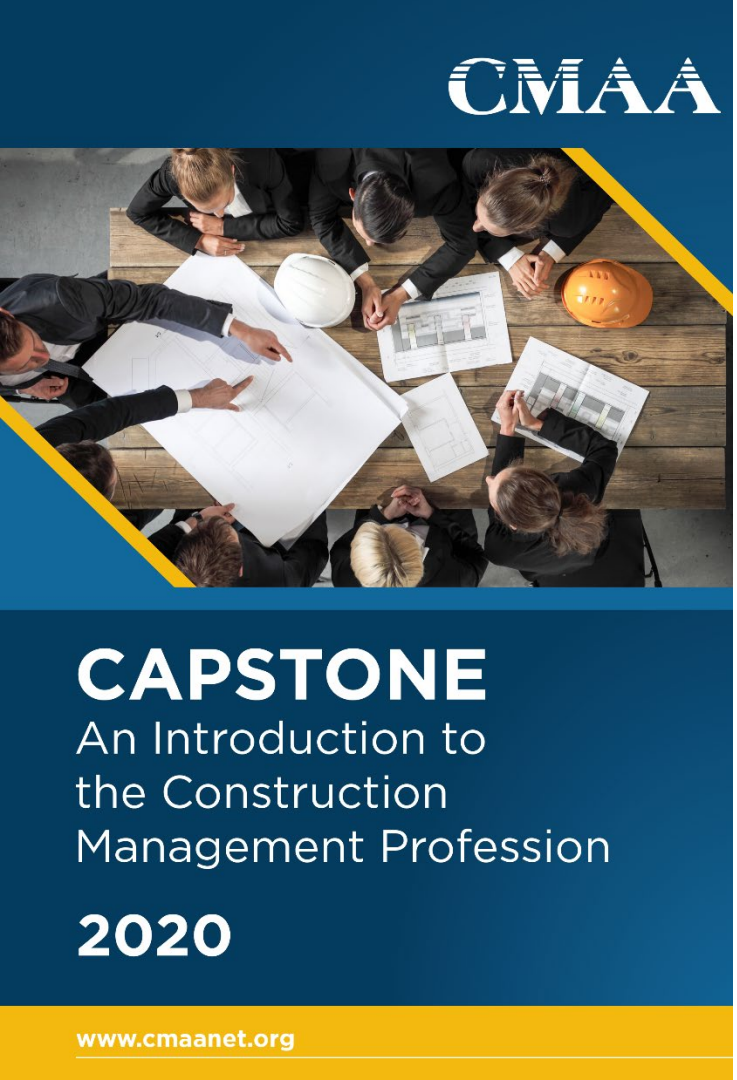
CMIT

Construction Manager-in-Training

Recognizing and guiding more than 8,000 newly-rising dedicated professionals in the CM industry:

- A commitment to continued development that shows employers, clients, and co-workers that they are dedicated to becoming professional construction managers.
- Knowledge of the practices, procedures, and principles represented by CACMs and CCMs and professional construction managers.

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Eligibility for the CMIT®

Complete an online application meeting the following criteria relative to education and experience:

- ✓ 18 years of age or older
- ✓ Signed letter of support from a supervisor, instructor, or superior officer

➢ Complete the online Capstone course

- ✓ CMIT Exam: 100 multiple choice questions in 2 hours

➢ Free active-duty military

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CMIT Stackable Credentials



- At least 18 years old
- Supervisor, instructor, or superior officer signs letter of support.
- Pass Level 1 exam on basics of construction management
- Basics of construction management:
  - role of the CM, project delivery methods, and legal issues



- Completed Level 1
- Pass Level 2 exams:
  - Professional Practice
  - Quality Management
  - Cost Management
- Completed Soft Skills training:
  - Emotional Intelligence in the AEC Industry: Part 1
  - Killer Communication Skills
  - Emotional Intelligence in the AEC Industry: Part 2
- Supervisor(s) verify the candidate has 6 months of experience in Professional Practice, Quality Management, and Cost Management*



- Completed
  - Level 1
  - Level 2
- Pass Level 3 exams:
  - Contract Administration
  - Time Management
  - Safety and Risk Management
- Emotional Intelligence:
  - How to Present with Power and Influence
  - Primal Safety: A Gut Level Approach
  - Time Management Using Lean Principles
- Supervisor(s) verify the candidate has 6 months of experience in Contract Administration, Time Management, and Safety and Risk Management*



- Completed
  - Level 1
  - Level 2
  - Level 3
- Pass Level 4 exams:
  - Project Management
  - Sustainability
  - Value Engineering
- Completed Soft Skills training:
  - Stress Management for Peak Performance
  - 12 Steps to Great Relationships
  - From Head to Heart: How to Differentiate Yourself in the Marketplace
- Supervisor(s) verify the candidate has 6 months of experience in Project Management, Sustainability, and Value Engineering*

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Certified Associate Construction Manager®



The CACM® recognizes professionals who have chosen a career in construction management and voluntarily met the prescribed criteria of the construction management certification program with regard to formal education, field experience, and demonstrated capability and understanding of the *CMAA Standards of Practice*.

Educational Requirements

There are multiple ways to meet the educational requirements outlined by the CMCI Board of Governors. The board does not require formal education; however, an accredited degree, non-overlapping general experience, OR completion of a Construction Manager-in-Training (CMIT®) level may be used in place of or in addition to professional experience to accompany RIC or construction/design experience.

		Column A		Column B		
No CMIT & No Degree	+	6 yrs General Construction Experience	+	12 months RIC OR 4 yrs additional General Construction/Design Experience	=	✓ ELIGIBLE
CMIT (Level 1)	+	3 yrs General Construction Experience	+	12 months RIC OR 4 yrs additional General Construction/Design Experience	=	✓ ELIGIBLE
CMIT Level 2	+	2 yrs General Construction Experience	+	12 months RIC OR 4 yrs additional General Construction/Design Experience	=	✓ ELIGIBLE
CMIT Level 3	+	1 yr General Construction Experience	+	12 months RIC OR 4 yrs additional General Construction/Design Experience	=	✓ ELIGIBLE
CMIT Level 4	+	N/A	+	12 months RIC OR 4 yrs additional General Construction/Design Experience	=	✓ ELIGIBLE
Associates Degree	+	4 yrs General Construction Experience	+	12 months RIC OR 4 yrs additional General Construction/Design Experience	=	✓ ELIGIBLE
BA/BS or MA/MS Degree	+	N/A	+	12 months RIC OR 4 yrs additional General Construction/Design Experience	=	✓ ELIGIBLE

If you are using any field experience in Column A, this experience may not overlap with any of the 12 months of RIC or 4 years of additional construction/design experience you use in Column B.

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CCM®

Certified Construction Manager

- A respected career path for CM professionals.
- Sets open, tested, and clear industry standards by which owners can evaluate staff and service providers.
- Establishes reliable professional development and continuing education.

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17024
PERSONNEL CERTIFICATION BODY

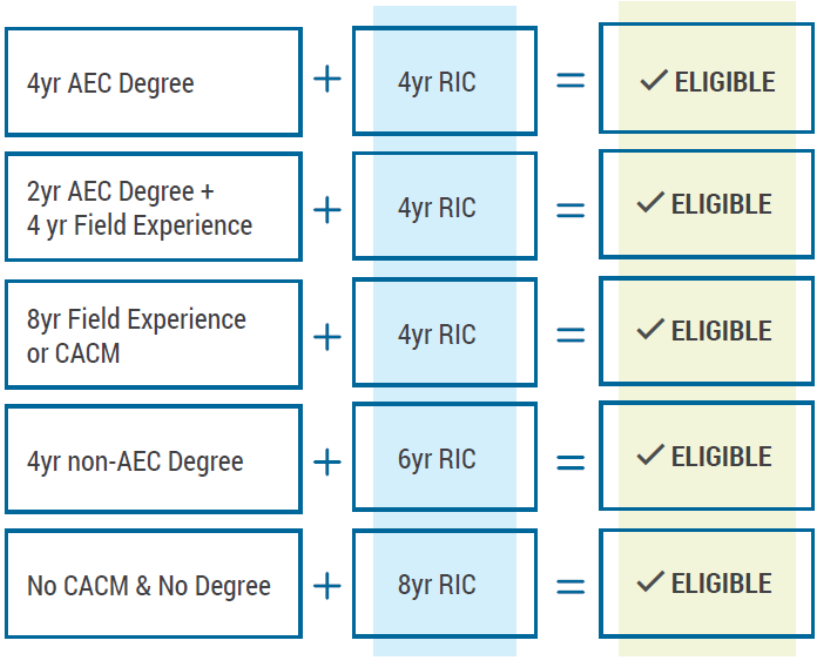
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Certified Construction Manager®



- Certificate and digital badge to promote your resume of knowledge and experience:
  - ✓ Minimum 48 months Responsible-in-Charge
  - ✓ Minimum two references
  - ✓ Tested on CM Standards of Practices
  - ✓ Adhere to Code of Conduct and Ethics
  - ✓ Maintain industry knowledge
- Internationally transferrable
- Industry relevant: over 6000 CCMs
- Owner recognized

Eligibility Options



Qualification Matrix

RIC Experience:

CACMs must have a minimum total of 12 months cumulative experience required in these phases & function/roles or an additional 48 months of experience.

CCMs must have a minimum total of 48 months cumulative experience required in all phases.

	PHASE	PRE-DESIGN	DESIGN	PROCUREMENT	CONSTRUCTION	POST-CONSTRUCTION
FUNCTION/ROLE	Project Management	☐	☐		☐	
	Cost Management		☐	☐	☐	
	Time Management		☐		☐	
	Quality Management		☐		☐	☐
	Contract Administration			☐	☐	☐
	Safety Management				☐	

Determining RIC

1. Was the CM empowered to make a direct impact on the successful project completion?

2. Was the CM directly in charge of construction management services?

3. Did the CM protect the project and the owner's best interests?



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Client/Owner Reference

- One reference per project submission for the 48 months of RIC.
- Inform the references that CMCI will contact them by email.
- Purpose is to verify/confirm experience cited.



QUALIFICATIONS:

Education/Experience:

- Bachelor's degree in Construction Management, Civil Engineering or related field
- Varied experience in construction & contract management principles and practices

Certification/License:

- Valid Washington state Driver's License.

Desired Qualifications:

- In-depth knowledge and experience with public works (PW) contracting processes, project management, record keeping;
- Certified Construction Manager (CCM), Professional Engineer (PE), or Project Management Professional (PMP);
- Underground/Right-of-way utility construction contracting experience;
- Ability to work well with other City Departments and develop relationships to work across City Departments and/Divisions in order to complete projects on time and within budget;
- In depth knowledge of City of Seattle or municipal/Public Works contracting processes and laws;
- Experience working with contractors on large municipal capital projects;
- Knowledge of risk management principles;
- Knowledge of the City of Seattle purchasing processes including experience with Change Orders, Claims mitigation and strategies;
- Excellent communication skills;
- Experience working with MS Project, Excel, and budgeting tools to manage PW contracting processes;
- Ability to provide outstanding customer service;
- Ability to be flexible and manage multiple projects at various sites;
- Supervisor or Management experience a plus with good people skills and the ability to build and reinforce strong, cohesive teams; and
- Ability to provide support to Project Managers in the Construction Group.

ADDITIONAL INFORMATION:

Job offers are contingent on the verification of credentials and other information required by the employment process including the completion of a background check which includes criminal history and driving history review.

Want to know more about Seattle City Light? Check out our web page: http://www.seattle.gov/light/.

APPLICATIONS MAY BE FILED ONLINE AT: http://www.seattle.gov/jobs
Job #2019-00705 CONSTRUCTION MANAGEMENT SERVICES MANAGER CF

If you are unable to apply on-line you may submit a paper application by the closing date to our office.

OUR OFFICE IS LOCATED AT:
Seattle Municipal Tower
700 5th Avenue, Suite 5500
Seattle, WA 98104

Careers@seattle.gov

Construction Manager:

Possession of a valid certificate of registration as a professional engineer (mechanical, electrical or civil) issued by the California State Board of Registration for Professional Engineers or a Bachelor's Degree in Construction Management or certification as a Construction Manager by CMAA is a requirement of this position. Construction Managers perform difficult and complex engineering tasks associated with construction and may act as supervisors to a small group of engineers and/or sub-professional support staff. The person must have:

ion experience. Offerors shall provide with their proposals copies of these ations for the staff proposed for this work.

s Construction Manager ("CM") shall possess a Bachelor of Science in Civil ering, Construction Management, or other related curricula and have 10 of experience in the management of roadway construction projects. ition as a Certified Construction Manager through the Construction ement Association of America (CMAA) or similar Construction Manager ation is preferred.

nent: By signing and submitting a proposal, offerors are certifying that they currently debarred by any local or state government or the Federal ment. Offerors shall provide in their proposal, documentation related to all ents that occurred within the last ten (10) years. Complete and include with posal Attachment 2, Certification Regarding Debarment from the offeror and consultants identified in the offerors proposal.

SERVICES/TASKS TO BE PERFORMED

must be made on the basis of, and either meet or exceed, the requirements ein. All requirements for inspection, materials testing, engineering, and ailability for the duration of the project, as well as an explanation regarding e organizational structure of the team. Rating considerations will be given to ms assigning personnel to this project who possess a Certified Construction anager credential, issued by the Construction Management Association of erica (CMAA) and Design Build Institute of America (DBIA) credential issued the DBIA. Project Team must have some level of storm water certification g., CESPE and/or CISEC) to review quality of contractors work in the field.

projects

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CCM Examination Sections

DOMAINS	% OF EXAM	DOMAINS	% OF EXAM
Program & Project Management	20%	Safety Management	10%
Cost Management	10%	Risk Management	10%
Time Management	10%	Professional Practice	10%
Contract Administration	10%	Sustainability	5%
Quality Management	10%	Technology	5%

CACM Examination Sections

DOMAINS	% OF EXAM	DOMAINS	% OF EXAM
Program & Project Management	22%	Safety Management	5%
Cost Management	11%	Risk Management	6%
Time Management	10%	Professional Practice	9%
Quality Management	10%	Sustainability	8%
Contract Administration	9%	Technology	10%

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CMAA's Body of Knowledge

CM Standards of Practice (2021)

Capstone: The History of CM Practice and Procedures (2020)

Contract Administration Guidelines (2021)

Cost Management Guidelines (2018)

Risk Management Guidelines (2017)

Sustainability Guidelines (2020)

Time Management Guidelines (2019)

Claims Management Guidelines (2018)

Project Closeout Guidelines (2020)

Quality Management Guidelines (2022)

Technology Management Guidelines (2023)

Professional Practice Guidelines (2023)

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Principles of Construction Management Course™

CMAA
Construction Management Association of America

The Principles of Construction Management course provides a basic understanding of construction management and the role of the construction manager (CM).

This course will provide an overview of owners and project types, contracts and agreements, CM project management, leadership, ethics, soft skills, and career development.

Who Should Attend?

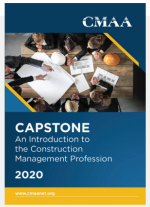
- ✓ Soon-to-be and recent graduates looking to begin their CM career.
- ✓ Early career professionals focused on becoming a professional CM.
- ✓ Mid-career professionals looking for a pathway to transition into a CM career.

Learning Objectives

- ✓ Distinguish and explain construction management and review the responsibilities of CMs within the project scope.
- ✓ Identify the factors controlled by the specialized management technique and describe the use techniques to plan, coordinate, monitor, and control a construction project.
- ✓ Understand the overall process of safely managing a quality project from start to finish applicable to any industry, within budget, on schedule, and meeting scope expectations as applied specifically to the construction industry addressing all associated risks.

INCLUDED IN REGISTRATION

- ✓ *Capstone: An Introduction to the CM Profession*
- ✓ *What is Your Construction Management IQ?*
- ✓ *What's Your Construction Management EQ?*



Credit for Professional Development

CMAA provides professional development credit for those who complete The Principles of Construction Management Course™. In order to meet the varied formats for reporting mandated education requirements to licensing boards, credits are identified as Professional Development Hours (PDH) and Learning Units (LU). CMAA is registered with the American Institute of Architects (AIA) and the National Council of Examiners for Engineering and Surveying (NCEES) as an approved provider. Course participants earn 8 PDHs and CMCI Renewal Points. LUs are available for registered architects. All AIA reports and NCEES transcripts can be accessed electronically by the participant. Partial credit is not assigned. The full day of the course must be completed to receive credit.

CMCI APPROVED PROVIDER
ENGINEERING MRCEP REGISTERED CONTINUING EDUCATION PROGRAM
CONTINUING EDUCATION AIA

Principles of Construction Management

Construction Management
- » History of Construction Management
- » Why Construction Management?
- » What is in a CM's "Toolbox"
- » Stakeholders and participants
- » Types of Owners & Projects
- » CM Services and Responsibilities

Construction Managers
- » Required Skills and Abilities
- » Work Style
- » Roles & Responsibilities

Contract Administration
- » Reading and Understanding Contracts
- » Document Review
- » Contract Terms and Conditions
- » Contract Responsibilities
- » RFP, RFI, RFQ

Projects
- » Project Phases
- » Project Lifecycle
- » Deliverables by Phase
- » Project controls
- » Domains
- » Delivery Methods

Qualities of a CM
- » Emotional Intelligence & Awareness
- » Communication
- » Communication Styles
- » Communication in Conflict
- » Leadership

Career Development
- » Where to Work
- » Credentials
- » Agency & CMAR Career
- » Progression

Construction Management by Domain

Program & Project Management
Construction Management Plan
Project Procedures Manual

Cost Management & Value Engineering
Estimates
Contingency
Change Management Techniques

Information Management
CMMS
KPIs & Dashboards
Handling Client Information

Quality management
Quality Management Plan
Quality Assurance
Quality Control
Non-Conformance

Risk Management
Quantitative Analysis
Qualitative Analysis
Risk Matrix

Sustainability
Building Codes
Lifecycle Cost
Triple Bottom Line
Certifications

Time Management
Types of Schedules
Scheduling Tools
Scheduling Procedures
Critical Path Method
Work Breakdown Schedules
Schedule of Values

Technology
Transition to Technology
BIM Dimensions
BIM Level of Development
Digital Twins
Applying Technology

Safety & Liability
CMAA's Safety Policy Statement
Three Legs of Safety
Safety Culture vs Safety Climate
OSHA
OSHA Violation Categories and Fines
OSHA Top 10 Multi-Employer Worksites
OSHA Record Keeping Requirements
Job Hazard & Safety Analysis
Claims & Dispute Resolution

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Professional Construction Management Course™

CMAA
Construction Management Association of America

Expand your knowledge and improve your understanding of professional Construction Management with the training course based on the CMAA Standards of Practice.

This course includes the *CACM Study Guide* and *CMAA Standards of Practice*. It is designed to help you understand and teach construction management techniques, as well as the nuances of CMAA's best practices regarding construction project management, leadership, and decision-making and provide guidance as you prepare for the CACM exam.

> "Industry wide, CMAA's Professional CM Course is a great program for all CMs, but especially for those pursing the CCM and CACM. The value of this course for VDOT means we have managers in place that understand both the theory behind the work, and the practical experience to perform the work they are managing daily.
>
> – **Bill Collins, CCM**
> Virginia Department of Transportation

Who Should Attend?

- ✓ Construction Managers
- ✓ Program and Project Managers
- ✓ Resident Engineers
- ✓ All levels of experience welcome!

Study Materials Included

- ✓ *CMAA Construction Management Standards of Practice*
- ✓ *CACM Study Guide*

> "Very interesting and captivating program. I enjoyed this three day seminar. I feel like I learned a great deal more than I expected and would like to pursue a CCM certification.
>
> – **Thistleton Robertson**
> New York City Department of Environmental Protection

Credit for Professional Development

CMAA provides professional development credit for those who complete The Professional Construction Management Course™. In order to meet the varied formats for reporting mandated education requirements to licensing boards, credits are identified as Professional Development Hours (PDH) and Learning Units (LU). CMAA is registered with the American Institute of Architects (AIA) and the National Council of examiners for Engineering and Surveying (NCEES) as an approved provider. Course participants earn 24 PDHs. LUs are available for registered architects. All AIA reports and NCEES transcripts can be accessed electronically by the participant Partial credit is not assigned. All three days of the course must be completed to receive credit.

CMCI APPROVED PROVIDER · ENGINEERING MRCEP REGISTERED CONTINUING EDUCATION PROGRAM · CONTINUING EDUCATION AIA

Introduction
- What is Construction Management?
- About CMAA, Mission & Vision, Publications, Resources
- Construction Manager Certification Institute (CMCI)

Professional Practice
- Construction Management Profession and Certification
- Code of Ethics
- Essential Definitions
- Legal Relationships
- CM Fee Structures
- Enforcement of Terms & Conditions of CM Agreements and Laws

Learning Objectives: Describe the qualifications for becoming a Certified Associate Construction Manager (CACM); Understand CMAA's Code of Ethics; Define key industry terms; Distinguish between project and program management; Understand how project delivery systems impact CM services; Explain legal relationships between CM and owner; Identify typical fee structures.

Program Management
- Program Management Defined
- Pre-Design Phase: Program Development
- Procurement and Construction Phase
- Post Construction Phase

Learning Objectives: Describe thesimilarities and differences between project and program management; Describe the role of program management during each project phase; Identify the key members needed on a Project Management Team.

Project Management
- Project Management Definitions, Functions, and Focus
- Goals, Philosophies, and Concepts
- Key Functions of the Project Manager Project Management Tools
- Project Management Services by Phase

Learning Objectives: Define Project Management and describe its functions and goals; Describe the key skills of a Project Manager; Describe common tools used for Project Management; Explain the Project Manager's role during each construction phase.

Contract Administration
- Delivery and Procurement Methods
- Contract Forms and Terms
- Contract Administration through
- Project Phases

Learning Objectives: Define Project Management and describe its functions and goals; Describe the key skills of a Project Manager; Describe common tools used for Project Management; Explain the Project Manager's role during each construction phase.

Time Management and Time Management Lab
- Time Management Overview
- CPM Building Blocks
- Calculate the CPM Schedule
- Scheduling by Project Phase
- Time Impact on the Schedule
- Time Management Calculation Activities

Learning Objectives: Explain the importance of time management in CM; Identify the primary objectives of CPM scheduling; Define key CPM terms; Describe the fundamentals of CPM scheduling; Explain how time impacts the project schedule.

Technology Management
- Transition to Technology
- BIM, Digital Twins, Drones, Software/ Apps
- Applying Technology

Learning Objectives: Describe the primary uses of technology; Identify the role of the CM while managing technology; Describe the role of technology during each phase of the project.

Quality Management
- Terms and definitions
- Quality Management Plans
- Quality Management by construction phase

Learning Objectives: Define Quality Management terminology; Describe the Quality Management Plan; Evaluate the AQ/QC processes; Conduct reviews for quality assurance.

Sustainability
- Sustainability goals, objectives, and requirements
- The CMs role in sustainability
- Tools for sustainable construction management
- Sustainability by construction phase

Learning Objectives: Describe the common features of a sustainable project; Customize CM tools for a project with sustainability goals and requirements; Understand a Sustainability Plan; Provide leadership to achieve a project's goals and requirements; Identify tasks by phase.

Cost Management & Value Engineering
- Cost Management overview
- Preliminary budgeting
- Cost Management System
- Cost Estimating
- Cost Management by project phase
- Value Engineering

Learning Objectives: Understand the CM's roles and responsibilities for controlling project costs; Describe the methods for developing the project and construction estimates and budget; Explain the Cost Management System; Monitor and manage costs during all project phases.

Safety & Risk Management
- Project Safety
- OSHA Requirements and Liability
- CM's Roles and Responsibilities
- Project Safety Plan Implementation
- Lessons Learned in the Field
- Risk Management

Learning Objectives: Describe the CM's roles and responsibilities related to safety; Explain OSHA's requirements and guidelines for construction safety; Recognize liabilities associated with safety violations; Identify and report safety hazards.

www.cmaanet.org

RISE UP! REACH OUT!

CCM BUILD UP

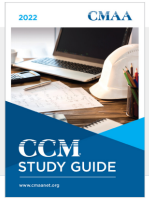
CMAA
Construction Management Association of America

CMAA's CCM Build Up is an in-depth professional development experience, carefully paced to provide a thorough exploration of all 10 CCM content domains over 9 weeks.

This course includes the CCM Study Guide, weekly webinar debriefs and discussions, and the online CCM Practice Exam with debriefing. This course is designed to help you understand the reasons and nuances of CMAA's best practices regarding construction project management, leadership, and decision-making and provide a structured study outline to help you prepare for the CCM exam. It is not intended to teach construction management techniques.

INCLUDED IN REGISTRATION

- ✓ CCM Study Guide
- ✓ CCM Practice Exam
- ✓ CM eGlossary



Course Dates

Wednesdays, February 15 – April 12

Wednesdays, April 26 - June 21

Wednesdays, July 5 - August 30

Wednesdays, September 13 - November 8

WEDNESDAYS @
1:00 – 3:00 p.m. ET
Online Course

Schedule

Week 1: Introduction, CCM Overview, What to Expect, Professional Practice
Week 2: Program & Project Management
Week 3: Cost Management
Week 4: Time Management
Week 5: Contract Administration
Week 6: Quality Management
Week 7: Safety & Risk Management
Week 8: Sustainability & Technology
Week 9: Practice Exam Debrief, Final Q&A, Test Day Tips, & Good luck!

What to Expect & How to Prepare

Attendees will get the most benefit from this course by doing a little bit of advance work. The Study Guide is a roadmap for this course.

1. Make sure you are eligibile for the CCM by checking the elibility requirements in the CCM Application Handbook.
2. Review corresponding chapter(s) in CCM Study Guide, especially the sample questions, prior to the week covering that domain.
3. Review recommended and additional reading lists. These lists refer to specific Chapters in the CMAA Body of Knowledge that pertain to each domain.
4. Come prepared with YOUR questions

CCM Build Up attendees will meet weekly by online seminar. The seminars are recorded and accessible later.

Weekly meetings are scheduled in two-hour blocks. Some weeks may run short or long, depending on attendee involvement, level of questions, etc. Instructors are prepared to stay online if attendees request. Many are available 'after hours' on an as needed, scheduled basis.

The CMAA Professional Construction Management (PCM) is not required prior to attending this course, but is recommended.

Credit for Professional Development

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Recommended Course Materials

(not included with registration fee)

- ✓ *CCM Application*
- ✓ *CMAA Body of Knowledge:*
  - *Construction Management Standards of Practice*
  - *Contract Administration Guidelines*
  - *Cost Management Guidelines*
  - *Claims Management Guidelines*
  - *Project Closeout Guidelines*
  - *Quality Management Guidelines*
  - *Risk Management Guidelines*
  - *Sustainability Guidelines*
  - *Technology Guidelines* (coming Summer 2023)
  - *Time Management Guidelines*

Instructors

Weekly sessions will be led by subject matter experts who are CMAA Authorized Trainers.

CCM Eligibility

The CCM Build Up is not a required course for CCM applicants and does not guarantee a passing score on the exam.

Information on eligibility to sit for the CMCI CCM Exam is www.CMCertification.org.

CMCI APPROVED PROVIDER

The CCM Build Up is worth 18 CACM and CCM recertification points.

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Maintaining the CACM and CCM



- Recertification of the CACM and CCM designations is required every three years.
- 20/25 Points are required and earned through two identified areas for recertification:
  - Involvement in the profession
  - Professional development
  - A minimum of 1 point must be related to ethics and safety
- Points are earned anytime from the date appearing on the certificate to the next expiration date.
- All activities can be added to an online recertification management tool for CACMs and CCMs.



Program and Project Expert Leader

Program and Project Manager

Advanced Program and Project Support

Program and Project Support

Program and Project Support

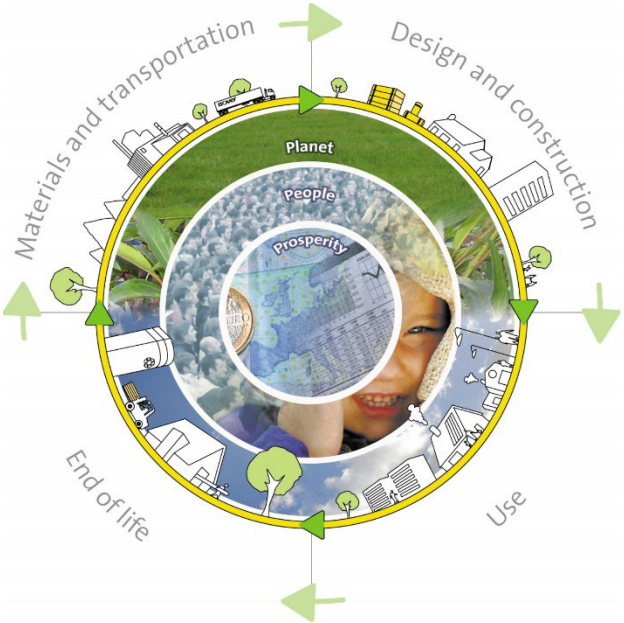
Program and Project Support

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Beyond the Standards

Certified Construction Managers are tested and expected to maintain knowledge in:

- Infrastructure
- Sustainability
  - Reducing environmental and disaster impact
  - Optimizing economic viability
- Building Information Modeling



Committing to the Future

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Having a Certified Construction Manager lead your project increases the chances for:

- ✓ Reduced Risk
- ✓ Increased Quality
- ✓ Keep on Schedule
- ✓ Stay on Budget
- ✓ Additional Resources



Tested. Trusted.

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Katie Choe, CCM
Chief Engineer/Director of Construction Management, Public Works Department for the City of Boston

"The construction industry in Boston is booming, so recruiting and retaining talented and experienced personnel is a challenge. We use the CCM to distinguish the most experienced and qualified candidates who meet continuous learning requirements to ensure our CM's knowledge stays current. **Our job is to bring transparency, trust, and quality to the construction process, and Certified Construction Managers do just that.** I trust the CCM credential and other public owners should as well." "



David Eberly, CCM
Deputy Assistant Inspector General, New Orleans Office of Inspector General

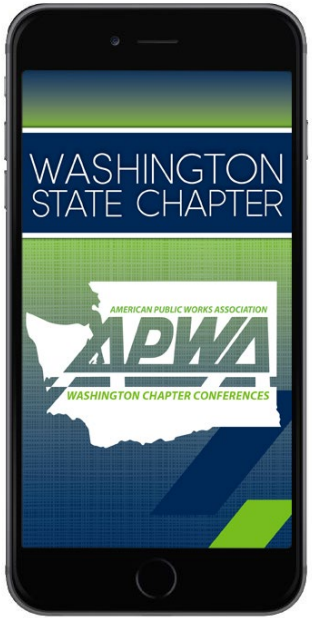
"Part of the mission of the New Orleans Inspector General is to promote efficiency and effectiveness in the programs and operations of the New Orleans Office of Inspector General. I wanted to be part of the community, establishing benchmarks for construction managers, and the CM industry. **I appreciate the rigorous certification process as a demonstration of professionalism**."

"The certification process has raised awareness of industry business practices and raised the standard of care we provide in managing our projects**. Our agency has been promoting the CCM to staff to demonstrate to clients that we possess key knowledge and experience to manage successful construction projects.**"



Sergio Pena
Deputy Director, Architecture and Engineering, County of Riverside, Economic Development Agency

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Please take a few minutes to use the evaluation form on the mobile app and provide your feedback on this session!

Evaluations help us select sessions for future conferences and provide valuable feedback for conference planners & speakers.

Thank you!

APWA WA ★ 2023 FALL CONFERENCE

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REACH OUT!

THANK YOU

www.CMCertification.org