

# Construction Management for Owners

General, Critical, and Future  
Trends

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# Agenda

- Change
- General Trends
- Four Critical Trends
- Future Trends
- Professional Construction Manager
- Recap – It's all about Risk
- Recommendations

# Change

- “Change is inevitable. Change for the better is a full-time job.” Adlai E. Stevenson
- Change is inevitable-except from a vending machine. Robert C. Gallagher
- Change is our friend – without change we would have no friends at all.” CPT Pat Healy
- The world hates change, yet it is the only thing that has brought progress. Charles F. Kettering

# ASCE Infrastructure Report Card

- 2006 ASCE estimated \$1.6 trillion needed over a five year period.
- 2009 ASCE estimates \$2.2 trillion is needed over a five year period.

Aviation	<b>D</b>
Bridges	<b>C</b>
Dams	<b>D</b>
Drinking Water	<b>D-</b>
Energy	<b>D+</b>
Hazardous Waste	<b>D</b>
Inland Waterways	<b>D-</b>
Levees	<b>D-</b>
Public Parks and Recreation	<b>C-</b>
Rail	<b>C-</b>
Roads	<b>D-</b>
Schools	<b>D</b>
Solid Waste	<b>C+</b>
Transit	<b>D</b>
Wastewater	<b>D-</b>

  

AMERICA'S INFRASTRUCTURE G.P.A.	<b>D</b>
ESTIMATED 5 YEAR INVESTMENT NEED	<b>\$2.2 TRILLION</b>

# Workload

- The U.S. Army Corps of Engineers' Military Programs mission area is facing its largest workload since World War II. Estimated \$40 billion.
- \$10.3 billion Civil Works Program.
- ARRA of 2009 – construction: \$2 billion
- Total funding for the civil construction program is \$1.805 billion (2010 PB).

# Annual Construction in the U.S.

- USACE - ~ \$50 billion (Military & Civil)
- Industry - Construction at \$964.0 billion  
Annual Rate. U.S. Census Bureau of the Department of Commerce estimate.
  - Private Construction - \$649.2 billion.
  - Public Construction - \$314.9 billion.
- USACE accounts for about **5%** of the Annual Construction spending in the U.S.

# Trends in Construction Management

- Changing Project Delivery Methods
  - “Our (USACE) goal is to provide projects at a 15 percent cost savings while reducing construction time by 30 percent.”
- Changing Construction Management Strategies of USACE.
  - Recruitment
  - Staffing
  - Talent Shortage – over 2,000 critical vacancies in USACE Construction.

# Project Delivery Methods

by Col (Ret) Mike Rossi, P.E.

- D-B-B. Don't know what you want (design takes care of that); Have plenty of time.
  - note: Market takes care of cost.
- D-B: Know what you want (performance specs at 35%). Willing to take what you get (as long as it meets performance specs). Not a lot of time.
  - note: Pay a premium (cost and time growth) for changing your mind (didn't really know what you wanted or weren't really willing to take what was offered).
- ECI: Don't know what you want. Need it fast.
  - note: Also, you want control over what you get, and there's a limit to what you can/will spend. You may pay a premium similar to D-B for changing your mind but may see some “give and take” over what you get with D-B.



# Owner's in Transition to Change

- Federal, State and other Public Sector agencies traditionally deliver projects using Owner CM with common goals:
  - Highest Quality
  - Stay within budget
  - Deliver by the need date.
- Owner's need assistance (CM Services) or transition to Agency CM.

# Critical Trends

by CMAA Chairman, William Van Wagenen, CCM

- Technology
- Growing Talent Shortage
- Evolving and Expanding Project Delivery Strategies
- Better Recognition and Definition of Construction Management

# Technology

- 1/3 of owner's responded they have used Building Information Modeling (BIM).
- USACE is placing emphasis on Standardization of Designs and seeking LEED Silver Goals for its Military Construction Program.
- CMAA Standards of Practice now include Risk Management, Sustainability, and BIM.

# Growing Talent Shortage

- USACE initiated a pilot for national recruiting for critical disciplines. Identified shortfalls in:
  - Construction Managers
  - Quality Assurance Representatives
  - Project Engineers
  - Area and Resident Engineers
- Attempt to bridge the gap with new graduates, interns and mid-career candidates from outside the public sector.

# Growing Talent Shortage

- CM Services – SAME 2008 JETC, panel of experts voice “concern” that CM Contractors “may not be qualified.”
- Improving ourselves – set new standards.
- Obtain CM Certification, improve performance across all phases of the project.
- Workload exceeds workforce – CM Services Contracts supplement workforce.

*CM*

*concern*

*setting*

*certification*

*contracts*

*workforce*

*supplement*



# Growing Talent Shortage

- Today's CE and CM Graduates can consider a wide range of opportunities in planning, design, program & project management or construction management.
- Aging Infrastructure, retiring baby boomers and an abundance of work (demand on talent) will change the way we manage projects today and well into the future.

# Evolving and Expanding Project Delivery Strategies

- Moving away from traditional D-B delivery.
- Concerns for quality, final cost and schedule delivered by the “lowest bidder.”
- Changes, claims, delays, and a complexity of market conditions are driving the need for alternative project delivery methods.
  - D-B, CM@R, ECI

# Evolving and Expanding Project Delivery Strategies

- Public Sector Owner CM's are struggling with their changing roles.
- Cannot find, learn or adapt to the skills required to coordinate the efforts of the designer, the contractor, and/or design builder to meet expectations of our partners or customers.



# Evolving and Expanding Project Delivery Strategies

- Key to Project Delivery Acquisition Strategy
  - Proper allocation of risk among the parties.
- 3 Basic Tools
  - DBB, DB, CM@R or ECI
- Risk is: Not staffing and not knowing.



*Primer on*  
Project  
Delivery



Provided by the Joint Committee of

The American Institute of Architects

The Associated General Contractors of America

# Better Recognition and Definition of Construction Management

- “Wake UP” – training and mentoring is essential.
- USACE, SAME, & CMAA are jointly working to get more interest in engineering, construction management and technical studies.
- CMAA is creating paths with it’s CMIT program.

# Better Recognition and Definition of Construction Management

- USACE is creating a new “culture of CM Certification” for professional construction managers.
- CM Certification, standards of practice and core competencies enhance USACE ability to deliver projects.
- CM Certification becomes the platform for continuing education.

# Future Trends for Construction Management

- Charter to Establish Construction Management as a Professional Series
- Why?
  - Talent Shortage (Workload vs. Workforce)
  - Universities and Colleges today are graduating students with Construction Management degrees from ABET and ACCE accredited programs.

# Future Trends for Construction Management

- Objective: Professional Construction Manager
  - 1) To establish construction management as a professional series within the federal government that provides equal career opportunities for ABET and ACCE accredited graduates; 2) define the scope of responsibilities, level of activities performed by a construction manager that requires the construction manager to be licensed or certified.

# Professional Construction Manager

- Coordinate efforts of everyone on site
- Represent the Owner
- Procurement
- Schedule & Cost Management
- Contract Plans & Specifications – Quality Management
- Computer Skills
- Have pride in their work
- Make a Difference
- Work long hours
- Work on call
- Perform under pressure
- Understand Risk Management

# Professional Construction Manager

- 4-year BS degree from Accredited College or University (Engineering or Construction Management).
- Registered Professional Engineer or Certified Construction Manager or Certified Professional Constructor.

# Professional Construction Manager

- Job Description - The Professional Construction Manager (CM) leads the Government's efforts in managing, administering, and controlling construction projects and programs through all project phases including planning, design, procurement, construction, and post-construction. The CM also leads, supervises, and manages the Government's construction management office and field staff that are responsible for: construction procurement; risk management; construction contract administration; construction management; construction inspection; quality management; and project controls including document control, cost estimating/cost control, scheduling/schedule control, and safety. The CM interfaces with and coordinates construction planning and operations with Architect/Engineering firms, construction companies, tenant activities, abutters to construction sites, and others as necessary. The Construction Manager's duties involve the application of accepted architectural and engineering theories, principles, concepts, and processes.



# Recap – It's all about Risk

- Change is inevitable – How can you do what you are doing better?
  - Technology – Requires new training, new skills, and updated standards of practice.
  - Talent Shortage – Retire, re-hire, supplement staff, grow the workforce.
  - Project Delivery – Risk defined by not staffing and not knowing.
  - Construction Management – What is it?

# Recap – It's all about Risk

- Our decisions define outcome both routine and non-routine.
  - Business as usual is not working. Owner's need to raise the bar for professional practice of construction management.
  - Recruit and train talent (Engineers and Construction Managers).

# Recap – It's all about Risk

- Our decisions define outcome both routine and non-routine.
  - Workload vs. Workforce – Both are changing.
  - Construction Management is vital to delivering projects. Adequate staffing and funding are essential (boots on the ground). D-B, CM@R or ECI require more staffing, not less.
  - Balance – Program/Project Management vs. Construction Management. There is an essential difference (knowledge & skill).

# Recommendations

- Essential we continue to recruit and train talent. Outreach to local college and universities quarterly.
- We must develop new skills and leadership in Construction Management.
- Continue our “Culture of Certification” for Professional Construction Managers.
- Professional Networking is vital to improving construction management.