


Managing Effective Plan Reviews
Course 625
APPA Facilities Institute – APPA-U


Jeff Gee, AIA, Vice President
Division Manager | General Manager
Swinerton Management & Consulting



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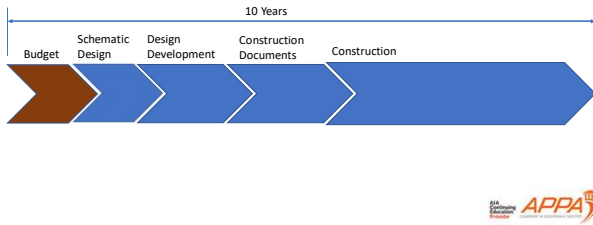
Program Outline

- Introduction
- What is a Plan Review?
- Are Plan Reviews Important?
- Can Plan Reviews save time and money?



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The Life of a Project



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What could change at your campus over 10 years?



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Why? Risk Management - Mitigation


- Changing academic needs
- Project scope changes
- Project budget creep
- Project schedule extension
- Quality concerns
- Material delays
- Safety concerns – construction / occupancy
- Incomplete design documents
- A/E and GC resource availability



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Plan Reviews

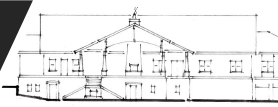
- Program
 - Program adherence
 - Conform to Campus Standards
 - Comply with funding/grant requirements
- Completeness
 - Are the construction plans and specifications complete?
- Constructability
 - Are the plans and specifications biddable?
 - Are conflicts reduced/mitigated
 - Are the construction plans coordinated




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Case Example – Golf Club House Project

- Budget \$9,950,000
- Donor Funding
- Replace Existing Clubhouse
- Open Golf Season 2020
- Set to bid April 2018
- 1st Bid September 2018
- 2nd Bid December 2018




North Elevation



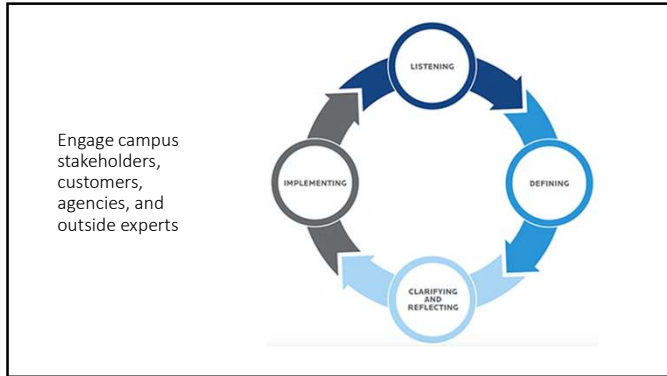
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Program Review

- Program
 - Program adherence
 - Conform to Campus Standards
 - Comply with funding/grant requirements



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Hold Kick Off Meeting

- Define Roles
- Set Expectations
- Review Scope
- Discuss Schedule and Budget
- Document (Meeting Minutes)

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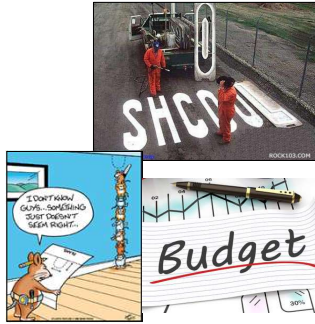
Program Review

- Align to Campus Master Plan
- Develop Project Team Members
- Establish Process
- Initiate Participation
- Validate Programming (space/equipment)
- Review Submittal requirements

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Program Compliance

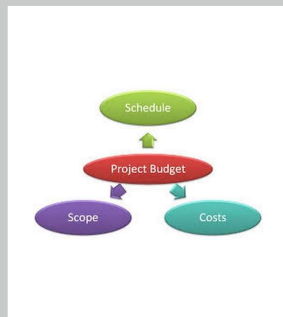
- Capital Project Programming
- Space Requirements
- System Requirements
- Campus Design Standards
- Local / State / Federal Requirements
- Safety Review
- Life Cycle Analysis
- Sustainability/LEED
- Commissioning



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Schedule Review

- Review project goals
- Construction Season Impact
- Availability of Market Resources
- Material Availability
- Budget Constraints
- Design Review Time
- Contingency Built In?
- Drive project forward



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Completeness Reviews

- Completeness
 - Are the construction plans and specifications complete?



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Construction Documents Review

- What?
 - Drawings
 - Specifications
- Confirm
 - scope, budget, quality, schedule
- Check (Constructability Review)
- Recheck
- File Documents

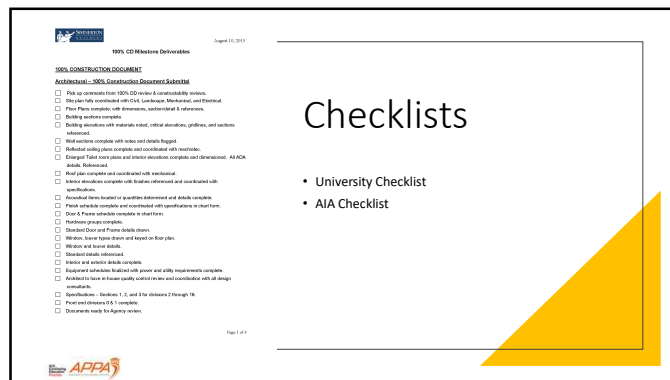


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Checklists

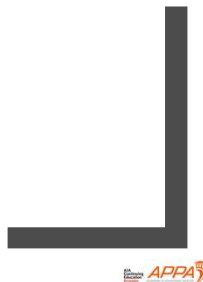
- University Checklist
- AIA Checklist



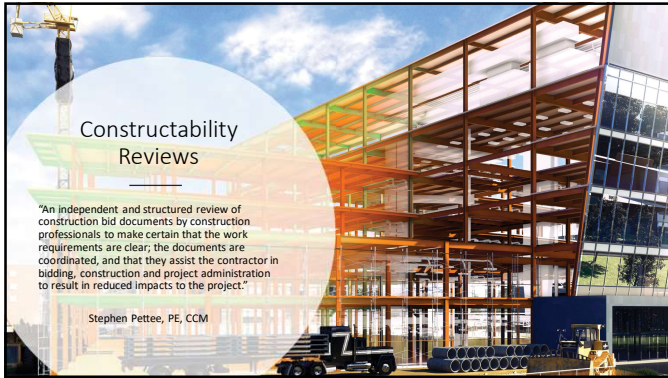
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Constructability Reviews

- Constructability
 - Are the plans and specifications biddable?
 - Are conflicts reduced/mitigated
 - Are the construction plans coordinated



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Cost Benefits

- Various Studies
- \$10 worth of savings for every CR Dollar spent
- 3% - 5% of the entire construction cost
- Costs are avoided with a complete constructability review, so detailed numbers are not regularly available



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Managing Expectations

- Not all issues will be found
- Change Orders and RFI's will not be eliminated
- Design changes after reviews may likely cause issues



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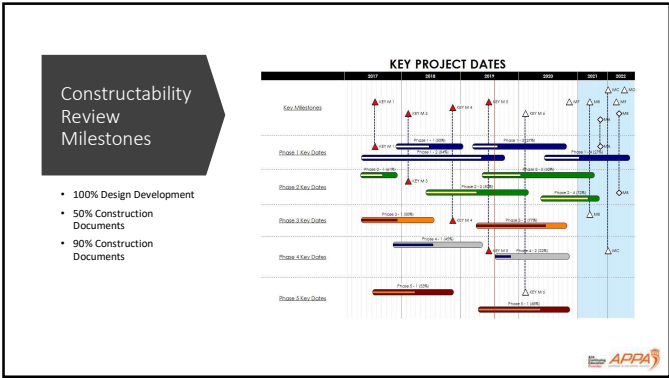
Elements of a Constructability Review



- Coordination
- Build-ability
- Bid-ability
- Building Systems Integrity



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Constructability Review Team

- Architect
- MEPT
- Construction Superintendent
- Owner

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Document and Backcheck

- Document all issues identified
 - Clear and concise
 - Spreadsheet
 - Comments directly on plans
- Backcheck – absolutely required
- Build in time for constructability review in project schedules

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Constructability Review Format

- Name of Reviewer
- Phase of Plans
- Item Number
- Location (sheet/page/specification)
- Issue Identified
- Acceptance by Designer
- Conformance
- Comment/Backcheck



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Sample Format

SFUSD 2011 Prop A Bond Program
Constructability/Peer Review Comments

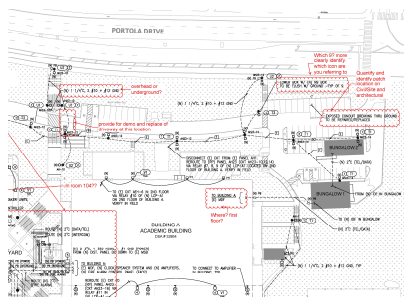
Project Site: Bureau of the Arts - Washington Project Name: Arts Center - Washington, DC Project Manager: Patrick Hensley Client: National Endowment for the Arts Contract Number: 2014-001-0001				
Item	Item Description	Item	Amount (\$)	Notes
1	Item 1.00	Item 1.00	1.00	Item 1.00
2	Item 2.00	Item 2.00	2.00	Item 2.00
3	Item 3.00	Item 3.00	3.00	Item 3.00
4	Item 4.00	Item 4.00	4.00	Item 4.00
5	Item 5.00	Item 5.00	5.00	Item 5.00
6	Item 6.00	Item 6.00	6.00	Item 6.00
7	Item 7.00	Item 7.00	7.00	Item 7.00
8	Item 8.00	Item 8.00	8.00	Item 8.00
9	Item 9.00	Item 9.00	9.00	Item 9.00
10	Item 10.00	Item 10.00	10.00	Item 10.00
11	Item 11.00	Item 11.00	11.00	Item 11.00
12	Item 12.00	Item 12.00	12.00	Item 12.00
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41	Item 41.00	Item 41.00	41.00	Item 41.00
42	Item 42.00	Item 42.00	42.00	Item 42.00
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46	Item 46.00	Item 46.00	46.00	Item 46.00
47	Item 47.00	Item 47.00	47.00	Item 47.00
48	Item 48.00	Item 48.00	48.00	Item 48.00
49	Item 49.00	Item 49.00	49.00	Item 49.00
50	Item 50.00	Item 50.00	50.00	Item 50.00



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Sample Format




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Constructability Review vs. BIM

- Clash detection is not a Constructability Review
- Clash detection identifies issues that may be in conflict
- Clash detection does not identify what is missing
- Clash detection works best in a collaborative Team environment
- Will not work in design-bid-build delivery




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- Reviews need to be planned for:
 - Budget
 - Schedule
- Reviews need to be managed and checked
- Reviews can save money/avoid costs
- Reviews can avoid costly time delays
- The architects and engineers retain their professional obligations


Constructability Reviews



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Thoughts?


- Are Plan Reviews Important?
- Can Plan Reviews save time and money?



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Final Thoughts

- Improved design and construction process
- Increased contractor competition
- Increased certainty of outcomes
 - Cost
 - Schedule
- Take work away from attorneys!



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Thank You!

•Jeff Gee, AIA, Vice President


•Division Manager | General Manager

•Swinerton Management & Consulting

•(o) 415-984-1239

•(m) 650-483-7412

•jgee@swinerton.com



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