


Effective Plan Reviews

APPA Facilities Institute – APPA-U
APPA 625


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1

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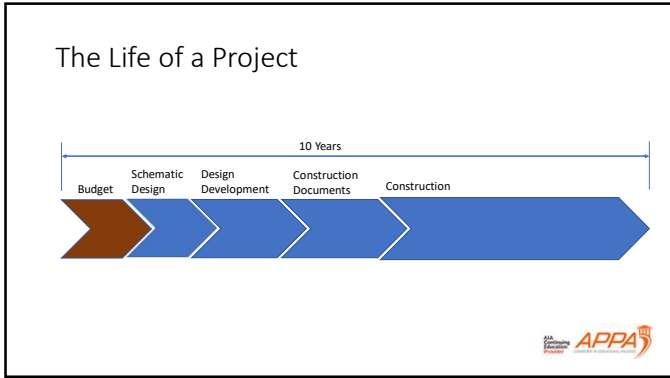
2

Program Outline

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



3



4

What could change at your campus over 10 years?

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5

- ### 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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6

Plan Reviews

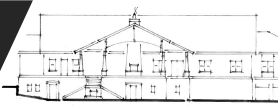
- Program
 - Program adherence
 - Conform to Campus Standards
 - Comply with funding/grant requirements
- Completeness
 - Are the construction plans and specifications complete?
- Constructability
 - Are the plans and specifications biddable?
 - Are conflicts reduced/mitigated
 - Are the construction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



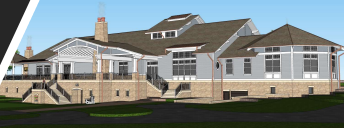
7

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



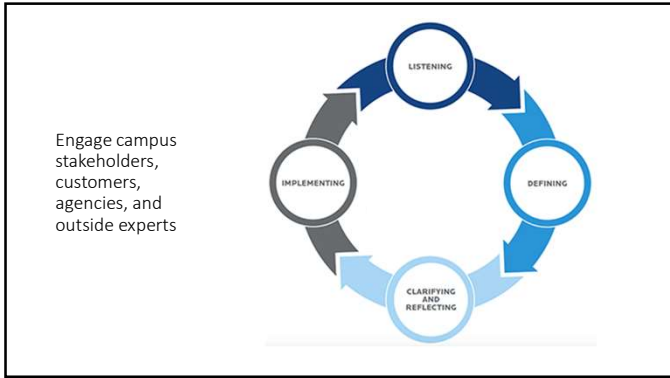
8

Program Review

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



9



10

Hold Kick Off Meeting

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

11

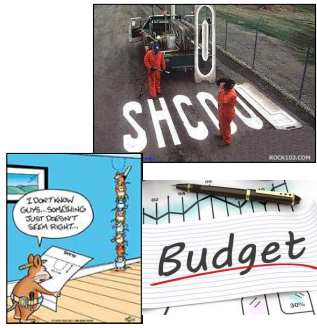
Program Review

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

12

Program Compliance

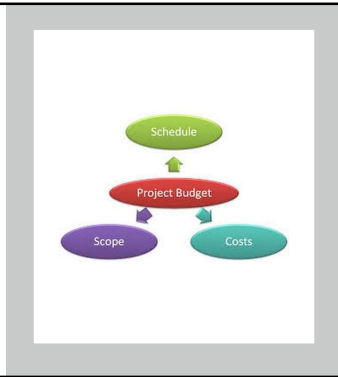
- Capital Project Programming
- Space Requirements
- System Requirements
- Campus Design Standards
- Local / State / Federal Requirements
- Safety Review
- Life Cycle Analysis
- Sustainability/LEED
- Commissioning



13

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



14

Completeness Reviews

- Completeness
 - Are the construction plans and specifications complete?



15

Construction Documents Review

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

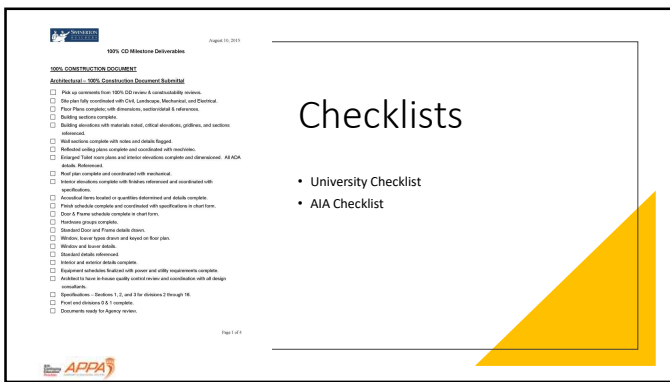


16

WPA, CO Milestone Deliverables August 10, 2015

Checklists

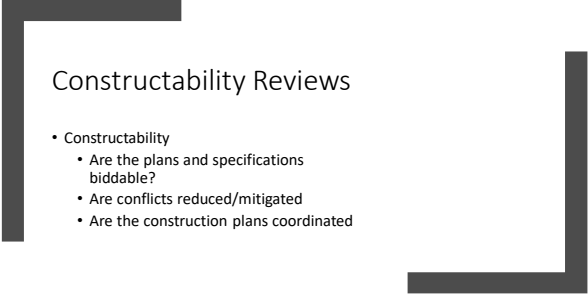

- University Checklist
- AIA Checklist



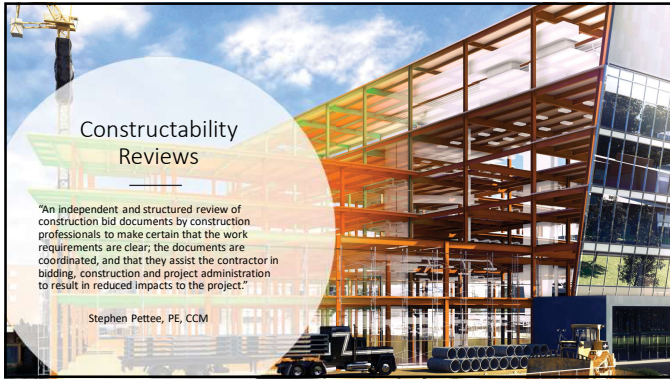
17

Constructability Reviews

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

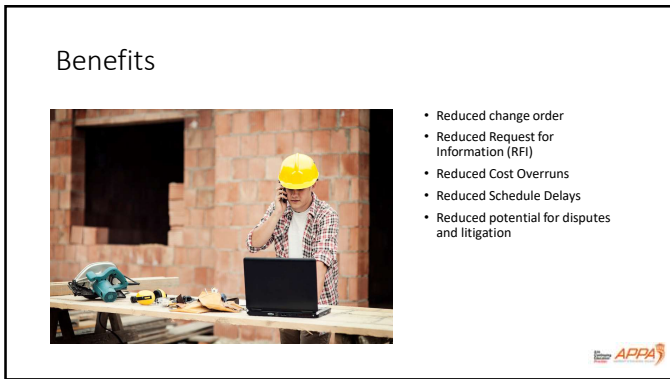
18



19





20



21

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



22

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



23

Elements of a Constructability Review



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



24

Constructability Review Milestones

- 100% Design Development
- 50% Construction Documents
- 90% Construction Documents

KEY PROJECT DATES

2017 2018 2019 2020 2021 2022

Key Milestones

Phase 1 Key Dates

Phase 2 Key Dates

Phase 3 Key Dates

Phase 4 Key Dates

Phase 5 Key Dates

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25

Constructability Review Team

- Architect
- MEPT
- Construction Superintendent
- Owner

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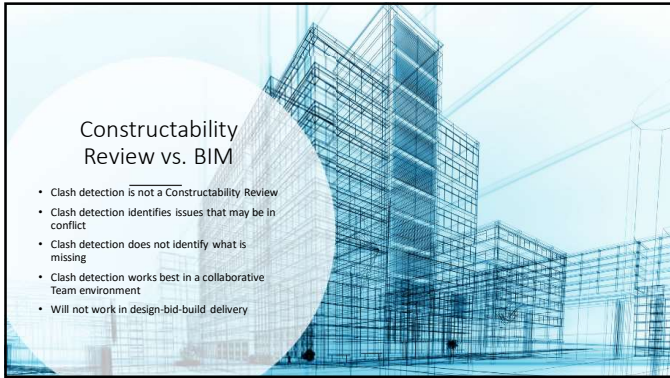
26

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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27



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

31

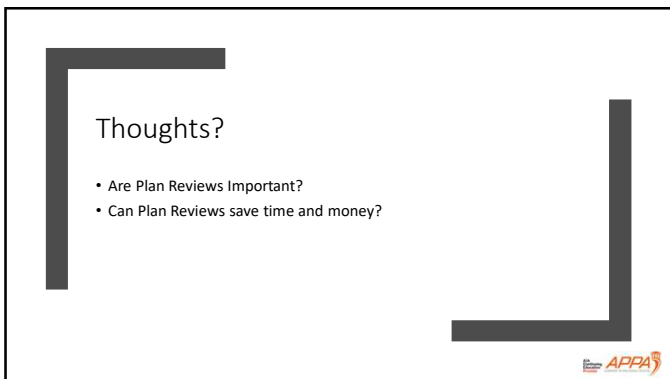


Constructability Reviews

- 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




32



Thoughts?


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



33

Final Thoughts

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



34


Feedback and Review




35

Thank You!

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36
