

17th NATIONAL CONFERENCE ON BUILDING COMMISSIONING



EFFICIENCY • PERSISTENCE • PERFORMANCE

Who's in Charge Anyway? Managing Roles & Responsibilities in the Cx Process

Part 1: Managing the Line Between Cx Provider and Design Engineer

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AIA Quality Assurance

Learning Objectives – to gain understanding of:

- 1. Problems related to the line of responsibility between Cx Provider (CxP) and Design Engineer (D. Eng.).*
- 2. The roles of CxP and D.Eng.*
- 3. Options for structuring the relationship in service.*
- 4. Working effectively with the D. Eng.*



*A key to life is discovering what is and isn't
our responsibility.*





Potential Problems Related to the Line

- Overlap and/or gaps in service.
- Frustration and tension in relationship.
- Lack of coordination in document review (e.g. equipment submittals, O&Ms, TAB report, test plans, etc.)

How do we provide the owner the most value?



Roles of CxP and D. Eng.

The Role of the CxP

- Implement a quality-control process for building design, construction, and turnover.
- Focus attention on quality, access, maintainability, testing, system coordination.
- Help ensure issues are thought through.
- Foster communication and accountability.

Roles of CxP and D. Eng.

D. Eng.'s Contract Typically Includes:

- Provide complete doc'n for the construction of safe systems that meet the owner's needs and applicable codes and standards.
- Engage and recommend on design-related issues.
- Perform stipulated number of site visits / reports.
- Review equipment submittals, TAB report, O&Ms, training, etc.
- Confirm the project met the design intent.

Roles of CxP and D. Eng.

Understanding Constraints on D. Eng.

- Often under tight \$ and time pressure to design.
- Owner can hold D. Eng. responsible for changes
- D. Eng.'s are expected to respond to all RFI's.
- Only limited site visits may be scoped.
- Less time than in past for construction admin.
- D. Eng. may not personally perform constr. ad.
- Can't know all facets of MEP scopes.

Its good to remember that every building is prototype

Roles of CxP and D. Eng.

Temptation to Cross the Line

- D. Eng.'s may not have thorough understanding of specialty systems or coordination between systems.
- D. Eng.'s may be busy and have their focus on new design projects.
- CxP may be more up-to-speed on owner reqt's and desired system interactions.
- On some issues, the CxP may seem better suited to identify and recommend solutions.

Roles of CxP and D. Eng.

Downside to CxP Acting in Role of D.Eng

- Liability when Cx proposed solutions create problems.
- Unrealistic client expectations of CxP involvement.
- Cx budget expended on un-scoped tasks resulting in extra expense or incomplete service.
- Blurred lines of responsibility, contributing to frustration and diminished desire to contribute.

Options for CxP / D. Eng. Interaction

Separate Service or Coordinated Service?

- Equipment and controls submittal review
- Shop drawing review (Itg cntrl drwgs, elec coor'n study, etc)
- Site visits, site visit reports, items lists / punchlists
- Test plan review, test attendance, test report review (TAB, functional testing, emergency generator, duck leakage, pipe cleaning, etc.)
- Training and O & M review

Options for CxP / D. Eng. Interaction

How Coordinated Service Might Look

- CxP provides review comments to D. Eng. who incorporates in his comments as he see fit.
- Allow CxP to lead on some activities (e.g. training plans, startup, ?)
- Decide how tracking of CxP issues and D. Eng punchlist will be handled at the end of the project.
- Presence at startup and training is coordinated.

Options for CxP / D. Eng. Interaction

Upside of Separate Service.

- Less potential for crossing the line of responsibility.
- Takes less initiative and communication.

Downside of Separate Service.

- More potential for overlap or gaps in service.
- More potential for confusion by other project team members.
- More potential for adversarial relationship.

Options for CxP / D. Eng. Interaction

Upside of Coordinated Service.

- Less overlap of service.
- Less confusion for other project team members.
- Less adversarial.

Downside of Coordinated Service.

- More chance for crossing the line of responsibility.
- Takes more initiative – may or may not take more time.


Options for CxP / D. Eng. Interaction

Some Specific Questions

- When there is an RFI process, is it better to use it or try for informal response from D. Eng?
- How reduce redundancy of review (say on TAB report, O & M's, etc.)?
- How can issues & punchlist tracking be coordinated?
- Site visits & site visit reports?





Working Effectively with an D. Eng.

- Find out early what the D. Eng is and isn't scoped to do.
 - Assertively, and early, communicate Cx needs.
 - Listen, talk, and consider the D. Eng.'s interests.
 - Respect D. Eng.'s position as one responsible for the design.
 - Use email with caution.
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In Summary

- It's the D. Eng's license that is on the line.
 - The CxP does not design, approve, or direct.
 - Coordination and communication with the D. Eng. is crucial to project success.
 - Many different approaches and styles can get the job done.
 - Talk...
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Let's keep thinking, so we can clarify our boundaries and live within them while we cooperate with others to improve service.






From the D. Eng.'s Perspective

- Making the most of the Cx design review
 - Effective submittal review & site observation
 - Project closeout
 - Why does the Cx process get off-track?
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Making the most of the Cx design review

- Focus Cx review on ensuring documents will support testing procedures
 - Provide experience-based feedback
 - Allow D. Eng. To make judgment call on incorporating feedback
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Effective Submittal Review & Site Observation

- Ensure D. Eng. & CxP review simultaneously, and provide a single set of review comments
 - D. Eng. to incorporate CxP comments, after discussion and coordination
 - Provide single, coordinated effort to owner and contractor
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Project Closeout

- Establish point of responsibility transfer between D. Eng. & CxP
 - Ensure process for adequate input from both entities
 - Establish approach for efficient interface from D. Eng. during testing
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Why Does the Cx Process Get Off-Track?

- Owners view of CxP's as design/construction experts
 - CxP's unwillingness to clarify with owners
 - D. Eng.'s getting territorial about their design/reputation
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D. Eng.'s Take-Home

“Understanding who maintains primary responsibility at various stages of a project not only results in a better process and project, but actually allows more input from all parties and allows that input to be put to better use”





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