Avoiding Pitfalls When Establishing Quality Oversight Programs

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This presentation will cover:

- Brief overview of several projects
- Critical elements of Quality Program
- Issues – Challenges – Solutions
- Biggest bang for the buck

Completed Projects…

TREX – Denver Colorado

- Interstate highway reconstruction and new LRT
- $1.2 Billion Design-Build contract
- ISO 9000 standard for Quality Program
- Contractor had QC and QA responsibility
- Builder lead overall quality effort
- Owner GEC team had Oversight OVT and IAT programs

COSMIX – Colorado Springs Colorado

- Interstate highway reconstruction
- $130 Million Design-Build contract
- Contractor had QC and QA responsibility
- Quality Assurance sub-contracted to material testing firm
- State DOT team had Oversight OVT and IAT programs

Current Projects…

Intercounty Connector – Baltimore Maryland

- 18 miles of new six lane toll highway
- $2.4 Billion – five separate Design-Build contracts
- Contractor has QC responsibility
- Owner GEC team has QA Oversight / OVT program
- State DOT has IAT program

The New I-64 – St. Louis Missouri

- Interstate highway reconstruction
- $560 Million Design-Build contract
- Contractor had QC and QA responsibility
- Quality Assurance responsibility of Designer
- State DOT team has Oversight OVT program

Current Projects…

KCICON – Kansas City Missouri

- New signature suspension bridge and roadway improvements
- $300 Million Design-Build contract
- Quality Program responsibility of JV partner
- State DOT has Oversight OVT program

FasTracks – Denver Colorado

- Major build out of transit system – LRT, Commuter Rail, BRT
- $6.2 Billion program with DBB, DB and P3
- Transit Agency managed Quality Program

Design Builder Selection

What is the VALUE placed on selecting a contractor with a mature and established Quality program?

Do the individual tasked to manage Quality program have formal CREDENTIALS in Quality Management?

Is the proposed STAFFING level for deploying Quality program sufficient?

Critical Elements of a Quality Program…

Design Quality

Verification of design input requirements or design review comments?

Design model review or plan sheet review?

Focus on design elements appropriate to the level of design development.

Critical Elements of a Quality Program…

Quality Records

Clearly define what Quality Records the DB team needs to produce and provide to owner.

Consider the limited value of hand written quality records.

Critically evaluate the need / end use for each type of quality record.

Critical Elements of a Quality Program…

Defined Roles and Responsibilities

Establish how various groups will interact:
-DB process Quality Control,
-Acceptance Inspection and Testing,
- Independent Oversight

Understand Professional Engineering responsibility

Role of other stakeholders with interest in project.

Critical Elements of a Quality Program…

Acceptance of the Work

Define:
-Who will be responsible to Accept the Work?
-How will the Work be parceled for Acceptance?
-When will the elements of the Work be ready for Acceptance?
-What will be needed for Acceptance?

Developing approach to Final Acceptance cannot start early enough.
Establish the 'bar' that must be reached and track progress.

REQUIREMENTS…

THE single biggest impact on the quality of the work

- Definition of Quality – "Conformance to Requirements"
- Nothing is done unless there is a 'requirement' to be met
- Contract documents, standards, regulations, codes
- Clarity of requirements WILL reduce claims and disputes.

Issues, Challenges, Solutions…

Best Value or Low Bid?

- Low Bid – looks good at tender opening but long term costs – increased management, increased maintenance
- Best Value – most facility for the $ = low bid OR life cycle cost – pay me now or pay me later
- Warranty structure – who pays for additional maintenance or reduced life due to pre-mature failure?
- Extended Warranties – 5, 25, 50 year – will the supplier be around ? Who will administer the warranty?
- Cost of Warranty – who takes on the risk of a failure

Consider the full cost of the project – construction and maintenance

Issues, Challenges, Solutions…

Acceptance of the Work

- Owner – is the owner the DOT or a Concessionaire?
- Contractor – If the contractor is performing the 'acceptance' function everything will look right on paper.
- Independent Entity – How is independence maintained? Who pays for the report or certification? There will always be hired guns.
- Professional Liability – how much is a professional license worth? Professional liability goes beyond the end of a contract.

Acceptance – short term or long term liability decision

Issues, Challenges, Solutions…

Maturity of local contracting community

- DBB vs DB vs P3 – complexity of project management increases – length of experience and capability of project management tools & techniques critical
- Contractor Selection Process – Demonstrated experience working together as a team, references from previous projects
- Value place on draft quality program – the selection criteria value sends a message to proposing teams regarding emphasis on quality

Be prepared to get what you ask for – ask for the best – expect the be

Issues, Challenges, Solutions…

Poorly deployed Quality Program

- Contractor unwilling or unable to manage quality – inexperience or under estimating task of taking full responsibility for quality acceptance – Owner's team steps into the breech of doing contractor's job
- Contractor's Quality Manager under-qualified – QM without the understanding or support to set up and run an effective program – creates extreme frustration on both sides
- Contractor's Quality staff running interference – Quality inspectors actively run interference for production staff to prevent detection of sub-standard work

Early in the project, all participants in Quality Program (owner & contractor staff) need to understand and agree on purpose and roles.

Issues, Challenges, Solutions…

Inappropriate use of requirements

- Too many requirements extracted from contract – Contract documents contain too much detail and too many requirements are identified as key and needing verification – focus on high risk and needs of stakeholders
- Vague Requirements – Developing and attempting to impose requirements that do not give enough direction – most claims are a result of misunderstanding and confusion.
- Poor configuration management – Requirements are changed in meetings and not followed up with a CO – the contract needs to be properly constructed and diligently maintained.

Requirements are the basis of defining Quality. More emphasis on Requirements Management will pay big dividends.

Biggest Bang For The Buck…

Systematic Requirements Management

- Requirements are foundation for Quality – Clearly describe what is expected and avoid disputes
- Consider level of Risk when developing requirements – "Mission Critical" requirements need to be well described
- Invest in good requirements – Requirements that are clear and verifiable are easy to fulfill and to verify

Focus on high risk

- Target high risk requirements first
- Set up system to highlight level of risk based upon past performance

Requirements, requirements, requirements.
Nothing is done unless there is a requirement that must be fulfilled.

In Summary…

Critical elements of a Quality Program

- Design Builder Selection
- Design Quality
- Quality Records
- Defined Roles & Responsibilities
- Acceptance Of The Work
- Requirements

Issues, Challenges, Solutions

- Best Value or Low Bid
- Acceptance of the Work
- Maturity of Local Contracting Community
- Poorly Deployed Quality Program
- Inappropriate use of Requirements

Biggest Bang For The Buck

- Systematic Requirements Management
- Focus on high risk

Questions?

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