



What Makes Good Design



AREA 41 Package (R.A. Burch)



Contractor

- **Scope Confirmation Meeting**
- **Design Change & Variations**
- **Communications Plan (part of DQCP)**

Government

- **Well planned CDWs**
- **Decision makers present at CDW**
- **Well prepared users**
- **Minimize Redesign after CDW**



Common Understanding What Makes a Good Design

Contractor Perspective (R.A. Burch Construction)



Clear, Concise, Consistent RFP

- PW involvement should be heaviest during RFP development, not design phase

Common end-state between End Users, PW, CM, DOR

Knowledgeable, Experienced Design/Build Teams

- Understand the *roles* and *responsibilities* of each other
- Know the *strengths* and *limitations* of each other
- Design Review involves the Construction Team
- DOR/ Design QCM have full understanding of submittal requirements
- Use DANTE early in design

Timely Administrative Response Time



Common Understanding What Makes a Good Design

Contractor Perspective (R.A. Burch Construction)



Well planned CDWs

- If IPT DM and DOR do not coordinate good agenda, the engineers and others get frustrated and don't come back
- All players need to dedicate their schedules to accommodate the CDW Agenda

Prior to PAK/CDW, well prepared users

- Understanding of the design/ build construction process
- Understand where they fit in the team
- Well-versed in RFP scope
- Understand why their TIMELY input is so important to the schedule
- Understand the impact of late information

Decision makers present at the CDW

- (IPT Mech Engineers, User POC, Base Environmental, PWD, FMD, etc.)

Minimize Redesign after CDW

- Add/Deduct list should not continue past Design Development (65%) DD Review
- Changes past DD through IFC will delay Mod and construction
- Add/ Deduct List (Tedious & Continuous, takes attention away from big picture)



Common Understanding What Makes a Good Design

Contractor Perspective (R.A. Burch Construction)



UFC Code Criteria Search

- Both parties review UFC applicability, involve DOR & SMEs early
- Completed between CDW & DD phase

Critical Path Submittals (ESOC packages)

- Require clear and logical path for successful design

Environmental Factors

- Clearly defined Environmental constraints identified at award
- Environmental Partnering with ROICC participation

LEED

- Consolidation of Requirements in RFP
- Indicates what points not desired



Common Understanding What Makes a Good Design

Government Perspective - Good Communication



Scope Confirmation Meeting

- The intent is to confirm project deliverables and time lines

Design Change & Variations

- Identify changes beyond the scope of the contract
- Changes leading to cost increases or schedule extensions must be identified before the first design submittal review

Specified in contracts under 3.2 Design Change and Variations



Communications Plan (part of DQCP)

- The intent is to build trust and set the stage for design & construction



Common Understanding What Makes a Good Design

Government Perspective - Good Communication



Design Quality Control Plan (DQCP)

- **Frequency & Content of Design Meetings**
- **Design Decision Points tied to Design Schedule**
- **Government's role in the Design Decision Points**
- **Review Procedures**
- **Plan to address design alternatives**
- **Stakeholder Identification & communication methods**
- **CDW, over-the-shoulder, life cycle cost analysis presentation, etc.**
- **Confirmed at Post Award Kickoff**
- **Update at every partnering meeting**

Regulated by Section 01 45 00.05 20 Design & Construction Quality Control





Common Understanding What Makes a Good Design

Government Perspective - Good Communication



Performance Assessment Plan (PAP)

- **Measurable ways to distinguish/evaluate**

- Innovative Design
- Budget Management
- Interim & Final Evaluations in CCASS

- **Finalized at Partnering Session**

- **Input from DOR, Prime, Client, Gov't (usually CM & DM)**

- **Submit PAP monthly with Schedule & Invoice**

Found in RFP Part 6 – Attachments

Regulated by Section 01 31 19.05 20 Post Award Meetings





Design Phase Float Eaters



Paralysis by Analysis

- Perfection becomes the enemy of progress
- Minor issues hold up major issues

Too many Cooks in the Kitchen

- Any Outlier has the power to hold up the whole process
- “veto power” possessed by too many

DM not empowered to make unpopular decisions

Inaccurate technical risk assessments made by reviewers most removed from the field

Leadership by committee; multiple organizational “silos”

(There’s a reason Joint Operations have a Composite Warfare Commander, and Boards of Directors have CEOs, etc.)



Design Review Process



Step	Best Practices
1. Receive submittals per schedule/ content/ format requirements	<ul style="list-style-type: none">• Clarify expectations with checklists, meetings, contract clauses, etc.• Add constraints for multiple parallel reviews, based on review resource availability and limitations.
2. 21-day Government review period	<ul style="list-style-type: none">• DM pre-arranges who reviews what to prevent redundant/conflicting comments• Check against clear, package-specific “go/no-go” criteria for acceptance. Rejections should be made within 7 days of submission.• Collect comments during first 14 days; coordinate comments during last 7 days• All required stakeholders are available and commit to deadlines• Follow-up with review team daily. Cancel/move other time requirements as necessary to meet deadlines.• Embed designers with review team to demonstrate how comments were picked up.
3. KTR reviews/resolves comments CRITICAL PATH!	<ul style="list-style-type: none">• Agree on how “concur” comments will be reflected in next submission.• Identify “non-concur” comments to be resolved by KO.• Chain of command and KO decisively resolve misaligned design opinions.
4. KTR makes corrections, submits next milestone	<ul style="list-style-type: none">• Hold over-the-shoulder design sessions when necessary to ensure mutual understanding of expectations.• Prime/DQCM resolves interdisciplinary conflicts among sub-designers across multiple packages.• Prime/DQCM includes enough time for back-check of comments before submission to Government



ACEC / NAVFAC SW Forum Notes



Gov't PM needs to resolve conflicting comments

Either provide more site design detail, or provide less

If outside agencies must issue permit, design should be further along

In DB, the Engineers work for Contractors

Initial sketches/bid proposals drive design and cost

When changes to RFP proposed, submit information and request early

Lowest cost design not typically world class



Design Phase Float Take Aways



Good early involvement of Stakeholders & Decision Makers

(start well to finish well)

Minimize changes during design evolution

Timely turnaround on RFIs *(answers & incorporation)*

Communication!

- DQCP
- PAP



Performance Assessment Plan (PAP)



SECTION 01 31 19.05 20 POST AWARD MEETINGS

1.3.8 Performance Assessment Plan (PAP)

The Performance Assessment Plan (PAP) shall be used to document design innovation and budget management, provide performance feedback to the Contractor, and as a basis for interim and final evaluations in the Construction Contractor Appraisal System (CCASS) on-line database.

It is the intent of the Government to establish the PAP based on tangible, measurable indicators of outstanding contractor performance, and on commitments made in the Contractor's proposal.

The initial PAP may be found in RFP PART 6 Attachments. Review and *finalize* the initial PAP during the *Partnering Session*. During the initial Partnering Session, the Government, the Contractor, the Designer-of-Record, and the Client will establish the PAP.

Following the establishment of the PAP, the Contractor will present it, with his input, for update and discussion at projects meetings which discuss project performance. Submit an updated PAP on a monthly basis with the invoice for that period as a minimum.



Design Quality Assurance Plan (DQAP)

(1 of 2)



- **Government QA procedures *do not replace* Contractor's QC responsibilities**
 - Government verifies that the Contractor implements their DQCP

- **Design-Build Contractor is responsible for the technical accuracy of the design, including constructability, operability and maintainability**
 - Construction Contractor personnel should be actively involved during design to effectively integrate design and construction requirements
 - DB Contractor Designer-of-Record's (DOR) professional engineers and architects are legally and ethically responsible to protect the public, health, safety, and welfare
 - DOR responsible for compliance with contract requirements, code, and criteria



Design Quality Assurance Plan (DQAP)

(2 of 2)



- **Government Quality Assurance review is to ensure conformance with the project scope and budget, criteria, functionality, specified building codes and the contract (RFP and DB Contractor accepted proposal)**
 - Government does not assume responsibility for the design adequacy
 - Government Reviewers conduct a “spot-check” of the design submittals and the Design Quality Control documentation to ensure that the Contractor’s QC processes are effective
 - Project focus areas for review may be identified (Life Safety, ATFP, Sustainability)
- ❑ **DANTE** – Deliverable Acceptance Notification & Technical Evaluation tool may be utilized to facilitate prompt submittal rejections
- ❑ **Dr. Checks** may be utilized to facilitate the comment resolution process



Design Quality Control Plan



(Part 2 – Section 01 45 00.05 20)



• **Submit prior to the PAK**

- Must be approved prior to Design Start
- Designate a Design Quality Control Manager
- Designate a qualified Fire Protection Engineer (*U.S. registered by exam, 5 years comprehensive experience, no business relationships with product manufacturers*)

• **Include Communication Plan**

- Frequency of design meetings
- Key decision points tied to schedule
- Peer review procedures
- Interdisciplinary coordination
- Design Review Procedures
- Comment Resolution (eg: QC “Page Turner” meeting)

• **Identify Design Quality Control documentation**

- QC Check Sets, QC Review Comments, etc...
- Cross check of each discipline for completeness and accuracy
- Cross check drawings and specifications
- Comments from discipline peer review for technical accuracy (compliance with RFP, Codes, and Criteria)





DQCP Specification



SECTION 01 45 00.05 20, DESIGN AND CONSTRUCTION QUALITY CONTROL

1.3.2 Design and Construction Quality Control Plans

The Contractor shall provide a project specific Design Quality Control (DQC) Plan and a project specific Construction Quality Control (CQC) Plan, for review and approval by the Government. The Contractor shall perform no design until the DQC Plan is approved and no construction until the CQC Plan is approved. The Contractor's plans shall include the following:

- I. For the DQC plan, submit a formal Communication Plan that indicates the frequency of design meetings and what information is covered in those meetings, key design decision points tied to the Network Analysis Schedule and how the DOR plans to include the Government in those decisions, peer review procedures, interdisciplinary coordination, design review procedures, comment resolution, etc. The Communication Plan will emphasize key decisions and possible problems the Contractor and Government may encounter during the design phase of the project. Provide a plan to discuss design alternatives and design coordination with the stakeholders at the key decision points as they arise on the project. Identify individual stakeholders and suggested communication methods that will be employed to expedite and facilitate each anticipated critical decision. Communication methods may include: Concept Design Workshop, over-the-shoulder review meetings, presentation at client's office, lifecycle cost analysis presentation, technical phone conversation, and formal review meeting. The design portion of the Communication Plan must be written by the DQC Manager and confirmed during the Post Award Kick off Partnering. Update the Communication Plan at every Partnering meeting.



Design Change and Variations



Clear and Early Communication of Scope

3.2 DESIGN CHANGE AND VARIATIONS

Design changes that the Contractor considers to be beyond the requirements of the contract, must be identified as a design change during the early stages of the facilities design developed. All design changes that will lead to an extra cost or schedule extension must be identified prior to the first design submittal that includes the design change. Design changes that lead to extra cost or schedule extension identified after the first design submittal review will not be considered.