US Army Corps of Engineers®

ENGINEERING AND CONSTRUCTION BULLETIN

No. 2002-13 (Rev. 2) Issuing Office: CECW-EI Issued: 6 Sep 2002

Subject: Design Charrette Guidance for Army Military Construction (MILCON) Programs

Applicability: Guidance. This document serves as a guide to U.S. Army Corps of Engineers (USACE) district commands having military construction responsibilities. Although specifically addressing Army MILCON, this process is appropriate for all customers. Recommend district commands encourage practicing the process and principles of the design charrette for all other MILCON projects.

1. General.

a. The design charrette is an intensive process where designers, users and installation decision makers team together to focus their input on the design of a specific project. The process involves the gathering of information and the definition of project requirements both in written and visual form. This process maximizes the customer's access to the designer and the designer's access to both the site and the installation during design development. The process normally takes place as close to the proposed project site as possible and requires a commitment of time and availability from all participants to be successful. The duration of a design charrette can vary from three days to two weeks depending on the complexity of the project. A facilitator normally is used to conduct the charrette proceedings. If an Architectural- Engineering (A-E) firm is chosen to do the project design, the A-E firm can consult with an independent facilitator to orchestrate the charrette.

b. The benefits of a design charrette are significant.

(1) Project design and construction schedules can be reduced due to better scope definition.

(2) Project costs can be effectively managed through reduced lost design, design costs and construction changes.

(3) Customer and installation personnel have maximum input and access to the design team.

(4) The design team receives functional information from the customer and installation personnel.

(5) More alternatives can be explored, resulting in a better design solution.

(6) Consensus support is accomplished through team member involvement and understanding of difficult decisions. Communication, working relationships and a partnering environment are improved throughout the project design charrette process.

(7) Materials, security, sustainability, maintenance and other issues are discussed, balanced and implemented through team involvement.

(8) Show stoppers are identified early and resolved.

(9) A good project cost estimate base is established.

(10) There is a "buy-in" of project design by the key decision makers.

c. Most of the same processes, tools and techniques used in the Department of Defense (DD) Form1391 planning charrette are used in the design charrette.

2. References.

a. Army Regulation (AR).
(1) AR 415-15, Army Military Construction Program Development and Execution, located at the following website: http://www.usapa.army.mil/pdffiles/r415_15.pdf.

b. Department of the Army (DA) Pamphlet (PAM).
(1) DA PAM 190-51, Risk Analysis for Army Property, located at the following website: http://www.usapa.army.mil/pdffiles/p190_51.pdf.

c. Technical Instructions (TI).
(1) TI 800-01, Design Criteria, located at the following website: http://www.hnd.usace.army.mil/techinfo/ti/800-01/ti80001a.htm
(2) TI 802-01, Code 3 Design with Parametric Estimating, located at the following website: http://www.hnd.usace.army.mil/techinfo/ti/800-01/ti80001a.htm

d. Engineer Regulation (ER).
(1) ER 1110-3-1300, Military Programs Cost Engineering, located at the following website: http://www.usace.army.mil/inet/usace-docs/eng-regs/er1110-3-1300/toc.htm

e. Unified Facilities Criteria (UFC) and Unified Facilities Guide Specifications (UFGS) located at the following website: http://www.hnd.usace.army.mil/techinfo/gspec.htm

3. Definitions.

a. Department of Defense (DD) Form 1391, FY_Military Construction Project data. The DD Form 1391 is a programming document used to request and justify a construction need. It defines the site, scope and cost estimate for the project. It must be relevant, factual, clear and concise. The documentation and cost estimates ensure functionality, operability, maintainability, efficiency, and economy. It clearly defines the user's needs and expectations for the selected site. The DD Form 1391 is the official record of the regulations, laws, restrictions and authorizations concerning the project.

b. Engineer (ENG) Form 3086, Current Working Estimates for Budget Purposes. The ENG Form 3086 is used for reporting the budgetary CWE. This may be prepared using the ENG Form 3086 Module in PC-COST or other compatible software. The CWE is based on a parametric estimate developed during a design charrette. It consists of the Primary Facility, Supporting Facility, Information Systems and Anti-terrorism/Force Protection (AT/FP) and design-build design cost, if applicable. Each cost item should be developed based on the latest design information. The CWE is used as a working tool to analyze costs and control design decisions in

constructing the project within approved funds and scope. The ENG Form 3086 when approved by HQUSACE becomes the basis for establishing the Program Amount (PA) for the project.

4. Timing. Design Charrettes should be held within 30-60 days of receipt of the initial design authority codes 2 or 3. For Congressional adds, the initial design authority would be codes 6 or 7.

5. Purpose.

a. Create, with the customer's active participation, an accurate scope of work to begin design.

b. Validate use of Department of the Army (DA) Facility Standardization Program standard designs for the project.

c. Validate scope requirements from the Centers of Standardization (COS), Directory of Expertise (DX) and Mandatory Centers of Expertise (MCX).

d. Validate customer's needs and requirements.

e. Validate the project scope and costs are accurate and in compliance with the approved project DD Form 1391.

f. Validate building unit costs are in compliance with DoD pricing guide.

g. Establish optimum siting for the project and its facilities.

h. Validate all onsite requirements, demolition, and restrictions.

i. Obtain customer approval of a schematic design developed from the design charrette.

j. Update DD Form 1391 to reflect design charrette decisions.

k. Validate design and specification requirements to include:

(1) Army sustainable design goal established in the use of the Sustainable Project Rating Tool (SPiRiT). For projects not selected as Showcase projects the required minimum level rating to achieve is BRONZE. Projects selected as Showcase projects need to achieve a GOLD or PLATINUM level rating. Current guidance needs to be reviewed to ensure the required level rating is achieved. The SPiRiT website is the following: http://www.cecer.army.mil/sustdesign. It is important to note that project site location has a large impact on the sustainable design rating, as do other sustainable design factors such as compliance with the EPA Affirmative Procurement Program.

(2) Antiterrorism/force protection requirements.

(3) Heating, Ventilation, Air Conditioning Commissioning.

(4) Building Commissioning.

(5) Joint Use requirements.

l. Verify acquisition strategy, i.e., design-build, design-bid-bid or other.

m. Establish design processes.
(1) Value Engineering Study
(2) Bidability, Constructability, Operability and Environmental Review
(3) Review submissions

6. Funding. MILCON Planning and Design (P&D) Project Funds.

7. Team Members and Responsibilities. The team members are determined by the functional requirements of the project or as warranted by specific conditions. All team members must be authorized to make binding decisions for their organizations. The team members and their responsibilities are as follows.

a. USACE District.
(1) Ensure appropriate Project Delivery Team members participate in the design charrette.
(2) Facilitate the design charrette schedule and agenda in coordination with the installation.
(3) Obtain required support form the Centers of Standardization (COS), Directory of Expertise (DX) and mandatory Centers of Expertise (MCX).
(4) Ensure the user's needs are fully and accurately defined in the DD Form 1391.
(5) Ensure the site meets project requirements and environmental compliance or mitigation requirements.
(6) Ensure the project scope complies with Army standards/criteria, UFC/UFGS and cost engineering requirements. Verify that scope and cost are accurate.
(7) Encourage Value Engineering participation in the design charrette to ensure cost effective project solutions. Value engineering recommendations should be documented.
(8) Support the installation in preparing and inputting updates to the DD Form 1391 and into DD Form 1391 Processor.
(9) Record decisions and disseminate to all attendees of the design charrette.

b. Centers of Standardization (COS), Directory of Expertise (DX) and Mandatory Centers of Expertise (MCX). A list of these centers is available at the following website: http://www.usace.army.mil/inet/functions/cw/cecwe/coexpert/index.htm.
(1) Provide area of expertise support to the design charrette.
(2) Review the project requirements for meeting the standards.

c. The Regional Installation Management Activity (IMA).
(1) Responsible for installation management activities within their region.
(2) Certifies installation DD Form 1391 and manages changes to the approved 1391 to include seeking change approval from ACSIM.

d. Major Army Commands (MACOM). Attend the design charrette, when possible.

e. Installation.

(1) The installation is the DD Form 1391 proponent.
(2) Host the design charrette.
(3) Coordinate the design charrette schedule, agenda and site location.
(4) Request DD Form 1391 project scope/cost increase approval from regional IMA.
(5) Verify the approved project site and that it meets environmental compliance or mitigation requirements.
(6) Verify the requirements are in accordance with the real property master plan.
(7) Verify use of DA Facility Standard design for the project. If a standard not used for the project, ensure that a waiver from ACSIM has been obtained.

f. Other Stakeholders. Include, but not limited to, building user/customer, Director of Public Works, Director of Housing, Director of Community Affairs, Director of Information Management (DOIM), Provost Marshal, Force Protection Officer, Environmental Officer, Fire Marshal, Safety Officer, DPW staff to represent all utilities, base operations and engineering.
(1) Participate in the design charrette process.
(2) Coordinate the project with the installation master planner and host MACOM.
(3) Make appropriate changes to the DD1391 or programming documents as a result of decisions made at the design charrette.
(4) Ensure the project includes Army Sustainable Design goals such as the contractor's construction and waste management plan in compliance with applicable UFGS and is coordinated with the installation waste management plan.

g. Other Agencies not discussed above. The following agencies may be required to be team members in order to coordinate their criteria on the facility design.
(1) U.S. Army Information Systems Engineering Command (USAISEC).
(2) Army and Air Force Exchange Services (AAFES). For barracks projects requiring individual soldier commercial telephone service.

8. Products. The following is a list of products produced during the design charrette. The on-site work session may be the last time that the entire project team is assembled together at one time, so it is important that the team members agree that the work products accurately represent the project in scope, design, costs and customer expectations.

a. Site Plan. Single line sketch site plan identifies all existing and proposed facility, access roads, parking, landscaping, and any pedestrian walks. Provides utility layouts with sizes, connection points, routings and any off-site utility upgrade requirements.

b. Floor Plan(s). Single line sketch floor plan defining the customer's functional requirements. The floor plan will depict all partitions, doors, and openings as well as typical contractor built-in cabinets, equipment and plumbing fixtures. This is not a construction drawing. Include critical notes and dimensions explaining all floor plan features so that people unfamiliar with reading plans will have sufficient information to understand the concept and can locate all spaces.

c. Exterior Elevation(s). Single line sketch elevation(s) depicting the project architectural style, massing and materials as they relate to the installation design guide. Note on the schematic elevation(s) the intended building materials and colors.

d. Facility Area Tabulations. Facility area tabulations will confirm that the design gross floor area does not deviate from the authorized gross floor area shown on the project DD Form 1391. Scope increases or decreases to the authorized/approved project scope require approval by ACSIM.

e. Parametric Estimate. This estimate will be used to develop an ENG Form 3086. Accurate life-cycle costing is essential to support the sustainable goals of SPiRiT. The ENG Form 3086 will verify the DD Form 1391 cost and scope. If the results of the design charrette produce a significant cost/scope increase, these results must be staffed by the installation through the IMA to ACSIM for approval, per AR415-15. The responsible HQUSACE CEMP-M program manager will issue a new design directive once the cost and scope changes are coordinated/approved with ACSIM.

f. Value Engineering process decisions. Record and include in project files.

g. Complete and Accurate DD Form 1391. The DD Form 1391 reviewed in detail and revised when necessary during the design charrette. Ensure that environmental documentation is complete.

h. Design Criteria and Selected Facility Systems Narrative. Address in outline form all proposed facility systems, unique design features and related design criteria. Identify if the design is based on an approved DA facility standard design. When an approved DA standard design is modified or not used for the project, provide a waiver document from that ACSIM.

i. Operability and Maintainability. Identify all operating and maintenance (O&M) issues and determine what energy conservation measures are to be included in the project.

j. Provide the status of the environmental documentation and insure that incomplete documentation is a recognized Project Management Plan (PMP) activity for the project manager to track and report.

9. Coordination. This bulletin has been coordinated with Directorate of Military Programs.

10. Point of Contact. Al Young, CECW-EI, 202-761-7099.

DWIGHT A. BERANEK, P.E.
Chief, Engineering and Construction Division
Directorate of Civil Works