



Appendix A



Army Interior Design Process

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The U.S. Army Corps of Engineers (USACE) is the construction agent for the Army and the Air Force. In 1974, USACE hired its first in-house interior designer, primarily in response to its Air Force customer's request for coordinated, high-quality interior finishes and furniture in its operational and personnel support facilities. In 1981, USACE first defined interior design services and design responsibilities in a policy document, ER 1110-345-122, *Engineering and Design, Interior Design*. In response to the USACE commitment to improving the quality of interior environments in the 1980's, the first USACE *Design Guide for Interiors* was issued in 1982.

In 1988, the U.S. Army Engineer District, Omaha was designated the Corps-Wide Technical Center of Expertise (TCX) for Interior Design. Along with a commitment to improve interior design criteria and expand interior design staffing, USACE also introduced interior design training for USACE, command staff, installation staff, and facility users in 1989. USACE currently has in-house interior design staff in ten district offices with military design and construction responsibilities to provide service at every step in the process of obtaining and maintaining facilities.

Organization of the Appendix

The appendix is organized in terms of the process steps normally required to obtain and maintain facilities. Important criteria references are discussed with each of the steps.

Planning and Programming

References

Army Regulation 415-15. *Army Military Construction Program Development and Execution*, dated 30 August 1994, or later. This regulation sets Army policies, responsibilities, and procedures for use in development of Military Construction Army (MCA) programs. Included is guidance concerning planning, programming, designing, budgeting, construction, and disposing of major and minor construction, acquisition of real estate, and other supporting activities.

*Army Regulation 415-15.
Army Military Construction
Program Development and
Execution is the primary
reference for planning and
programming of all Military
Construction Army
programs*

Appendix G, "Facilities Standardization and Repetitive Designs", AR 415-15, discusses the advantages to the government in the reuse of successful designs. This encourages efficient use of time and funding by using existing and proven designs. Currently, two facility types have standard interior designs developed. These are for use in Chapel and Unaccompanied Enlisted Personnel Housing interior design projects.

Appendix H, "Equipment Installation", AR 415-15, defines installed building equipment which is normally provided as a part of construction and whose costs are included in the construction cost estimate and personal property, which is not normally MILCON funded. (Note prewired workstations may be provided in the construction contract when funding is included in the DD Form 1391 and furniture-related interior design services are requested.)

Appendix I of AR 415-15 defines the DD Form 1391, "Military Construction Project Data". This form defines user facility requirements in terms of area, functions, and financial resources. The DD Form 1391 is important to the interior design process because it can be used to define furniture-reflected requirements.

Architectural and Engineering Instructions, Design Criteria. This document (3 July 1994 or later edition) is issued by HQUSACE to replace DoD 4270.1-M, *Construction Criteria*. The *Architectural and Engineering Instructions* (AEI) provide design criteria and guidance to be used when planning, programming,

designing, and managing military facilities at Army installations. The AEI is a single source document for planning and design criteria because significant related criteria are referenced for each facility type.

Standard Designs. Standard Interior Designs provide guidelines for interior materials and furnishings for specific facility types. There are currently two standard interior designs which have been developed within the USACE. The facility types are Chapel and Unaccompanied Enlisted Personnel Housing.

Other Sources. Both the Army and Air Force major commands provide additional criteria on specific facility types which are of particular importance to them. This guidance should be used to supplement the referenced criteria. This information can be placed behind the numbered tabs.

Design Directives

Design Directives are given to Districts to authorize various stages of design and specific functions. These directives are given design codes which manage, in part, the design execution. Directive codes which typically apply to MCA projects requiring Interior Design are:

- **Code 1** directives initiate the design of a project, authorize selection of an Architect-Engineer (A-E), and permit various preliminary work such as surveys and studies.
- **Code 2** directives permit development of a project to the concept level. For the purposes of reporting, approved concept design is considered to be 35% of the total design effort. Concept design includes drawings, estimate, design analysis, and outline specifications adequate to define the functional aspects of a facility.
- **Code 3** directives may be issued for certain types of projects in lieu of a Code 1 or Code 2 directive. A Code 3 design is known as Project Engineering with Parametric Estimating. It is authorized for certain types of projects to achieve a clear definition of project requirements, scope, and cost more quickly than can be accomplished with a Code 2 directive.
- **Code 4** directives indicate that the project design is on hold, pending a supplemental design directive.

- **Code 5** directives indicate that the project is deferred from the program.
- **Code 6** directives authorize final design. The District Commander's approval of final design is sufficient to permit the project to proceed to advertisement and bid.
- **Code 9** directives indicate a construction contract (or design and construct contract) is authorized for award.

Responsibilities

Although USACE is not normally involved at this stage, assistance with scope definition and preparation of programming documents can be provided on a reimbursable basis. In addition to defining area and functional requirements, the identification of funds for furniture and furnishings is critical to effective programming.

Planning and Programming. During this phase, the user has the responsibility to initiate planning and programming. The Department of Public Works (DPW) prepares the programming documents.

Funding. The funding for Military Construction (MILCON) projects differs significantly from funding for Operations and Maintenance (O&M). The processes are as follows:

- **Military Construction Projects.** Funds are not available until Congress passes and the President signs the MILCON Authorization and Appropriations Acts. Funds are available for new obligations for a period of 5 years. The process by which these projects reach Congress for approval is as follows.

- Documentation for projects over \$300,000 is prepared and justified by installation commanders based on the Installation Master Plan. DD Form 1391 is the programming document which includes project description, costs estimates and is the basis of the requirement for the facility.

- The Major Army Command (MACOM) includes this in its "Six-Year Program" on a priority basis. This program is submitted to Headquarters Department of the Army (HQDA).

- HQDA justifies programs to Department of Defense (DoD), Office of Management and Budget (OMB) and to the Congressional committees.

- The programming document is submitted to Congress for review, approval and passage as Public Law.

- Once a project has been approved, HQUSACE will release it for design by a District by issuing a design directive.

• **Operations and Maintenance Projects.** O&M Funds are appropriated on a yearly basis by Congress and are allocated at the base level. They are available for a variety of uses including the purchase of furniture. Funds are provided by the user and are available for new obligation only for the year appropriated.

In addition to policy requirements and responsibilities, ER 1110-345-122 establishes the framework of the process for USACE participation with the customer.

Design

References

ER 1110-345-122, *Engineering and Design, Interior Design* 15 April 1994 or later establishes policy requirements, and responsibilities to be followed in the planning, design, approval, and procurement of interior designs for military construction projects and improvement programs.

This ER defines types of interior design to be performed as Building- and Furniture-Related Interior Design. Building-Related Interior Design is required for all facilities and includes all items permanently attached to the facility. This service requires the accommodation of needed furniture and equipment within the building, and the design or selection of items normally provided as part of the building construction project in accordance with AR 415-15. Furniture-Related Interior Design services relate to the planning and selection of items that will be provided or procured by the Government. This service will be provided when requested by the user and normally includes items which are movable and not permanently attached to the facility.

Initiation of Design

This is the point where USACE design activities normally enter the process. The Scope of Work is refined from the data provided on DD Form 1391. Refinement involves developing any additional information necessary to define a Scope of Services, from which an Architect-Engineering (AE) firm can be contracted. For in-house designers, this scope refinement is necessary to establish man-hour estimates and budgets for design. The designer performs the following two functions to start the design process:

Data Collection - Specific data applicable to a project must be collected prior to starting design. This information is project-specific. The collection of this information may involve a site visit, customer completed survey, or direct contact with the customer. A predesign conference is also appropriate at this stage of design. This conference should include all interested parties in the design process to discuss specific requirements and clarify responsibilities.

Data Analysis - Once data has been collected, it must be analyzed for its implications in relation to the design. Various factors involving customer requirements, existing conditions, criteria/regulations, design practices, regional preferences, and maintenance considerations are analyzed to form a complete basis for design.

Concept Design

Concept design is authorized when a Code 2 design directive is received from Headquarters U.S. Army Corps of Engineers (HQUSACE). Concept design is based on the pre-design activities and is limited to the Headquarters Department of the Army (HQDA) approved scope as stated in the DD Form 1391. AR 415-15 defines information required to be provided in a concept design.

Project Engineering with Parametric Estimating

Project engineering with parametric estimating is authorized for certain construction projects where standard designs, design guide sketches, or project designs exist that meet the requirements of the customer. Its purpose is to provide a clear and final definition of project requirements by the design agency, with customer involvement throughout the process. Appropriate design decisions and calculations, as well as a thorough site investigation will be accomplished. Project scope and cost will have the same degree of reliability as a 35% concept design. Architectural and Engineering Instructions (AEI), Code 3 Design, 6 February 1996, defines the information required for this type of submission. Government-furnished equipment, installed equipment, and equipment that will be procured and installed by the using agency should also be identified.

Project engineering with parametric estimating is not generally suitable for modernization, maintenance and repair, minor construction, or urgent minor projects. This process also does not apply to medical projects.

Final Design

Final design is based on approved concept design and is authorized when a Code 6 directive is received from HQUSACE. The final design must be functional, cost effective and reflect the scope of the approved DD form 1391. At the completion of this stage, contract documents are 100% complete.

Procurement

References and Sources

Federal Acquisition Regulations (FAR) - The Federal Acquisitions are based on Public Law. For the purpose of Interior Design, they define acceptable processes for acquisition of interior items.

FAR Part 8. This portion of the FAR directly affects the interior design process by outlining the required sources of supplies and services and their use. Of particular importance to the process of developing and procuring Furniture-related Interior Design is paragraph 8.001, Priorities for use of Government supply sources. These are as follows:

- Agency inventories
- Excess from other agencies (Subpart 8.1)
- Federal Prison Industries, Inc. (Subpart 8.6)
- Products available from the Committee for Purchase From People Who Are Blind or Severely Disabled (Subpart 8.7)
- Wholesale supply sources (such as the stock programs of the General Services Administration (GSA))
- Mandatory Federal Supply Schedules (Subpart 8.4)
- Optional use Federal Supply Schedules (Subpart 8.4)
- Commercial sources

General Services Administration (GSA) Schedules. The General Services Administration contracts with manufacturers of a variety of products for purchase by agencies of the Federal Government. Products are grouped by product type and contracts are awarded to either multiple or single vendors. These contracts are intended to ensure that the government receive products that meet the specifications outlined by GSA at a price

that is fair to the government based on the large quantity of products purchased. Products are selected from these schedules subject to the FAR regulations.

To request GSA Schedules, a GSA Form 457, FSS Publications Mailing List Application, must be completed. Copies of the GSA form 457 may be obtained from the following:

General Services Administration
Centralized Mailing List Service (7CAFL)
4900 Hemhill St
PO Box 6477
Ft. Worth, TX 76115

Federal Prison Industries (FPI) UNICOR. Federal Prison Industries supplies a variety of products for use by government agencies. Among these items produced are a variety of furniture and drapery products. FPI is a mandatory source of supply for government agencies. If an item is produced by FPI and another source for that product is desired, the FAR requires a clearance be obtained from FPI before that item can be purchased from another source. Information about UNICOR products or services can be obtained from:

UNICOR Customer Service Center
(800) 827-3168

Actions

Building-Related Interior Design - Items permanently attached to a facility and purchased with military construction funding are documented in contract documents. These documents include the contract drawings and specifications. Drawings clearly depict the plans, details, schedules, dimensions, elevations and all other essential visual information required to construct a complete facility. Specifications define in written form requirements for specific materials and products required for facility construction. These specifications are written in a three part format. These three parts are:

- Part 1, General, which outlines references and submitted approval requirements.
- Part 2, Products, which defines product quality.
- Part 3, Execution, which defines installation.

Furniture-Related Interior Design - Items which are not permanently attached to the facility may not be purchased with military construction funding and require an alternate method of procurement and implementation. Once the source of supply has been determined, all information necessary for procurement and installation of that item must be supplied on the appropriate procurement form. Information may also include a clearance from FPI, source justification for GSA items, or a performance specification. A specification may be required if the total dollar amount exceeds the small purchase limit of \$100,000.

Furniture-Related Interior Design is documented separately from, and is not a part of, the Contract Documents. The Furniture-Related Interior Design documents should contain all information required to procure and place furnishings including item, manufacturer, price, color/finish, placement plans and lists, total estimates, and all other pertinent information required by the Contracting Officer.

During the procurement of the furniture package, support to the contracting agency may be required. This support could include re-selection of furnishings which are not currently available, update of information which may no longer be current (such as price) or participation in the evaluation of items competitively bid from a specification to determine best value for the government. The requirement to provide these services should be defined in the Scope of Work, when the service is desired by the customer.

Design Services During Construction And Installation

Building-Related Interior Design

Building-Related Interior Design is documented in the Contract Drawings and Specifications. These documents define the quantity, quality and installation of materials required for a project. They are legally binding documents. Once a contract has been awarded to a contractor, the drawings and specifications are the documents by which a facility is constructed. The government assures quality of construction and approves

products to be used in construction by means of Contractor Submittals (Shop Drawings). The contractor submits for approval information and samples which the contractor believes will meet the contract requirements.

Any changes to the contract documents after the award of the contract require a modification to the contract by which the cost of the contract is adjusted accordingly.

During construction, support to the field may be required. This effort could include preparation of modifications to the contract documents, shop drawing review and approval, site visits to verify or assist in resolving unforeseen issues that arise, and other technical support which may not be available in the resident or area office.

Furniture-Related Interior Design

During installation of furniture, assistance may be required on site. This may involve the placement of furniture, furnishings and artwork. Typically, this effort requires additional funding as it is not normally covered as an extension of design.

Completing The Process

USACE

At this point, USACE turns the building over to the user and DPW. However, approximately one year after completion of construction, a Post Occupancy Evaluation of the project is conducted to determine the effectiveness of the design. This evaluation involves the inspection of the completed facility by a team composed of Corps and user personnel. It is typically concerned with the Building-Related aspects of the interior; however, Furniture-Related interior design may also be evaluated. Information on the quality, durability, and suitability of the furniture and furnishings can then be used to improve future projects.

User Responsibilities

Installation Design Guide. Interior design policy is a component of the Installation Design Guide (IDG). The IDG reflects installation themes and policy which are

unique to the individual military installation. The IDG should address interior design policy in terms of design and maintenance issues.

Operations Policy. To preserve the quality of facilities, the user and installation must agree upon an operations policy which defines their respective responsibilities. The user is responsible for preserving the visual appearance of the facility, and the installation is responsible for providing maintenance support needed to preserve facility quality.

Reorganization and Changing Mission. As DoD reorganizes and redefines its mission in the world, changes occur in the work place that must be addressed. As functions and technology change, the needs of the occupant are impacted. The interior environment must respond to those needs if the mission is to be supported. These changes ultimately require rethinking of the use of space, and the process of planning and programming must begin again.