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TECHNICAL GUIDE

For

ARCHITECTURE and INTERIOR DESIGN

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CHARLESTON, SOUTH CAROLINA

I. INTRODUCTION

This is the Architectural Technical Guide for Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). Sections VI, VII & VIII will serve as the basis for the Architectural Orientation Guide outline. Also it is to be used by A/E contractors for all architectural work performed for this command. It is intended that this be a "living" document, that is, to be updated as conditions change. Therefore the A/E is encouraged to provide criticism and suggestions to help us continually improve this guide.

II. PURPOSE

The discipline oriented technical guidelines herein provided were largely determined as a result of frequently repeated review comments; their purpose is to provide just-in-time technical direction to our A/E contractors in order to reduce changes and corrections and to ultimately diminish the need for formal reviews.

III. RELATED GUIDANCE

All A/E contractors must also comply with direction provided in the Guide for Architect-Engineer Firms Performing Services for the Southern Division Naval Facilities Engineering Command (P-141), the specific project "Statement of Work" and other guidance hereinafter referenced.

IV. DESIGN STANDARDS

It is important to note these general conditions which every architect must satisfy for each of our projects. The architect must:

1. Fully define project requirements;
2. Comply with all applicable regulations and laws;
3. Provide a facility within funding limits;
4. Provide a facility within scope of work limits;
5. Provide an effective barrier against the elements.
6. Provide a facility of acceptable appearance within Navy standards;
7. Provide a facility with coordinated systems (structural, mechanical, electrical, etc.);
8. Provide complete, accurate, and coordinated construction documentation for the procurement of the facility.
9. Provide a facility considerate of the ecological, physical and visual features of the site.
10. If Comprehensive Interior Design (CID) is required, it shall be fully coordinated with the facility design.

VI. PRE-DESIGN

Pre-design effort is required to identify and organize all of the elements and resources that will influence the design, identify governing regulations, gather information, define the problems to be solved and gain a consensus of the issues among all the players.

A. GUIDELINES AND REFERENCES.

Here are some pre-design issues including references to available guidance material.:

1. The Guide for Architect-Engineer Firms Performing Services For The Southern Division, Naval Facilities Engineering Command, Charleston, SC, (P-141) contains general and discipline specific information on Government requirements of design contractors.
2. Base Exterior Architectural Plans (BEAP) are available from SOUTHNAVFACENGCOM code 0712 for most Navy and Marine Corps activities. The design guidance contained in the BEAP should be followed carefully since these are published under the authority of the Secretary of the Navy (SECNAV). Direction to deviate from the BEAP guidance should be given in writing.

The section titled "Base Design Guidelines" contains the guidance most valuable to designers. Where design guidelines are not available for an area, compatibility with surrounding features and Base standards, as well as consensus of the project team will determine the appearance criteria for the project.

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3. SouthNavFacEngCom Instruction 5420.19F describes the function and duties of

The Architectural Review Board (ARB), which will be available for consultation regarding BEAP and compatibility issues.

4. Other Disciplines' Technical Guides. The guidance in Technical Guides from other SOUTHNAVFACENGCOM disciplines must be coordinated with this guidance. If there is an apparent conflict, the A/E must bring it to the attention of the SOUTHDIV point of contact immediately so that the conflict can be resolved.

5. Accessibility - P-141 Section 10B Review both the Americans with Disabilities Act Application Guide, (ADAAG,) and the Uniform Federal Accessibility Standards, (UFAS.) Use the more stringent requirements of the two. Ask the Architectural Division Handicapped-access Design (HCD) Specialist for designs requiring the military exclusion of UFAS.

6. Lessons Learned Data Base. Lessons learned and other information both general and activity specific is available. These compilations are intended to be open ended and include information from A/Es and construction sources. The A/E should request the data base files and review. Subsequent information, comments and lessons learned during design and construction should be sent to the 0712 Architectural Division Technical Support Branch at SOUTHNAVFACENGCOM.

7. The NavFac SouthDiv Guide to Functional Analysis and Concept Development and P-141, Section 11, M, N & Z describe the on-site project analysis and schematic design process that must be used on all projects for architectural programming and schematic design without regard to size or circumstance.

"Charrette" type sessions should be used to maximize the productivity of design solutions while the design team is on-site with user input and pertinent activity data resources close at hand. The process may be modified to meet project size and time available. Obtain from code 0712 written agreement on the implementation of the On-Site process.

User questionnaire template forms are available from the Architectural Division technical support branch; a sample form is provided in Appendix "E" of the Southdiv Guide to Functional Analysis and Concept Development.

8. Index of Criteria. The SOUTHNAVFACENGCOM Index of Criteria is updated quarterly and is available from Code 076. It lists Military Handbooks, Design Manuals, Technical Manuals, Guide Specifications and other special guidance.

9. P-141 Section 11 T and SODIV-TG-1007 - Technical Guidance for Roofing and Building Envelope Design includes specialized guidance to be used on all projects. Consult the

Southern Division Roofing and Building Envelope Team (RABET) for assistance.

a. Roof Design: Avoid complicated metal roof configurations which result in excessive ridges, valleys, junctures with vertical surfaces, crickets, counterflashing, penetrations and other points requiring unnecessarily difficult flashing and sealing techniques. Utilize form fitting foam filler blocks to prevent insect and potential water entry.

b. Exercise care in designing single wythe wall systems such as EIFS, precast concrete and single wythe masonry. The preferred wall is a rain barrier system which provides a primary deterrent against water penetration with a secondary moisture proof barrier behind a system to drain any water that may have gotten through.

10. The Interior Design Handbook describes the interior design process for military facility outfitting. Guidelines for specific requirements, presentation format and submittals are addressed.

11. Sustainable Design is defined as meeting current needs for resources, products, food & shelter while conserving and protecting environmental quality and the natural resource base through:

- Energy efficiency and conservation.
- Building with recycled materials.
- Building with recyclable building materials.
- Avoiding polluting materials, such as VOC's, HCFC's, etc.
- Reducing construction waste.
- Improving indoor air quality.

12. Historic Preservation.. If the project requires alteration or demolition of any structure 50 or more years old, or disturbance of any known or suspected archeologically sensitive sites, notify the PDM and State Historic Preservation Officer.

Coordinate with the PDM to determine limits on the design resulting from cultural (archeological, historic) significance of the project site or of any existing buildings that might be impacted by this project.

13. Landscape Design. Design of facilities should reflect a total project solution that enhances, compliments and preserves natural site features such as topography, vegetation and other scenic assets. Furthermore, disruption of the environment and resultant landscape modification costs can be minimized.

Plant materials should be utilized to extend and strengthen existing and/or BEAP mandated streetscapes. Locally hardy plant materials are required. Use the BEAP planting list as a guide. Small scale planting beds and base planting are strongly discouraged since they require maintenance not usually available.

B. PROJECT SPECIFIC INFORMATION

These items of information must be collected and organized for each project.

1. DD 1391

Use this document to determine the size and maximum cost of the project. Prepare design proposals against these limits. Alert the SOUTHNAVFACENGCOM point of contact as soon as these limits are reached.

2. Site Approval is a document containing a sketch that identifies the location and physical limits of the project. The design process should not begin until this document is approved.

3. Existing Conditions, including those below ground and substrate conditions to be altered or demolished are often not well documented. Confer with ROICC, Staff Civil Engineer and Public Works personnel to determine existing conditions. Partial destruction of pertinent areas may be necessary to ascertain conditions.

It is generally best to cite the worse case anticipated and prepare design accordingly

which will minimize change orders for adverse unforeseen conditions.

Photos of existing conditions included in the construction documents have been valuable assets in documenting the site.

C. EARLY ACTIONS REQUIRED

Determine immediately the items of work that need long lead times and may interrupt the orderly delivery of the project such as collateral equipment, systems furniture and government furnished equipment (GFE).

The following design service elements often require early attention:

1. Historic Preservation. Involve the State Historic Preservation Officer (SHPO) early in the process. See "Historic Preservation" above.

2. Permits. See P-141 Section 11 P. Identify all environmental and construction permits that may be required for the project. Include local, state and federal permits. Review potential permits with ROICC, Staff Civil Engineer, Public Works and SOUTHDIV to determine the appropriate permits and current processing requirements.

3. Accessibility. See P-141 Section 10 B. Determine early in the analysis process to what extent the project must meet accessibility standards.

4. Hazardous Materials. Identify immediately the possible existence of hazardous materials on the project site. Lead containing paint and asbestos containing materials are usually found in repair, renovation and demolition projects.

Review the potential existence of hazardous materials with ROICC, Staff Civil Engineer, Public Works and SOUTHNAVFACENGCOM to determine appropriate process for testing and abatement .

5. Facility furnishings outfitting. Review and determine at an early date with the Code 0712 Project Interior Designer the following:

1. If furnishings are required for the project.
2. If both systems and conventional loose furniture are required.
3. If a CID concept submittal may be submitted in lieu of a generic furniture placement plan.

6. Systems Furniture. Determine the requirements for systems furniture during or before the On-Site Schematic Conference. Consult with the Code 0712 Project Interior Designer to determine how it will be funded, whether it will be included as SID in the construction contract or be part of a Comprehensive Interior Design package.

7. Conventional Furniture. Consult with Code 0712 Proj. Int. Designer to determine whether CID will be provided by the A/E, or be done in-house.

VII. DESIGN DEVELOPMENT

Appearance of Navy buildings must reflect a sober, timeless, cost conscious, attitude while providing a low maintenance facility that compliments the existing buildings in the area. Avoid faddish styles and extreme forms. Again, keep in mind: appropriate design.

Consider the areas around and between projects with the same level of care given to the design of the project itself. Equipment and service entrances must be located and screened to minimize disruption of other functions. Parking and drives must be located, shaped and screened to add to the quality of the project and not degrade adjacent areas.

A. LIFE SAFETY

Check SOW for A/E submittal requirements.

Code Analysis document: Include a list of codes used and discussion of conflicts or problems.

Plan drawings indicating exit ways with distances, location and rating of fire barriers and smoke barriers and locations of detectors and alarms.

B. ACCESSIBILITY

Review for compliance with handicap accessibility requirements. .see Par. VI,5.

D. CONSTRUCTION DETAILS

Whether part of construction documents or design-build documents, some kinds of details such as roofing , building envelope, and those describing elements of a high volume of work are of the highest importance to the Navy.

Moisture penetration must be fully addressed to insure construction contractor compliance. See SDIV-TG-1007 for detailed instructions. Review current failures in EIFS wall systems and direct attention to points where the EIFS system abuts unlike materials such as windows, wall/roof intersections and wall penetrations such as electrical and plumbing service entrances. Penetrating water is likely to remain in the wall system long enough to cause damage to water-sensitive sheathing and structural systems. Refer to the EIMA for complete guidelines on sealants and related items.

Vapor barriers must be located to prevent condensation within the wall section. Provide an analysis of each wall section and a graphic presentation locating the dew point. Ask for a copy of the Code 071 Vapor Penetration software program.

Masonry expansion must be dealt with using very conservative standards. Cracking near building corners and in large areas of masonry are continuing problems. Carefully consider placement of building expansion joints.

Incorporate hurricane resistant measures such as more effective roof anchoring, careful use of ballast, and proper design of oversized doors.

Acoustic controls: collocate interdisciplinary detailing to ensure that elements such as electrical outlets and mechanical items are properly incorporated into a composite system.

Design and detailing of site components, including paving, ornamental plant materials, street furniture, and signage should be developed as a consistent system related functionally and aesthetically circulation land use and user activity elements.

VIII. CONSTRUCTION DOCUMENTS

Technical accuracy of construction documents is the responsibility of the A/E. A complete set of documents, fully descriptive of the project is essential. Where performance criteria is specified in lieu of prescriptive requirements, documents must convey enough information and direction to reduce the need for contractor inquiries and change orders. Before and after-award modifications to correct design deficiencies will adversely affect the government's view of A/E performance.

A. COORDINATION

Coordination among disciplines, and between specifications and drawings is exceptionally important for Navy projects where the administrative organization and process separates the designer from the construction process.

Drawings, schedules, specifications, furnishings and color boards must be coordinated. Fully furnished mock-ups of typical spaces such as BEQ rooms and high volume elements such as masonry walls and windows are strongly recommended as part of the specification requirements to ensure that the design is fully functional and aesthetically acceptable to The Customer, The Activity and "Southern Division."

Confirm adequate design of building systems in constrained areas which involve installation by several trades.

B. CLARITY

Contract documents for Navy projects must be more than usually clear and complete to provide a clear basis of bid. They must be understandable to the contractor and to the ROICC with little or no explanation by the A/E. Code 071 reviews will pay particular attention to this characteristic.

Drawings must be clear, especially when submitted as 11 inch by 17 inch review sets.

Terminology must be the same in specifications and drawings.

C. SHOP DRAWINGS

See P-141, Section 10 L.

D. AS-BUILT DRAWINGS

See P-141, Section 10 N.

IX. STRUCTURAL & COMPREHENSIVE INTERIOR DESIGN

A. STRUCTURAL INTERIOR DESIGN (SID)

Reference P-141, Section 10 Part K, Structural Interior Design (SID), Paragraphs 1-4.

SID is performed by the prime A/E and is NOT optional.

Systems furniture, when included in SID is part of the construction contract, but funded by sources other than construction funds.

Systems furniture as part of SID is performed by the prime A/E.

B. COMPREHENSIVE INTERIOR DESIGN (CID)

Reference P-141, Section 10 Part O, Comprehensive Interior Design (CID). CID shall fully coordinate with all elements of the facility architectural design, including the SID. An orientation by a Code 0712 project interior designer should be conducted prior to the pre-design meeting.

For Air Force projects, the Air Force Interior Design Presentation Guide shall be followed.

For Navy Projects, further direction will be provided by a project interior designer.