

SECTION 3-4: DESIGN GUIDELINES

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3-4-00 POLICY

HHS buildings shall be designed and constructed to best meet the functional, safety, security, and environmental needs of the programs they house. A safe and healthy work environment is the crucial objective in the design of HHS facilities. The requirements listed in this section are the minimum OPDIV requirements to meet this objective.

The purpose of this section is to provide general design guidance to the OPDIVS to assist them in developing design criteria for projects. Over the years several OPDIVS have developed design criteria to provide guidance to A/Es and to ensure the quality of design and construction of HHS facilities. Design Criteria generally represents a body of knowledge gathered from many sources within the OPDIV, Department, Federal / State / local entities and the private sector. The purpose of design criteria is to provide guidance to A/E and OPDIV staff in the preparation of HHS contract (construction) documents and to promote excellence in the process of planning, programming, design and construction of HHS facilities.

3-4-10 PROCEDURES

Design criteria reflect the collective corporate knowledge and wisdom of the OPDIV's design professionals based on history and experience that is benchmarked against best practices within the industry. OPDIVS are encouraged to use industry design criteria that are readily available for ordinary buildings that are common in the practice of architecture and engineering. Highly specialized buildings may, to an extent, require development of project unique design criteria. However, even in these specialized facilities there will be design features and elements that can be generic in nature. Using generic design criteria to avoid customizing individual spaces, functions, and operations will save taxpayer money.

3-4-20 GUIDANCE AND INFORMATION

The overarching design guidelines described below are intended to establish general performance objectives for HHS buildings and facilities. The OPDIV Project Officer should ensure that project specific objectives are identified when the design Statement of Work (SOW) is developed. The A/E should be responsible for determining how to achieve specified objectives.

A. ENVIRONMENTAL AND FUNCTIONAL NEEDS

HHS buildings shall provide an environment in which occupants can do their work with maximum efficiency at the optimum level of comfort, taking the following factors into consideration.

1. Arrangement of Space. Space relationships within buildings shall be planned to optimize the functions being performed by the occupant. Interaction areas should be provided within the building to promote informal discussion between scientists / occupants.

2. Access for Persons with Disabilities. Refer to the Section 3-6, entitled “Accessibility Requirements for Persons with Disabilities” in this Chapter.
3. Illumination. Natural and artificial illumination shall be sufficient to meet requirements of the tasks performed by the occupants.
4. Thermal Environment. The thermal environment shall be such as to provide healthy working conditions for the occupants and proper climatic conditions for the work being performed. Provision of flexibility and suitable control is necessary.
5. Acoustical Environment. New buildings and alterations shall be planned and designed to minimize noise that disturbs occupants unduly or interferes with their ability to do their work. An adequate level of privacy shall be provided so that occupants can perform their tasks effectively with minimum outside disturbance. The level of privacy required will vary depending on the tasks involved.
6. Maintenance and Operation. Designs shall be based on user needs and maintenance capabilities and shall satisfy the functional requirements for efficient operation of the facility. Materials and products shall be durable, easily maintained, and appropriate for the intended use.
7. Harmony with Environment. Special attention should be paid to the arrangement of streets and public space of which the building is a part. Within budgetary and site limitations, designs should include generous development of well-landscaped, inviting, people-oriented space.
8. Regional Character. Buildings should reflect the architectural character of the locale. Local building ordinances and zoning practices should generally be followed. Consistent with applicable Federal procurement requirements, the use of materials and products indigenous to the locale of the project should be given preference.

B. SAFETY, HEALTH AND SECURITY

HHS buildings shall provide an environment that is safe and healthful for occupants, and that offers them maximum protection during emergencies or disasters.

1. Structural Adequacy. Design of buildings shall be adequate for the functions to be performed and the loads imposed by building equipment, occupants, and their activities.
2. Protection against disaster. Design shall provide minimum exposure to fire, earthquake, or other natural disaster, and shall provide egress and refuge for all people, including the disabled, in an emergency.
3. Security. For information relating to facility security refer to the Section 3-7, entitled “Facility Security” in this Chapter.
4. Accident Prevention Design. Design shall be the result of safety analyses and shall address unsafe conditions that cause injury, illness, or property damage.
5. Health Hazards. Materials and products with known or suspected properties that are hazardous to the health of occupants and installers shall be avoided. Only materials that are lead and asbestos free shall be used in HHS buildings. This includes materials such as paint, adhesives, sealers, sealants, floor tiles, etc.
6. Repair, Renovation, and Alterations. Design shall be accomplished to reduce or eliminate hazardous exposure through astute selection and use of materials and methods. Prior to any renovation or demolition project, the design should identify any existing hazardous building constituents - asbestos or lead etc. If lead or asbestos containing materials is present, the contractor shall be required to submit relevant management and abatement plans as part of their

proposal for HHS approval and send notification letters to the State regarding asbestos removal prior to initiating work.

C. ECONOMY

HHS buildings shall be designed at the most reasonable cost in terms of combined initial and long-term expenditures, without compromising other project requirements.

1. **Site Adaptation.** In many, if not most instances, a site has already been selected before design begins; however, OPDIV design professionals should, where possible, have a part in the selection. The design of the building shall be sited economically and efficiently.
2. **Efficient Utilization.** The ratio of net usable to gross area should be as high as possible (without wasted space) consistent with program objectives as stated in the POR. The design shall comply with the HHS Space Utilization Rate (U/R) Guidelines.
3. **Economical Materials.** Materials, products, and systems of proven dependability shall be used in the design or alteration of buildings. Materials shall be as economical as possible, in terms of combined initial and long-term cost and consistent with program objectives. To the extent possible, standard commercially available products shall be used.
4. **Energy Efficiency.** The National Energy Conservation Policy Act (PL 95-619), as amended by the Energy Policy Act of 1992 (PL 102-486), and including all applicable Executive Orders, set out and reinforces long-standing requirements for energy conservation in Federal facilities. It is HHS Policy in response to these mandates to foster cost effective energy management practices to ensure the efficient use of energy, while maximizing the ability of the OPDIV to accomplish its mission and maintaining the health and safety of HHS employees and visitors.
5. **Life Cycle Cost (LCC) Analysis.** LCC shall be performed on all projects as required by OMB Circular A-11 for capital assets. The analysis shall consider the overall estimated costs of each program alternative over the life of the program. In assessing LCC the assumed life of a new facility shall be 50 years. In addition, during design value engineering shall be done to determine the most cost effective, long-term solutions for the selected program alternative. See also Section 3-8.
6. **Maintenance, Operation, Repair, and Replacement Costs.** Buildings shall be designed, and materials selected, to minimize the cost of maintenance and repair.
7. **Foster Maximum Competition.** Buildings shall be designed and building materials, components, and systems incorporated into the design so as to foster maximum competition among suppliers and contractors.
8. **Project Administration.** Projects shall be planned and scheduled to ensure effective and efficient design.

D. COMPLIANCE WITH CODES AND STANDARDS

In accordance with 40 U.S.C. 3312 each HHS building shall be constructed or altered, to the maximum extent feasible, in compliance with one of the nationally recognized model building codes and with other nationally recognized codes including mechanical and electrical codes, fire and life safety codes, and plumbing codes. Due consideration shall be given to all State and local zoning laws as if the project were not being constructed or altered by a Federal agency. The Government and its contractors shall not be liable for the cost of issuing permits or performing inspections. The Contracting Officer shall insert a clause in every design and construction contract solicitation notifying prospective contractors of the statutory provisions of 40 U.S.C. 3112 (f) and (g).

