

**CHAPTER 21-17.2 SUSTAINABILITY GUIDELINES FOR NEW FACILITY
CONSTRUCTION, BUILD-TO-LEASE AND MAJOR RENOVATION**

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A. Purpose

This Section establishes standards for implementation of applicable Federal laws, regulations, executive orders and policies related to the general heading of sustainability as they apply to the planning, design, and construction of new and replacement healthcare facilities and major renovation projects.

B. Scope

This Section applies to all new construction, build-to-lease, and major renovation projects funded by IHS.

Guidelines for sustainability assessments and activities for existing IHS facilities, staff quarters, and minor renovations are addressed in Chapter 21-17.3, Sustainability Guidelines for Existing Facilities. Leased facilities are addressed in Chapter 21-17.4, Sustainability Guidelines for Leased Facilities.

C. Guidelines

Below is specific guidance for complying with the Federal Sustainability Requirements:

Project Budgets

The project budget estimate shall incorporate estimates for the design, construction, and third-party certification of sustainable design features. The estimate for the project shall include not less than two percent of the construction budget for sustainability features and not less than two percent of the construction budget for renewable energy features. The estimate will be adjusted for inflation annually and updated as additional data is developed. The FBES shall be revised to include these estimates.

Third Party Certification

All new construction projects of at least \$10 million will be designed and constructed to achieve a third-party certification by a recognized sustainability certification entity. The United States Green Building Council (USGBC) Leadership in Energy and Environmental Design Green Building Rating System (LEED®) and the Green Building Initiative (GBI) Green Globes® green building guidance and assessment program are the currently approved certification standards. A minimum certification

level of LEED Silver or two Green Globes shall be achieved. Higher levels of certification shall be achieved when feasible based on life-cycle cost-effectiveness and within the budget generated for sustainability by the IHS Budget Cost Estimating System.

All build-to-lease projects of at least \$10 million will be designed and constructed to achieve a third party certification by a recognized sustainability entity. A minimum certification level of LEED Silver or two Green Globes shall be achieved. Higher levels of certification shall be achieved when feasible based on life-cycle cost-effectiveness and within the budget generated for sustainability by the IHS Budget Cost Estimating System.

All renovation projects of at least \$10 million or that impact over 40 percent of the floor area shall be designed and constructed to achieve a third-party certification by a recognized sustainability entity. A minimum certification level of LEED Silver or two Green Globes shall be achieved. Higher levels of certification shall be achieved when feasible based on life-cycle cost-effectiveness and within the budget generated for sustainability by the IHS Budget Cost Estimating System. Note: The 40 percent floor area threshold does not apply to individual quarters units.

All other projects shall comply with the requirements of this chapter to the maximum extent practicable.

Integrated Project Team

For each project, the IHS will establish an Integrated Project Team (IPT) as outlined in the Indian Health Service Architect/Engineering (A/E) Guide. Leadership and membership in the IPT may change depending upon the phase of the project (Planning, Design, Construction, or Post-Construction). The IPT shall establish, implement, and document sustainability goals in the project consistent with applicable laws, regulations, and policy. Build-to-lease projects will include the IHS Warranted Lease Contracting Officer as part of the IPT.

Optimize Energy Performance

Facilities shall be designed and constructed to incorporate advanced metering in accordance with Technical Handbook Chapter 72-3 *IHS Metering Plan*.

Motors shall be, at a minimum, National Electrical Manufacturers Association (NEMA) premium labeled electric motors.

Projects shall include a Conceptual Design Phase analysis, including life-cycle costs, to determine the feasibility of constructing on-site renewable energy systems capable of providing at least 7.5 percent of the annual electrical load. Feasibility will be based upon the two percent budget amount identified in the "Project Budgets" paragraph above. On-site renewable energy systems determined to be feasible or required shall be incorporated into the project. If it is not feasible to provide renewable energy systems providing at least 7.5

percent of the annual electrical load, the maximum capacity feasible system shall be incorporated into the project.

All facilities shall be designed and constructed so that the fossil fuel-generated energy consumption is reduced, compared with such energy consumption by a similar building in fiscal year 2003 (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from the Energy Information Agency). Reductions will be at least 55 percent in 2010-2014, 65 percent in 2015-2019, 80 percent in 2020-2024, 90 percent in 2025-2029, and 100 percent in 2030 and later.

All facilities, except staff quarters, shall be designed and constructed to be at least 30 percent more efficient than the American Society of Heating Refrigerating and Air-Conditioning (ASHRAE) 90.1-2003 baseline.

Staff quarters shall be designed to be at least 30 percent more efficient than the International Energy Conservation Code (2004 supplement) baseline.

Facilities shall be designed and constructed to achieve the EPA Energy Star. In addition, it is required that a comparison be made of the energy design targets with actual performance data from the first year of operation. After one year of occupancy, the ENERGY STAR® Portfolio Manager will be used to determine the Target Finder rating for buildings and space types covered by ENERGY STAR®.

Projects shall incorporate Building Commissioning into design and construction activities. All facilities shall be commissioned during design and construction and recommissioned every four years thereafter.

Projects shall include a Conceptual Design Phase analysis, including life-cycle costs, to determine the feasibility of construction of solar hot water heating capable of delivering 30 percent of the hot water demand. Solar hot water heating systems determined to be feasible shall be incorporated into the project.

Water Conservation and Protection

All facilities shall be designed and constructed to:

- To reduce water consumption in accordance with Federal Sustainability Requirements (see Appendix 2) and Technical Handbook Chapter 72-2, "Water Management;"
- Utilize only indigenous plants and eliminate the use of potable water irrigation for landscaping in accordance water conservation principles in Technical Handbook Chapter 72-4, "Energy Management Program;" and

- Abide by the storm water runoff requirements of Section 438 of the Energy Independence and Security Act of 2007.

Enhance Indoor Environmental Quality

All facilities shall be designed and constructed to:

- Meet current ASHRAE 55, ASHRAE 62.1, and Facility Guidelines Institute (FGI) thermal and ventilation standards to the maximum extent practicable;
- Control moisture flows and condensation to prevent water damage and mold contamination;
- Maximize the use of natural light in occupied spaces;
- Maximize the use of low volatile organic compounds (VOC) products; and
- Protect indoor air quality during and after construction.

Reduce Environmental Impact of Materials

All facilities shall be designed and constructed to:

- Use products containing recycled content and products meeting or exceeding EPA recycled content recommendations;
- Use biobased products made from rapidly renewable materials and United States Department of Agriculture (USDA) designated products meeting or products exceeding USDA biobased content recommendations;
- Divert construction generated waste from landfills to recycling and salvage programs; and
- Eliminate the use of ozone depleting compounds where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account lifecycle impacts.

IHS A/E Design Guide

All facilities shall be designed and constructed in accordance with the most current edition of the IHS A/E Design Guide. The Design Guide contains specific procedures to ensure compliance with current federal, departmental, and IHS-specific requirements, policies, and best practices and procedures.

D. Procedures

- Budget Phase
Ensure the IHS Facilities Budget Estimating System (FBES) incorporates estimated costs for environmental sustainability, and that these costs are applied to all project cost estimates.

- Planning Phase
 - a. An IPT shall be established and shall have a designated Sustainability Coordinator.
 - b. Broad sustainability goals shall be established and specified in the Program of Requirement (POR). The Sustainability Coordinator shall track these goals during the design process and report the progress to the project manager. Goals shall be set for:
 1. Third-Party Certification
 2. Energy Efficiency
 3. Commissioning
 4. Percent of Renewable Energy
 5. Indoor and Outdoor Water Consumption
 6. Thermal Comfort
 7. Moisture Control
 8. Daylighting
 9. Low-emitting Materials
 10. Recycled Content of Materials
 11. Biobased Content of Materials
 12. Percent of Construction Waste to be Recycled
 - c. The Sustainable Buildings Checklist for New Construction, Part 1, shall be completed and sent to the Office of Environmental Health and Engineering, Division of Facilities Planning and Construction (DFPC). This checklist becomes part of the Facility Project Approval Agreement (FPAA).
- Site Selection Phase

The site selection evaluation process shall give preference to sites that are:

 - a. NOT prime farmland as defined by the USDA.
 - a. NOT previously undeveloped land whose elevation is lower than five feet above the elevation of the 100-year floodplain.
 - b. NOT land specifically identified as habitat for any species on federal or state threatened or endangered lists.
 - c. NOT land within 100 feet of any wetlands as defined by the Code of Federal Regulations, 40CFR Parts 230-233 and Part 22.
 - d. NOT previously undeveloped land within 50 feet of a water body (seas, lakes, rivers, streams, and tributaries).
 - e. Previously developed, within ½ mile of a residential neighborhood and within ½ mile of at least 10 basic services.
 - f. Remediated brownfield sites.
 - g. Located within ¼ mile of one or more public bus stops.

- Design Phase
 - a. IPT membership and Sustainability Coordinator may be revised as appropriate for the Design Phase.
 - b. The A/E evaluation and selection process shall incorporate selection factors to ensure that selected A/E's demonstrate experience in sustainable design.
 - c. The project shall be registered with the sustainability certification entity.
 - d. Sustainability goals shall be reassessed in all design stages. During the Conceptual Design Phase, a sustainability charrette shall be performed and the third-party certification credits identified. The Planning Phase goals may be updated to reflect the feasibility of each element.
 - e. The designer is required to provide and assign an accredited sustainability specialist to the project.

The construction specifications shall:

- a. Require regular sustainability status reports (Basic Requirements Section);
 - b. Include a listing of third-party certification credits being pursued on the project and the level of certification planned. The credits shall follow the instructions of the A/E Guide;
 - c. Integrate sustainability requirements throughout the specifications and shall include sustainability-specific requirements of required submittals; and
 - d. List specific baseline requirements for all materials and products with sustainability implications.
- Construction Phase
 - a. IPT membership and Sustainability Coordinator may be revised as appropriate for the Construction Phase.
 - b. Sustainability requirements shall be identified in the construction contract and subcontracts.
 - Post Construction Phase
 - a. IPT membership and Sustainability Coordinator may be revised as appropriate for the Post Construction Phase.
 - b. After at least 12 months of operation, energy and water usage shall be compared to the design targets.
 - c. The Sustainability Checklist for New Construction, Part 2 shall be completed and sent to the DFPC.

E. Reporting

- The Sustainability Coordinator shall issue periodic reports regarding implementation of Federal sustainability requirements to the IPT.
- All required information shall be entered into Health Facilities Data System (HFDS).
- Completed activities, e. g. commissioning or recommissioning, shall be listed and described in the HFDS energy report forms and will be included in the Annual Energy Report.

F. Responsibilities

1. IPT Sustainability Coordinator

The IPT Sustainability Coordinator is responsible for:

- Participating on the IPT;
- Participating in sustainability assessments/charrettes;
- Delivering the completed Sustainability Checklist, Part 1 to DFPC;
- Monitoring the design and construction contracts to ensure the sustainability goals are met; and
- Issuing periodic reports regarding implementation of Federal sustainability requirements to the IPT.

2. Installation

Each Installation is responsible for:

- Participating on the IPT;
- Participating in sustainability assessments/charrettes; and
- Providing energy and water consumption data and other documentation as required.

3. Area Office

Each Area Office is responsible for:

- Integrating site-related sustainability principles during the site selection process;
- Assisting installations in their responsibilities;
- Participating on the IPT;
- Participating in sustainability assessments/charrette;
- Ensuring sustainability goals are incorporated into the project planning documents;
- Ensuring that the goals are included in all Area administered contracts;
- Ensuring all required information is entered into HFDS; and
- Ensuring ENERGY STAR® Portfolio Manager data files are established for each facility and updated annually as part of the energy reporting cycle.
- If the project is administered by the Area:
 - Appointing a Sustainability Coordinator for the project;

- Ensuring funding for sustainability and renewable energy requirements are included in the government cost estimate for renovation projects;
 - Ensuring sustainability requirements are included in all contracts;
 - Monitoring the design and construction contracts to insure the goals are met;
 - Evaluating the actual energy and water use of the facility for the first year of operation and compare it to the design targets; and
 - Completing the Sustainability Checklist for New Construction, Part 2 and delivering it to DFPC.
4. If the project is administered by DES, DES is responsible for:
- Assisting Areas in their responsibilities;
 - Participating on the IPT;
 - Participating in sustainability assessment/charrette;
 - Ensuring funding for sustainability and renewable energy requirements are included in the government cost estimate;
 - Ensuring sustainability requirements are included in all contracts;
 - Appointing a Sustainability Coordinator for the project;
 - Monitoring the design and construction contracts to insure the goals are met;
 - Evaluating the actual energy and water use of the facility for the first year of operation and comparing it to the design targets; and
 - Completing the Sustainability Checklist for New Construction, Part 2 and delivering it to DFPC.
5. IHS Headquarters Division of Facilities Planning and Construction (DFPC) is responsible for:
- Assisting Area and/or DES in their responsibilities;
 - Participating in the IPT;
 - Participating in assessment/charrette as appropriate;
 - Submitting semi-annual progress reports to DHHS; and
 - Reporting information as necessary to meet other requirements and requests.