

## SECTION 7.0

### ENVIRONMENTALLY RESPONSIBLE DESIGN GUIDELINES

The Texas State Energy Conservation Office (SECO) has adopted the minimum energy standards for state agencies and institutions of higher education described in:

[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p\\_dir=&p\\_rloc=&p\\_tloc=&p\\_ploc=&pg=1&p\\_tac=&ti=34&pt=1&ch=19&rl=32](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=34&pt=1&ch=19&rl=32)

Environmentally Responsible (“Sustainable”) Design: In addition to other requirements, provide design and construction that minimizes adverse effects on the exterior environment, enhances the quality of the indoor environment, and minimizes consumption of energy, water, construction materials, and other resources.

7.1 **LEED Criteria:** The University of Houston has adopted many of the USGBC *Leadership in Energy and Environmental Design* (LEED) criteria for sustainable design and, since 2006, has required buildings to be designed to current LEED Silver criteria or greater. Actual certification has not commonly been pursued.

LEED 4 has replaced LEED-NC 2009. Like the LEED 4 criteria, UH has also adopted revised EPA and ASHRAE guidelines and continues to improve its metering, recycling, and transparency initiatives.

**Until further notice**, UH will continue to require new construction to be designed, at a minimum, to LEED-NC 2009 Silver criteria. On an individual project basis, UH FP&C/FS and other Project Team members may make the decision to incorporate sustainable practices from LEED 4.

Selection from the *LEED Project Checklist* of specific credits to achieve is the responsibility of the Consultant unless otherwise indicated.

7.2 **Goals:** Listed below are some of the sustainable practices that are applicable to UH projects.

- 1) The goals indicated as "Required" must be achieved.
- 2) The goals indicated as "Desirable" will be given high priority.
- 3) The goals indicated as "If possible" must be achieved if the design and site considerations allow.
- 4) The goals indicated "As Specified" have different requirements specified in other Chapters.

7.2.1. Sitework/Landscaping:

- 1) Minimize footprint: Required.
- 2) Bicycle and cyclist facilities: Required.
- 3) Restoration of degraded site areas: Required
- 4) Minimum surface disturbance: Required. Minimum disturbance limits will be established by UH FP&C Project Manager
- 5) Sediment and erosion control: Required.
- 6) No net increase of storm water runoff: Required.
- 7) Proactive design of storm water management: Required.
- 8) Increased tree canopy: Desirable.
- 9) Use of indigenous/adapted plants: Desirable.
- 10) Reduced irrigation water use/reduced chemical maintenance use: Required.
- 11) Air Quality: The University of Houston is a tobacco-free campus Smoking is prohibited in all areas of campus including construction sites. Required.
- 12) Light pollution reduction: Required
- 13) Integrated pest management plan, including appropriate preventative measures which avert or reduce the occurrence of significant pest problems: Required

7.2.2. Water Conservation:

- 1) Reduction of potable water use for sewage conveyance: Desirable.
- 2) Reduction of water used by plumbing fixtures, appliances, and equipment through the use of high efficiency plumbing fixtures, appliances, and equipment: Required.
- 3) Air handler condensate recovery: Desirable.

7.2.3. Energy Conservation:

- 1) Energy efficiency meeting ASHRAE 90.1-2010 and As Specified. Required.
- 2) Improvement of efficiency through basic building commissioning: Required.
- 3) Energy and water consumption measurement and verification systems: Required (see also Section 12.0 of these Design Guidelines, subsections D2020 and D5010)
- 7) Use of LED lighting: Desirable.

7.2.4. Conservation of Materials and Resources:

- 1) Recycling rooms, one per floor, and recycling alcoves adjacent to large common spaces (student lounges, multi-purpose rooms, etc.). Required. (see

Section 12.0 of these Design Guidelines, subsection C1050, “Recycling Rooms”)

- 2) Recycling and/or salvaging of construction waste: Required. (See also Master Specification Section 01 74 19).
- 3) Use of materials containing recycled content: Desirable.
- 4) Use of local/regional materials: Desirable.
- 5) Use of rapidly renewable materials: Desirable.
- 6) Standardization of off-white paint color (See also Section 12.0 of these Design Guidelines, subsection C3010 WALL FINISHES): Required.

#### 7.2.5. Indoor Environmental Quality

- 1) Smoking is prohibited in and adjacent to the building: Required.
- 2) Minimum ventilation performance: Required.
- 3) Carbon dioxide monitoring and control: Required in large common spaces (student lounges, multi-purpose rooms, etc.).
- 4) Increased ventilation effectiveness: Desirable.
- 5) Construction procedures that reduce impact on interior air quality during and after construction: Required.
- 6) Use of materials that are low-emitting, non-toxic, and chemically inert: Required.
- 7) Control of sources of indoor pollutants: Required.
- 8) Thermal comfort conditions: As specified.
- 9) Humidity control and monitoring: Required in large common spaces (student lounges, multi-purpose rooms, etc.).

#### 7.2.6. Wellness:

- 1) Individual occupant control of lighting systems: Desirable.
- 2) Individual occupant control of environmental systems: If possible.
- 3) No use of HCFC's: Desirable.
- 4) No use of Halon: Required.
- 5) Provision of daylighting: Required.
- 6) Provision of views to outdoors: Desirable.

### 7.3 Electrical Energy Conservation Strategies:

In addition to the goals above, the design consultant is encouraged to initiate the following energy conservation strategies in new construction or renovation projects.

- 1) Installation of occupancy sensors
- 2) Reduced stand-by power consumption
- 3) Introduction of daylighting into interior spaces

- 4) Advocate energy modeling programs during design to explore which construction dollars result in the most savings for the lowest expenditure.
- 5) Review power consumption during design/Review HVAC and lighting systems specifications for energy efficiency.

7.4 Sustainability Signage:

With User's consent, provide an interior sign or signs consistent with the interior wayfinding sign format (Design Guideline Section 10) that describe noteworthy features of the building which advance sustainable principles. Sign(s) shall be posted to be publicly viewable by visitors.

7.5 LEED-NC 2009 Silver Design Substantiation:

- 1) Schematic Design Stage: LEED Checklist annotated to show specific credits to be achieved with brief description of how they will be achieved. If certification is pursued, University will submit application and pay applicable fees.
- 2) Design Development and Construction Documents Stages: LEED Checklist annotated to show status of design related to specific credits to be achieved. If certification is pursued, a comprehensive checklist of certification document specified in LEED Reference Guide annotated to show status of preparation of documentation shall be provided.
- 3) At Project Closeout
  - b) If certification is pursued, Contractor and Architect shall provide University a complete duplicate of certification documentation, including credit application paperwork.
  - a) Contractor shall install certification plaque.