

## **APPENDIX B**

### **ENERGY CONSERVATION**

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#### **PURPOSE**

1. Bowling Green State University is committed to energy conservation and sustainability. The goal of this energy design standard is to reduce campus wide energy use intensity through energy efficient design in new construction and major renovation projects.

#### **GENERAL**

1. Energy Consumption Requirements
  - a. All new building construction projects shall exceed ASHRAE 90.1.2004 by 20%.
  - b. All major building renovation projects shall exceed ASHRAE 90.1.2004 by 15%.
  - c. Additionally, all new building construction or major building renovation projects, shall meet the following targets for energy consumption:
    - i. E&G Buildings: 55,000 btu/gsf/year maximum
    - ii. Auxiliary Buildings: 80,0000 btu/gsf/yr maximum
    - iii. Residence Hall with air conditioning: 125,000 btu/gsf/yr maximum
    - iv. Science Laboratory Buildings: 100,000 btu/gsf/yr maximum
  - d. All building envelope components shall meet the minimum requirements prescribed in the latest version of ASHRAE 90.1.
  - e. The lighting power density shall not exceed the minimum requirements prescribed in the latest version of ASHRAE 90.1.
2. Energy Modeling
  - a. The following requirements are in addition to the requirements of Section 123.01 of the Ohio Revised Code Rule 123:4 of the Ohio Administrative Code.
    - i. Energy modeling shall be performed utilizing a simulation program such as Trane Trace or DOE.
    - ii. An energy analysis shall be submitted at the end of schematic design and design development and shall include the following:
      - Narrative describing ASHRAE Cost Budget Building assumptions including schedules for thermostats, people, lighting, miscellaneous/plug loads and HVAC equipment.
      - Narrative describing energy conservation opportunities evaluated along with first cost impact along with life cycle cost analysis.
      - Modeling archive file used to model energy consumption.