Green Build and Energy Policy #3.10 Administration & Planning

Applies to: University offices, faculty, staff, students, visitors, and vendors

POLICY

Issued: 12/2008
Revised: 8/22/2012

This policy is created in support of the Climate Action Plan for the Columbus Campus; to comply with Ohio Revised Code (ORC) 3345.69 which establishes a goal to reduce on- and off-campus building energy consumption by at least 20 percent by 2014 using fiscal year 2004 as the benchmark year; and to comply with all other state and municipal requirements affecting energy efficiency in building design and construction at The Ohio State University.

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Definitions

Term	Definition
ASHRAE	American Society of Heating Refrigerating and Air-Conditioning Engineers.
Building construction project	New construction, substantial improvement, substantial renovation, enlargement or other substantial alterations to buildings and structures, or part of a building or structure that includes a major energy consuming system, component or equipment, as approved, by the university engineer, in collaboration with the university architect and university landscape architect, prior to the completion of the schematic design phase of the project.
Sustainability	Creating a campus that is timeless, maintainable, and flexible; incorporating responsible use of fiscal, environmental, and human resources; and having minimal environmental impact.

Policy Details

I. Overview

A. The Ohio State University is committed to addressing sustainability in the design of both new construction and substantial renovation of existing buildings and structures.

B. The principles, practices, and standards governing the design of new campus buildings and structures, and renovation of the same, promote sustainability and support the University Master Plan with the additional objectives of:

1. inspiring teaching, learning and research;
2. providing accessibility to a broad cross-section of the population;
3. conserving resources;

4. incorporating green design principles; and
5. balancing initial and long term operating costs.

II. Green Build and Energy Policy Principles, Practices, and Standards

A. These principles and practices are applicable to building construction projects for which the construction budget is equal to or greater than $100,000 and for which programming and design commenced after July 1, 2008.

B. The university is a signatory to the *American College and University Presidents' Climate Commitment* and has a Climate Action Plan for the Columbus Campus. Since building energy efficiency and energy use, as well as the associated greenhouse gas emissions, are considered in relationship to campus energy generation and supply, the green build principles extend beyond buildings and include the following:

1. employing a mix of renewable and non-renewable energy sources
2. increasing the efficiency of generating and delivering energy to campus buildings, and
3. reducing energy consumption within buildings.

C. The principles and practices of this policy are incorporated into existing university construction procurement, design policies, and practices and will be employed in the design of all qualifying building construction projects.

PROCEDURE

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I. Green Build and University Design Standards

A. For each qualifying building construction project, life-cycle cost analyses will be undertaken by a qualified engineer or architect and in accordance with the standards established in ORC 3345.69 (http://codes.ohio.gov/orc/3345.69). This will include an energy systems analysis and the results of these analyses will be a primary consideration in developing the project design.

B. The following are minimum standards that will apply to design and construction of qualifing building construction:

1. Every classroom and administrative building construction project will achieve energy efficiency that is 25% above ASHRAE 90.1 2004 standards.
2. Every residential hall construction project will achieve energy efficiency that is 30% above ASHRAE 90.1 2004 standards.
3. Every athletics and recreation construction project will achieve energy efficiency that is 20% above ASHRAE 90.1 2004 standards.
4. Every lab construction project will achieve energy efficiency that is 20% above ASHRAE 90.1 2004 standards.
5. Every hospital and clinical construction project will achieve energy efficiency that is 20% above ASHRAE 90.1 2004 standards.

6. All other building types will achieve energy efficiency that is a minimum of 20% above ASHRAE 90.1 2004 standards.

C. The above standards will apply to building construction projects to improve, renovate or otherwise alter an existing building or structure which has been deemed to have inferior systems; and for which the life cycle analysis identifies that building systems perform negatively. For all other applicable building improvements, renovation, or alteration projects, such projects will exceed ASHRAE 90.1 2004 by 15%.

D. In addition to the above requirements, each qualified building construction project with a budget of $4 million or more will be certified to United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) certified "Silver" or higher. Below are the required university mandated LEED points for each project:

1. Optimize energy performance,
2. Enhanced commissioning,
3. Enhanced refrigerant management,
4. Construction waste management/Low-emitting materials – paints and coatings,
5. Low-emitting materials - flooring systems,
6. Indoor chemical and pollutant source control, and
7. Thermal comfort: design.

E. Requests to waive any of the university mandated points may be submitted to the university engineer along with compelling documentation as to why mandated points should not be pursued. Such waiver requests will be considered by the university engineer, in collaboration with the university architect and university landscape architect, according to the Building Design Standards Variance/Waiver Adjudication Process

1. Requests for waiver of the requirements of this policy for a specific project will follow the same procedure as outlined above. Escalation to the Office of Administration and Planning may occur as an outcome of the adjudication hearing process outlined above.
2. All policy waiver requests are expected to be presented for consideration prior to the beginning of the schematic design phase of the project. Failure to present the waiver request in a timely fashion may cause project delays and could become grounds for denial of the waiver request.

F. Monitoring the impact of this policy is critical to informing its contribution to achieving sustainability for the university and for complying with related state law(s). The university will strive to develop regular reports on the impact of this policy, including those stipulated in ORC Sec. 3345.69, and make them available to the public through internet postings, present their findings at relevant university forums, and use their findings to inform other university led sustainability initiatives. Contributing to this, a project impact assessment may be conducted for all applicable building projects with a construction budget over $100,000. This report will describe the fiscal effects of energy efficiency and conservation measures pursued within the project.

G. The mix of renewable and non-renewable energy sources employed and the increase in the efficiency of generating and delivering energy to university buildings will be considered on the basis of their relative value in reducing greenhouse gas emissions, lifecycle cost effectiveness, ability to incorporate the findings of university driven research, and ability to advance the university toward its greenhouse gas emission and other energy goals. Such improvements will be implemented as part

of the university's commitments to reduce greenhouse gas emissions, diversify fuel sources, improve the efficiency of energy delivery and comply with all relevant state laws, including ORC Sec. 3345.69.

II. Energy and Sustainability

A. The University Master Plan contains several principles that encourage sustainability and energy conservation. Energy management is a responsibility shared by building designers, departments that produce and provide the utilities for the university, departments that maintain buildings and systems that use energy, and the university community that consumes the energy. The university is committed to improving energy efficiency, reducing energy consumption, and investigating cost effective options for use of renewable energy sources.

B. Energy efficiency and conservation guidelines have been established for state institutions of higher education in response to ORC Sec. 3345.69. The university proposed a 15 year strategic energy plan to comply with these guidelines. The plan provides a five percent increase in construction costs and applicable fees to ensure energy efficient design and compliance with the Green Build and Energy policy requirements. The plan will request resources to conduct energy audits and implement energy conservation measures. The overall goal is a 20 percent reduction in energy consumption using fiscal year 2004 as the baseline. The following building operation and maintenance practices will be observed:

1. Building Energy Management

    a. Energy audits and/or re-commissioning of existing building systems will be performed at regular intervals to ensure that systems are operating at maximum efficiency.

    b. Recommendations on resources and building selection for the energy audit program will be made through the University Energy Committee and the Energy Services and Sustainability Program Plan. Audits, level of commissioning efforts, energy conservation projects, the preventive maintenance program, and the renewal and deferred maintenance program will be prioritized and implemented as funded through the annual budget process and the capital plan. Level of funding received will determine programs goals and deliverables. Performance contracting will be used to support projects and related efforts when possible.

    c. Building system controls will be added, modified, and integrated into the existing building automation system (BAS) as they are funded. This will allow for greater control over operating schedules, which will permit implementation of demand management strategies to reduce energy consumption and related costs.

    d. The university community (faculty, students, staff, visitors, and vendors) is responsible for practices and behaviors which effect energy demand. In conditioned spaces, windows and doors will be kept closed. Energy consuming devices, such as personal computers, other office equipment, lights and window air conditioners will be turned off when not in use. Information technology support teams will ensure at set up and during maintenance periods that all personal computers, monitors, printers, and copiers have their energy management features enabled.

2. Heating and Cooling

    a. Office and academic space should maintain temperatures during the heating and air conditioning seasons at 70°F and 76°F respectively when occupied. Whenever it is economically and technically feasible, night setback and building scheduling features of the

BAS system will be used to allow temperatures to reset to 60°F and 80°F during heating/cooling unoccupied periods.

i. Temperature control requirements for patient care and medical procedures areas of the Medical Center will be established by the appropriate medical care provider in consultation with Medical Center Operations.

ii. Student Life and Athletics will develop and maintain temperature control requirements for their facilities that do not fall under the above policy 2-a, including housing and recreation facilities.

iii. Temperature control requirements for research, animal care, laboratory areas, and university animal housing areas will be established by University Laboratory Animal Resources, Office of Research, or the appropriate college as mandated by the associated requirements.

iv. All areas noted above will participate in the development of an annual report detailing their established conservation measures, control requirements, and associated outcomes in conjunction with the University Energy Committee.

b. Building temperature control schedules will be established through a Building Energy Management Agreement for each building. The agreement will identify any special care, human needs, or research requirements to maintain the building outside the normal schedule and temperature range. Absent special needs, the University Energy Committee will evaluate exemption requests on an individual basis and will use the most energy efficient means of supplying heat or cooling for approved exemption requests. Installation of window air conditioners in university buildings will be authorized in advance to ensure proper installation and safety measures by the university architect and university engineer. Use of electric space heaters in university buildings will be authorized in advance to ensure proper installation and safety measures by the district leader or facilities manager of the area. All units will meet equipment and installation standards of the university. Areas that are too hot or too cold should be reported to Service2Facilities by calling (614) 292-HELP (Medical Center call 293-8645).

3. Building Leases

a. For building leases of 20,000 square feet or more, the above policies should be complied with whenever practical.

b. Leases will be evaluated by the university engineer in consultation with the university architect and university landscape architect on an individual basis and on their own merits, with an emphasis on the overall financial value of the arrangement and with consideration provided to not allow energy efficiency to impact or impede a desirable and financially sound business arrangement.

4. Utility Metering and Cost Allocation

a. Quality utility metering is essential to provide the data and information required by the Strategic Energy Plan and to allocate costs effectively for billable customers.

b. New buildings or renovations of more than 50% of replacement value or building area will have full utility metering in line with the Building Design Standards.

c. Metering systems for existing buildings are being upgraded over time as outlined in the Facilities Operations and Development (FOD) Metering Plan. Metering upgrades for existing

buildings are funded through the annual budget process and will be managed through Facilities Operations and Development - Energy Services and Sustainability (ESS).

d. Utility billing rates will be developed annually. The cost recovery method for Utility system costs will be collaboratively developed by the Offices of Administration and Planning, Business and Finance, and Energy and Environment.

III. Sustainability

A. Renewable Energy

1. In an effort to meet the climate neutrality goal of the ACUPCC, the university will investigate cost effective renewable energy options and recommend implementation when viable options are identified and funded.
2. Projects requested by students, staff or faculty that connect to the utility infrastructure or to building systems will be reviewed and recommended jointly with FOD and the Office of Energy and Environment prior to any project commitments or initiation.

B. Waste Management – Recycling and Composting

1. Disposal of materials in the solid waste stream represents an increasing cost to the environment and for the university. As a result, the university has adopted a goal of 40 percent waste diversion.
2. The university will continue to improve existing recycling programs such as the All-in-One and outdoor area recycling programs.
3. Composting programs will be developed and expanded for biomass from food operations and landscaping activities.
4. Design of facilities will incorporate the facilities necessary to make recycling convenient for university users.

C. Water Usage

1. Landscape design should use plants that are in balance with the local climate and require minimal resource inputs for landscape care and maintenance.
2. Irrigation water use should be minimized through rainfall monitoring. Major construction or renovation projects should also investigate collecting storm water for non-potable uses on campus as part of sustainable design practice.
3. Low water use flush valves and flow restrictors on faucets and showers will be used in all applicable areas.
4. No single-pass cooling water will be used on mechanical equipment in new construction or retrofits, except in the case of an emergency.
5. Water that does not go to the sanitary sewer system (such as lawn irrigation, cooling towers, and fountains) will have deduction meters installed to obtain a sewer credit from our water supplier.
6. Water leaks, dripping faucets, and fixtures that do not shut off should be reported to Service2Facilities by calling (614) 292-HELP (Medical Center call 293-8645).
7. Domestic hot water heating systems will be well insulated and mixing valves, hot water return pumps, and controls should be designed for maximum efficiency and performance.

D. Studies and Technology Evaluation

Implementing new technology to support sustainability initiatives is most effective when coupled with ongoing research. The university will conduct studies and investigate new technologies to explore feasibility for campus application and do so in collaboration with both academic and research units.

E. Education and Academic Collaboration

University faculty, staff, and students will, under the guidance of the Office of Energy and the Environment and the President's and Provost's Council on Sustainability, support an education program and collaboration on various sustainability topics to allow the campus community to better understand how they can positively impact our campus environment. This work will build off the existing campus sustainability programs, including the University Sustainability Plan, the Climate Action Plan, and the Energy and Infrastructure Plan and will continue to provide support in the classroom through instruction, mentoring of student research projects, and partnering on grant proposals.

F. Transportation

1. Use of the Campus Area Bus Service (CABS), a car sharing program and car/van pooling will continue to be an integral part of our transportation and parking strategy.
2. The university will provide focused communications targeting the benefits of walking, biking and use of public transportation.
3. Student fees include a bus pass for unlimited access to the local transit system. Amenities to encourage methods of transportation that are non-fuel supported such as use of public transit, walking and biking will be strong considerations in all physical planning decisions.
4. The Vehicle Idling policy has been adopted by the university for all state vehicles and will continue to be endorsed and supported.
5. The university onsite fueling station dispenses only soy biodiesel fuel which is used for all diesel powered vehicles, including the campus bus system.
6. The university fleet currently includes alternative fuel vehicles. All requests for vehicle acquisitions are reviewed and alternative fuel vehicles are strongly encouraged.

G. Purchasing

1. Energy efficient and environmentally friendly products will be purchased whenever possible (e.g. the U.S. Environmental Protection Agency Energy Star products list). Recyclable and reusable products should also be purchased when feasible to reduce disposal costs.
2. The university's Stores Department offers products and services for green purchasing.
3. The university has mandated that all copy paper purchased contain 30 percent post-consumer recycled content.

IV. Metrics

Success of the university's energy and sustainability program will be monitored on a continual basis in a number of ways. Existing metrics will be maintained and others added as the 15-year energy plan begins implementation. Metrics include air pollutant, energy, recycling and waste diversion, and the campus carbon footprint for monitoring the performance of the Columbus campus. All metrics will be tracked and updated yearly by ESS. The university will strive to meet reporting requirements for the state and ORC

3345.69. Annual updates will be published to provide the greater community with information on the success of the energy and sustainability programs.

Responsibilities

Position or Office	Responsibilities
Facilities Operations & Development	Implementation and technical support in conjunction with facilities design, construction, and operations activities.
Design Architect/Engineer	Provide a life-cycle cost analysis, including an energy systems analysis to be the primary consideration in developing the project design
University Engineer, University Architect, University Landscape Architect	1. Consider policy waiver requests. 2. Authorize the installation of window air conditioners in university buildings. 3. Evaluate leases with an emphasis on the overall financial value of the arrangement and with consideration provided to not allow energy efficiency to impact or impede a desirable and financially sound business arrangement.
University Energy Committee	1. Provide recommendations on resources and building selection for the energy audit program. 2. Develop an annual report detailing conservation measures, control requirements, and associated outcomes. 3. Evaluate temperature control requirements and consider exemption requests on an individual basis.
University Community	Responsible for practices and behaviors which effect energy demand. 1. In conditioned spaces keep windows and doors closed. 2. Turn off energy consuming devices, such as personal computers, other office equipment, lights, and window air conditioners when they are not in use. 3. Report any areas that are too hot or too cold to Service2Facilities (614) 292-HELP.
Medical Center Operations	Establish temperature control requirements for patient care and medical procedure areas of the Medical Center
Student Life	Develop and maintain temperature control requirements for Student Life facilities.
Athletics	Develop and maintain temperature control requirements for Athletic facilities.
University Laboratory Animal Resources	Develop temperature control requirements for associated research, animal care, and animal housing areas
Office of Research	Develop temperature control requirements for associated research and laboratory areas
District Leader	Authorize and ensure proper installation, according to university and code standards, of electric space heaters.
Energy Services and Sustainability	1. Manage metering upgrade projects for existing buildings that are funded through the annual budget process. 2. Annually track and update metrics.
The Offices of: Administration and Planning, Business and Finance, and Energy and Environment	Collaboratively develop annual utility billing rates and the cost recovery method for utility system costs.
Office of Energy and Environment and Facilities Operations and Development	Jointly review and recommend projects requested by students, staff, or faculty that connect to the utility infrastructure or to building systems prior to any project commitments or initiation.
Office of Energy and Environment and the President's and Provost's Council on Sustainability	Support an education program and collaboration on various sustainability topics to allow the campus community to better understand how they can positively impact our campus environment.

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Resources

Offices:

Facilities Operations and Development, 614-292-0257, fod.osu.edu/

Service2Facilities, 614-292-4357 (614-292-HELP), fod.osu.edu/s2f/index.htm

Stores, 614-292-2694, osustores.osu.edu/

Policies and related documents:

Building Design Standards, fod.osu.edu/bds/

Building Design Standards Variance/Waiver Adjudication Process, fod.osu.edu/bds/bds_process_guidelines.doc

Climate Action Plan, rs.acupcc.org/site_media/uploads/cap/857-cap.pdf

Design Values for Campus Development, fod.osu.edu/proj_del/ref/0200_Design_Values.pdf

Energy and Infrastructure Plan, (currently DRAFT form; not available on-line)

Vehicle Idling Policy, tp.osu.edu/fleetservices/images/IdlingGuidelines.pdf

Metering Plan, fod.osu.edu/uess/metering_plan_final_2006-mar-1.pdf

Ohio Revised Code, codes.ohio.gov/orc/3345.69

Principles and Practices for a Sustainable Ohio State University, fod.osu.edu/uess/sustainable_ohio_state.pdf

Recycled Paper Policy, busfin.osu.edu/FileStore/PDFs/201_RecycledPaper.pdf

Sustainability Plan, (not available on-line)

Web sites:

American College and University Presidents' Climate Commitment, presidentsclimatecommitment.org

United States Green Building Council (USGBC), usgbc.org

Contacts

Subject	Office	Telephone	E-mail/URL
Policy questions	Facilities Operations and Development	614-292-0257	**http://fod.osu.edu/**

History

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