

Sustainability Policy for Operations and Maintenance

Northwestern University has more than 200 owned buildings totaling nearly 12,500,000 gross square feet between the Evanston and Chicago campuses. The watchful stewardship of the buildings' facilities and the grounds is heavily influenced by Northwestern University's commitment to sustainability. The Facilities Management (FM) Operations team supports and advances the preservation of the campus grounds as well as the reduction of energy consumption and accompanying greenhouse gas emissions. These measures are undertaken in order to provide attractive, safe and healthy teaching, learning and work environments. NU's sustainability goals for FM Operations fall within three main areas:

1. Energy and Greenhouse Gas Emissions
2. Green Buildings, Infrastructure, and Grounds
3. Resource Management and Waste

Energy and Greenhouse Gas Emissions

Northwestern University's Operations and custodial staff are the key implementers of NU's energy and sustainability programs. There are two areas where the Operations team impacts energy conservation: lighting, both in replacement and in renovation and improvement projects; and heating and cooling, through controls and scheduling/setback programs, preventative maintenance programs, and through ensuring that existing equipment operates efficiently and to design intent.

Northwestern University has undertaken an ambitious lighting upgrade program, replacing incandescent and T12 fluorescents with efficient T5 and LED fixtures across the University. When fixtures are being replaced, the Operations team selects the most efficient options whenever possible. Preferred LED and T5 fixtures are specified in NU's Design and Construction Standards, along with occupancy sensors and light sensing and dimming technologies when applicable.

The University's energy management system sets indoor temperature at 68°F during the heating season and at 76°F during the cooling season. Occupants who control the temperatures in their spaces are expected to follow this policy by using these ranges. During off-hours and on weekends and holidays, the temperature in most non-residential spaces is allowed to drop to 55°F before heating occurs and is allowed to rise to 86°F before cooling occurs. In selected areas, more aggressive temperature setback programs are being piloted and employed.

Green Buildings, Infrastructure, and Grounds

Sustainable Operations and Custodial Services

Northwestern employs Aramark for its custodial services, who utilizes a “blue cleaning” program that covers all normal cleaning activities undertaken in managing University facilities. Aramark’s program addresses the following: cleaning chemicals, janitorial products and equipment, entryway systems maintenance, waste, and education. More details about Aramark’s “blue cleaning” program can be found here - <http://www.aramark.com/PressRoom/PressReleases/ARAMARK-Blue-Cleaning.aspx>

Non-toxic and bio-based cleaning products are beta tested in an effort to develop “green” cleaning protocols. The initiative for green cleaning provides considerable benefits to the health of building occupants and custodial staff. In testing, product effectiveness is the primary concern.

Low moisture carpet cleaning agents and protocols are used. Typically, less than five gallons of water are utilized when cleaning +/- 2,000 square feet of carpeting, compared to an average hot water extraction method that can consume over 150 gallons. This same area will hold over ten gallons of water following extraction cleaning, which contributes to long dry time, and even the potential formation of mold/mildew. Cleaning agents are effective when mixed with cold water, eliminating the need to waste energy and water heating them. Dry compounds are completely biodegradable and contain no harmful solvents. In most cases, carpets are 95 percent, if not completely, dry when the job is completed.

Paint and adhesive products are reviewed and chosen based on their VOC levels, with the goal of using the products with the lowest VOC possible.

Carpeting that is removed should be recycled. New carpeting is required to have a minimum of ten percent recycled content.

Indoor Environmental Quality

As an institution of higher education, it is critical that classrooms, labs, and offices facilitate and enhance the processes of teaching and learning. Daily operations and maintenance activities are evaluated to ensure that buildings, their occupants, and the environment are safeguarded. Should concerns about the environmental quality of buildings arise, requests for maintenance can be submitted to Facilities Management via an electronic or telephone submission. Residential students may submit maintenance requests and report problems via “SchoolDude,” an online portal.

All heating, ventilation, and air conditioning systems must be routinely maintained to provide environmentally controlled conditions for occupant comfort and health. Outside air intakes provide fresh air and are always located away from harmful emission sources including building exhausts. Temperature and relative humidity levels are monitored and set to inhibit the formation and presence of mold and mildew. In the event that mold or mildew is detected in a building, the HVAC shop and Office of Research Safety are notified, and the incident is investigated to determine and eliminate the causative factor(s).

To the maximum extent possible, natural day lighting is used before artificial lighting is turned on. Window treatments are also utilized to minimize glare as well as heat gain.

Noise levels inside classrooms and offices can be adversely affected by outdoor ground maintenance equipment. In order to minimize this impact, leaf blowers, lawn edgers, mowers, chain saws, etc. are not operated in proximity to classroom or administrative buildings when classes are in session or during normal business hours.

Only paints with low VOC levels are used for maintenance. Whenever possible, Environmental Services uses green cleaning products. Food wastes and other odor producing wastes are removed daily. Soap and paper products are supplied in every public restroom; each building has hand sanitizer available as well. The soap used is a type of foam that supports using less water and creating less waste.

Sustainable Grounds

Northwestern University is challenged by special constraints on both of its campuses, but it has maintained a focus on growth with minimal impact on its environs and the surrounding communities. To accommodate the growth in enrollment and research, the campus infrastructure and facilities have expanded in accordance with the campus master plan. Planners have recognized the importance of open green space and mature trees in their capital planning and have preserved and incorporated these natural features into the current campus landscape.

Stormwater collection and management is a focus, particularly in Evanston where the lake frontage makes the potential impact significant. The use of synthetic fertilizer is kept to a minimum through the use of frequent soil and tissue tests and custom blended fertilizer to provide only the nutrients found to be deficient. Slow release nitrogen components (polymer coated, sulfur coated ureas) are primarily used, as they promote both moisture and high soil temperatures, virtually eliminating leaching or run-off concerns and providing a slow nutrient release.

Around each campus building, landscaping enhances and softens the stark features of the brick and mortar. Low-maintenance grasses, shrubs and flowerbeds are preferred— particularly perennials— and landscaping is constructed in accordance with sound horticultural designs. When designing landscape spaces, NU architects prioritize the use of drought tolerant and adaptable species. Emphasis is given to making the campus walkable and bikeable through the inclusion of wide sidewalks, which allow for easy commuting as well as facilitate the removal of snow and ice with equipment, thereby minimizing the use of de-icing materials.

New parking lots are constructed on the campus perimeter and bicycle racks are conveniently provided at or near most buildings to discourage driving and promote biking and walking as the preferred modes of transportation.

Resource Management and Waste

NU recycles more than 1,800 tons of the 5,300 tons of waste generated annually, representing a 34 percent diversion rate. Recycling has been a part of Northwestern University's campus greening efforts since 1989. Students started the program, and it is now a part of daily operations across the campus. Reducing waste and increasing NU's diversion rate continue to be important parts of campus sustainability efforts.

To ensure NU maximizes its diversion rates, recycling and trash bins are placed throughout campus buildings in common spaces as well as in individual classrooms. Whenever possible, trashcans are paired with plastic and paper recycling bins so no cans stand alone. The same guidelines stand for outdoor spaces, where almost all waste stations feature three connected bins, for trash, paper, and plastic recycling. The Office of Sustainability monitors the location of recycling bins across campus and also offers means through which any member of the Northwestern community can offer suggestions for where bins ought to be placed.

In dining halls, composting organic waste maximizes NU's operational sustainability. In partnership with NU's food service provider (Sodexo), pre- and post-consumer food waste is collected and composted in a "back of the house" program. All kitchen staff is trained in handling compost and food waste and scrape used plates to ensure all food waste is composted.