

Application for FMXcellence

Name: Peter Strazdas

Title: Associate Vice President for Facilities Management

Company: Western Michigan University-Facilities Management Department

Please provide an overview of one completed FM project/initiative or ongoing FM practice/program that supports the goals of the larger organization. Projects must be completed to be considered. (Limit responses to no more than 2,000 words.)

The Facilities Management Department at Western Michigan University provides all facility services to the campus community. FM is responsible for approximately 8 million square feet of university space, generates 510 million pounds of steam each year, employs over 460 employees and maintains roughly 1,200 acres. With such a dynamic responsibility, the Facilities Management Department is comprised of four Divisions that include; Engineering, Projects and Construction, Planning, and Operations (Custodial, Landscape, Maintenance, Power Plant, Recycling and Transportation).

Sustainability is a significant part of our Facilities Management culture. Each Division of FM has a significant role of the University's sustainability goals with individual contributions in all aspects of the stewardship of the campus environment.

Over the course of several years FM has continuously researched new and more efficient processes, products and resources in order maintain a position in the movement toward a "greener" environment. One of the more recent examples included incorporating the irrigation systems on campus into the Building Automation System, which resulted in a 48% reduction in irrigation water usage this past year. This effort was in response to the concern for the environment. The Building Custodial unit of FM has undertaken several key steps to reduce the amount of chemicals used in the cleaning of campus buildings.

Starting with the design and construction of the WMU Parkview Campus in the late 90s, Western Michigan University has been committed to cutting-edge sustainable and environmentally friendly construction and renovation projects. Much of the current movement began in 2008, where the development plans for WMU's College of Health and Human Services building were in process. Collectively, FM, campus administration and outside architects were able to create a state of the art, 240,000-square-foot building. This signified a commitment WMU has toward sustainability and WMU achieved with the LEED-EB gold certification.

Over the past 14 years, WMU has made a consistent effort with energy conservation. Here are some key points of pride:

- 18% Total Campus energy consumption
- 17% building square foot increase
- Floor space increase of 1.1 million SF
- Electrical avoidance of 70 million kWh

- Steam avoidance of 1,690 million lbs.
- Offset over 105,000 metric tons of greenhouse gas emissions (equal to energy emissions for over 9,000 homes per year)
 - Power Plant 91% emission reduction
 - Campus water usage reduction by 11% or 84,190 cubic meters
 - Converted over 12,000 light bulbs from incandescent to compact fluorescent

Facilities Management is a vital component of our higher learning institution, so we feel that it is important to keep current with issues that impact the daily operations of all physical assets of our campus. Education and activism are important and because of that we believe FM should stay involved. Several employees in the Facilities Management Department actively participate in the President's Universitywide Sustainability Committee (PUSC), which was established in 2008. FM is also involved in many other sustainability related organizations including; Recyclemania, Tree Campus USA, International Executive Housekeepers Association (IEHA) and Association of Physical Plant Administrators (APPA).

Describe the larger organizational goals or challenges addressed by the project or practice. Include any impacts that the project or practice had on building occupants. Limit responses to 1,000 words.

One of the more significant aspects of what we do in FM is the incorporation of sustainability within all of our Divisions. Many of our Divisions and units collaborate together on projects to gain a larger and broader goal. Facilities Management's vision is to be an exemplary higher education facility management organization with excellent stewardship of the campus environment. Each Division and unit has its own specific goals to contribute to the larger goal in response to the challenges and demands FM faces each day.

Every organization experiences challenges and situations that call for fast action. FM works very diligently to provide the university community with excellent customer service and is always looking for ways to develop better, more efficient methods to do so. We want the students and faculty to have the best possible facility to promote better learning. Through the introduction of web based work request submittals we have instituted a 24 hour first response promise.

Each Division and unit has contributed goals to the larger scope of the Facilities Management Department. Goals that have been created have incorporated sustainability, as the program is important to all aspects of what we do in Facilities Management. Many of the goals set for 2010 have been achieved and FM looks forward to reviewing the accomplishments and challenges faced.

For a more in depth look into each division and units goals please visit our website:

<http://www.fm.wmich.edu/administration>

Describe results achieved. Include quantitative and qualitative results. For quantitative results, describe the way that results were measured or evaluated. It is helpful to put savings results in some context – as a

percentage of the overall facility or energy budget, for example. Energy and water savings results should be based on hard data, e.g. metered data or utility bills. If the project or practice involved the creation of metrics/measurements, use this space to provide more detail about the metrics program. Limit responses to 1,000 words.

One of the more significant aspects of what we do in FM is the incorporation of sustainability. Many of our Divisions and units work together on projects to gain a larger perspective. There have been several successfully completed projects in a combined effort including the following examples:

- College of Engineering and Applied Sciences '90s
- Brown Hall LEEDS scorecard

<http://www.wmich.edu/sustainability/pdf/brown-hall-leed-scorecard-update.pdf>

- South Kohrman renovation-Storm Water Management
- Launch of FM sustainability website

<http://www.wmich.edu/sustainability/index.html>

- Use of beet juice and pre-wetting salt for snow removal reducing annual salt usage by 35%

Other projects that are currently underway have LEED's checklists include;

- Sangren Hall 200,000 square feet
- Western View campus apartments-4 buildings-330 beds

The transformation continues to grow as the FM department is able to see the savings and more importantly the impact it has on the campus. The Maintenance Services unit replaced over 12,000 incandescent light bulbs with fluorescents in an effort to conserve energy. So far the savings have amounted to the conservation of one million watts. Transportation Services takes into consideration a number of alternatives when replacing vehicles within the University's fleet. The FM department currently has 30 fuel efficient vehicles, saving the University 20% in fuel costs.

The sub-metering initiative is another tool Facilities Management has implemented to aid in energy conservation. Sub-metering can provide FM with accurate analysis in addition to the ability to further research solutions that will result in less consumption. Over the last ten years our campus square footage has grown while our total energy consumption has decreased.

College of Health and Human Services is a LEED-EB gold certified facility and a sustainable addition to our growing campus. The addition proved to be turning point for the University, as it has undoubtedly transformed the social culture of the many that make WMU the great higher learning institution it is today. One of the most rewarding aspects of a sustainability program is the awareness that exists on campus and in the community. Facilities Management can implement many new solutions to existing wasteful challenges, however if the campus community isn't involved the program is less likely to be as effective. It just goes to show that sustainability isn't just an FM effort it goes much further beyond, to the students, faculty, staff and everyone involved with our great university.

Buildings

College of Health and Human Services:Western Michigan University has been awarded a \$15,000 federal grant to help its College of Health and Human Services Building meet national energy efficiency standards and put it among one of the highest performing buildings in Michigan. Since its construction in 2005, ongoing projects at CHHS are striving to exceed policy and attain a LEED Gold certification for the building. CHHS is currently in a monitoring status by the LEED Review Board.

<http://www.wmich.edu/sustainability/campus/buildings.html>

New Building Construction

Starting with the design and construction of the WMU Parkview Campus in the late 90s, Western Michigan University has been committed to sustainable and environmentally friendly construction and renovation projects. The university has adopted the Facility Life Cycle Design Guidelines which incorporates the LEED Green Building Rating System and evaluation of environmental impacts & costs during the entire life cycle of facilities. Some examples of sustainable design strategies used in new buildings & renovation projects:

- Daylighting: Architectural design to maximize penetration of daylight to occupied spaces, in conjunction with daylight & occupancy sensors to reduce electric lighting use.

<http://www.wmich.edu/sustainability/campus/learn/daylight.html>

- Heat Recovery Systems: Waste heat from recycled air is used to temper outside air in ventilation

systems.<http://www.wmich.edu/sustainability/campus/energy.html#heaT>

- Recycled Content Materials: Materials with post-consumer or post-industrial recycled content are specified.

- Renewable Materials: Materials from sustainably managed & harvested sources are used, which regenerate in a short amount of time.

- Construction Waste Management: Sorting & recycling of demolition & construction waste products.

- Ventilation Fresh Air: An increased amount of outside air is used in mechanical ventilation systems, to improve indoor air quality.

- Low Emitting Materials: Interior finishes are specified which off gas low amounts of volatile organic compounds (VOC's).

- Stormwater Management: Rain gardens & bio-swales are utilized to increase the amount of on-site infiltration & filtering of stormwater, and reduce the discharge to storm sewer systems.

<http://www.wmich.edu/sustainability/campus/water.html#storm>

- Drought Resistant Landscaping: Plantings which need little or no irrigation water are specified.

Energy & Water

Load Shedding for Electric Chillers: At Western Michigan University, we systematically shut down our on campus electric chillers to reduce loading on the electric utility grid during peak demand hours. Doing so reduces the demand on the public electric utilities while offsetting large volumes of greenhouse gases each year.

<http://www.pp.wmich.edu/ms/em/initiatives/index.html>

Variable Air Flow for HVAC Systems: Variable Air Volume [VAV] Boxes are added to the HVAC systems in many of the buildings at Western Michigan University to control air flow to individual rooms or spaces. Use of VAV technology controlled by the Building Automation System [BAS] generated savings in heating and cooling while maintaining a comfortable interior environment for buildings occupants.

<http://www.pp.wmich.edu/ms/em/initiatives/airflow.html>

Time of Day Scheduling: Controlling lighting and HVAC through the use of Time of Day scheduling and the Building Automation System [BAS] allows the Western Michigan University Physical Plant staff to define normal occupancy hours for individual buildings and facilities on campus

http://www.pp.wmich.edu/ms/em/initiatives/time_scheduling.html

Installation of High Efficiency Motors: Western Michigan University currently purchases high efficiency motors wherever possible. The cumulative energy savings as well as reduced maintenance costs contribute to overall savings that may be funneled into green projects elsewhere throughout campus.

<http://www.pp.wmich.edu/ms/em/initiatives/motor.html>

Occupancy Sensors for Lighting and HVAC: Lighting: One of the fastest and easiest ways to lower energy costs and the associated environmental impact is to reduce electricity use in the first place. Energy-efficient upgrades can provide the university with long-term savings and make campus operations more sustainable. One such upgrade that you may have noticed here on campus are occupancy motion sensors for lights in many campus buildings.

<http://www.pp.wmich.edu/ms/em/initiatives/sensors.html>

http://www.pp.wmich.edu/ms/em/initiatives/lighting_chart.pdf

Lighting Conversion: T12 -to- T8, HID -to- CFL, Incandescent -to- CFL

T12 to T8 Conversion: Older linear florescent ballast technology is inefficient and requires more power to operate. Western Michigan University has overseen the replacement of older T12 type magnetic ballasts with the newer more efficient T8 electronic ballasts throughout campus.

<http://www.pp.wmich.edu/ms/em/initiatives/lighting.html>

HID to CFL Conversion: Converting our Metal Halide High Intensity Discharge [HID] fixtures to Compact Florescent Lamps [CFL] has generated long-term energy reduction and labor savings for multi-functional facilities on the WMU campus

<http://www.pp.wmich.edu/ms/em/initiatives/HIDtoCFL.html>

Incandescent to CFL Conversion: In an effort to reduce energy costs associated with lighting, the first response is to replace screw type incandescent bulbs with energy efficient Compact Florescent Lamps [CFL]. At Western Michigan University we look for any opportunity to replace incandescent bulbs with CFLs in buildings and facilities on campus.

<http://www.pp.wmich.edu/ms/em/initiatives/incandescent.html>

LED Conversion for Exit Lights: In 2005, Western Michigan University completed a retrofit of all exit signs on campus, converting from older incandescent models to Light Emitting Diode [LED] versions. The average power required for older incandescent signs was 50 watts. The newer LED versions require only 1.8 watts on average

http://www.pp.wmich.edu/ms/em/initiatives/exit_signs.pdf

Daylight Harvesting: Daylight must be properly integrated with the electric lighting system for its energy-savings potential to be realized. A primary strategy, called daylight harvesting, is to use lighting controls that switch or dim the lights either manually or automatically in response to available daylight.

<http://www.pp.wmich.edu/ms/em/initiatives/daylight.html>

Reduction in CFC, HCFC Usage On-campus: Western Michigan University is doing its part to reduce ozone depletion by eliminating the use of chlorofluorocarbons [CFC] in all refrigeration units on campus.

<http://www.pp.wmich.edu/ms/em/initiatives/reduction.html>

CO2 Monitoring and Control: Western Michigan University uses the latest CO2 monitoring technology in all of its newly constructed buildings and facilities to maintain a high degree of indoor air quality.

<http://www.pp.wmich.edu/ms/em/initiatives/index.html#cfc>

Preventative Maintenance Program: Preventative maintenance of steam traps throughout the WMU is a full-time job. Regular maintenance can prevent high pressure blow through at the traps and detect steam line problems before they become costly.

<http://www.pp.wmich.edu/ms/em/initiatives/prevention.html>

<http://www.pp.wmich.edu/ms/em/initiatives/prevention.pdf>

Grounds & Landscaping

Melding Landscaping with Storm Water Management Practices: The University green space has also been adapted in several areas of campus to accommodate a broader ecological concern. Impervious surfaces such as rooftops, streets, parking lots and other hardscapes have traditionally put storm water and associated mineral and biological loading into local streams, rivers and lakes creating additional environmental problems. The diagrams here are representative of these concepts and initiatives being employed at the University campuses.

<http://www.wmich.edu/sustainability/pdf/operations/main-campus-storm-water.pdf>

<http://www.wmich.edu/sustainability/pdf/operations/btr-storm-water.pdf>

<http://www.wmich.edu/sustainability/campus/learn/melding.html>

Use of GeoMelt (Sugar Beet Juice) and Natural Brine as a Pre-Wet on Rock Salt and as an Anti-Icing Agent on Sidewalks: GeoMelt uses extract from a common vegetable, the beet. GeoMelt is a derivative of the sugar beet after the sugar is removed. It is also completely organic and water soluble. Since it comes from a plant, GeoMelt is entirely environmentally friendly. The resulting syrupy concoction is nature's natural ice melter. Unlike traditional salt, which loses its effectiveness around 15 degrees, a load treated with beet juice works to 30 below. Because it is thicker than other treatments, it lasts longer. GeoMelt stays in the grooves and cracks of the asphalt or concrete requiring less application. The use of GeoMelt on campus helps to minimize salt use during the winter season and in turn helps to control salt contamination in the snow melt run-off.

Snow Melt Systems: WMU uses snow melt systems [SMS] at the entrances to many of its buildings. These systems circulate glycol under low pressure through closed-loop piping embedded in concrete. Snow melt systems are controlled through the Building Automation System [BAS]. The BAS checks

that the outdoor air temperature is below freezing and that there is snow on the ground before activating the SMS. Use of the on campus snow melt systems reduce the amount of salt required to thaw walkways, minimize snow buildup near building entrances and reduce the number of slip-fall accidents that occur during winter months.

Purchasing & Policies

Energy-Star: In the fall of 2000, WMU became an Energy Star partner, meaning that all of the appliances and equipment it purchases will reach Energy Star standards whenever possible. The products that reach the Energy Star standards require 25 to 50 percent less power than products that don't meet them.

http://www.pp.wmich.edu/ms/em/policies/energy_star.pdf

Green Cleaning Policy: Cleaning products such as paper and chemicals are environmentally friendly.

http://www.wmich.edu/sustainability/pdf/green_cleaning_Policy.pdf

Compact Fluorescent Lamp Policy: Western Michigan University continues to be a leader in energy conservation as it rids itself of inefficient incandescent lamps used to light the campus. Compact Fluorescent Lamps reduces electrical consumption of each fixture by almost 75%, and last up to 10 times longer than incandescent lamps. All lamps are to be recycled at the end of the lamp life.

30% PCW (post consumer waste) copier paper requirements

http://www.wmich.edu/sustainability/pdf/recycled_paper_products.pdf

Recycling

We recycle plastics, metals, glass, paper and cardboard, polystyrene foam and other materials on campus.

<http://www.pp.wmich.edu/rs/>

<http://www.pp.wmich.edu/rs/offcampus.html>

<http://www.pp.wmich.edu/rs/oncampus.html>

Trash-to-Treasure Program: Recycling & Waste Reduction Services collects clothing, food, linens, toys, furniture, appliances, and toiletries for the less fortunate living in Kalamazoo

<http://www.pp.wmich.edu/rs/treasure.html>

Recycle Mania Competition: Recycle Mania is a friendly competition among college and university recycling programs in the United States that provides the campus community with a fun, proactive activity in waste reduction

<http://www.wmich.edu/sustainability/campus/learn/recyclemania.html>

Rental Regalia: By renting out machine washable caps and gowns to WMU graduates, the WMU Bookstore will save graduates money and hopes to reduce waste.

Plastics Products: The shopping bags used at the WMU Bookstore are made from 25% postconsumer recycled content. These bags and all other plastic bags can now be recycled at the drop-off center in the WMU Bookstore.

Reusable Shopping Bags: The WMU Bookstore offers a polyester alternative to plastic bags that clutter our landfills. These stylish tote bags, offered in assorted colors, can be purchased for just \$1 and can be reused for a variety of uses.

Book BuyBack: Book buyback is a service that allows students to sell their used books for a percentage of what they originally paid. If the book is needed for our store, the students receive 50% of the new retail price. Books not needed for our store will be offered the national wholesale price, which varies depending on the nationwide need.

The Cotton Exchange: The Campus Trends will be selling 100% certified organic ringspun cotton T-shirts. These shirts come in several colors, are dyed with environmentally friendly garment dyeing process and are made in the USA.

Bottle Deposit Redemption Program

The WMU Bookstore will redeem your Michigan bottle deposits for Coca-Cola® products. Bring empty deposit containers to the service counter during store hours to receive your 10 cent deposit. There is a limit of 250 containers per day. Remember, Coke® products only.

Transportation and Parking

AFV Parking: As part of our efforts to secure Leadership in Environmental and Energy Design (LEED) certification for the HHS building, signs for reserved parking spots have gone up around the building.

<http://www.wmich.edu/sustainability/campus/learn/afv.html>

Flex Fuel E85 and Electric Vehicles: Western owns approximately 50 vehicles used in several departments with Flex Fuel capability; including Public Safety, Maintenance Services, and Custodial Services. Western owns 2 electric vehicles with a 20–30 mile range for an 8 hour charge which saves on gas and emissions.

<http://www.wmich.edu/sustainability/pdf/operations/vehicle-comparison.pdf>

<http://www.wmich.edu/sustainability/campus/learn/flexfuel.html>

Green Garage: The transportation department recycles all its' used oil, oil filters, tires, and antifreeze. It also uses re-refined motor oil and antifreeze.

http://www.wmich.edu/sustainability/campus/learn/used_oil.html

Describe methods used to communicate the results of the project or practice to the greater organization. (If the project or practice was a communications effort, use this space to provide more detail about the communications program.) Limit responses to no more than 500 words.

The Facilities Management Department publishes a quarterly newsletter for building occupants and employees in a combined effort to allow for knowledge about updates, projects and initiatives taking place. There have also been articles published in the local Kalamazoo Gazette and in the Western Herald about initiatives happening with Facilities Management.

FM developed a sustainability website for the WMU community as an outreach effort. This website offers information about the building life cycle, LEED standards, etc. Recycling and Waste Reduction Services has a unique website filled with information on recycling, as well as an informative newsletter that reaches students, faculty and staff.

FM Connection Newsletter:

<http://www.fm.wmich.edu/about/aboutnewsletter>

FM Sustainability Website:

<http://www.cf.wmich.edu/campusfacilities/Green/index.html>

WMU Recycling and Waste Management Services Website:

<http://www.fm.wmich.edu/operations/recycling>