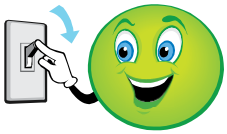
DesMoines PUBLIC SCHOOLS

ENERGY REPORT CARD

March 2014

Flipping the Switch:

DMPS Exterior is Going LED



The Energy Team is starting the initiative to convert all exterior light fixtures on all DMPS buildings to high-efficiency LED fixtures. The process will begin within the next two months with a round of elementary schools.

Light emitting diodes, or LEDs, are small light sources that are illuminated by the movement of electrons through a semiconductor material.

ENERGY STAR certified LED bulbs last up to 25 times longer than incandescent bulbs—saving up to $135 in energy bills and reducing our collective footprint by billions of pounds.

Who else is using LED lighting?

- **The City of Los Angeles**—141,089 LEDs have been installed in LA's streetlights since 2009. LA has been able to save $7 million a year in energy costs, reduce energy use by 63.1 percent, and prevent 47,583 metric tons of carbon emissions from being released into the environment.
- **New York City**—the city plans to replace all of its 250,000 streetlights with LEDs. The project is expected to save $14 million a year in energy and maintenance costs.
- **Renton School District in Seattle**—the 2.4 million sq. ft. district decreased energy consumption by 82 percent and expects to save $15,000 annually.

The Top 10 Benefits of LED LIGHTING

1. **Long Life**—If you leave on the LED fixture for eight hours per day, it would take around 20 years before it needed to be replaced.
2. **Energy Efficiency**—LEDs have an estimated energy efficiency of 80 percent to 90 percent when compared to traditional lighting and conventional light bulbs.
3. **Ecologically Friendly**—LED lights contain no toxic materials and are 100 percent recyclable.
4. **Durable Quality**—Because LED lights are resistant to shock, vibrations and external impacts, they make great outdoor lighting systems for rough conditions and exposure to weather.
5. **Zero UV Emissions**—LED illumination produces little infrared light and close to no UV emissions.
6. **Design Flexibility**—LEDs can be combined in any shape to produce highly efficient illumination.
7. **Operational in Extremely Cold or Hot Temperatures**—LED illumination operates well in cold settings, such as for outdoor winter settings, freezer rooms, etc.
8. **Light Dispersement**—LED is designed to focus its light and can be directed to a specific location without the use of an external reflector, achieving a higher application efficiency than conventional lighting.
9. **Instant Lighting & Frequent Switching**—LED lights can be switched off and on frequently and without affecting the LED's lifetime or light emission.
10. Low-Voltage—A low-voltage power supply is sufficient for LED illumination.

Read more about LED lighting on www.ledluxor.com.

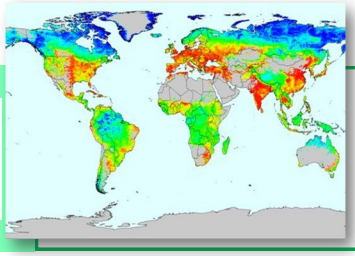
Knowledge from our Students

CONSERVATION

JASMIN GARCIA. LINCOLN HIGH SCHOOL

Conservation means to protect, reserve, restore and conserve resources. It is an important method in prolonging the sustainability of basic necessities, such as water and energy. Certain resources need to be conserved in order to prolong a healthy and balanced life. Water is not renewable and needs to be maintained. Energy is a renewable resource that is worldly used and can be conducted using several different methods. The problem with this is finding an inexpensive, environment-friendly method that will not only reduce land use, land destruction and pollution, but will sustain enough energy for a community.

Conservation is not only important for the sustainability of water and energy, but it is important for all species. The protection of animal and plant species is vital to a balanced life on Earth. Without the conservation and balance of present animal and plant species, the ecosystem could tumble with the corruption of any food chain. Several organizations around the world make it their goal to protect animal and plant species as well as our natural resources. Organizations like WWF (World Wildlife Fund) have made a spike in conservation efforts with different projects and such efforts as the Wildlife Crime Technology Project that allows WWF to monitor and protect animals in the wild.



This is a map of the world's water supply and the severity of harmful substances and pollution. Red being the most unsecure, dark blue being the most secured.

LIGHT BULBS

KEELY STAGNER, LINCOLN HIGH

In IESA, we talked about light bulbs and which kinds are more efficient to use in your home. The main types are traditional incandescent, halogen incandescent, compact fluorescent, and light-emitting diode (LED) light. The less efficient bulbs are the traditional incandescent, an electric bulb that generates light with a filament wire heated to a high temperature by an electric current passing through it until it lights. These are cheap but don't last as long as others.

The most efficient bulbs are compact fluorescent or CFL. These bulbs use 1/5 to 1/3 the electrical power as regular bulb and produce the same amount of light. These can last up to nine years and cost about $3. CFLs contain argon and mercury vapor kept within a spiral-shaped tube. They also contain an integrated ballast, which generates an electric current to pass through the vaporous mixture and excites the gas molecules.

For a 10-year stretch, you spend about $85.15 for traditional incandescent bulbs. For compact fluorescent bulbs, you only spend about $23.37 over 10 years. The CFLs are more efficient and are excellent for our planet.

ENERGY REPORT CARD

YEAR-TO-DATE SITE ENERGY USAGE REPORT
July 1, 2013—February 28, 2014

Percentage change as compared to same period time from last year

AVERAGE TEMPERATURE FOR FEBRUARY 2014 WAS 11 DEGREES LOWER THAN FEBRUARY 2013

Site	Total Energy (mBtu)	%Chg	Heating degree days	kBtu/ SqFt
Findley	959	-62.10%	3,759	22
Pleasant Hill	675	-52.50%	3,759	17
Jefferson	852	-42.80%	3,759	19
Woodlawn	683	-15.20%	3,759	15
Hoyt	5,185	-12.30%	3,759	52
Operations Center	2,636	-11.70%	3,759	27
McKee	486	-10.90%	3,759	11
Prospect	5,004	-7%	3,759	95
Samuelson	1,051	-6.70%	3,759	19
McCombs	2,818	-6.60%	3,759	32
CNC	8,304	-4.40%	3,759	148
Park Avenue	1,477	-4.20%	3,759	23
Hanawalt	972	-2.90%	3,759	22
Welcome Center	296	-1.60%	3,759	48
Carver	1,515	-1.50%	3,759	17
Cattell	1,381	-1.30%	3,759	29
Willard	1,878	-.20%	3,759	32
Harding	3,545	.40%	3,759	28
Monroe	3,059	1.20%	3,759	41
Madison	1,135	2.20%	3,759	27
Morris	1,208	4.30%	3,759	17
Weeks	3,722	4.60%	3,759	33
Walker Street	1,535	4.80%	3,759	29
Brubaker	1,704	4.80%	3,759	22
Walnut Street	5,755	5.60%	3,759	49
Phillips	1,697	5.80%	3,759	40
Aviation Lab	562	5.90%	3,759	39
King	860	6.60%	3,759	16
Capitol View	2,256	7%	3,759	30
Hiatt	2,204	7.40%	3,759	21
Goodrell	2,153	7.60%	3,759	19
Oak Park	1,418	7.70%	3,759	24
Perkins	1,200	8%	3,759	21
Lovejoy	1,190	8.40%	3,759	30
Jackson	1,012	9.20%	3,759	22
Cowles	1,285	9.30%	3,759	29
Wright	838	9.90%	3,759	28
South Union	1,503	9.90%	3,759	22
Central Academy	3,589	10.30%	3,759	42
Brody	4,492	11.90%	3,759	46
Garton	1,922	13%	3,759	29
McKinley	1,987	13.10%	3,759	40
Moulton	6,682	15.80%	3,759	55
Mitchell	819	16.60%	3,759	26
Hillis	1,211	16.70%	3,759	21
River Woods	3,090	17%	3,759	52
Windsor	1,266	17%	3,759	21
Hubbell	2,142	17.20%	3,759	40
Greenwood	1,441	18%	3,759	23
Studebaker	1,203	22.20%	3,759	26
Callanan	3,762	22.30%	3,759	32
Howe	969	26.30%	3,759	25
Hoover/Meredith	16,171	26.50%	3,759	54
Roosevelt	13,860	27.20%	3,759	58
Kurtz	7,191	27.70%	3,759	68
Van Meter	5,609	29.60%	3,759	98
Lincoln	20,225	29.90%	3,759	65
East	22,131	38.60%	3,759	64
Central Campus	29,658	41.60%	3,759	65
Merrill	4,768	46.70%	3,759	53
Moore (Scavo)	2,829	57.20%	3,759	62
North	15,536	57.20%	3,759	62
Smouse	6,334	59.60%	3,759	118
Stowe	1,553	84.90%	3,759	27
Edmunds*	1,082	N/A	3,759	14

Increase in energy use
Maintaining energy use
Decrease in energy use

*Edmunds was constructed in 2013; comparable data is not available.

Visit www.dmschools.org for more details of the district's energy mission and building performance. Do you want to share your ideas for saving energy or helping our environment? Or want to let us know about your projects? Tell us about it! E-mail Michelle.Chalkey@dmschools.org