

## Watt's Up?

Technology is always changing. DMPS recognizes the need to stay current as well as conserve energy. One of the less visible changes in this past summers renovations was an upgrade to the technology infrastructure.

~ Wayne Knutson, Principal at Park said, "Through the remodel we were able to add a 30 cart wireless lab. The lab is working well and gives our students and staff a lot of flexibility with technology."

~ Lindsey Cornwell, Principal at Wright, added, "We also were able to add 30 laptop student computers to use. Our wireless network is very strong, which allows teachers and students to work on computers all throughout the school."

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## Learn More @

~ According to ENERGY STAR®, "If all computers sold in the US meet ENERGY STAR requirements, the savings in energy costs will grow to more than \$1.5 billion each year, reducing greenhouse gas emissions equivalent to those from 2 million vehicles." Learn more at [www.energystar.gov](http://www.energystar.gov).

~ "Des Moines Public Schools is proud to be an ENERGY STAR Low Carbon IT Campaign Participant, part of EPA's ongoing efforts to help save energy and money. The ENERGY STAR Low Carbon IT Campaign is a nationwide effort to assist and recognize organizations for reducing the energy consumed by computers. Learn how you can reduce your carbon footprint and save up to \$50 per computer annually by going to [www.energystar.gov/lowcarbonit](http://www.energystar.gov/lowcarbonit)."

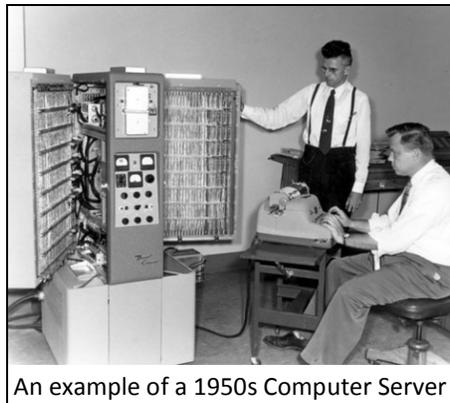
~ Don't throw away your unwanted electronics, consider donating or recycling. Check out Earth911 for listings in your community. Visit [www.earth911.com](http://www.earth911.com).

***"The Technology Department is doing its part to cut costs and reduce our carbon footprint." ~ Dan Warren, Director of Technology***

There are significant savings that can be achieved through using technology wisely. This would include utilizing power management software to shut down computers at night and over the weekends, utilizing sleep modes for periods of inactivity, turning off monitors and other peripherals, and purchasing ENERGY STAR® computers and monitors.

The Technology Department is in the process of upgrading our infrastructure to allow for faster response to network resources. Today we have around 95% of our buildings on a fiber connection. We will continue to make our network response time even faster in the near future. As virtualizing technology progresses we will begin to look into a virtual workstation or lab.

## Technology Saves Energy



An example of a 1950s Computer Server



An example of a virtualized computer lab. There will be significant energy savings with the reduction and/or elimination of desktop computers.

Virtualization, "what is that?", you may ask. Wikipedia defines virtualization as: "Virtualization, in computing, is the creation of a virtual (rather than actual) version of something, such as a hardware platform, operating system, a storage device or network resources."

While a single server can provide a shared hard drive to multiple machines, our network requires more storage that a single server can offer. The purchase of two Storage Area Network (SAN) units is an efficient way to increase network storage resulting in the dismantling of servers in the building and replacing with either a blade or virtual server. A SAN is a network of storage devices that can be accessed by multiple computers. A blade server is a stripped down server computer designed to minimize the use of physical space and energy. The district currently has 20 blade servers and has the capacity to add 12 more.

The purpose of the SANS project is to provide the necessary storage space to continue virtualizing servers as they need replaced or fail. Virtualizing actual servers saves us on energy, storage waste, processor waste, physical space and total server cost.



# Check It Out ...

Iowa Energy & Sustainability Academy  
Des Moines Public Schools

what's new from our students.



By Ernesto (David) Portillo

The IESA (Iowa Energy and Sustainability Academy) class is a really interesting program which focuses in making students aware of how to appreciate and protect the environment we live in. We the students with the guidance of a great teacher (Mr. Beall) have been researching on topics such as Land, Water and Air which are the three that cover all of the resources that we now have on Earth. Land is the supplier of food, the ground below us and something we should appreciate. We have researched the types of soil, different types of land and how they affect what type of plants can grow in different territories, for example we did a presentation on Maine State Soil and how it is unique in the world.

Water is another of the main resources and which most people seem to take for granted, water is not an endless supply, water that we drink and use only accounts for less than 2% of the world's total water, and converting sea-water may be expensive and most importantly it might bring bad changes to other organisms. In this class we try to make ourselves aware of what we can do to help the environment and preserve it's natural course, in fact one of our old tidbits was "Water always wins" which is an article that talks about how water works and the functions of it in the environment, and how it can break down anything given sufficient time.

Air is what we breathe in, is something that we should all be concerned about; gas emissions are turning this planet into a giant oven trapping heat. Air is something that we need to survive. The last research had as one of the three main parts air. Different places have different levels of air pollution, sometimes cities go up to dangerous levels which are not healthy for a person, that's why this class focuses in looking at different cleaner alternatives for producing energy without affecting either water or air which are the ones that are mainly affected: air by air pollution and water by contamination or changes in the variety of the ecosystem inhabiting that area.

# ENERGY REPORT CARD

## YEAR-TO-DATE SITE ENERGY USAGE REPORT

July 1, 2010 – December 31, 2010

Percentage change as compared to the same time period from previous year  
Ranked Lowest to Highest Energy User (measured in kBtu/sq ft)

Site	Total Energy	% Chg	kBtu/Sq Ft	Site	Total Energy	% Chg	kBtu/Sq Ft
McKee	336	7%	8	Harding	3,007	-16%	24
Stowe	584	-2%	10	McKinley	1,185	10%	24
Hillis	626	9%	11	Monroe	1,774	18%	24
Morris	771	-6%	11	Phillips	998	-3%	24
Windsor	672	-7%	11	Scavo @ Moore*	1,105		24
King	652	18%	12	Central Academy	2,187	-2%	25
South Union	843	0%	12	Cowles	1,091	-4%	25
Carver	1,157	3%	13	River Woods	1,592	-5%	27
Greenwood	832	5%	13	Moulton	3,377	-2%	28
Mitchell*	411		13	Casady	1,284	17%	29
Perkins	711	5%	13	Central Campus*	13,380		29
Samuelson	754	7%	13	Hoover/Meredith	8,591	-14%	29
Wright	389	-36%	13	Lincoln South	3,211	-10%	29
Goodrell	1,523	-6%	14	East	10,360	-17%	30
Brubaker	1,179	8%	15	East Academy	1,581	14%	30
Garton	979	-27%	15	Welcome Center	186	-1%	30
Hanawalt	637	4%	15	Hiatt	3,267	-23%	31
Howe	561	-34%	15	Lovejoy	1,056	-4%	32
Jackson*	720		16	Hoyt	3,310	0%	33
Oak Park	968	1%	16	Lincoln	10,259	-4%	33
Cattell	806	-10%	17	Merrill	3,036	-15%	34
Dean Operations Center♦	1,664		17	Walnut Street	3,924	-5%	34
Madison	696	-46%	17	Edmunds	1,621	-2%	35
Park Ave	991	-58%	17	Findley	1,372	56%	35
Capitol View	1,326	0%	18	Studebaker	1,734	3%	39
Weeks	2,011	-7%	18	River Plaza	506	8%	41
Callanan	2,327	21%	20	McCombs Green-house	517	46%	42
Hubbell	1,057	4%	20	North	9,375	-11%	42
Pleasant Hill	737	-12%	20	Brody	4,059	-3%	43
Willard	1,187	-6%	20	McCombs	3,830	8%	44
Aviation Lab	314	1%	22	Smouse	2,590	-5%	48
Downtown School	904	-7%	22	Van Meter	2,823	12%	49
Jefferson	996	-2%	23	Roosevelt*	13,036		54

\* Building under construction comparison year 2009-10 ♦ Building unoccupied part of comparison year 2009-10  
● Building occupied during renovations

Visit [www.dmps.k12.ia.us](http://www.dmps.k12.ia.us) for more details of the district's energy mission and building performance.  
**Tell us about it!** Do you want to share your ideas for saving energy or helping our environment? Or want to let us know about your projects? E-mail [lisa.simpson@dmps.k12.ia.us](mailto:lisa.simpson@dmps.k12.ia.us).



Recognized by the U.S. EPA for the superior energy management of our schools

2010