



# State of Efficiency



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ef·fi·cien·cy [i fish'nsee]  
The productive use of **resources**;  
the degree to which something is  
done well or without wasted energy

# YEAR IN REVIEW

This special issue of the *State of Efficiency* is a look back at progress made in fiscal year 2011 (FY11). Inside, you will find recyclable material collection totals, energy and water reduction totals, and details of major projects contributing to the savings.

The Office of Facilities Management (OFM) sustainability plan goals, objectives and tasks are updated in the [FY11 Sustainability Performance Review](#). The report details the evolution of the Sustain-

ability Plan from July 2010 to the end of June 2011. OFM reviewed each goal and listed the challenges and success factors that either hindered or helped achieve the objectives.

The Energy Star Guidelines for Superior Energy Management places a great deal of importance on re-assessment. Each year, OFM looks to build upon the program's successes and continuously improve energy efficiency in DCS-managed facilities. This step is vital in the

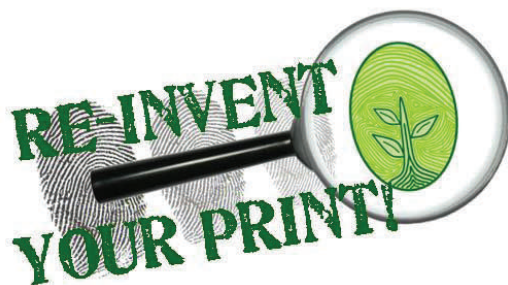
evolution of a sustainability plan to maximize financial and environmental benefits.

Thank you for your continued interest in the operations of state government buildings and energy efficiency programs. Together, we will succeed in accomplishing our mission.

Remember to [subscribe](#) to the *State of Efficiency* to stay up-to-date on DCS projects and sustainability program initiatives in state government.

## *Re-Invent Your Print! Mission Statement:*

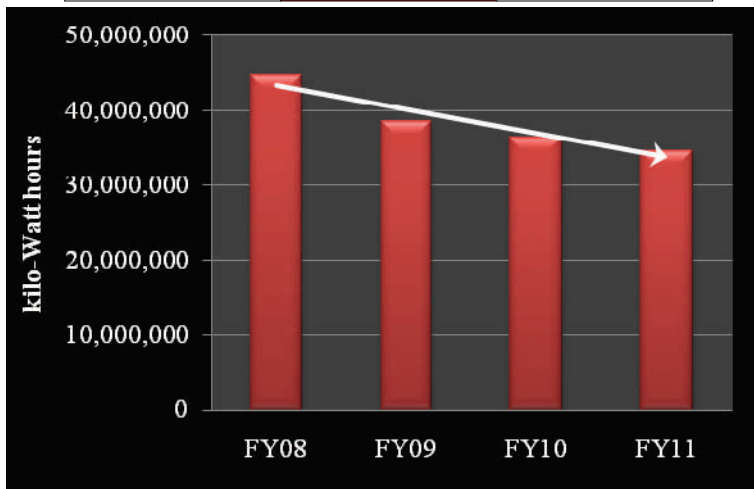
*"We, the public servants of the state of Oklahoma, are hereby committed to the conservation of resources and the protection of future generations through the promotion and implementation of sustainable business practices."*



## **WHAT'S INSIDE:**

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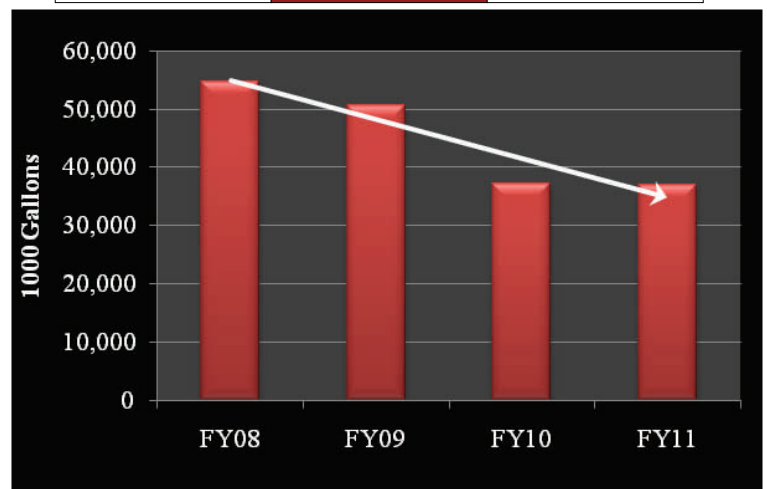
# ELECTRICITY



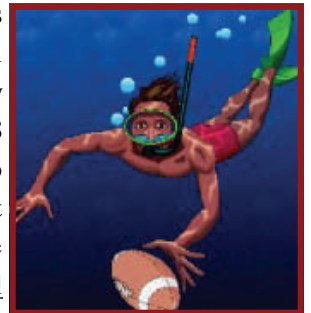
In FY11, efficiency projects and the continued support of state agencies resulted in a reduction of **10,151,162 kilo-watt-hours (kWh) (22%)** based on FY08 benchmark. That much electricity could power **931 average American homes** for one year or (at \$.04/kWh) save approximately \$406,046.



# WATER



Water conservation efforts continued in DCS-managed facilities in FY11, reducing consumption by **17,662,000 gallons (32%)** from FY08 totals. OFM saved enough water to cover an entire football field in **54 feet of water**. That's 47 feet above the [tallest player in U.S. professional football history](#).

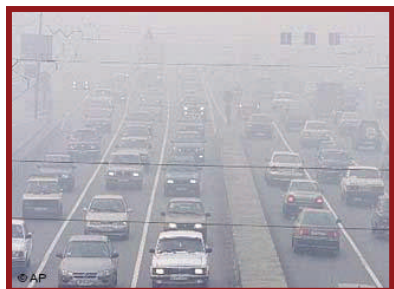


# NATURAL GAS

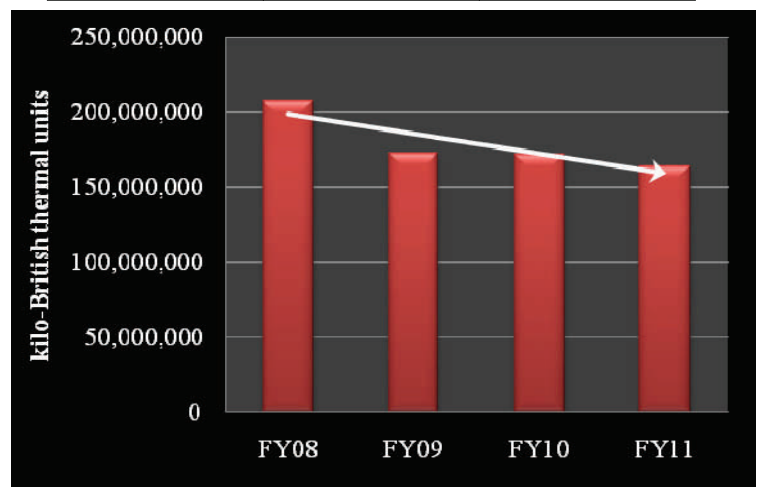


FY11 natural gas usage was reduced by **9,830 Dekatherms (Dth) (22%)** from FY08 usage totals.

The reduction of natural gas avoided generating CO<sub>2</sub> emissions equivalent to the annual emissions of **96 vehicles**.



# TOTAL ENERGY

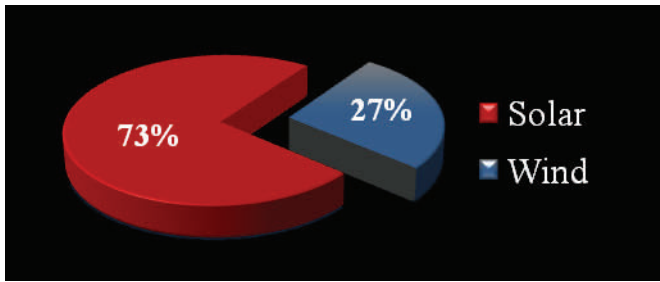


Total energy usage was reduced by **44,046,660 kilo-British thermal units (kBtu) (21%)** from FY08 usage to FY11 usage. kBtu is a common unit of measurement for energy, including electricity, natural gas and steam.



The total energy reduction is enough to give each resident of Beaver, OK an electric clothes dryer and run it non-stop for an entire year! 🌟

# RENEWABLE ENERGY



Renewable sources at the DHS-CAP building and Governor’s mansion produced a total of **182,037 kWh**. The clean energy generated in FY11 is the equivalent of removing **313,104 lbs CO<sup>2</sup>** from the atmosphere!

For details of each solar & wind project visit the [Renewable Energy](#) page on the DCS website.



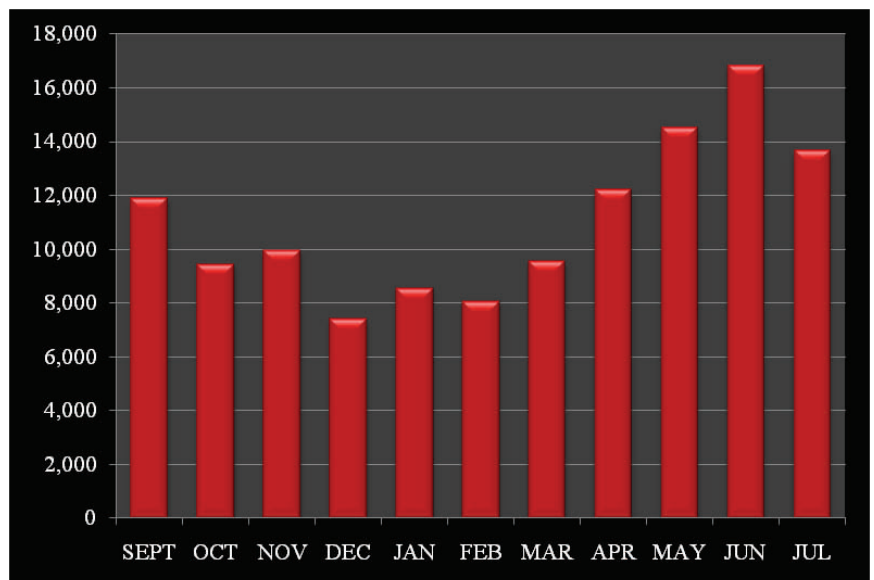
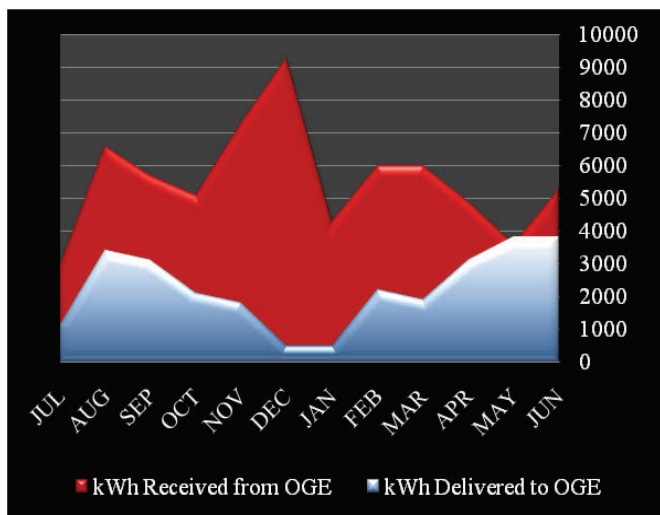
The Governor’s Mansion Firehouse is home to grounds maintenance personnel and as of August 9, 2010, it sports 6.5 kW of photovoltaic (PV) solar panels on the roof.

The addition of solar panels contributed energy-source diversity to the Governor's mansion grounds renewable energy portfolio. The panels join a 10-kW wind turbine at the Firehouse to generate clean electricity using two of Oklahoma's most abundant energy sources - the sun and wind.

The chart below details month-by-month electricity production from the Governor’s Mansion and DHS-CAP building combined. 🌟



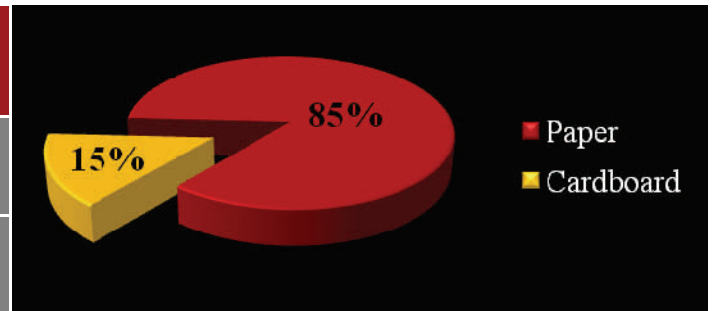
Electricity bills for the DHS-CAP building are calculated using the difference between kilo-watt hours (kWh) delivered to the building and kWh received at the utility company. Essentially, the electricity generated by the wind turbine and solar panels at the DHS-CAP building chip away at the monthly charges from the utility company (see chart below).



Total electricity (kWh) production from all renewable sources

# RECYCLING

Material	Weight	Conversion
Paper	321,500 lbs	2,732 trees saved
Cardboard	55,766 lbs	83 yds <sup>3</sup> of landfill space



Recycling totals July 2010 through July 2011

Recycled material weight by type

DCS expanded recycling services in FY11 to include six new buildings. The new total of 15 building serviced by the DCS Recycling program now includes the Department of Transportation, Denver Davison Courts, Jim Thorpe, Allen Wright Memorial Library, Department of Agriculture and Attorney General buildings.

To increase awareness of the program and encourage waste-conscious behavior, DCS sponsored an *Earth Day 2011 Recycling Challenge*. From March 21st through April 15th, four Capitol Complex buildings competed to recycle the most paper and cardboard materials. The buildings combined to recycle 5,653 lbs of

paper and 4,929 lbs of cardboard from January 1 until the challenge began. During the contest, recycling in the four buildings increased by **224%**, keeping a total of 8,129 pounds out of landfills!

The Will Rogers building was the overall winner with 4,659 total pounds recycled during the contest period. The employees in the Will Rogers building will have to work hard to keep the Earth Day Recycling Challenge Award in the lobby because the traveling trophy will be displayed in the lobby of each year's challenge winner.

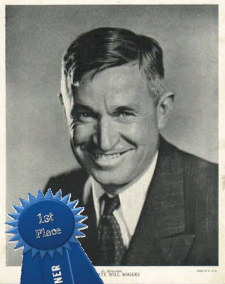
The Most Valuable Participant (MVP) on the winning team was awarded to the **Office of State Leasing** which recently implemented strategies to decrease their paper use by scanning all documents currently filed and establishing an internal

policy to store and send documents electronically, and only printing what is necessary. A positive example of initiative from which we can all learn, State Leasing eliminated four file cabinets and recycled a total of 600 pounds of paper since December 2010, with 141 pounds recycled during the contest period.

According to the [Environmental Protection Agency](#) (EPA), only 33% of municipal waste is recycled. Statistics such as these highlight the drastic impact state employees can have in decreasing office waste and breaking the customs of our disposable culture. FY11 was a step in the right direction for the recycling program and FY12 promises to be more productive.

For more information on the DCS Recycling Program contact Liz Cope via [email](#) or at (405) 521-3315.

## EARTH DAY 2011 RECYCLING CHALLENGE



First Place:  
**Will Rogers**

Total Pounds:  
**4,695 lbs**

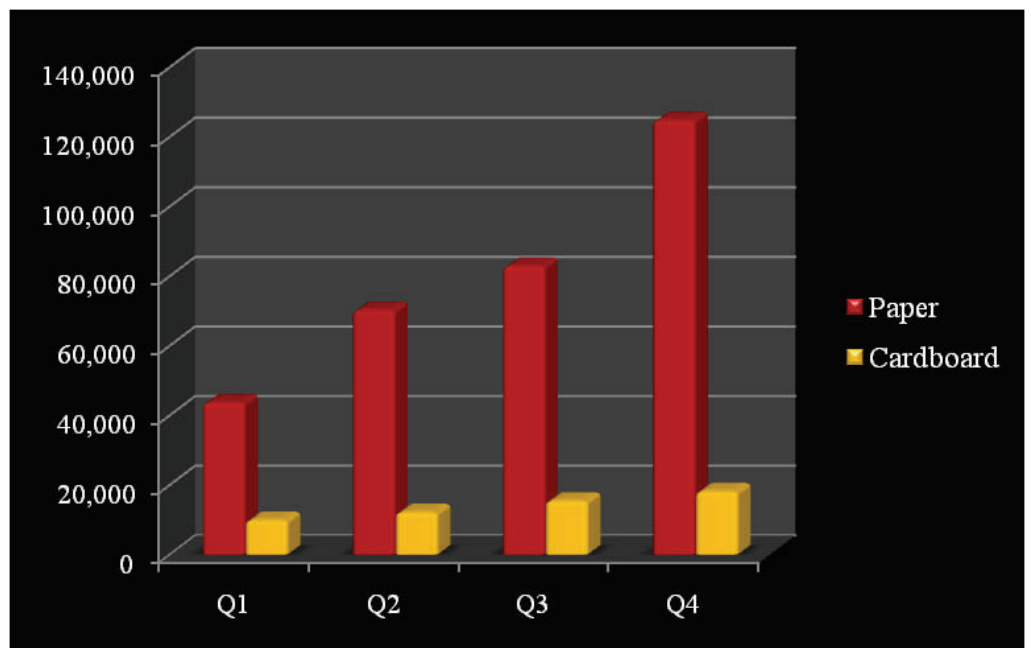
Percent Increase:  
**216%**



Second Place:  
**Sequoyah**

Total Pounds:  
**1,792 lbs**

Percent Increase:  
**356%**



Recycled material types in pounds collected per quarter

# FACILITIES SPOTLIGHT

## The Facts

### Name:

*Craig Cherry*

### Occupation:

*Operations Manager*

### Years with DCS:

*3*

### Specialized Skills:

*Building Automation  
& HVAC Controls*

### Hometown:

*El Paso, TX*

First exposed to Building Automation while serving in the U.S. Air Force and stationed in Bitburg, Germany, Craig Cherry brings more than 20 years experience in Building Automation and Heating, Ventilating & Air Conditioning (HVAC) Controls industries to DCS. Craig manages the operations of all building HVAC, fire alarm and access control systems and assists with management of related on-call contracts.

To contribute to the OFM Sustainability Plan, Craig monitors and manages the real-time energy usage to ensure buildings operate as efficiently as possible. Craig's favorite part of working for DCS is having the privilege of working with other agencies in their efforts to complete their missions and ensuring DCS is providing the proper support as efficiently as possible.

In March, Craig represented DCS at the National Facilities Management & Technology (NFMT) conference & expo in Baltimore where he accepted the Building Operating Management's FMXcellence award on behalf of DCS. Craig also served on a panel of experts and fielded questions from facilities professionals looking to improve efficiency efforts or begin sustainability programs.

[Click here](#) to read the entire article from Building Operating Management's August 2011 issue titled *Everyday Heroes*. Click the video to the left to watch Craig's interview from the NFMT conference.

Craig is married with 4 daughters and referees soccer from 4 year-old through college level matches. ⭐



[Email Craig Cherry](#)



# FY11 MAJOR PROJECTS

- ⇒ Retrofitted more than 400 fluorescent lamps burning 24/7 with LED lamps;
- ⇒ Retrofitted incandescent lamps (300 hour rated life) in the Jim Thorpe elevators with LED (25,000 hour rated life);
- ⇒ Replaced fluorescent elevator lighting with LED at the State Capitol;
- ⇒ Replaced metal halide flood fixtures with induction at Mansion Gatehouse;
- ⇒ Replaced 1000-watt rooftop lights with lower wattage induction lamps at the Jim Thorpe, Denver Davison Courts and Allen Wright Memorial Library buildings;
- ⇒ Replaced all exterior lights at Kerr-Edmondson building with low-wattage, extra long life induction lamps;
- ⇒ Replaced 175-watt mercury vapor lamps with 40w induction lamps at the Veteran's Memorial;
- ⇒ Installed timer switches & occupancy lighting controls;
- ⇒ Installed condensing boilers at the Will Rogers, Sequoyah & Allen Wright Memorial Library buildings;
- ⇒ Installed 58 high-efficiency motors in nine buildings;
- ⇒ Completed domestic hot water boiler project at the Department of Agriculture building;
- ⇒ Replaced old pneumatic (air) building controls in multiple buildings with DDC (electric) controls providing more precise operation of the heating and cooling systems;
- ⇒ Sub-metered 16 electrical meters;
- ⇒ Added new scheduling strategies to the building automation system;
- ⇒ High-speed dock doors and window tinting were added to some buildings to secure the building envelope and reduce electrical use via heating/cooling demand;
- ⇒ Received \$107,355 in utility rebates for motor, heat pump and lighting upgrades. ⭐

## FY11 AWARDS

- ⇒ **Sustainable Facility Initiative Awards**  
Finalist – April 2011
- ⇒ **EPA Energy Star Leader**  
20% reduction in energy use & greenhouse gas emissions – February 2011
- ⇒ **AGC 2010 Build Oklahoma Award**  
DHS-CAP Renovation – January 2011
- ⇒ **Building Operating Management's FMXcellence Awards**  
Honoree – December 2010
- ⇒ **Buildings Magazine Project Innovations**  
Green Facilities, Merit Award – October 2010

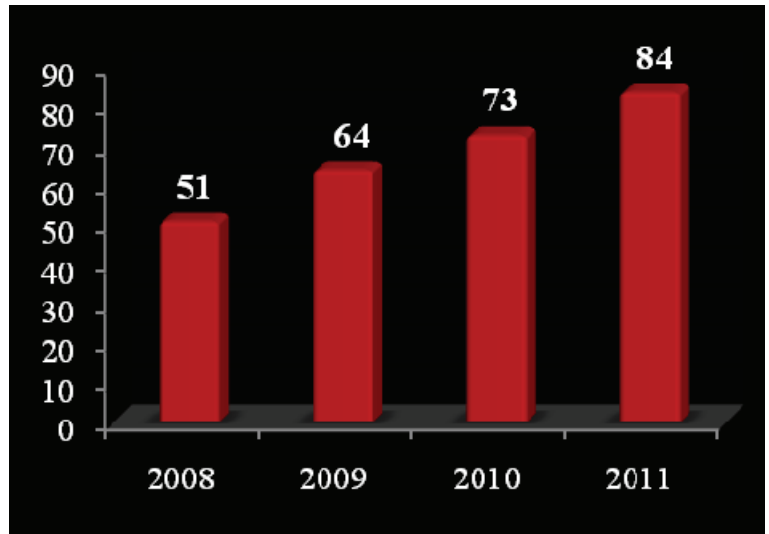
# LEADING THE WAY WITH ENERGY STAR

For the second year in a row, the DCS Office of Facilities Management (OFM) was named an Energy Star



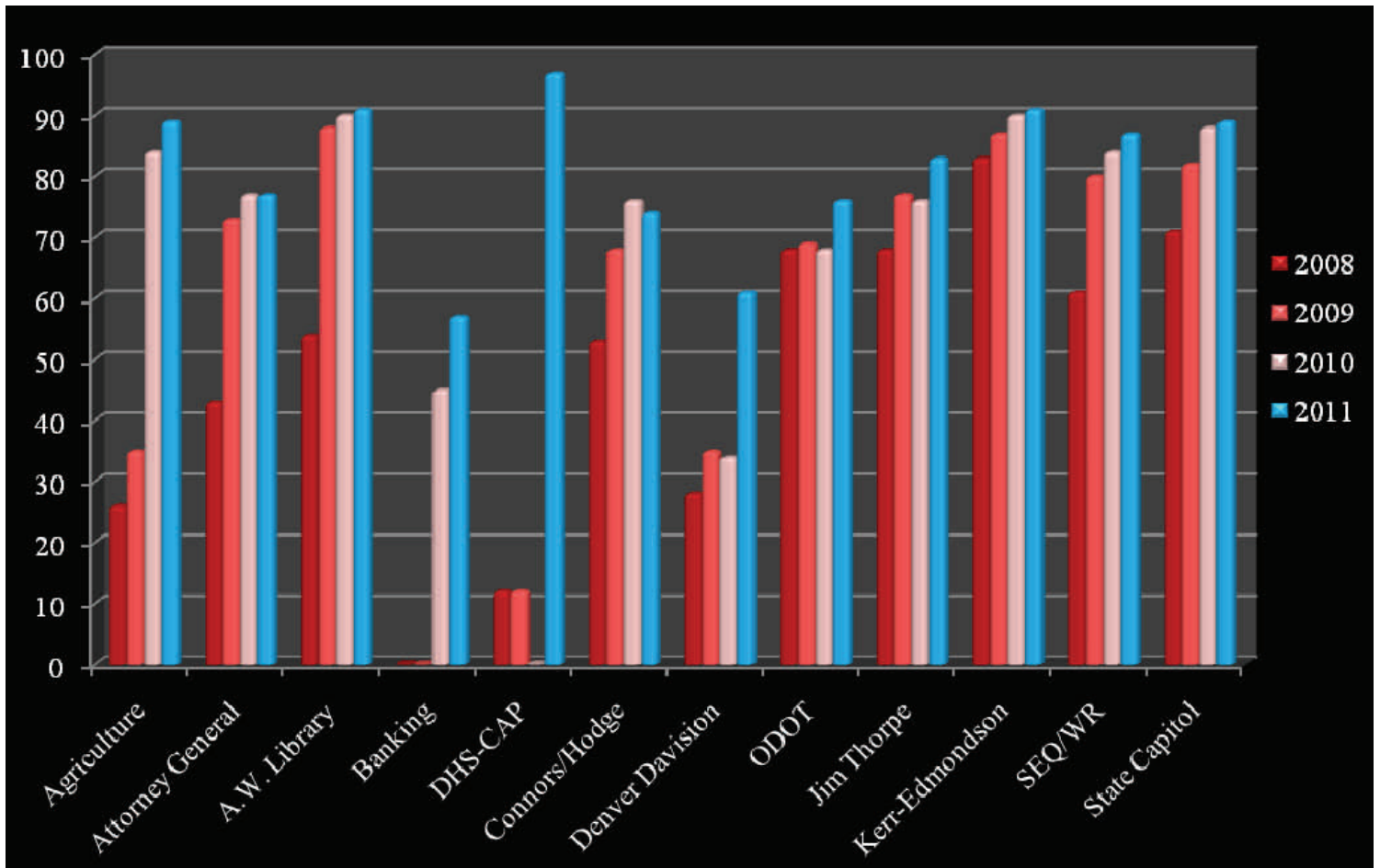
Leader by the Environmental Protection Agency (EPA) for a 20% improvement in Portfolio average rating and reduction of greenhouse gas emissions.

The chart to the right illustrates the yearly improvement in average portfolio rating. This data backing the rating increase is proof of the positive impact the DCS Sustainability Program is making on the efficiency of state government building operations and the agency's budget.



Energy Star Portfolio Average Rating at the end of each fiscal year

For more information about the Energy Star, Energy Star rating system, or other aspects of Energy Star certification program, please visit the EPA's [Energy Star website](#).



Energy Star Rating per building on July 1 of each year

# ENERGY STAR-CERTIFIED FACILITIES

As of July 1, 2011, a total of eight (8) buildings in the DCS Portfolio are Energy Star certified. According to the EPA's website, buildings earning the Energy Star certification meet strict energy performance standards set by EPA and use less energy, are less expensive to operate, and cause fewer greenhouse gas emissions than its peers.

To qualify for the ENERGY STAR, a building or manufacturing plant must earn a 75 or higher on EPA's 1-100 energy performance scale, indicating that the facility performs better than at least 75% of similar buildings nationwide. The ENERGY STAR energy performance scale accounts for differences in operating conditions, regional weather data, and other important considerations. [CLICK HERE](#) to see the ratings for all DCS-managed buildings.



DHS-CAP Building



Allen Wright Memorial Library



Kerr-Edmondson



Jim Thorpe



Dept. of Agriculture



State Capitol



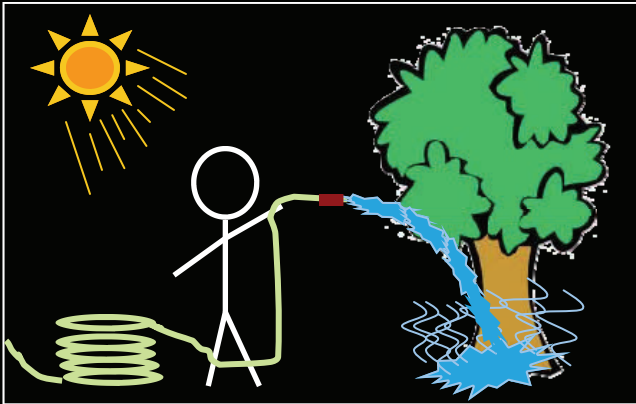
Dept. of Transportation



Attorney General

# ...AND THEN THERE'S THIS

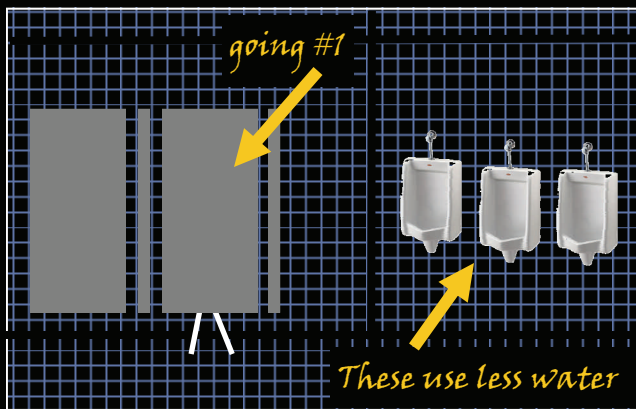
Way to Waste Water #47



Way to Waste Water #12



Way to Waste Water #243



Please remember to make efficient use of water at work and at home!  
[CLICK HERE](#) to learn how you can start conserving water today!



**HELP CONTROL INDOOR INSECT POPULATIONS;  
REMEMBER TO RINSE CONTAINERS BEFORE RECYCLING!**

Click below to request an [accessible version](#) of the *State of Efficiency!*



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