



## SCARCE GREEN AUDIT REPORT

Business: St. Charles Parks

Audit Date: July 6, 2012

Green Team Members Present: Pam Otto

SCARCE Auditors: Kris, Kay, Heather, and Felicia

### Executive Summary

Overall, St. Charles Park District has managed park properties in ways that are both environmentally and fiscally responsible. Many park districts would be envious of the following:

1. Overhead fluorescent lighting fixtures have been upgraded to T-8, making them both more energy efficient and compliant with current federal laws regarding both the bulbs and the ballasts, saving 30-50% energy relative to the old T-12s.
2. All Exit Lights have been upgraded or replaced with energy efficient LED fixtures, saving 85-90% energy relative to incandescent.
3. All toilets are water efficient at 1.6 GPF, saving 50% or more water relative to old toilets.
4. All HVAC systems appear to operate on programmable controllers to reduce energy use.
5. Building windows and doors seems to be well sealed and energy efficient
6. You have the first LEED certified building in Kane County

The following aspects need the most improvement:

1. Cleaning chemicals in use in every building compromise air quality for occupants and air and water quality in the environment.
2. Recycling efforts are impeded by the lack of bins in the right location, by poor signage, and by lack of training for employees.
3. Energy usage is not being "tracked" in a way that facilitates managing it.
4. There is not a "green" purchasing program for paper, hospitality supplies, building supplies, etc.
5. In general, there's a lack of employee "mindfulness" around turning off computers, printers, and lights, reducing paper use, etc. This is the usual position in which a green team starts!

### Audit Notes on Specific Buildings

Hickory Knolls + Otter Cove Pool Building Year=2011

#### Energy & Water Conservation

- ✓ Compact Fluorescent Light bulbs (CFLs) or LED lights for recessed/can lighting, hanging fixtures and lamps. The exhibit room has dozens of halogen lights that will contribute to a higher than normal energy use and cooling load. We recommend replacing these with LED lighting, as funds are available.
- ✓ Lighting Upgrades (T-8 fluorescent lighting)
- Motion sensors on lights in mostly empty rooms (offices)
- Candidate for delamping (removing bulbs)? -no
- ✓ Exit Lights- LED
- ✓ Lights off in empty rooms-meeting and exhibit room lights were off
- Lights off/disconnected in vending machines-na



Turn off lights, computers, monitors at end of day or when employees leave desk-don't know

- Turn off copiers, printers at end of day-don't know
- Unplug microwave or coffee maker when not in use -not when we were there
- Kilowatt Measurements :none
- ✓ Energy efficient windows
- ✓ HVAC upgrades-new
- ✓ Programmable thermostats for HVAC in use
- Perform regular inspection & maintenance of HVAC equipment (plan & budget)-you just finished the compulsory building commissioning for LEED, future plan?
- An energy audit was performed (SEDAC or other)?- Energy use can be systematically tracked (Energy Star or other; recommend implementing this using Energy Star Portfolio Manager software - free on [www.energystar.gov/index.cfm?c=evaluate...bus\\_portfoliomanager](http://www.energystar.gov/index.cfm?c=evaluate...bus_portfoliomanager))
- ✓ Renewable energy used on site - solar panels for window awnings as demonstration only
- Windows & doors adequately sealed- front door threshold gaps and leaks
- ✓ No dripping faucets, fountains
- Tank toilets tested (one in five tank toilets leak- use toilet leak detector tabs)-didn't check
- ✓ Low flow toilets? (*Toilets replaced after 1992 are necessarily low flow*)
- ✓ Low flow faucets & shower heads
- ✓ Automatic sensors on faucets
- ✓ Landscaping shades building -it will as it matures
- ✓ Native plant landscaping
- ✓ Avoid watering of landscape
- ✓ Rain garden for stormwater management
- ✓ Green roof on building entrance (less than 25% of entire roof)

### Indoor Air Quality

- ✓ Operable windows
- Vented, separate copier room -not sure
- Green cleaning products/ equipment policy & use (see list of cleaners on back page) **No. The cleaning chemicals are traditional, toxic products that damage both indoor air quality and the environment.**



Fume-free policy (i.e. no perfumes, air fresheners) **NO policy + aerosol air fresheners are in**

**use**

- VOC (Volatile Organic Compounds) free paints used – during construction of LEED bldg. after?
- ✓ **Anti-Idling policy for delivery trucks, fleet, etc.** –yes, but not consistently practiced
- Policy for not purchasing toxic chemicals -no
- ✓ Outdoor air intakes (for HVAC) free of unsanitary debris or building exhausts intakes
- Integrated pest management practiced to minimize toxic pesticide use – probably not
- ✓ Indoor Plants used (golden pothos & peace lily are best air cleaners)
- ✓ Entrance mats of appropriate length
- ✓ Moisture control for mold prevention –building had leaking windows that have now been fixed
- ✓ **Avoid dry drain traps that allow the passage of sewer gas** –didn't smell gas!
- ✓ No asbestos-containing flooring or pipe insulation (not a problem for new buildings)
- Building tested for radon emissions –don't know

#### **Natural Resource Reduction**

- Use recycled content copy/printer paper (color & white) –no
- Use unbleached, recycled content paper towels, tissue & napkins-don't know
- Reuse furniture/furnishings
- ✓ **Electric hand driers in bathrooms**
- Use an "Eco font" to reduce ink/toner (Century Gothic 30% less ink than Arial)
- Use compostable utensils, cups, plates, bowls, napkins, paper towels
- ✓ **Foam Soap** (reduces soap use by 75%) + a bottle of regular soap in women's bathroom
- Reuse efforts of office supplies, books & equipment
- Lighten toner on copy machine (can change copier settings to accomplish this)
- Employees or customers **use reusable mugs**, glasses, plates, napkins, etc. –don't know
- Employees asked to print only when necessary-don't know
- Employees asked to use both sides of paper
- Copier defaults to two-sided
- ✓ Use second side of used paper for scratch paper
- Use washable tablecloths, cleaning rags, etc.
- ✓ **Recycled plastic benches outside of building**



## Recycling and Composting Waste Hauler: Veolia\*

- ✓ Recycling program in place (plastic, paper, cardboard, aluminum, steel, glass) but doesn't work well.
- Sufficient number & placement of recycling bins ) recycling bins are available here & there but do not have good signage and are the same blue color as garbage bins. Consequently, garbage is mixed with recycling and vice versa.
- ✓ Additional waste reduction activities (i.e. CFLs, batteries, plastic bags, food grease, pallets, cell phones, inkjet & toner cartridges, electronics) recycle electronics
- Composting program in place

\*ask Veolia for new mixed recycling labels for recycling rolloff to replace "cardboard only" signage

### Other Green Initiatives

- Pay for hazardous waste disposal, such as fluorescent light bulbs-don't know
- Avoid the use of Styrofoam coffee cups, plates, and containers-don't know
- Eco-friendly catering service (recyclable containers, organic food)-na
- Serves Certified Organic food options-na
- Green lawn care service-don't know
- ✓ On site community vegetable garden with compost available for use
- Eco-friendly pavement de-icing (beet juice, for example) -don't know
- Have sustainability goals in place\_no
- Publish annual sustainability report\_no

### Employee Involvement

- Green Team in place -"forming"
- Green Newsletter\_no
- Reusable corner for employees (i.e. books, magazines, gift bags, coupon, etc.)
- Green Corner for employees with news and info on recycling events, etc.-no
- Sponsor a green event for community or employees and families
- ✓ Bike racks for employees & visitors
- Encourage employees to carpool, walk to work, bike to work
- Employees volunteer for eco-events



**Non-Green Chemicals in Use/Where**

Disinfectant – quaternary amine -asthma & respiratory sensitizer, highly toxic to fish	Hickory Knolls Kitchen storage
Pledge multi-surface pump	" "
Murphy's oil soap - hydrocarbon	" "
Stainless Steel Cleaner – aerosol -asthma	" "
Clorox w/bleach cleanup -asthma	" "
Clearflush – urinal cleaner "Poison"	" "

**Green Cleaners/Adhesives/Paints/Other**

none	

Notes on cleaners:

- **Quaternary Amine** ("Quat") disinfectants are asthmagens & respiratory sensitizers and are very toxic to fish and other aquatic organisms.
- **Bleach** is a known asthma trigger and is highly reactive to organics, potentially forming carcinogenic chlorinated organics such as chloroform in wastewater.
- **Aerosol cleaners** contain propellants, such as butane, that contribute to ground-level ozone levels, a key component of asthma-inducing smog, as well as dispersing very small droplets of the cleaner chemicals, including volatile organic compounds (VOCs) that impact health and air quality
- Products with "poison" labels **must be avoided** for obvious reasons

**Maintenance Building –garage + offices  
Energy & Water Conservation**

**Building Year=???? (pre-1990s)**

Compact Fluorescent Light bulbs (CFLs) or LED lights for recessed/can lighting, hanging fixtures and lamps.

Lighting Upgrades (T-8) in offices

Garage bays+ outside lights are 16 x 250W or 400W(?) metal halide lights; the outside lights were "on"



during the day . Also, metal halide fixture ballasts are now required to conform to a relatively new federal standard for

energy efficiency. Section 324(e) of EISA 2007 requires specific efficiency values for the various types of covered metal halide ballasts.

- Motion sensors on lights in mostly empty rooms (offices)
- Candidate for delamping?
- ✓ Exit Lights- LED retrofited
- Lights off in empty rooms Lights were on in the lunchroom which was empty when we arrived.
- Lights off/disconnected in vending machines -1 vending machine lit in office area was lit
- Turn off lights, computers, monitors at end of day or when employees leave desk?
- Turn off copiers, printers at end of day there was a map printer "on" in a locked office-lots of power use
- Unplug microwave or coffee maker when not in use. There were 2 microwaves plugged in + 1 coffeemaker. The 2 toasters were unplugged.
- Kilowatt Measurements: plugged but off coffeemaker= 1.8W; microwave=1.4W
- ✓ Energy efficient windows -looked ok
- HVAC upgrades -don't know
- ✓ Programmable thermostats for HVAC in use
- Perform regular inspection & maintenance of HVAC equipment (plan & budget)??
- An energy audit was performed (SEDAC or other)- you can request SEDAC audits
- Energy use is systematically tracked (Energy Star or other)-not now
- Renewable energy used on site or purchased -not this building
- ✓ Windows & doors adequately sealed
- ✓ No dripping faucets, fountains
- Tank toilets tested (one in five tank toilets leak- use toilet leak detector tabs)-we didn't test
- ✓ Low flow toilets -1.6 GPF
- Low flow faucets & shower heads-don't know but they looked new enough to be low flow
- Automatic sensors on faucets-no
- Landscaping shades building-no
- Native plant landscaping-no
- Avoid watering of landscape
- Rain barrel/rain garden for stormwater management-no



## Indoor Air Quality

- Operable windows –not sure
- Vented, separate copier room-no. It's next to the front desk
- Green cleaning products/ equipment policy & use (see list of cleaners on back page) -NO
- Fume-free policy (i.e. no perfumes, air fresheners)-no
- VOC (Volatile Organic Compounds) free paints used-don't know 'cause paint was locked up
- ✓ Anti-Idling policy for delivery trucks, fleet, etc. –not consistently practiced
- Policy for not purchasing toxic chemicals-probably not
- Outdoor air intakes (for HVAC) free of unsanitary debris or building exhausts intakes?
- Integrated pest management practiced-no
- Indoor Plants used (golden pothos & peace lily are best air cleaners)
- ✓ Entrance mats of appropriate length
- Moisture control for mold prevention
- ✓ Avoid dry drain traps that allow the passage of sewer gas –no obvious sewer gas smell
- ✓ No asbestos-containing flooring or pipe insulation

### Natural Resource Reduction

- Use recycled content copy/printer paper (color & white) -no
- Use unbleached, recycled content paper towels, tissue & napkins -no
- Reuse furniture/furnishings
- Electric hand driers in bathrooms?
- ✓ Foam Soap (reduces soap use by 75%)

### Recycling and Composting

- Sufficient number & placement of recycling bins –need bin near back door of office
- ✓ Additional waste reduction activities (i.e. CFLs, batteries, plastic bags, food grease, pallets, cell phones, inkjet & toner cartridges, electronics) –scrap metal, oil & antifreeze recycled

### Other Green Initiatives

- Pay for hazardous waste disposal, such as fluorescent light bulbs –don't know
- Avoid the use of Styrofoam coffee cups, plates, and containers –styrofoam definitely in use
- Eco-friendly pavement de-icing (beet juice, for example)- Geomelt (beet juice + salt) can save money, lessen plant damage from salt, and decrease employee exposure to cyanide anticaking agent.



**Non-Green Chemicals in Use/Where**

<u>Item</u>	<u>Maintenance Bldg. location</u>
Aerosol disinfectant	Kitchen –under sink
Bleach	"
Stainless steel aerosol cleaner	"
Raid fumigator	"
Liquid TSP Substitute	"
Graf Fighter – aerosol w/ toluene (CARCINOGEN)	"
Sterno –dried up in cans	"
Ant killer	"
CLR	"
Air freshener aerosol –automatic dispenser	bathroom
Brite Stripe*	garage
Roundup Pro (herbicide)	"
Alenza Basal Oil Blue -10 gal can (hydrocarbon oil)	"

\* Pioneer makes VOC-Free, EPA Recognized Field Marking Paint being used by Lombard Park

**Baker Community Center – 1926 or earlier  
Energy & Water Conservation**

- Compact Fluorescent Light bulbs (CFLs) or LED lights for recessed/can lighting, hanging fixtures and lamps. There is a mixture of CFLs and incandescent candelabra bulbs (could be replaced with CFLs)
- Lighting Upgrades (from T-12 fluorescent lighting)
- Motion sensors on lights in mostly empty rooms (offices)
- Candidate for delamping?
- ✓ Exit Lights- LED
- ✓ Lights off in empty rooms
- Lights off/disconnected in vending machines
- Turn off lights, computers, monitors at end of day or when employees leave desk?
- Turn off copiers, printers at end of day?
- Unplug microwave or coffee maker when not in use -no
- Kilowatt Measurements: microwave plugged in = 2.5W





- Energy efficient windows
- HVAC upgrades –window AC units in offices of

unknown age & efficiency

- Programmable thermostats for HVAC in use - window AC units in offices allow “zoned” control
- Perform regular inspection & maintenance of HVAC equipment (plan & budget)
- An energy audit was performed (SEDAC or other)
- Energy use is systematically tracked (Energy Star or other)
- Renewable energy used on site or purchased-no
- Windows & doors are adequately sealed ?
- No dripping faucets, fountains –note in basement kitchen “to leave sink drip to prevent pipe freezing”  
Look into insulating these pipes or heat-tracing them.
- Tank toilets tested (one in five tank toilets leak- use toilet leak detector tabs)-didn't check these
- Low flow toilets? (*Toilets replaced after 1992 are necessarily low flow*) –Annex bldg. bathroom had a 1.6 GPF toilet
- Low flow faucets (1994 federal law requires faucets and showerheads use a maximum of 2.5 gal per minute)- if your faucets have been replaced since 1994, they are low flow.
- Automatic sensors on faucets -no
- Landscaping shades building
- Native plant landscaping
- Avoid watering of landscape –not much landscaping
- Rain barrel/rain garden for stormwater management

### Indoor Air Quality

- Operable windows?
- Vented, separate copier room-no
- Green cleaning products/ equipment policy & use (see list of cleaners on back page)
- Fume-free policy (i.e. no perfumes, air fresheners)?
- VOC (Volatile Organic Compounds) free paints used?
- Anti-Idling policy for delivery trucks, fleet, etc.
- Policy for not purchasing toxic chemicals
- Outdoor air intakes (for HVAC) free of unsanitary debris or building exhausts intakes?
- Integrated pest management practiced?
- ✓ Indoor Plants used (golden pothos & peace lily are best air cleaners) –some offices have



- ✓ Entrance mats of appropriate length
- ☐ Moisture control for mold prevention **lower level**

**teen room is musty; basement walls shows signs of leaks**

- ☐ Avoid dry drain traps that allow the passage of sewer gas?
- ☐ No asbestos-containing flooring or pipe insulation **recommend checking flooring in lower level**
- ☐ Building tested for radon emissions **recommend testing basement, if it hasn't been done**
- ☐ recycling program in place (plastic, paper, cardboard, aluminum, steel, glass)
- ☐ Sufficient number & placement of recycling bins
- ☐ Additional waste reduction activities (i.e. CFLs, batteries, plastic bags, food grease, pallets, cell phones, inkjet & toner cartridges, electronics)
- ☐ Composting program in place

### **Pottawatomie Community Center +Golf Course+ Mini Golf + Swanson Pool, Building Year=1990 Energy & Water Conservation**

- ☐ Compact Fluorescent Light bulbs (CFLs) or LED lights for recessed/can lighting, hanging fixtures and lamps.) **Center entrance has lots of windows and halogen lighting on all day! The golf shop has 50 x 50W halogen track lights + 6 x 65W incandescent recessed lights. Halogen bulbs last longer but also burn hotter than conventional incandescent bulbs, requiring extra energy for air conditioning to cool a room. The outside lights at the snack bar are lit all day.**
- ☐ Lighting Upgrades (from T-12 fluorescent lighting)?
- ☐ Motion sensors on lights in mostly empty rooms (offices)
- ☐ Candidate for delamping?
- ✓ Exit Lights- LED
- ✓ Lights off in empty rooms
- ✓ Lights off/disconnected in vending machines **In the mini-golf snack bar, the bottled drink machine has two 40W fluorescent bulbs that are turned off at the end of the day!**
- ☐ Turn off lights, computers, monitors at end of day or when employees leave desk?
- ☐ Turn off copiers, printers at end of day?
- ☐ Unplug microwave or coffee maker when not in use
- ✓ Energy efficient windows
- ☐ HVAC upgrades?
- ✓ Programmable thermostats for HVAC in use
- ☐ Perform regular inspection & maintenance of HVAC equipment (plan & budget)?
- ☐ An energy audit was performed (SEDAC or other)



Energy use is systematically tracked (Energy Star or other)

- ✓ Renewable energy used on site or purchased-solar hot water panels for the pool!
- ✓ Windows & doors are adequately sealed
- ✓ No dripping faucets, fountains
- Tank toilets tested (one in five tank toilets leak- use toilet leak detector tabs)-didn't check these
- ✓ Low flow toilets (*Toilets replaced after 1992 are necessarily low flow*)
- Low flow faucets (1994 federal law requires faucets and showerheads use a maximum of 2.5 gal per minute)- if your faucets have been replaced since 1994, they are low flow.
- Automatic sensors on faucets -no
- ✓ Landscaping shades building -some
- Native plant landscaping
- Avoid watering of landscape -not much landscaping
- Rain barrel/rain garden for stormwater management

#### Indoor Air Quality

- Operable windows?
- Vented, separate copier room
- Green cleaning products/ equipment policy & use (see list of cleaners on back page)
- Fume-free policy (i.e. no perfumes, air fresheners) **air fresheners used in bathrooms**
- VOC (Volatile Organic Compounds) free paints used?
- Anti-Idling policy for delivery trucks, fleet, etc.
- Policy for not purchasing toxic chemicals
- Outdoor air intakes (for HVAC) free of unsanitary debris or building exhausts intakes?
- Integrated pest management practiced?
- ✓ Indoor Plants used (golden pothos & peace lily are best air cleaners) -some offices have
- ✓ Entrance mats of appropriate length
- ✓ Moisture control for mold
- ✓ Avoid dry drain traps that allow the passage of sewer gas?
- ✓ No asbestos-containing flooring or pipe insulation
- Building tested for radon emissions