



Eco Savings Solutions

1277 1st Street, Suite 1 - Key West, FL 33040 (305) 296-3434

Water



Hot Water Heater

Purpose: Replaces older hot water heater with less insulation. If you're keeping an older model, make sure it's wrapped in insulation to help save energy by holding in the heat. The model we replaced was 10 years old.

Retail Cost: \$441
Installation Cost: \$95
Annual Savings: \$101.04



Intermatic 40 Amp 125/208/240/277 Volt AC Water Heater Time Switch

Purpose: Shuts down water heater during hours when it's not needed. In our facility it shuts the heater down in the evening (8:00 pm) and back on before we open (5:00 am).

CAUTION: In a commercial facility you need to make sure and reset this unit after a power failure.

Retail Cost: \$39
Installation Cost: \$127
Annual Savings: \$291.60



For facilities that use water on a sporadic basis and limited space:

Look at a Tankless (On Demand) Water Heater. It only turns on when hot water is needed and instantly warms the water up. You don't keep warming a tank of water that isn't needed.

Units cost \$700 to \$1200, depending on capacity. They run on electricity or propane.

Do not install tankless if you plan on putting in a solar hot water system.

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Electrical



Surge Suppressors and Battery Backups

Purpose: The battery backups provide three critical things.

1. Protect (with a lifetime warranty) against surges or spikes that might destroy equipment.
2. Allow us to turn off every device connected to it at night with the touch of one button. This prevents vampire power drain.
3. Gives us uninterrupted power for critical devices.

Our Use: Stereo, Amp. and speakers.

Retail Cost: \$199 for Power Backup

\$24.95 for Surge Suppression

Installation Cost: \$0 (They plug into electrical outlets.)

Annual Savings: \$911.28



Intermatic 15 Amp 1750 Watt 125 Volt AC 24 Hour Heavy-Duty Timer

Purpose: To shut down electrical appliances automatically when they're no longer needed at night.

Our Use: We have 2 interactive bikes that run with computers and get updates at midnight. So we shut them down at 1:00 am with these timers, after the updates are done. The timer then turns the power back on at 6:00 am for early clients.

Retail Cost: \$9.97

Installation Cost: \$0 (They plug into electrical outlets.)

Annual Savings: \$415.32



Wireless Electrical Remote Control

Purpose: To shut down electrical appliances without having to reach behind cabinets or under desks.

Our Use: We have a laser printer that the on/off switch is very difficult to get to. Using this device we can turn it off when we're not using it to save energy.

Retail Cost: \$14.97

Installation Cost: \$0 (They plug into electrical outlets.)

Annual Savings: \$13.92

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Lighting



LED 45 Watt Equivalent

Purpose: Replaces standard 45 watt incandescent bulbs using far less energy. We choose models that provide “warm” light.

Our Use: We have 50 standard bulbs.

Retail Cost: \$23.99 per bulb

Installation Cost: \$0 (They fit existing light sockets.)

Annual Savings: \$1348.80

What does it cost to run an electrical appliance?

On the appliances name plate, look for a number with a “W” beside it. This is the wattage. If your appliance lists the amperage (A) and voltage (V) instead of the wattage, you need to do some simple math. Multiply the VOLTS times the AMPS. If you have a 120 VOLT radio rated at 12.5 AMPS it is 1500 WATTS.

To figure out what it costs to operate, you now need to figure out kilowatt-hours. Take the WATTS and multiply that by how many hours you use it each month. Let’s say you use a large television 2 hours a day, every day of the month (30 days). That’s 60 hours a month of use. Using the television above you would take 1500 WATTS times 60 hours or 90,000 WATT-HOURS of electricity used.

Electrical bills are measured in KILOWATT-HOURS (kilo means thousand). So divide the WATT-HOURS by 1000. The 1500 WATT television running for 60 hours a month uses 90 KILOWATT hours.

Now one more piece of math. Take the total KILOWATT HOURS and multiply it by the cost of electricity per KILOWATT HOUR. If you pay 16 cents per KILOWATT HOUR then that television would cost you \$14.40 per month to operate.



Photocell Outdoor Lighting

Purpose: Employees don’t have to remember to turn on or shut off outside lights. With a photocell it turns on when the sun goes down and on when the sun comes up.

Our Use: We used photocells that screw into the sockets. A word of warning, the screw in models don’t work as well as lighting systems designed from scratch with the photocell integrated. It works, but can take up to 15 minutes after the sun is up to shut off.

Retail Cost: \$14 per socket

Installation Cost: \$0 (They fit existing light sockets.)

Annual Savings: \$92.04

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Gold Coffee Pot Filter

Purpose: Wash and re-use these instead of buying and tossing paper filters.

Our Use: We have 2 filters so when one gets dirty, we put it in the dishwasher and have a clean one to make more coffee.

Retail Cost: \$14 each (we bought 2)

Installation Cost: \$0 (Choose one that fits your coffeemaker.)

Annual Savings: \$45.76

(Savings based on 4 pots of coffee a day on weekdays and 2 pots on the weekend, for a total of 22 pots/filters a week and 4 cents per filter on sale.)



Braun KF600 Impressions 10-Cup Thermal Coffeemaker

Purpose: Coffee Pot for Employees and Clients

Our Use: We chose a model with 2 important features.

1. It had to have a thermal pot so the coffee would keep warm without a warming plate baking it to save energy. The thermal pot also keeps the coffee tasting fresher.
2. It had to have an automatic shut-off once coffee is brewed so there's not a fire hazard or energy being used needlessly.

Retail Cost: \$89

Installation Cost: \$0

Annual Savings: \$73.45

(Savings based on a standard Mr. Coffee coffeemaker with traditional hot plate running for 4 hours a day to make coffee and keep it hot.)



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Washable Air Conditioning Filter

Purpose: A central A/C unit should have its filter changed every 30 days. They're relatively inexpensive (ours cost \$7.80 each) but it's still a monthly cost. The old filter ends up in a landfill. So we chose a filter that we wash every 30 days. It's guaranteed for life (should anything ever happen) and we never have to buy another filter.

Retail Cost: \$72

Installation Cost: \$0 (Put it in place of the disposable ones.)

Annual Savings: \$93.60



Leviton PR150 Motion Sensor (Does NOT work with CFL bulbs!)

& LED Lights - Ecosmart LED Bright White A19 40 Watt Equivalent 429 Lumens and Ecosmart LED Bright White PAR20 40 Watt Equivalent 350 Lumens for Showers.

Purpose: Put motion sensing lights in rooms that are visited frequently throughout the day, but not for long periods of time.

Our Use: Our locker rooms and bathrooms are only occupied for a few minutes each hour. But since we used traditional CFL bulbs we couldn't turn off the lights between clients because they take 5 minutes to come up to full brightness.

So we replaced the CFL's with LED's and put motion detectors in. Now when a person walks into those rooms, the lights come on instantly. 5 Minutes after they leave, the lights turn off. The LED's have no Mercury, will last 46 years based on our usage and only take 7 watts when on, instead of 40 watts like traditional bulbs.



Retail Cost LED: \$9.95 each LED Bulb (we bought 22)

Retail Cost Motion Sensor: \$21.95 each (we bought 5)

Installation Cost: \$0 (Choose bulbs that fit your fixtures.)

Annual Savings: \$0 for 2 years then \$70.9 per year after-

wards. Savings are based on switching from CFL's. Savings are MUCH higher if you switch from traditional incandescents.

(Savings based on the shorter period of time the lights are on compared to the CFL's that were very low power. We also included the cost of the motion sensors and that's why no savings the first 2 years. The other reason for the savings is because we do not have to replace the CFL's every 2 years.)

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Water



Energy Star Dishwasher

Purpose: To clean client water bottles and employee dishes.
Our Use: Having a dishwasher means we don't need to keep buying disposable cups or plates for our employees when they eat/drink at work.
EXTRAUSE: Washing and re-using stainless steel water bottles allows us to prevent more than 100 plastic bottles a day from ending up in a landfill.

Retail Cost: \$360 (Dishwasher)
Retail Cost Plates/Cups/Silverware: \$90
Installation Cost: \$172
Annual Savings: \$438 (For Plates and Cups)
(Savings based on disposable cups we would have purchased for employees and clients. 10 cups a day, 12 cents a cup for a year.)
Annual Savings: \$6,240 (For Water Bottles)
(Savings based on 100 water bottles a day at 20 cents per bottle, 6 days a week.)



Touchless Faucets for Bathrooms and Shower Rooms

Purpose: To prevent water waste from people not turning off the faucet and prevent the spread of germs.
Our Use: We chose battery operated models so they would continue to function during a power outage. The batteries last more than 2 years between changes.

Retail Cost: \$288 each
Installation Cost: \$50 each
Annual Savings: \$180
(Savings calculated based on 50% less water usage to clean hands or during sink use. Actual savings from manufacturer's is estimated at 70%.)

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Low Flow Shower Head

Purpose: Client Showers

Our Use: A low flow shower head only uses 2.5 gallons of water per minute (2.5 gpm) instead of the usual 5-8 gallons per minute. These have been designed so they maintain pressure and introduce air into the water stream so it feels (and washes) just like the full water versions. We replaced the low flow with EXTREMELY low flow 1.1 gpm shower heads. They work great.

Retail Cost: \$129 (We replaced the entire fitting.)

Installation Cost: \$0 (Simply replace the shower head.)

Annual Savings: \$456.72

(Savings calculated based on 7 showers per day, 2 showers (men and womens) and an average shower time of 10 minutes. Facility open 6 days a week. Home showers typically take 20 minutes but in a commercial setting people spend less time.)



NEST / GOOGLE Programmable Thermostat

Purpose: Automatically adjust the temperature in our facility so it's optimal during hours of operation.

Our Use: We chose a model that could be programmed over 7 days AND will learn our preferences to change based on how we use our facility. It turns the AC down 30 minutes before we open to bring the temperature down to 72 degrees and keeps it there until after we close. By making it automatic an employee doesn't have to remember to turn it up or down when they come in and leave.

EXTRA IDEA: You can set temperature alerts to send to your smart phone if it goes above or below a specific number. This allows us to know if there's a repair problem that may need to be addressed.

Retail Cost: \$229

Installation Cost: \$120

Annual Savings: \$249.18

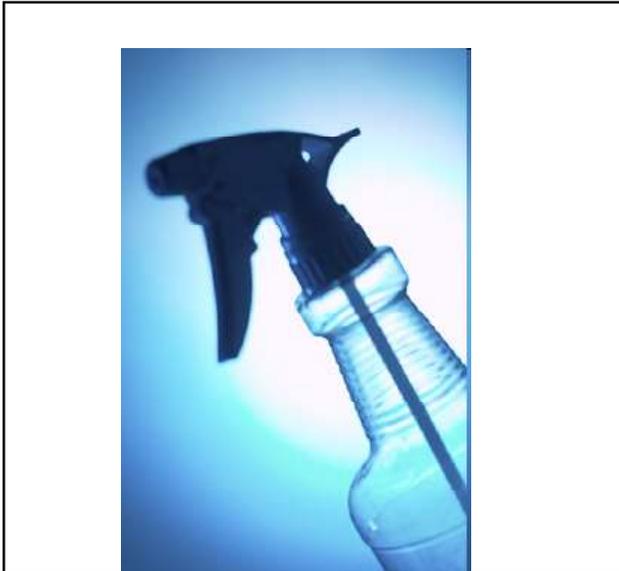
(Savings calculated based on Department of Energy estimates that turning temperature down for 8 hours will save 10% on your energy bill. We turn the power down for 9 hours on weekdays and 35 hours over the weekend.)

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Cleaning Solutions

Purpose: Window Cleaners, Paper Towels, Dishwashing Detergent, Washing Machine Detergent and Dryer Sheets.

What We Chose:

1. We looked at and tried several “green” window cleaning solutions. There were reasonable options, but we found the costs were often significantly higher than traditional cleaners. Then we tested a mixture of vinegar and water. The cost was cheaper than any commercial product, there were no harmful chemicals and it cleans GREAT.

We Mix 1 Part Vinegar to 6 Parts Water

2. We use the previous days newspaper (that our clients read while they’re doing cardio) to wash the windows and mirrors. It’s more effective than paper towels and costs dramatically less. Once all the glass is clean, we let the newspaper dry out and we put it in with the paper recycling.

3. We chose Shaklee products for our dishwasher and washing machine detergent. They are super concentrated so large bottles full of water for filler aren’t being shipped around. Plus they’re inexpensive and don’t contain any phosphates, bleaches or other harsh chemicals. Our towels are clean and bright without the “chemical” or “bleach” smell common in many commercial linens.

4. We chose dryer sheets that are bio-degradable. After testing several brands, we liked the results from the Shaklee versions best.

Annual Savings: \$325

(Savings calculated based on cost of traditional window cleaners versus our vinegar and water solution. Additional savings came from using newspaper that was already purchased in place of paper towels.)



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Dyson Canister Vacuum

Purpose: To vacuum the facility each evening.

Our Use: These are the 4 reasons we chose this particular model.

1. A canister model means less effort when vacuuming. You're only moving the hose, not the entire vacuum like upright models. For a 1600+ square foot business that was important.
2. A canister is more compact so we can use less space when storing it.
3. The biggest ecological advantage is the Dyson vacuums don't use bags or disposable filters. The only thing that gets thrown away is the actual debris from the floor. And because the filter is washable, we don't have to keep buying new ones.
4. Because the canister is easily emptied each night after vacuuming, nothing ever remains behind that can create foul odors.

Retail Cost: \$499

Installation Cost: N/A

Annual Savings: \$76.80

(Savings calculated based on a standard vacuum cleaner bag that would have to be changed twice a month. The bag cost is the average price for Hoover and Eureka bags at time we purchased the Dyson, \$3.20 per bag. Actual savings could be considerably higher if you change the bag more frequently.)

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Laptop Computer

Our Use: We chose a laptop over the more traditional desktop for several reasons.

1. Takes up less space.
2. Energy Star rating and lower power requirements of a laptop over desktop means it uses less than half the power of traditional desktops.
3. Since laptops have batteries, they continue running for hours if the power goes out. It can also be removed easily during hurricane or other evacuations.

SPECIAL NOTE: A laptop is easy to steal, so we've attached a steel cable and anchored it to the desk. We also use password security and a tracking device (with remote data erase) should it ever be stolen. These security features cost less than \$200 and we recommend them highly.

Retail Cost: \$730

Installation Cost: N/A

Annual Savings: \$497.16

(Savings calculated based on a desktop model of the same chip speed, memory and drive capacity. The desktop model it replaced was NOT an Energy Star model.)

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Greater long-term savings can be realized from “GREEN LIVING ROOFS” that can double the life of a roof and even further reduce the amount of energy necessary to cool a building.

This is a picture of the building called “ACROS Fukuoka” in Fukuoka City, Japan. The photo is copyright MetaEfficient and can be found at the link below:

<http://www.metaefficient.com/architecture-and-building/amazing-green-building-the-acros-fukuoka.html>

Notice how much nicer the green building appears compared to the grey jungle it’s surrounded by.

Green Roof (White Living Roof)

Purpose: Replace old roof, reduce stormwater runoff on street, extend life of new roof and increase living area for our building.

Our Use: We started by replacing the old tar roof with a white roof that reflects heat back.

The current roof has reduced the average rooftop temperature by approximately 25 degrees Fahrenheit.

Retail Cost: \$18,000 (Approx.)

Annual Savings: \$1,000 (Estimated)

Savings is based on estimated energy savings from better insulation. At a 20% reduction, that would be \$1,000 per year.

What is a white roof?

A white roof is painted with solar reflective white coating and reflects up to 90% of sunlight (as opposed to traditional black roofs which reflect only 20%). A white roofs are a lot more than just white paint! White roofs' benefits are measured partly according to the solar reflectance index, or SRI. A roof's SRI is a measure of a surface's ability to reflect solar heat. SRI measures reflectance (reflecting the sun's rays) and thermal emittance (the roof's ability to radiate absorbed heat). If you've ever worn a black t-shirt in the sun than you already understand that black's reflectance is negligible and its emittance is zero. A white roof's reflectance is as high as 90% and its emittance is 100%.

White roofs keep buildings cool and reduce energy use. 5–10% of summer electricity is used to compensate for the Urban Heat Island effect. Americans spend about \$40 billion annually to air condition buildings — one-sixth of all electricity generated in this country! White roofs can reduce summer energy use by 10–40%, saving money and preventing pollution. White roofs can reduce the total Urban Heat Island effect in an impacted city by 1° to 2° F - enough to lower peak energy demand, reducing the risk of brownouts and black-outs.

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Power-Save 1200

Purpose: How Does the Power-Save Unit Work?

The Power-Save reduces the amount of power drawn from the utility by storing (in its capacitors) otherwise lost electricity (watts) caused by the inductive motors in your home. (Some examples of inductive motors are Air Conditioning units, refrigerators, freezers, washers, dryers, dishwashers, pool pumps, vacuum cleaners, furnace blower motors, fans etc.) The technology applied by the Power-Save 1200™ Unit supplies that stored electricity back to your inductive loads, thus causing you to decrease your demand from the utility. If you decrease your demand from the utility, your meter slows down, and you use less electricity. The thought is, you've already paid for that electricity, why pay for it and waste it when you can pay for it, store it, and reuse it again. This whole process is called power factor optimization.

What is Power Factor?

Power factor is the percentage of electricity that's delivered to your house and used effectively, compared to what is wasted. For example, a 1.0 power factor means that all the electricity that's being delivered to your home is being used effectively for its purpose. However, most homes in America today have a .77 power factor or less. This means that 77% of the electricity that is coming thru your meter at your home or business is being used effectively, the other 23% is being wasted by your inductive load. With a low power factor, the utility has to deliver more electricity to do the same work. However, the Power-Save unit increases that power factor in most cases to .97 or .98, thus increasing the effective use of your electricity and lowering your usage.

Retail Cost: \$299

Installation Cost: \$95

Annual Savings: \$1080

(Savings calculated based on the average reduction in power consumption we've experienced over the first 6 months.)

Learn more at: www.GreenKeyWest.com