

Green is the New Luxury

enhance your guests' experience and your bottom line



Kirksey
ARCHITECTURE

As the owner or operator of a green hotel,
here's what your next pillow card might say:

{ Your Logo Here }

Dear Guest,

We're committed to protecting the environment while
providing you with the most luxurious hotel experience available.

We encourage you to:



Leave the Lights On

The card key system will turn them off for you.

Take a Long, Hot Shower

Our water is heated by free energy from the sun.

Use a Fresh Towel

*Our ozone laundry system uses a quarter of the energy
and a third less water than typical laundries.*

Throw it Away

All waste is removed from your room, sorted off site and recycled.



about the “new luxury”

If you're reading this, you may be wondering if green is truly the right direction for your hotel renovation. Is it really your best investment? Is it important to your guests and could it be a factor in their choice of hotels? Is there any real economic benefit to owning a sustainable hotel?

In a word, **yes!**

To show you, we've assembled some of the most recent data and conducted a study of our own to demonstrate the cost and payback of sustainability measures. We have highlighted those that are **most easily achieved**, have the **best payback**, and will have the **greatest marketability** to your guests.

Implementing these green strategies will allow your guests to experience **true luxury** — the feeling of doing the right thing as they enjoy all the amenities that a fine hotel has to offer.

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How does a hotel move beyond **the towel program** to making real change that guests can believe?

Kirksey has researched more than a dozen potential strategies that existing hotels can employ to green their operations. We found that measures relating to **energy efficiency** and **water savings** yield the best return on investment for typical existing hotels, and we have also identified those measures **most visible** in exhibiting your hotel's **commitment to sustainability**, outlined below and explained in greater detail later in this book:

Energy Efficiency

- Card Key Systems
- Solar Hot Water Heating
- Retro-Commissioning
- Ozone Laundry Systems

Water Savings

- Guest Room Water Conservation
- Kitchen Water Conservation

Visible Commitment to Sustainability

- Energy Star Appliances
- Products with Recycled Content
- Green Cleaning Products
- Purchasing Locally
- Recycling
- Certification

Kirksey conducted an energy simulation on a typical 10-year-old upscale hotel with 262 suites. We tested many strategies and have illustrated those that provided the best combination of **quick payback, reasonable up-front costs, and generous profit** over a 15-year period.

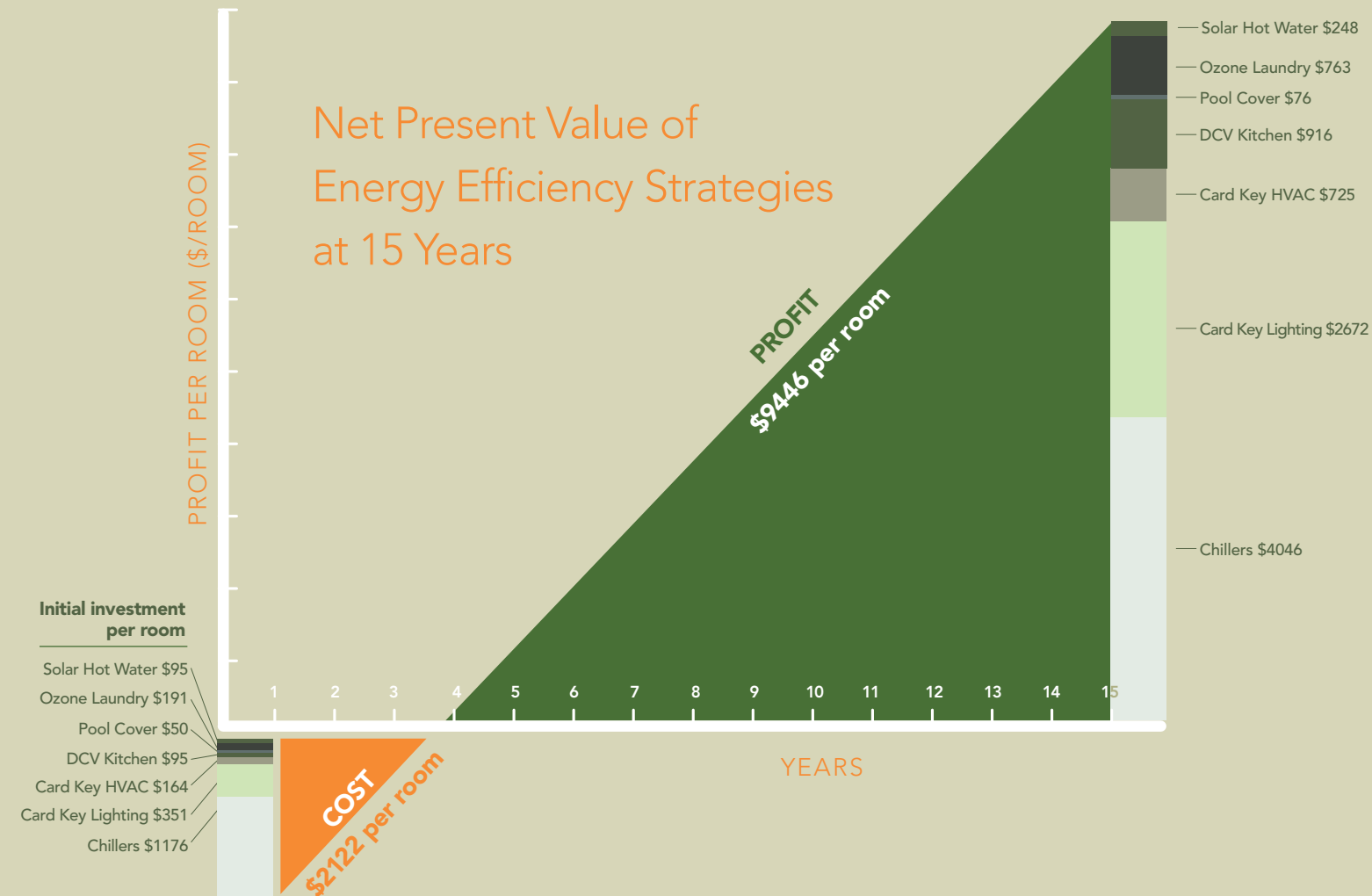
Our study found that implementing **seven energy-efficient measures**, (shown on chart, opposite), would cost \$2,122 per hotel room. This investment yields an average payback in 3.7 years and returns a profit of \$9,446 per room over 15 years. Considering these cost savings alone, this is a terrific investment for existing hotels!



Notes

- The following strategies are included in the case study, but not detailed further in this article:
 - Demand Control Ventilation in the Kitchen** – Kitchen appliances spend many hours idle or in ready-to-cook mode; during these hours, ventilation rates can be reduced. With DCV, variable-speed fans run only as needed, reducing fan and cooling energy use.
 - Chiller Upgrade** – Cooling energy use can be significantly reduced by upgrading to variable speed chillers compliant with ASHRAE 90.1 2004. These save energy by matching the speed of system motors to cooling demand.
 - Pool Covers** – Insulating pools and saunas with vinyl covers reduces heat loss through evaporation.
- The baseline hotel building used for comparison in this energy simulation has the following features: annual occupancy rate of 60%; two 700-ton chillers serve fan-coil units with standard efficiency pumps and constant volume fans; dedicated outdoor air unit; guest room lighting 1.5 W/sf; occupants leave lights on 25% of the time (this figure based on industry data); 3,000 lbs/day laundry, 5 days per week; 830-sf outdoor heated pool and 75-sf outdoor heated sauna.
- Chiller upgrade cost noted in graph represents only the cost for upgrading to higher efficiency units. It is assumed that the hotel has already budgeted the cost of replacing equipment at the existing efficiency.

Net Present Value of Energy Efficiency Strategies at 15 Years



Free Money.

Don't forget that there are federal tax incentives as well as local incentives for many energy efficiency and renewable energy strategies. See www.dsireusa.org for more information.

Note: Tax incentives are not included in our case study calculations, other than for solar water heating, which has a federal tax incentive of 30% from the American Recovery & Reinvestment Act of 2009.



Card Key Systems

Do your guests turn off the lights when leaving their rooms? Many people don't. Hotel card keys can now turn on/off lights and air conditioning in guest rooms.

Inserting the hotel card key activates a circuit that controls the lighting and, in more robust systems, the HVAC system. When the card key is removed, the controlled circuit will turn off after 15 – 30 seconds, allowing enough time to exit the room before the lights go out.

21% reduction in lighting energy

costs

Card Key Lighting:
\$351/room

Card Key Air Conditioning:
\$164/room

payback

Card Key Lighting:
2.4 years

Card Key Air Conditioning:
3.9 years

Reduction in HVAC:
4.5%

Source: Case Study pages 4 - 5

Solar Hot Water Heating

Harnessing sunlight can save 30% on your natural gas use, the largest consumer of energy in hotel properties.

Amazingly simple, solar hot water employs a technique in which a refrigerant is run through collectors that are heated by the sun. The medium is then circulated to fill an insulated storage tank that serves the hotel's various hot water needs.

12.1% reduction in natural gas

costs
\$25,400

payback
5.5 years

Source: Case Study pages 4 - 5

SOLAR HOT WATER RETURN ON INVESTMENT

HOTEL NAME	NO. OF ROOMS	INITIAL COST	OUT OF POCKET COST	ANNUAL SOLAR RADIATION (kWh)	ANNUAL COST SAVINGS	PAYBACK TIME (YRS)
Holiday Inn West, Columbia, South Carolina	120	\$72,000	Federal grant = 30% Local grant = 25% Total = \$39,600 Out of pocket = \$32,406	44,995	\$4,830	< 4.5
Alleghany Inn, Sparta, North Carolina	64	\$200,000	Federal tax credit = 30% State/local = 35% Total = \$130,000 Out of pocket = \$70,000	90,258	\$10,270	6.5
Days Inn Hotel, Colchester, Vermont	73	\$92,800	Federal tax credit = 30% State/local = 30% Total = \$55,680 Out of pocket = \$37,120	27,244	\$5,080	< 4.5
Confederation Place Hotel, Kingston, Canada	95	\$51,600	Federal grant = 25% Out of pocket = \$38,700	44,155	\$1,940	6.5

Source: Owners and vendors of the above-mentioned hotels

Retro-Commissioning

This is just another word for a thorough evaluation of all mechanical and electrical systems. Studies show that retro-commissioning can yield a 5% - 15% energy savings in a typical hotel.

RETRO-COMMISSIONING RETURN ON INVESTMENT

HOTEL NAME	NO. OF ROOMS	SYSTEMS COMMISSIONED	INITIAL COST	ANNUAL COST SAVINGS	PAYBACK TIME (YRS)
Los Angeles Airport Marriott	1000	AHU, chilled water plant and back-of-house system tune-ups	\$125,000	\$153,000	< 1
Sheraton Chicago Hotel & Towers Cityfront Center	1209	AHU, chilled water plant, hot water plant, guest exhaust, lighting	\$1.9 million	\$1.2 million (estimated)	1.6
San Diego Marriott Hotel & Marina	1362	AHU, chilled water plant, domestic hot water system, landscape water	\$195,304	\$272,500	< 1

Source: Energy Star Building Manual; Phillips: RCx Investigation Study of the Sheraton Chicago Hotel & Towers Cityfront Center, Architectural Energy Corporation; Retro-Commissioning Services & Incentives Program, Portland Energy Conservation, Inc.

Ozone Laundry Systems

This triple-saver conserves water, energy, and laundry detergent the natural way.

Ozone (O₃) is dissolved in water and instantly neutralizes stains, odors, and biological contaminants using cold water and little to no added detergent. Ozone is biodegradable and reverts to oxygen, leaving behind no chemical residue.

37.5% reduction in natural gas

costs
\$49,400

payback
3.6 years

Source: Case Study pages 4 - 5

OZONE LAUNDRY RETURN ON INVESTMENT

HOTEL NAME	NO. OF ROOMS	INITIAL COST	OUT OF POCKET COST	ANNUAL WATER SAVINGS (GALLONS)	ANNUAL GAS SAVINGS (THERMS)	ANNUAL COST SAVINGS	PAYBACK TIME (YRS)
SAHV (projected data), San Antonio, TX	218	\$30,000	Water incentive = \$14,167 Out of pocket = \$15,833	1,154,044	13,515	\$32,986	0.5
Sheraton Pleasanton Hotel, Pleasanton, CA	170	\$14,165	Energy incentives = \$5,358 Out of pocket = \$8,807	1,150,488	6,698	\$21,876	0.4
Renaissance Club Sport, Walnut Creek, CA	175	\$14,165	Energy incentives = \$7,083 Out of pocket = \$7,082	4,475	12816	\$15,405	0.5
Vintner's Inn, Santa Rosa, CA	44	\$13,000	Energy incentives = \$2729 Out of pocket = \$10,271	157,375	3411	\$6,048	1.7
Hotel Valencia, San Jose, CA	212	\$15,662	Water incentive = \$7,330 Energy incentive = \$7,831 Out of pocket = \$501	1,418,304	10530	\$29,650	0.1
Apple Farm Inn, San Luis Obispo, CA	104	\$14,370	Out of pocket = \$14,370	255,750	3,623	\$22,517	0.6
Hilton Garden Inn, Emeryville, CA	278	\$14,171	Water incentive = \$1,740 Energy incentive = \$7,086 Out of pocket = \$5,345	654,896	12,331	\$22,337	0.2

Source: Owners and vendors of the above-mentioned hotels





Guest Room Water Conservation

The average guest room consumes 100-200 gallons of water per day. While this may seem excessive, many hotel operators and guests alike worry that water-saving fixtures will reduce the quality of the guest experience — especially when it comes to the all-important water pressure in the shower!

The good news is that the manufacturers of these fixtures have greatly improved upon their earlier versions so that guests no longer have to sacrifice a good shower in order for the hotelier to save on water bills.

When choosing a showerhead, be sure to test it before purchasing, as performance can vary greatly among brands and models.

Common fixtures & efficiency goals

Lavatories: **0.5 gallons per minute vs. 2.5 gallons**

Toilets: **1.28 gallons per flush vs. 1.6 gallons**

Showers: **1.5 gallons per minute vs. 2.5 gallons**

Kitchen Water Conservation

The food service sector averages 300,000 gallons of water annually per restaurant. New technologies have yielded efficient fixtures to help large, commercial kitchen operators reduce water consumption.

Water-saving strategies:

- Low-flow, 1.2-gmp spray valves
- Ware washers that use 0.5 gal/rack instead of 1.2 + gal/rack
- Low-flow sink aerators ranging from 0.25 gallons per minute to 2.2 gallons per minute
- Water-efficient ice makers that produce 100 lbs. of ice per 21 gallons of water vs. 32 gallons
- Steamers that use 4 gallons of water per hour
- Foot- and knee-controlled faucets for hand sinks
- Energy Star-rated appliances for commercial kitchens

As examples, Energy Star steam cookers are 90% more water-efficient than non-qualified steam cookers and Energy Star commercial dishwashers are 25% more water-efficient than standard models. (For complete commercial kitchen package of Energy Star appliances, go to http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CKP)



64% of consumers feel most companies engage in initiatives and activity surrounding sustainability solely to protect or improve their image.¹

Studies show that consumers are skeptical of environmental claims. To counter this assumption, *invest in measures that your guests can see and in those that have quantifiable results.* Implementing the following green strategies can help convey to your guests that your hotel's green efforts are genuine.

Energy Star Appliances From televisions to mini-refrigerators, the Energy Star label means energy efficiency, which translates to lower energy costs. Go to www.energystar.gov to find a list of Energy Star-rated appliances.

Products with recycled content From toilet tissue and paper napkins to carpet and sheetrock, many hotel products contain recycled content. The EPA provides fact sheets, specifications, and additional resources for recycled-content products at www.epa.gov/cpg.

Green Cleaning Products What comes closer to your guests than the chemicals used to clean their rooms? Information at the Green Cleaning Network (www.greencleaningnetwork.org) and Green Seal (www.greenseal.org) can help guide you to products and practices that will keep your guests and custodial staff healthy and your air clean.

Buy Local By purchasing local food and products, you help the local economy and reduce fuel needed to transport goods over long distances. For most hotels, food is a logical place to start. For a listing of local food sources, go to www.localharvest.org.

Recycling There's no better visible symbol of "green-ness" than a recycling program, especially if you make it a tastefully-designed feature in guest rooms and lobbies. To find available recycling resources in your area, go to www.earth911.org.





54% of consumers are more likely to choose a hotel operation that demonstrates a commitment to environmental responsibility.²

Certification

For the most visible and objective testament of your green commitment, several third-party organizations and programs can certify your new or existing hotel or restaurant.

▶ **Leadership in Energy and Environmental Design (LEED®)**

Categories include sustainable sites, water efficiency, energy efficiency, indoor environmental quality, and materials & resources. Certification levels: Certified, Silver, Gold, Platinum

▶ **Green Seal (GS)**

Categories include waste minimization, reuse and recycling, energy efficiency, conservation and management of fresh water resources, waste water management, hazardous substances, and environmentally-sensitive purchasing. Certification levels: Bronze, Silver, Gold

▶ **Green Restaurant Association (GRA)**

Categories include water efficiency, waste reduction & recycling, sustainable food, energy, disposables, and chemical & pollution reduction. Certification levels: Two-, Three-, or Four-Star

The number of hotel rooms currently in the pipeline is just over 3 times that of a year ago.³ While this is certainly good news in that the hotel industry appears to be making a comeback, recovery from the recent downturn may be slow. With occupancy rates still flat or declining in many markets, older hotels face an ongoing struggle to distinguish themselves and attract new guests.

Going green is one avenue for improving guest perception and can be successfully implemented on existing hotels. A recent study found that “the most affluent, educated, and higher-end travelers are the most sustainably-oriented.”²

If these are the guests you’re hoping to attract, contact us for assistance in greening your hotel.

Endnotes

- 1 Havas Media Intelligence, *Sustainable Futures 09*. www.sustainablefutures09.com
- 2 Suzanne D. Cook, Ph.D., “Why Sustainable Tourism Makes Dollars & Sense.” Travel Industry Association. Presentation delivered to the Great Smoky Mountains Sustainable Tourism Summit, April 28, 2008. <http://travelgreen.org/files/Why%20Sustainable%20Tourism.pdf>
- 3 Smith Travel Research, “Comprehensive Pipeline Outlook,” end of June 2010. <http://www.strglobal.com/Resources/Samples/Pipeline%20June%202010.pdf>

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