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Climate Change Other Greening of the White House

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THE WHITE HOUSE
WASHINGTON

September 22, 1999

MEMORANDUM FOR JOHN PODESTA

FROM: ROGER BALLENTINE 
RE: WHITE HOUSE ENERGY USE

The Department of Energy (DOE) recently announced that compact fluorescent light bulbs (CFLs) have been awarded the ENERGY STAR label. ENERGY STAR is a joint government-industry effort to promote the most energy efficient products. An ENERGY STAR label gives consumers assurances that they will get value for their investment. On average, each CFL saves \$61.00 over its lifetime, compared to incandescent bulbs.

The announcement by DOE prompted inquiries from both you and the President. In response I have looked into where we are on "the Greening of the White House" in general and the use of CFLs in particular.

Since we initiated the Greening project in 1993, significant improvements have been made to the lighting systems in the White House and OEOB. These include installing CFL's in 95% of table lamps in the White House and OEOB, upgrading the façade lighting for the White House, and replacing existing fluorescent fixtures with efficient T-8 tubes, electronic ballasts and reflectors. Cumulatively, these lighting measures have resulted in annual savings of over \$130,000 and avoidance of almost 700 metric tons of greenhouse gases.

A progress report on "The Greening of the White House" is in final editing and can be released soon. It shows that all greening measures completed in the White House and the OEOB since 1993 have saved approximately \$1.5 million (averaging \$170,000 annually) and eliminated over 18,000 metric tons of greenhouse gases.

Much of what we have accomplished will continue to produce savings far into the future. We suspect, however, that there has been backsliding on the use of CFL's in table lamps, with incandescents finding their way back into use. Anecdotal evidence is that maintenance personnel routinely replace light bulbs in table lamps with incandescent bulbs instead of CFLs. This needs to be verified and corrected.

With regard to the Oval Office, a state-of-the-art CFL lighting system was installed in 1989. It is not clear if it is still in use. More importantly, there are newer, more cost-effective systems that could be installed. We need access to inspect this system and upgrade it, if possible.

As for other federal agencies, DOE is funding a 2 for 1 buy-down of CFLs to replace incandescent bulbs, implemented by the Defense Logistics Agency at DOD. DOE has recommended the use of CFLs to help agencies comply with newly signed Executive Order 13123.

I propose we take the following steps:

1. Verify continued use of CFLs in the White House and OEOD and inspect Oval Office system;
2. Prepare replacement program for all eligible fixtures in White House and OEOD not currently using CFLs;
3. Clear "Greening the White House" update report including recommended "next steps" to achieve even more cost savings (such as by accelerating the phase-in of ENERGY STAR computers and air conditioners, activation of ENERGY STAR "sleep" features for existing computers and printers, and adding improvements at Jackson Place to the White House Greening efforts);
4. Prepare White House event at which we would release the "Greening" report, announce new federal agency procurement activity and announce further White House "Greening plans", all with estimated savings.

If we go ahead, we should try to amplify our message with industry and public interest partners. Possible options include industry promotions of "green" products at home products stores; television and print specials (in 1993 The Washington POST ran a cover story on the White House Greening effort for their HOME section, and 40 million viewers watched a TV special on the Greening of the White House in the Southwest); announcements of industry headquarters buildings and factories "taking the pledge" to become more efficient; and a commitment by CFL manufacturers to cut bulb costs.

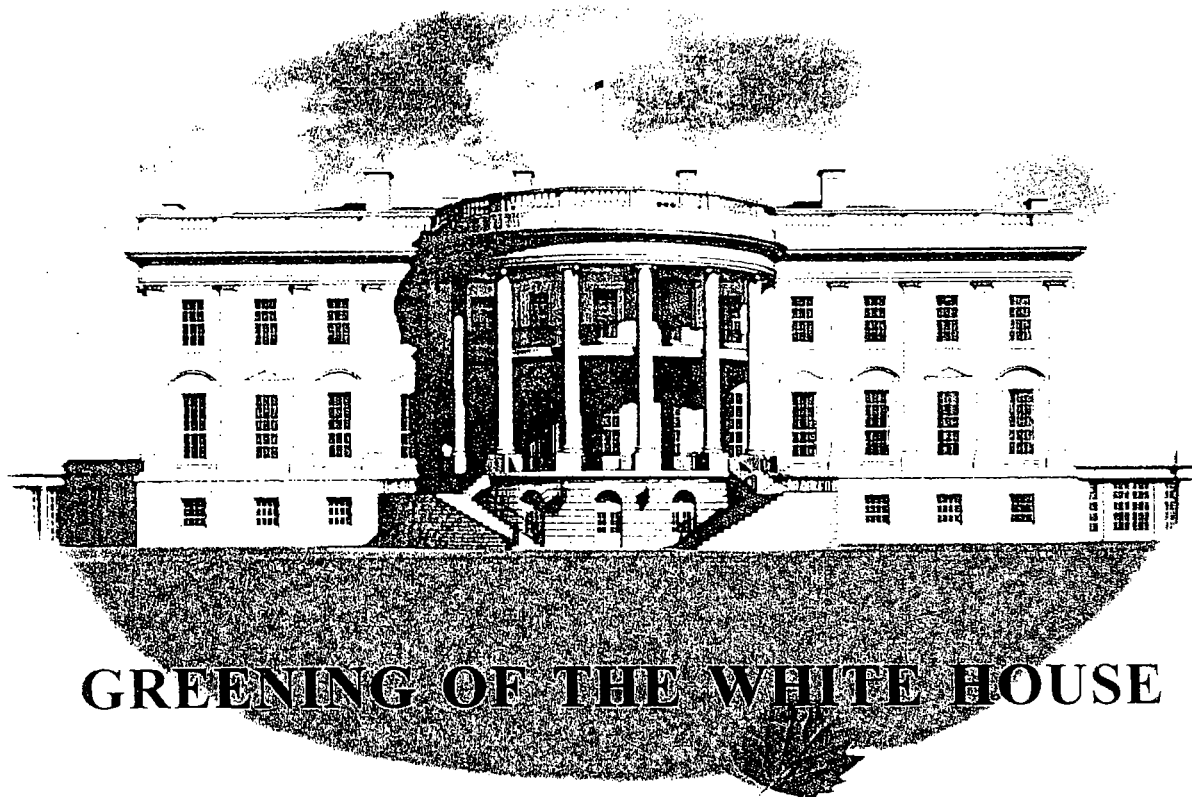
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GREENING OF THE WHITE HOUSE

**Six
Year
Report**

November 1999

White House Trims Its Energy Bills

Program Has Saved \$1.4 Million Since '93

By STEPHEN BARR
Washington Post Staff Writer

Energy-efficient measures and other steps taken as part of a "greening of the White House" initiative have saved taxpayers nearly \$1.4 million since 1993, according to an administration report scheduled for release today.

The savings, now running about \$300,000 a year at the White House, have been achieved through more efficient lighting, heating and air conditioning, new water sprinklers and other modifications. Lighting changes alone are saving about \$138,000 annually, officials said.

President Clinton announced the energy-saving project for the White House complex, including what is now known as the Eisenhower Executive Office Building, on Earth Day in 1993. "This has been his baby from the beginning," said Roger Ballantine, deputy assistant to the president for environmental initiatives.

Today's announcement, Ballantine said, shows "we've now done it" and that the White House is ready to move onto the next step—a new government-wide energy efficiency effort. In an executive order this summer, Clinton directed agencies to draw up conservation plans that would save \$750 million annually by 2010.

Energy Secretary Bill Richardson and Environmental Protection Agency Administrator Carol M. Browner are scheduled to release the "greening" report at the White House this morning. Officials said they will point out that many of the White House energy improvements came from commercially available, "off the shelf" materials and technology that most Americans can purchase for their homes and offices.

Clinton, of course, is not the first president to try to make the 200-year-old White House more environmentally friendly. President Jimmy Carter, in particular,

made it a habit to turn off White House lights and installed a solar panel (removed during the Reagan administration) on the West Wing roof.

But the Clinton project has been able to take advantage of new technology and techniques developed in recent years. Architects, Potomac Electric Power Co. experts and federal agency officials were called upon by the President's Council on Environmental Quality to devise a strategy for the White House complex, which covers about 19 acres.

At the White House, incandescent table lamp bulbs were replaced with compact fluorescent bulbs, with some exceptions made for antiques or for security purposes. Steps were taken to take better advantage of natural light and to ensure electric lights got turned off in rooms not in use. Exterior flood lights were replaced with more efficient halogen lights, which were hooked to timers to reduce energy waste.

The White House team also installed a new heating and air conditioning system in the executive residence this year, put new insulation on pipes and reduced steam loss. Even high-efficiency refrigerators were installed in the White House kitchen.

Next door at the Eisenhower Building, virtually all of the windows in the 1888 granite structure were replaced with double-paned glass, except when historical considerations took priority.

As offices replaced computers, printers and fax machines, they purchased energy-saving models that consume much less electricity.

On the White House grounds, the use of pesticides was sharply cut back and sprinklers were reset to operate in the early morning as part of a water conservation effort.

The White House also began participating in pilot programs to test alternative-fuel vehicles and an electric pickup truck.

Scientists Decode Layout Of Human Chromosome

By RICK WEISS
Washington Post Staff Writer

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Scientists from three countries announced yesterday that they had jointly determined the piece-by-piece order of virtually all of the 34 million chemical "letters" that spell out the genetic code of an entire human chromosome.

The achievement provides the first complete molecular script for a single human chromosome, 23 pairs of which carry the estimated 80,000 genes that provide the instructions for constructing a human body.

Researchers around the world praised the advance as a technical tour de force, a triumph of international scientific collaboration, and evidence that the publicly funded Human Genome Project is on track to sequencing by 2002 all of the 3.2 billion units of genetic code that together describe how to make a person.

Scientists hope that by noting "spelling errors" in the chromosomes of people with various dis-

eases, they will be able to understand the molecular underpinnings of those ailments and develop new therapies. But first they must determine the normal sequences for each chromosome, as they now have for chromosome 22, the second smallest of the human chromosomes.

"For the hundreds of genes that are on this chromosome, we now have their anatomy," said Francis Collins, chief of the National Human Genome Research Institute, which funded most of the U.S. contribution to the project. "And for all the medical conditions [that are related to genes on that chromosome], we'll be that much further along understanding them."

About three dozen diseases are known to be caused by faulty genes on chromosome 22. Most are rare, such as DiGeorge syndrome, which involves abnormal skull development, and there is indirect evidence that a gene on chromosome 22 may contribute to the risk of schizophrenia. But with scientists expecting to find a total of 700 or 800 genes embedded in the chromosome's code, scores of other diseases may eventually be shown to have their roots there.

"I can tell you it is no fun chasing down a disease gene when you're in territory no one has ever been in before," Collins said at a Washington news conference yesterday. For scientists hunting for important genes on chromosome 22, he said, having the complete sequence in hand is "a dream come true."

Chromosomal sequence analysis also may provide insights into human evolution, because large chunks of molecular text in human chromosomes are very similar to certain DNA chunks in animal chromosomes. A comparison of those molecular scripts could reveal how and when various organisms branched off from one another and diverged over millions of years.

"It's like seeing the surface or the landscape of a new planet for the first time," said Mark Patterson, an editor at *Nature*, the scientific journal that is publishing the chromo-

somes report today. "It's allowing us to say something about its geography, and it's also allowing us to say something about its history, ... how the chromosome evolved."

A chromosome, like a skein of yarn, is a single long strand of DNA folded and refolded into a plump, cinch-waisted bundle inside a cell. The DNA strand is made of four chemical subunits—the four "letters" of the genetic alphabet—strung together by the millions. Anywhere from 1,000 to a half-million of those letters typically make up a gene, and the order of the

letters within the gene determines what the gene does in the body.

The exact meaning of chromosome 22's molecular sequence remains mostly a mystery. In some ways, it's like a long run-on sentence in a foreign language for which only a modest number of words have been translated into English. Scientists understood what the translated words mean, and they now know the remaining letters, but most of it remains untranslated and therefore the meaning remains unknown. Moreover, only about 3 percent of the script is believed to encode working genes, with most of the rest of the sequence being "junk" DNA, the function of which remains unknown.

But with chromosome 22's complete script in hand—and with similar texts already being translated in other organisms, such as the mouse and the fruit fly—scientists said it won't be long before they become fluent in the language of human genes and begin to make profound discoveries about embryo development, genetic diseases and aging.

The scientific report lists more than 200 scientists as co-authors, an astonishing number that *Nature* editors said was probably a record. Four institutions cooperated in the venture: the Sanger Center in Cambridge, England; Keio University School of Medicine in Tokyo; the University of Oklahoma in Norman; and Washington University in St. Louis.

Technically, the sequence is not 100 percent complete. Small gaps, constituting a total of about 3 percent of the chromosome's "letters," have proven impossible to decode.

in some cases because they contain confusing strings of repeating motifs. And one specialized end of the chromosome, the DNA of which helps cells make another kind of genetic material called RNA, is not included in the new analysis.

But according to a 1996 international convention, a chromosome that is at least 95 percent sequenced and whose remaining gaps are small and well delineated can be deemed "complete." Various analyses showed that the completed se-

quence contains less than one error for every 50,000 letters.

Researchers on the chromosome 22 project emphasized yesterday that the results of their work were made freely available to other scientists on the World Wide Web every day as they accumulated. And in

stark contrast to some privately financed efforts—most notably, that of controversial geneticist and entrepreneur J. Craig Venter of Celera Genomics Corp. in Rockville—they said no one on the team had filed for patents on the genes they had found.

‘Greening of the White House’ Press Conference Speakers

Roger Ballentine
Deputy Assistant to the President for Environmental Initiatives

Bill Richardson
Secretary of Energy

Carol Browner
Administrator of the Environmental Protection Agency

Larry Wilton
President and Chief Executive Officer, Philips Lighting Company North America

Daniel DeMeo
President, HVAC Services, Sears

Michael Thieneman
Executive Vice President of North American Operations, Whirlpool

Kent Baker
Vice President of Strategic Marketing, Home Appliance Division, Maytag Corporation

Marty Gallagher
National Program Manager for Millwork, Home Depot

Tom Hoge

Welcome to the White House. Thank you all very much for coming this morning. As a foot-soldier in this Administration's efforts to use energy more efficiently, protect the environment, save taxpayers' money and fight climate change, I am very excited to have two of our field generals – Secretary Richardson and Administrator Browner – here today.

It's a privilege for me to introduce Energy Secretary Bill Richardson.

Companies for 'Greening of the White House' Event

Philips Lighting Company North America

Contact: Randy Moorhead, VP Government Affairs (202) 962-8550
Steve Goldmacher, Director, Public Affairs (New Jersey) (732) 563-3039

Executive: Larry Wilton, President and Chief Executive Officer, Philips

Promotion: Philips will offer its household compact fluorescent light bulb (CFL) available exclusively, and for the first time ever, at the Home Depot for less than \$10.

Home Depot

Contact: Kim Woodbury, Environmental Marketing Manager (Atlanta) (770) 433-5871
Carol Schumacher, VP Public Affairs (770) 384-2828

Executive:

Promotion:

Maytag

Contact: Doug Horstman, VP Government Relations (202) 639-9420

Executive: President of one of their four business units (Home Appliance, Worldwide Solutions, Commercial Appliance, Emerging E-Commerce Solutions)

Promotion: Energy Star promotion that will cut across all appliances (details to be provided).

Best Buy

Contact: Richard Volz, Senior Appliance Buyer (Minneapolis) (612) 947-2477

Executive: *NO EXECUTIVE WILL ATTEND PRESS EVENT*

Promotion: Free delivery on energy efficient appliances (clothes washers, dishwashers, refrigerators) for the month of December 1999. Free financing for 18 months for appliances bought between 11/28-12/18; free financing for 12 months for appliances bought between 12/19-1/1).

Sears

Contact: Larry Costello (Chicago) (847) 286-9036
Tom Nicholson (847) 286-5231

Executive:

Promotion: Not final – will likely involve heating and air conditioning units, some kind of sales promotion and/or discount.

Whirlpool

Contact: Deb Jones, Government Relations (Benton Harbor, MI) (616) 923-4646
Tom Catania (616) 923-4645

Executive: Michael Thieneman, Executive Vice President of North American Operations

Promotion: Will announce a new product – a SERP (super efficient refrigerator program) refrigerator, “Whirlpool Conquest”, which is 35% more efficient than the current U.S. standard for refrigerators. It will be released in the 3rd quarter 2000 (April, May, or June). The SERP refrigerator Whirlpool is currently selling is 25% more efficient than the standard.

THE GREENING OF THE WHITE HOUSE
SAVING MONEY AND THE ENVIRONMENT THROUGH ENERGY EFFICIENCY
December 2, 1999

BEGIN BOX Since 1993, energy efficiency measures at the White House have saved nearly \$1.4 million in energy costs and are reducing greenhouse gas emissions by 845 metric tons every year—the equivalent of taking almost 700 cars off the road. In total, the Greening Plan can cut White House energy and water consumption by more than 50 percent. **END BOX**

On Earth Day 1993, President Clinton announced the Greening of the White House initiative, an effort to improve the energy and environmental performance of the White House complex. The report being released today is the culmination of that vision. It details energy efficiency and conservation measures taken throughout the White House complex, including the East and West Wings and the Old Executive Office Building. Initial results were reported in 1996 – with annual energy cost and operating savings of \$150,000. This report adds another \$150,000 annually to the savings total, details greenhouse gas reductions, expands the Greening effort to Jackson Place and lists planned and recommended next steps.

Off-the-Shelf Products Available to All Americans. All of the energy efficiency and other improvements to the White House complex made under the *Greening Plan* used “off-the-shelf” materials and technologies—available to all Americans to use in their own homes and workplaces. As President Clinton said in 1993, “I want to make the White House a model for other Federal agencies, for State and local governments, for business, and for families in their own homes. Before I ask you to do the best you can in your house, I ought to make sure I’m doing the best I can in my house.” (CHAPPAQUA!!!)

Real Actions, Real Savings. Energy saving and environmentally friendly improvements made to the White House complex include:

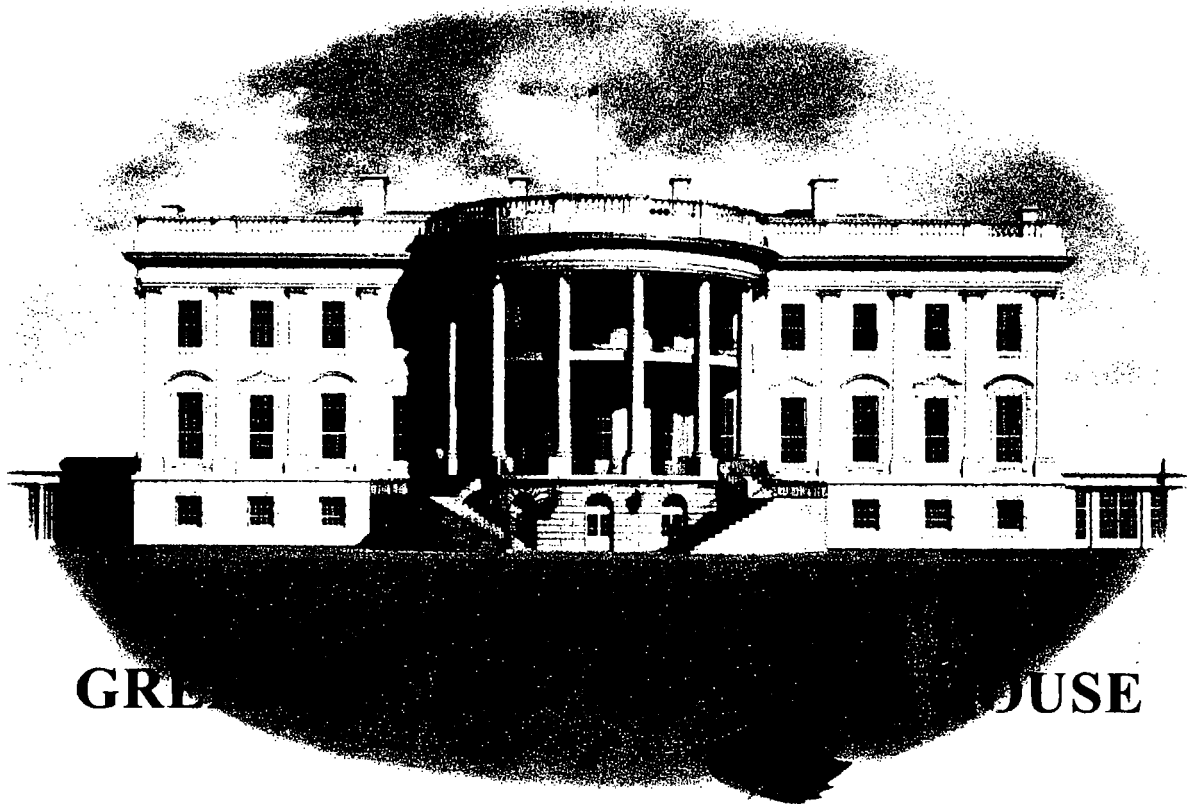
LIGHTING: energy-saving compact fluorescent light bulbs were installed where possible—saving \$22,000 a year and 1,600 kilowatt-hours per year. Replacement of overhead fixtures saved \$98,000.

HEATING, VENTILATION AND COOLING: Measures were taken to reduce the amount of energy used to heat and cool while also improving indoor air quality. New heating system saves \$32,000 a year.

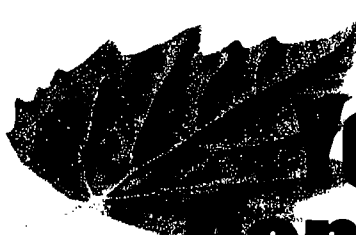
WASTE: Began comprehensive recycling program for aluminum, glass, paper, newsprint, furniture, batteries, and other materials.

LANDSCAPING. Seasonal plants replaced with perennials and shrubs. Pesticide use reduced by 80 percent and fertilizer use by 33 percent. New sprinklers and timers saving water and \$15,000.

Energy Star Public-Private Partnership. As part of today’s release of the Greening of the White House Report, six major American companies involved in the production and sale of energy efficient products—Best Buy, Sears, Home Depot, Phillips, Maytag and Whirlpool—are announcing a series of consumer incentives to help promote the use of energy efficient products by Americans in their own homes. All of these companies take part in a Federal-private sector partnership to design and promote Energy Star Products, appliances and other items which use cutting edge energy efficient technologies to save consumers money and help protect the environment.

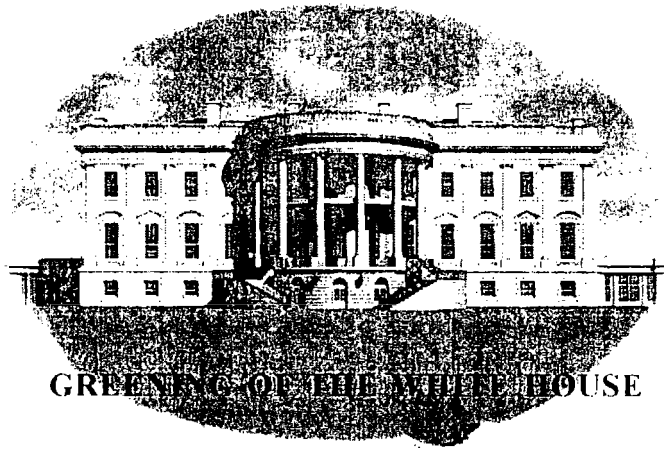


GREENHOUSE



Six Year Report

November 1999



We're going to identify what it takes to make the White House a model for efficiency and waste reduction, and then we're going to get the job done. I want to make the White House a model for other Federal agencies, for State and local governments, for business, and for families in their homes. Before I ask you to do the best you can in your house, I ought to make sure I'm doing the best I can in my house.

President Clinton
April 21, 1993

Acknowledgments

This report is the result of a one-year effort that brought together more than two dozen people from both within and outside the Federal Government. The report builds on a process begun in 1993 designed to tap the best thinking on energy conservation and waste reduction and apply that knowledge to the White House complex.

The authors wish to recognize the critical support provided by George Frampton, Chair of the Council on Environmental Quality; Roger Ballentine, Deputy Assistant to the President for Environmental Initiatives; and Beth Shearer in her positions at both the General Services Administration and the Department of Energy. Mention must also be made of the contributions of Mark Lindsay, Assistant to the President for Management and Administration; Mike Lyle, Director, Office of Administration (Executive Office of the President) and Donald Plummer, Buildings Manager, General Services Administration.

Special thanks go to John Archibald, Anne Sprunt Crawley, Dean McCauley, and Katie McGervey of the Federal Energy Management Program at the Department of Energy, all of whom provided insight and guidance throughout the Greening Initiative. Andy Walker of the Department of Energy's National Renewable Energy Laboratory (NREL) and NREL intern Lori Mitchell helped coordinate the energy audit of Jackson Place. Also involved with the Jackson Place audit was the Environmental Protection Agency's (EPA) Indoor Air Quality Team, lead by Bob Thompson and including Bryan Ligman, Gene Fisher, Garvin Heath, Greg Brunner, Susan Womble, and Ralph Wright.

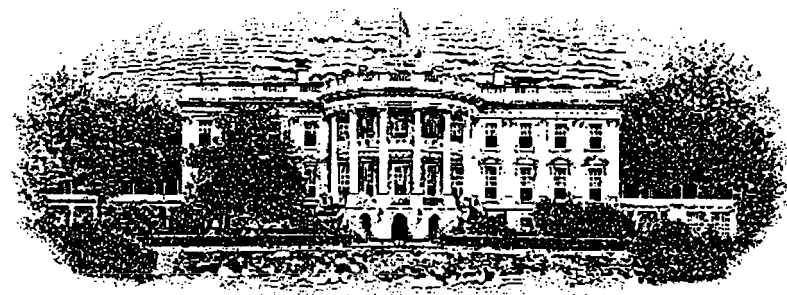
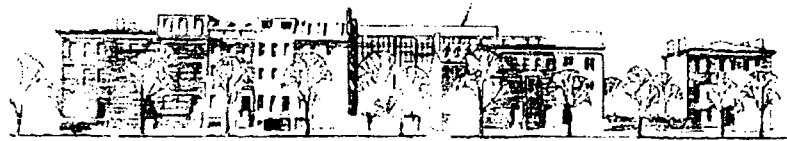
Dana Arnold of the Office of the Federal Environmental Executive provided support on waste reduction and recycling issues.

Shelley Fidler of the White House Climate Change Task Force and David Rejeski, EPA agency representative to the Council on Environmental Quality, provided overall project management.

Bill Browning of the Rocky Mountain Institute helped pull together the environmental history of the White House complex. Paul Jutton of the Office of Administration (Executive Office of the President) provided graphics for the report, and Chris Tremper of McNeil Technologies, Inc., oversaw the report's final production.

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The Greening of the White House . . .

An Introduction

The White House, which recently celebrated its 200th birthday, has a long tradition of demonstrating technological innovation. In keeping with that tradition, President Clinton announced the Greening of the White House Initiative on Earth Day 1993. The initiative improves the energy and environmental performance of the White House complex by identifying opportunities to reduce waste, lower energy use, and make an appropriate use of renewable resources, all while improving indoor air quality and building comfort.

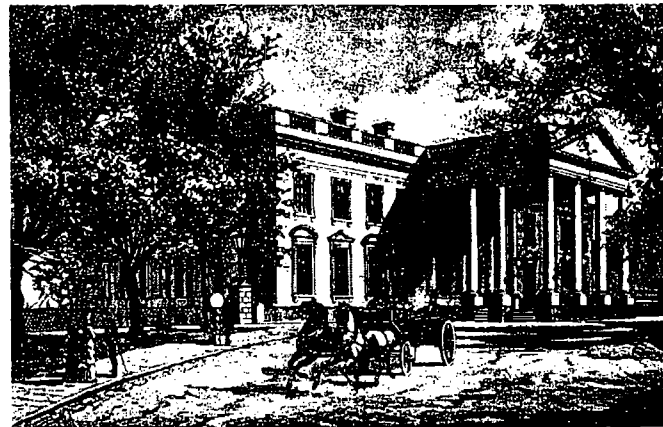
This report on President Clinton's legacy of greening at the White House summarizes progress made to date and gives an overview of new opportunities identified during the past year. It also includes an environmental history of the White House and a short tour of the buildings that make up the White House complex. Over the past five years, this initiative has involved hundreds of dedicated people from both within and outside government. A description of how they worked together to develop and implement the Greening Plan is also included in this report.

Many of the steps identified during the first two years of the Greening Initiative were implemented. The Second Annual Report, issued in March 1996, estimated savings of more than \$150,000 per year in energy and water costs, landscaping expenses, and expenditures associated with solid waste. White House Greening measures completed since 1996 are saving an additional \$150,000 each year, for a total of approximately \$300,000 annually. These new projects, together with the original measures, are also avoiding atmospheric emissions of at least 845 metric tons of carbon every year.

The Greening Plan can decrease White House energy and water consumption by 50 percent or more. It also supports President Clinton's leadership role in protecting the environment. The Greening of the White House project creates an environmentally sustainable White House and a world-class environmental showcase.

The White House has been described as the house of the people. In that sense, this work is not just about the White House, it is about your house. Many of the steps identified and implemented in this report make good economic and environmental sense for many Americans. Hopefully this report will provide you with the ideas and inspiration to make your home, office, or business more energy efficient, environmentally sound, and comfortable.

White House Greening measures completed since 1993 have saved almost \$1.4 million to date and are now avoiding at least 845 metric tons of carbon every year.



The Greening Plan can cut White House resource consumption by 50 percent or more.

What are the White House "Greening Measures"?

These short descriptions identify what steps the Greening Team have taken in the past and are currently considering to reduce energy and waste in the White House complex. In the coming pages, a "tour" is given of each building in the complex, including a short history and more details on the following measures.

These symbols
will help you quickly
identify what measures
were implemented.



Building Envelope: A significant amount of energy is lost through the roof, windows, and walls of buildings, so those areas were analyzed for options to increase efficiency.



Lighting: Energy-saving light bulbs were installed wherever possible, and steps were taken to ensure lights are turned off in rooms that are not in use. Maximizing the use of natural light was a priority, because it's free and more visually pleasing.



Heating, Ventilation, and Air Conditioning (HVAC): Measures were sought to reduce the amount of energy used to heat and cool the buildings while simultaneously increasing occupant comfort. Improving indoor air quality and reducing the use of paint with volatile organic compounds are also major goals.



Plug Loads: Energy-saving office equipment was installed, and refrigerators and coolers were replaced with more energy-efficient models.



Waste: After analyzing the waste being generated, a comprehensive recycling program began for aluminum, glass, paper, newsprint, furniture, batteries, fluorescent lamps, paint solvents, and laser printer cartridges. Organic yard waste is recycled at an off-site composting facility.



Vehicles: Many leased vehicles accept cleaner-burning alternative fuels, and the White House is participating in a pilot program to test electric vehicles. Also, many employees use public transportation to decrease the use of automobiles.



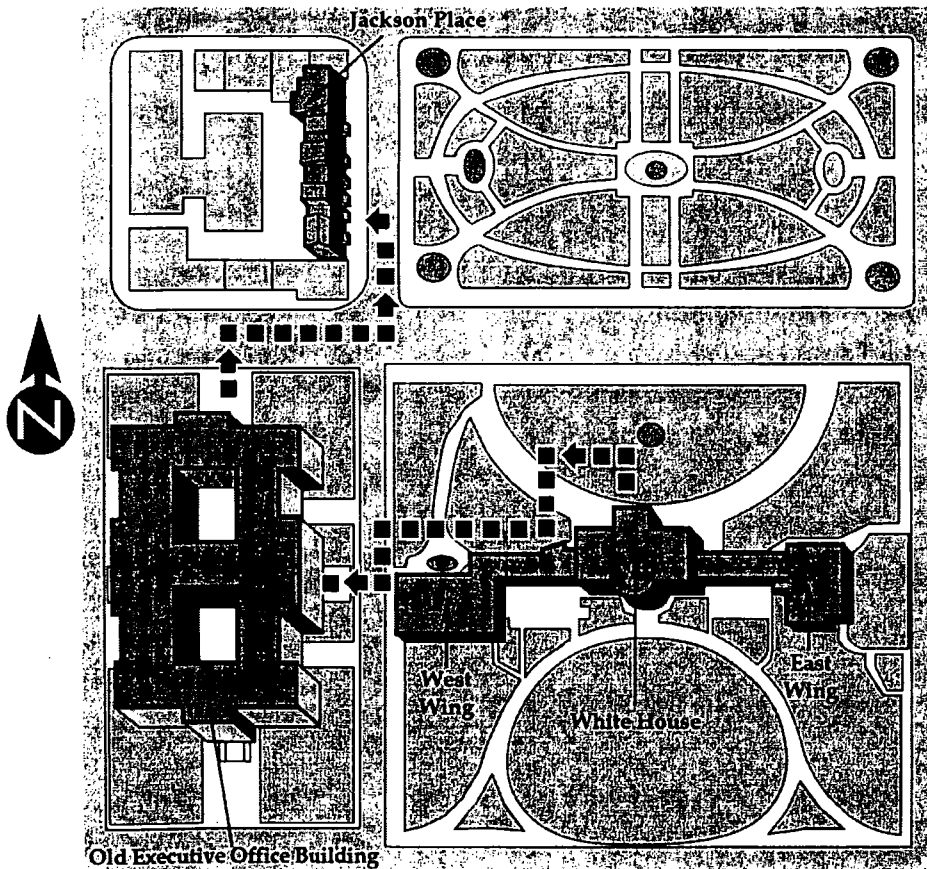
Landscaping: Methods to reduce unnecessary water and pesticide use and increase organic fertilizers on the grounds of the complex were analyzed.

Take the Greening of the White House Tour

You are invited to take a tour of the White House complex to learn more about the historic buildings and take a closer look at the energy and waste reduction measures that make up the Greening of the White House Initiative.

As you visit the various buildings, the Greening measures will be discussed in greater detail and you will learn what has been accomplished and what is planned for the future. Keep in mind that much of what was done used existing technologies that are now applicable to a wide range of buildings, including your own home or office.

The tour begins in the White House, proceeds to the Old Executive Office Building, and then to the townhouses on Jackson Place.



The multibuilding
White House complex
encompasses about
800,000 square feet
of space.

The White House

Martin Van Buren, the first President born in the United States, installed the first central heating system in the White House.

Besides being a home to the President and his family, the White House includes office space, a museum, ceremonial spaces used for visits and special events with dignitaries, a restaurant, and an 18-acre botanical garden. The White House is composed of three main sections: the Executive Residence, the East Wing, and the West Wing. The First Family lives on the second and third floors of the Executive Residence, which also contains space for guests. The ground floor is open to the public and is visited by more than a million people annually. From the central heating system in the mid 1800s to the plumbing, gas lighting, elevators, air conditioning, solar panels, and the first generation compact fluorescent lamps added during the Bush Administration, the White House frequently has been a showcase for innovations.

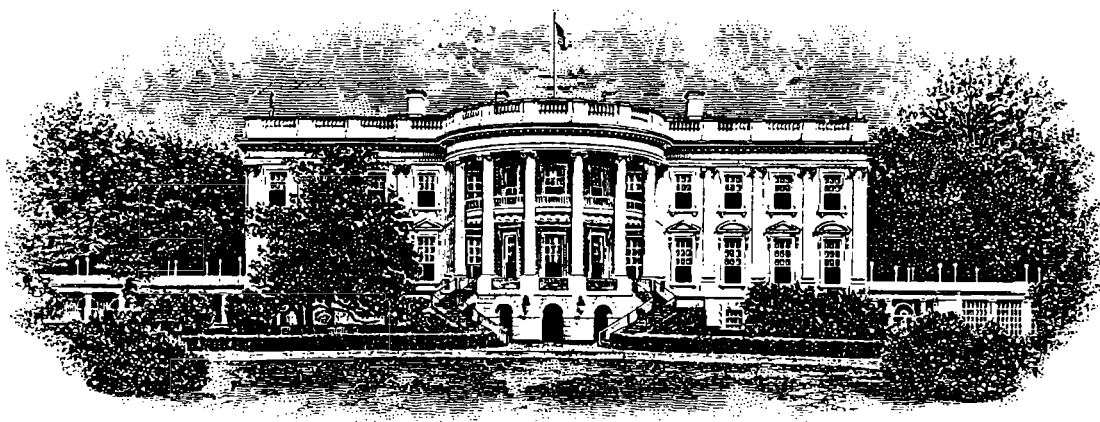
James Hoban, an Irishman, designed and began building the Executive Residence in 1792. George Washington laid the cornerstone of the building, but John Adams was the first President to occupy the building, in 1800. The White House is oriented on an east-west axis, allowing for maximum use of the sun for lighting and heating. The building was lit by sunlight during the day, with candles and lard-oil lamps used at night. Gas lighting was added in 1848, and wiring for electrical lighting soon followed after Thomas Edison perfected the light bulb. Today sunlight still provides light for most of the day.

"Hell itself couldn't heat that corner."

— President Andrew Jackson, on the problematic heating of the White House.

Despite the ample sunlight and numerous fireplaces, heating remained a problem for a long time. A coal-fired furnace to heat the dining room was installed for President Adams, but when the White House was destroyed by the British in the War of 1812, the furnace was not replaced. Later, frustrated by the inadequate heating, President Andrew Jackson remarked, "Hell itself couldn't heat that corner." President Martin Van Buren had the first central heating system installed. The air, heated by burning coal, rose through flues and chambers into many of the rooms. The White House was one of the first houses in the country

to have running water when plumbing was installed in the 1830s. In 1853, during Franklin Pierce's presidency, the heating system was changed to circulate heated water in pipes. This improved indoor air quality and burned less coal. Eventually the system was switched to



steam. In the 1970s, during the Carter Administration, solar panels were installed to heat the water for the Navy Mess, but the panels didn't function as well as hoped, so President Reagan had them removed.

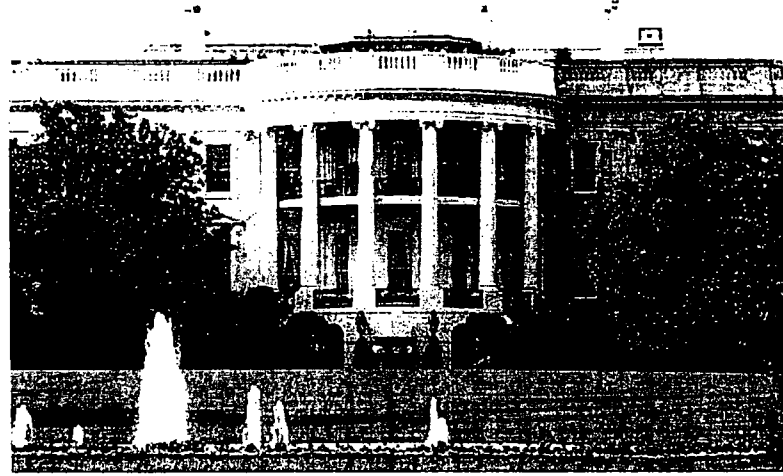
In the summer, the building's position on the edge of a hill, combined with large windows and high ceilings, maximized the cooling power of breezes. The first attempt at central air conditioning was in 1909 with a system in which fans blew air across ice bins placed in the attic. This system did not work, but during the Truman presidency an air conditioning system was installed that is still in use, with new controls and chillers recently added.

The President and his closest staff work in the West Wing, which contains the Oval Office, meeting spaces, White House media office, and the Navy Dining Mess. The oldest portion of the West Wing was built originally as a stable during the presidency of Thomas Jefferson. At the beginning of the 20th century, the extensive conservatories on the site were demolished to make way for office space. The West Wing was expanded again in the 1930s.

The East Wing was intended to be a museum, but when construction began in 1941, the outbreak of World War II forced most of the space to be used for other purposes. Today, the East Wing contains mostly office space, including the First Lady's, and a theater. Tour visitors enter the White House through the East Wing and walk down a corridor looking out into the Jacqueline Kennedy Garden before entering the ground floor of the Executive Residence.

The landscaping and use of the White House grounds have changed often over the last two centuries. Past activities included livestock grazing and military drills. Some former Presidents planted trees from their home States on the grounds, many of which did not survive in Washington's climate. The National Park Service and the General Services Administration, which are responsible for maintaining the grounds and buildings, now plant only species that are native to Washington and give preference to organic practices whenever possible.

The current size and configuration of the grounds were arrived at around the beginning of this century. Today's many uses include treaty events, celebrations, and the traditional Easter Egg Roll. Television crews use a space just to the north of the West Wing to film segments of their White House news stories. So many events occur on the South Lawn that the sod in this area must be replaced several times a year. In addition to the well-known Rose and Jacqueline Kennedy Gardens, the grounds include a tennis court, a swimming pool, a running track made from recycled rubber, and the Grandchildren's Garden.



7,000 hard-boiled eggs
were used in the 1999
Easter Egg Roll.

White House Greening Activities

Completed



- The roof of the White House was replaced to improve the thermal integrity of the building shell.



- Incandescent table lamp bulbs in the White House were replaced with compact fluorescent bulbs where possible, saving 1,600 kilowatt-hours per year. Only 5 percent of the bulbs weren't replaced due to the historic character of the fixtures and security concerns.
- Exterior flood lighting was replaced with energy-efficient halogen lighting in 1994. The halogen spotlights are controlled by timers that turn off the lights after 11 p.m., reducing energy use for exterior lighting by 60 percent.
- Halogen lights were installed in the coolers for the flower shop and kitchen in 1998.
- In 1995 (East Wing) and 1997 (West Wing), T-12 fluorescent tube lamps were replaced with more efficient T-8 fixtures and electronic ballasts.



- In 1994, a chlorofluorocarbon (CFC) management system was put in place.
- A preventive maintenance program for kitchen freezer CFC leaks was instituted in 1994.
- Chiller CFC recycling/recovery/reclamation machines meet all applicable regulations. All CFC technicians were certified by the Environmental Protection Agency.



Using compact fluorescent bulbs instead of incandescent light bulbs saves \$22,000 each year throughout the White House complex.

- Installation of a new HVAC system in the Executive Residence was completed in January 1999. The chillers were replaced with high-efficiency units that don't use CFCs. This project is expected to save 400,000 kilowatt-hours of electricity, 24,000 gallons of water, and \$32,000 per year.
- New insulation is being installed on all pipes as part of a larger asbestos abatement program begun in 1998.
- Ninety percent of the steam traps have been replaced to prevent steam loss.
- A no-smoking policy continues throughout the White House, improving indoor air quality.
- A new Park Service paint shop was completed in 1995 to improve indoor air quality, and a more efficient paint sprayer was installed in January 1999.

Improvements to the HVAC system save more than \$30,000 per year.



- The old coolers and refrigerators in the kitchen and flower shop of the Executive Residence have been replaced with more efficient units.
- The first high-efficiency (Golden Carrot) refrigerator was installed in 1994. At that time, the model exceeded industry standards for energy efficiency by 30 percent.
- Since September 1995, 99 percent of the computers, printers, copiers, and fax machines purchased have been efficient ENERGY STAR® models. These units consume 50 to 60 percent less energy than comparable models.
- Staff are required to turn computers off after work to save energy and promote security.

ENERGY STAR® office equipment has cut energy consumption for those devices by 50 to 60 percent.



- Due to security requirements, most documents are shredded into fibers too short for traditional recycling. Since July 1998, this material has been sent to an off-site composting facility where it is mixed with yard trimmings to make a compost product called LEAFGRO. LEAFGRO, in turn, is used as compost on White House grounds. LEAFGRO is also available for purchase commercially.



Recycling

- An ongoing project began in 1993 to educate staff and set internal policy to reduce paper consumption, limit the use of disposables, conserve office supplies, and eliminate unnecessary items.
- The staff purchases recycled paper including copier paper containing 30 percent of post-consumer products and stationery with 20 percent of such products. The library staff sends newspapers to a recycling facility once the microfilm version arrives. Monthly accounting reports are copied on both sides and personnel, procurement, and travel forms are being automated.
- Used furniture is refurbished to avoid cutting new wood and manufacturing other materials to make new furniture.
- Inks that contain biodegradable vegetable ingredients are used for printing, decreasing the environmental impact related to the disposal of printed items.



- The White House has a contract with DaimlerChrysler to supply 75 percent of its fleet with alternative-fuel vehicles. Currently, these are flexible-fuel ethanol vehicles.
- In August 1998, the White House participated in a pilot program sponsored by the Potomac Electric Power Company and the Department of Energy to test Ford's electric 1998 Ranger pickup truck.
- Metrochek, a transit subsidy program, encourages eligible employees to use public transportation and reduce the environmental impact associated with the use of automobiles. Recently, the pool of eligible employees was significantly expanded to enhance the environmental benefits of the Metrochek program.
- A shuttle service is provided for official travel to Capitol Hill, thereby minimizing the need for extra trips by automobile.



- Pesticide use has been reduced 80 percent by eliminating blanket sprays and improving pest management.
- In 1994, sprinkler heads were adjusted and/or replaced and watering was switched to the early morning, saving 15,000 gallons in one year.
- Since 1995, native plants have been planted in place of nonnative species.
- Trimmings and yard waste from the 18 acres of grounds are composted off-site and returned for use as soil amendments.

Adjusting and replacing
sprinkler heads saved
15,000 gallons of water
in one year.



Composting

Recommended/Planned



- The Solarium and Greenhouse are being redesigned to include energy-efficient glazings.
- Replace the existing electric swimming pool heaters with a solar water heater or natural gas-fired heater, saving about \$1,120 per year, and implement conservation measures such as covering the pool when it's not in use.



- The Park Service is awaiting funding to rehabilitate the visitors entrance building near the East Wing. Recommendations to upgrade the fluorescent lighting from T-12 bulbs to T-8 bulbs and electronic ballasts will be incorporated into the project.
- Install photovoltaic-powered lighting for the Pennsylvania Avenue Park, and incorporate PV arrays into visitor kiosks to showcase the technology. Photovoltaics could provide enough energy to power the 40-watt bulbs in each kiosk.

A solar water heater for the
swimming pool could save
more than \$1,000
per year.

- Automatic controls will be used to reduce the energy use of lighting and take advantage of natural daylight in the East Wing visitors entrance building.
- Replace incandescent light bulbs in the paint shop with triple-phosphor fluorescent lamps for improved color rendition.



- An ozone-friendly non-chlorofluorocarbon ("non-CFC") air-conditioning system for the East and West Wings of the White House is scheduled for completion during FY 2000.



- Work with the EPA to establish a collection system to recycle nickel-cadmium batteries.

The Old Executive Office Building

Located next to the White House, the Old Executive Office Building (OEOB) occupies a unique place in Washington's architectural history. The building's flamboyant French Second Empire design stood in stark contrast to its Greek Revival neighbors. When completed after 17 years of construction in 1888, the OEOB was the largest office building in Washington with 4½-foot-thick granite walls, 16-foot ceilings, 2 miles of black and white marble tile corridors, and more than 550 offices in 600,000 square feet of space. The building has two large internal courtyards and was originally designed to use daylight and natural ventilation. In 1969, the OEOB was designated a National Historical Landmark, and in 1972 it was placed on the National Register of Historic Places.

The building was designed soon after the discovery of carbon dioxide, leading to the development of an intricate ventilation system. Air channels were built throughout the walls, allowing fresh air to enter rooms through slots under the windows. At each corner, stained glass domes top open stairwells. Hot air would rise into the domes and exhaust through vents into glazed skylit spaces, creating negative pressure that pulled air through the rest of the building.

The Old Executive Office Building is the largest granite building in the world.

President Taft allowed the family cow, Pauline, to graze on the south lawn of the OEOB.



The ventilation system was gradually disabled over the years. Today's cooling system consists of 782 window air conditioners, 100 package units, and three chillers. An exterior renovation begun during the Reagan Administration restored the skylights to their original function.

Originally designed to house the State, Navy, and War Departments, it today contains the Vice President's ceremonial office and more than 25 agencies within the Executive Office of the President. The building also contains the historic Indian Treaty Room, two libraries, a small gymnasium, a two-lane bowling alley, a paint shop, and a furniture repair shop.

Old Executive Office Building

Greening Activities

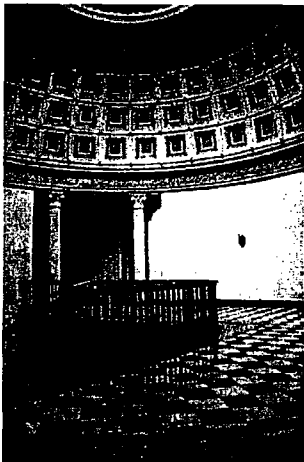
Completed



The building's first light bulb was installed in 1893.



- Ninety-eight percent of the windows were replaced with energy-efficient double-paned units. The remaining 2 percent are not double-paned because of historic considerations.



OEOB skylit stairwell

The lighting upgrades in the OEOB have reduced the building's total energy load by more than 12 percent.

- The 1,600 incandescent light bulbs in corridor fixtures were replaced with energy-efficient compact fluorescents, saving more than \$20,000 each year and avoiding 100 metric tons of greenhouse gases.
- More than 90 percent of all overhead lighting has been upgraded with energy-efficient T-8 fluorescent tubes and electronic ballasts. Security concerns have prevented replacing the remaining 10 percent. This project cut lighting energy use by almost 70 percent and paid for itself in three years by saving nearly \$100,000 annually.
- Motion detectors were installed in the bathrooms, copy rooms, and conference rooms to shut off lights automatically when rooms are unoccupied, saving about \$6,000 per year.
- In 1994, the mercury vapor lighting in the Indian Treaty Room was replaced with more efficient metal halide lights, which provide 35 percent more light and dramatically improve color rendition in this historic meeting place.
- Most table lamp bulbs were replaced with compact fluorescent bulbs. Only 2 percent were not replaced, due to security reasons.
- In 1995, the historic skylights were rehabilitated, which increased daylighting and restored the original historical appearance.
- Outdoor lighting was programmed in 1998 to turn off after 11 p.m., reducing energy consumption by 60 percent.

- Converting to light-emitting diode (LED) exit signs reduced annual electricity use by 280 kilowatt-hours per sign. This is a savings of approximately \$25 in energy costs for each sign. Maintenance is also decreased dramatically.



- Eighty-five percent of the window air conditioning units have been replaced with more efficient models meeting the Department of Energy's and EPA's ENERGY STAR® requirements. This ongoing retrofit is saving more than \$4,500 in electricity costs per year.
- Timers have been installed on a large number of window air conditioner units to turn them off between 10 p.m. and 5 a.m.
- New R-19 fiberglass insulation was installed on steam pipes as part of an asbestos abatement program.
- A preventive maintenance program for ozone-depleting CFCs from kitchen freezer leaks was instituted in 1994.
- Chiller CFC recycling/recovery/reclamation machines met regulations in 1994. All CFC technicians were EPA-certified by 1994.
- In 1994, the chiller system was modified to recirculate cooling water instead of wasting it.
- The no-smoking policy within the White House complex continues, improving indoor air quality.
- Begun in 1995, 60 percent of the rooms have been painted with paint low in volatile organic compounds. The remaining rooms are painted with oil-based paints due to historic considerations.



- Since 1995, 99 percent of the computers, printers, copiers, and fax machines purchased have been efficient ENERGY STAR® models. These units consume 50 to 60 percent less energy.
- Staff are required to turn computers off after work to save energy and promote security.



Metal halide lighting improved lighting levels in the Indian Treaty Room by 35 percent with no additional energy use.

New air conditioners save more than \$4,500 in electricity costs per year.



- An ongoing project began in 1993 to educate staff and set internal policy to reduce paper consumption, limit the use of disposable products, conserve office supplies, and eliminate unnecessary items.
- The staff purchases recycled paper including copier paper containing 30 percent of post-consumer products and stationery with 20 percent of such products. The library staff sends newspapers to a recycling facility once the microfilm version arrives. Monthly accounting reports are copied on both sides and personnel, procurement, and travel forms are being automated.
- Used furniture is refurbished to avoid cutting new wood and manufacturing other materials to make new furniture.
- Inks that contain biodegradable vegetable ingredients are used for printing, decreasing the environmental impact related to the disposal of printed items.
- In 1994, an agreement was completed to ensure that all hazardous waste is handled in accordance with internal procedures that comply with Resource Conservation and Recovery Act regulations.
- All hazardous waste was consolidated in an OEOB storage cabinet in 1993.
- Hazardous waste is inspected weekly, and has undergone a chemical inventory. Polychlorinated biphenyl (PCB) records were consolidated in 1993.
- Since 1994, staff working near PCB-contaminated transformers wear protective clothing, and transformers are periodically drained and filled with non-PCB fluid.



Pesticides have been reduced by
80 percent.

- The GSA reduced fertilizer consumption by one-third by using mulching mowers and increasing the use of compost.
- Pesticide use has been reduced 80 percent by eliminating blanket sprays and improving pest management.

- Seasonal flowerbeds, which have high maintenance costs, were replaced in 1998 with perennials and shrubs.
- Water conservation devices were installed in restrooms, kitchens, and other areas in 1994. Combined with adjusting and replacing sprinkler heads and watering the landscape in the morning, 15,000 fewer gallons of water were used in 1995.



- Metrochek, a transit subsidy program, encourages eligible employees to use public transportation and reduce the environmental impact associated with the use of automobiles. Recently, the pool of eligible employees was significantly expanded to enhance the environmental benefits of the Metrochek program.
- A shuttle service is provided for official travel to Capitol Hill thereby minimizing the need for extra trips by automobile.

Recommended/Planned



- Certify the OEOP as an EPA/DOE ENERGY STAR® building, signifying excellence in energy performance. This benchmark recognizes the top 25 percent energy-efficient commercial office buildings.



- More efficient chillers are being designed, and are to be installed during summer 2000.
- Install more window air conditioning unit timers as budget allows.

- Upgrade the document shredder to improve air quality. The current shredder creates a large amount of dust when operating.
- A long-term project, currently in its planning stages, is the elimination of single window air conditioning in favor of a non-CFC central air conditioning system.



- Install the first ENERGY STAR® labeled vending machine in the OEOB's snack bar as soon as it becomes available. The ENERGY STAR® vending machine program is still in development; labeled products will likely be available in 2001. DOE and EPA will work with GSA's concession's office to install the appropriate ENERGY STAR® labeled equipment.
- The renovation of the electrical distribution system is scheduled for FY 2002 and FY 2003. This includes the replacement of transformers, antiquated wiring systems, and electrical distribution equipment.



Recycling

- Improve the labeling system of the building's recycling containers.
- Work with the EPA to establish a collection system to recycle nickel-cadmium batteries.
- Initiate a pilot project to test bio-based products (tableware, plates, and garbage bags) in the cafeteria.

Jackson Place

The Jackson Place townhouses are located along the west side of Lafayette Park north of the White House. The tract of land was originally known as "Jamaica," and records show John Pierce first owned it in 1685. The Federal Government purchased the land in 1792 as part of the new District of Columbia.

By 1803, the land had been designated as a public area, known first as President's Square or the Common and, after 1825, as Lafayette Square. Gravel carriageways were laid out along the west and east sides of the square, and by 1824 an old ferry road along the north side of the square had become H Street. Both Charles Bulfinch, a famous architect of government buildings who also finished the Capitol Building, and Andrew Jackson drew plans for improving the grounds in Lafayette Square. In 1858, the carriageways were officially named Jackson Place and Madison Place. During the 19th century, the land gradually turned from a neglected common to an attractive urban park. The neighborhood remained essentially residential from the 1820s until the early 20th century, when several row houses were adapted to small offices and others were replaced with larger structures for offices.

During the Eisenhower Administration, plans to demolish the existing structures and construct new Federal office buildings on the square ignited community opposition.

For the past 30 years, the townhouses on Jackson Place have provided space for White House offices and special projects related to the Executive Office of the President. Presently, Jackson Place is home to the White House Council on Environmental Quality, the White House Climate Change Task Force, the Millennium Program, the Office of National AIDS Policy, the White House Historical Society, and a conference center. In 1998, the buildings were added to the Greening of the White House Initiative and underwent extensive audits to identify opportunities to reduce energy use and waste, as well as improve indoor air quality.

First Lady Jacqueline Kennedy helped save Jackson Place from being demolished, which was a milestone in changing Federal policy toward the buildings' preservation.



*1960 sketch by
Grosvenor Chapman
of Jackson Place.*

Jackson Place

Greening Activities

A Department of Energy
audit revealed the
potential to save
\$135,000 per year.



*Jackson Place, ca. 1920.
By Theodor Horydczak.*

Although the Jackson Place buildings did not join the Greening Initiative until 1998, several projects have taken place since 1993 through general greening policies affecting the entire White House complex. For example, since September 1995, virtually all office equipment purchased meet ENERGY STAR® standards. And in 1993, as part of an ongoing project, the staff was mandated to reduce resource consumption and waste generation. A Department of Energy audit was one of the first steps of the Jackson Place greening process, and the audit discovered potential annual energy savings of \$135,000. The General Services Administration is funding a comprehensive engineering and architectural study of Jackson Place to explore more carefully the options presented in the DOE audit.

An indoor air quality audit performed in 1998 by the Environmental Protection Agency determined the condition of key factors that affect indoor air quality. These factors include measurements of ventilation and radon, and indicators of potential problems from pollutants such as mold and mildew; pest detritus; lead-based paint; and gaseous emissions from building materials, furnishings, and housekeeping supplies. The audit revealed several operation and maintenance actions that could result in a healthier and more productive work environment, as well as reduced energy consumption.

Recommended/Planned



- Replace all windows with double-glazed windows meeting the appearance standards of historical preservation (window retrofits to begin in April 2000).
- Install weather stripping to reduce air infiltration. Reducing heat loss and gain could save \$13,000 per year.



- Finish converting T-12 fluorescent tubes to more efficient T-8 fixtures and electronic ballasts.
- Replace incandescent bulbs in table and desk lamps with compact fluorescent bulbs.
- Install motion sensors in areas with sporadic activity and maintain constant light levels in rooms with dimmable lighting systems. These measures, taking into account the reduced heat gain during winter, would produce net savings of \$3,000 per year.



- Install ceiling fans as a near-term solution to destratify the air in the high-ceiling rooms. Thermostats could then be set lower, saving \$2,300 per year.
- Correct problems with makeup air systems to improve air quality, comfort, and energy efficiency.
- A feasibility study is under way to investigate installing high-pressure HVAC lines, which will resolve heating and cooling issues on upper floors while preserving the historical character of the rooms. Energy savings from this new technology are estimated to be around 30 percent.



- Improve the labeling system of the building's recycling containers.
- Work with the EPA to establish a collection system to recycle nickel-cadmium batteries.

Ceiling fans could help
save more than
\$2,000 per year.

The Bottom Line – Energy Efficiency Measures in Place



Building Envelope

Replace Executive Residence roof with lead-coated copper roof installed over rigid board thermal insulation

4,500 kWh
(15 million Btu)

\$520

1

Replace 98% of windows in OEOP with double-paned units and low-emissivity (low-E) film.

470 million Btu

\$8,000

11



Lighting

Replace incandescent bulbs in table lamps and corridor lighting with compact fluorescent bulbs (White House, OEOP)

350,000 kWh
(1.2 billion Btu)

\$22,815

100

Replace exterior facade lighting with halogen fixtures (White House)

36,000 kWh
(123 million Btu)

\$2,160

10

Retrofit fluorescent fixtures in service areas using T-8 bulbs, electronic ballasts, and controls; halogen lighting in coolers (White House)

111,000 kWh
(379 million Btu)

\$7,759

35

Replace 23 300-watt incandescent bulbs in paint shop with triple-phosphor fluorescent lamps (White House)

14,400 kWh
(49 million Btu)

\$1,000

4

Replace T-12 bulbs with T-8 tubes, electronic ballasts, and reflectors (East and West Wings, OEOP)

1,634,644 kWh
(5,577 million Btu)

\$98,078

515

Retrofit mercury vapor with metal halide lights in Indian Treaty Room (OEOP)

35% more light

\$0

0

Install motion sensors in the restrooms, copy rooms, and conference rooms (OEOP)

100,000 kWh
(341 million Btu)

\$6,054

32



HVAC

Install new HVAC system in the White House using HCF-134 (non-CFC) coolant (Executive Residence)

400,000 kWh
(1.4 billion Btu)

\$32,000

Carbon
Emissions
Avoided
(Tons)

116

Install R-19 insulation on all exposed steam lines and replace steam traps on an ongoing basis (East and West Wing, OEOB)

Steam line improvement measures are ongoing.

Upgrade 208V window unit air conditioners beyond 9.5 energy efficiency ratio level. Install timers on all window air conditioning units to turn off from 10 p.m. to 5 a.m. (OEOB)

70,550 kWh
(241 million Btu)

\$4,621

22



Plug Loads

Install superefficient "Golden Carrot" refrigerator in the Executive Residence

2,316 kWh
(8 million Btu)

\$175

1

Install more efficient coolers in kitchen and flower shop in the Executive Residence

Initiate policy to purchase only ENERGY STAR® Office equipment (East and West Wings, OEOB)

Reduce office equipment energy consumption 50-60%.

Energy Efficiency Bottom Line

9.8 billion Btu

\$183,182

845*

Other Greening Savings

(Waste reduction, vehicles, water conservation, landscaping, operations and maintenance)

\$117,000**

Total Bottom Line

\$300,182

NOTE: Engineering estimates used for savings calculation for some measures.

*Avoiding 845 tons of carbon emissions is equivalent to removing 648 cars from the road for one year.

**An exact breakdown of the savings from these measures is unavailable.

Environmental Bottom Line

Some of the measures taken in the course of the Greening of the White House cannot be quantified in terms of energy savings or reduced carbon emissions. However, the following activities have had a beneficial impact on the environment or will help popularize new environmentally friendly technologies.



Waste

All organic yard waste is recycled at an off-site composting facility.

The complex's recycling program includes aluminum, glass, paper, batteries, cardboard, newspaper, plastic, construction materials, furniture, fluorescent lamps, paint solvents, and laser printer toner cartridges.

Shredded paper is recycled into LEAFGRO soil complement for use in landscaping.



Vehicles

Seventy-five percent of the leased vehicles accept alternative fuels.

The complex participates in Potomac Electric Power Company's pilot program to test electric vehicles.

A transit subsidy program, Metrochek, encourages eligible employees to use public transportation. Also, a shuttle service is provided for official travel to Capitol Hill.



Landscape

Seasonal flowerbeds were replaced with perennials and shrubs.

Fertilizer use was reduced by one-third.

Pesticide use was reduced by 80 percent.

An emphasis is placed on native plant species.

Appendix

The Greening Process

The work performed as part of the Greening of the White House is based on a 1993 comprehensive energy and environmental audit by an intergovernmental team. The audit process included detailed reviews of building records and utility billings, research on building histories, and investigations of site conditions.

The energy audit team, led by the Department of Energy, included the Lawrence Berkeley National Laboratory; the National Renewable Energy Laboratory; and the Rocky Mountain Institute, which served as a technical advisor and as the liaison with the American Institute of Architects. This team gathered information on energy and water use, then analyzed the data to identify cost-effective, innovative techniques to save money and resources.

A *charrette* is an intensive design workshop with a set deadline, forcing participants to work quickly, creatively, and across disciplines.

The environmental audit team, led by the Environmental Protection Agency, included the General Services Administration, the District of Columbia's Regulatory Office, and the Institute for Environmental Auditing. This team examined the overall environmental performance of the complex and its compliance with various environmental acts and regulations, including the Resource Conservation and Recovery Act (RCRA) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), among others. The White House was brought into full compliance with those regulations during the course of the greening improvements.

Audit information was used in a subsequent Feasibility Study that was sponsored by the American Institute of Architects (AIA) in July 1993. The Corporate Conservation Council of the National Wildlife Federation provided partial funding for the study. The AIA organized a design charrette composed of more than 90 experts from the Government and private sectors, the Rocky Mountain Institute, and the AIA National Committee on the Environment. They produced a model design process and expert recommendations, leading to an integrated approach to improve the White House's energy efficiency, performance, and environmental responsiveness. The recommendations emphasized cost-effectiveness and solutions using "state-of-the-shelf" (commercially available) technologies.

All of the early actions that could be accomplished easily and quickly, that had little or no implementation cost, and that were required for regulatory compliance, have been completed. One example is the "Golden Carrot" refrigerator in the Executive Residence. "Golden Carrot" refers to the design competition that resulted in the commercial production of a superefficient appliance designed to use 25 to 50 percent less energy than standard models and using no chlorofluorocarbons (CFCs).



Participants in the Greening of the White House charrette.

Long-term initiatives focus on goals rather than specific actions, ensuring that the greening measures become permanent. Operations, maintenance, and procurement practices are a few areas in which change can occur through increasing environmental awareness. For example, using paint with low or no volatile organic compounds was an issue that could be implemented quickly and integrated with future procurement practices. One long-term goal is to develop an education process that will increase the management staff's understanding of their decisions' implications.

The intergovernmental team encourages you to replicate the projects discussed in this report in your own governmental, commercial, or private buildings. Already, a number of corporations have undertaken greening efforts inspired by the Greening of the White House. In the public sector, the DOE's Federal Energy Management Program (FEMP), in association with other organizations, extends the greening process to other Federal sites. To help get the message out, FEMP and AIA developed an interactive CD-ROM explaining project lessons and technologies. FEMP also has a Greening of Federal Facilities Resource Guide for Federal energy managers that will help reduce energy consumption and costs, improve the working environment, and reduce the environmental impacts of their building. A Greening of the White House Web site went on-line in 1995, and Houston Lighting and Power Company produced a videotape documentary. Communicating the project's lessons and transferring this knowledge to the public is crucial to its long-term success.

Resources

General Energy Efficiency

DOE Center of Excellence for Sustainable Development	www.sustainable.doe.gov/
DOE EREN Energy Saving Fact Sheets	www.eren.doe.gov/erec/factsheets/factsheets.html
DOE Federal Energy Management Program	http://www.eren.doe.gov/femp
DOE FEMP Greening Federal Facilities Web Site	http://www.eren.doe.gov/femp/greenfed/
DOE BTS Energy Savers	www.eren.doe.gov/consumerinfo/energy_savers/
EPA ENERGY STAR® Program	www.epa.gov/energystar.html
NPS Department of Energy Resources	www.nps.gov/renew/doe.htm
Alliance to Save Energy - Energy Efficiency Programs	www.ase.org/programs/index.htm
Alliance to Save Energy - Home and Business Energy Checkup	www.ase.org/checkup/index.html
Portland Energy Conservation, Inc.	www.peci.org

Building Design/Building Envelope

DOE BTS Building Software Tools	www.eren.doe.gov/buildings/tools_directory/
DOE FEMP Building Commissioning Guide	www.eren.doe.gov/femp/techassist/bldgcomgd.html
DOE BTS Windows Guide	www.eren.doe.gov/buildings/purchs_windows.html
DOE Center of Excellence for Sustainable Development - Green Buildings	www.sustainable.doe.gov/buildings/gbintro.htm
ORNL Building Envelope	www.ornl.gov/roofs+walls/
NREL High-Performance Buildings Research	www.nrel.gov/buildings/highperformance/
DOE/EPA ENERGY STAR® Buildings	www.epa.gov/buildings
DOE/EPA ENERGY STAR® Building Insulation	www.epa.gov/appdstar/insulation/
DOE/EPA ENERGY STAR® Roof Products	www.epa.gov/appdstar/roofing/
Navy/GSA/DOE Whole Building Design Guide	www.wbdg.org
NPS Guiding Principles of Sustainable Building Design	www.nps.gov/dsc/dsgncnstr/gpsd/ch6.html
Advanced Technologies for Commercial Buildings	www.advancedbuildings.org/design.html
Sustainable Buildings Industry Council	www.sbicouncil.org
Efficient Windows Collaborative	www.efficientwindows.org

Lighting

DLA Lighting Site	http://dscpl103.dscpl.dla.mil/gi/general/light1.htm
DOE FEMP Lighting Resources	www.eren.doe.gov/femp/resources/lighting.html

DOE BTS Lighting www.eren.doe.gov/buildings/purchs_lighting.html
 ENERGY STAR® Residential Lighting www.epa.gov/appdstar/fixtures/
 ENERGY STAR® CFL www.energystar.gov/products/cflbulbs.html
 Energy Efficient Lighting Association www.eela.com/
 Advanced Technologies for
 Commercial Buildings www.advancedbuildings.org/lighting.html
 PECCI Residential Services Lighting Program www.peci.org/res/lighting.html

HVAC

BTS HVAC www.eren.doe.gov/buildings/purchs_hvac.html
 ORNL Heating and Cooling www.ornl.gov/ORNL/BTC/h_and_c.htm
 NREL Desiccant Cooling Program www.nrel.gov/desiccantcool/
 Advanced Technologies for
 Commercial Buildings www.advancedbuildings.org/heating.html
 EPA ENERGY STAR® Heating and
 Cooling Equipment www.epa.gov/appdstar/hvac/index.html

Plug Loads

DOE FEMP Procurement, Buying Energy
 Efficient Products <http://www.eren.doe.gov/femp/procurement>
 DOE/EPA ENERGY STAR® Home Appliances www.energystar.gov/products/appliances.html
 DOE/EPA ENERGY STAR® Office Equipment www.epa.gov/appdstar/esoe/index.html Advanced
 Advanced Technologies for
 Commercial Buildings www.advancedbuildings.org/load.html

Environmentally Preferable Purchasing/Recycling

Comprehensive Procurement Guideline for
 Recycled Content Products www.epa.gov/cpg
 Environmentally Preferable Products Purchasing www.epa.gov/opptintr/epp
 DOE Center of Excellence for Sustainable
 Development – Materials Efficiency www.sustainable.doe.gov/efficiency/materials/meintro.htm
 National Recycling Coalition www.recycle.net

Water

DOE FEMP Water Conservation Program www.eren.doe.gov/femp/techassist/waterconserve.html
 Cities and Counties Project www.eren.doe.gov/cities_counties/articles.html#water
 DOE Center of Excellence for Sustainable
 Development – Water Efficiency www.sustainable.doe.gov/efficiency/weinfo.htm
 Clean Water Action Plan www.cleanwater.gov

Vehicles

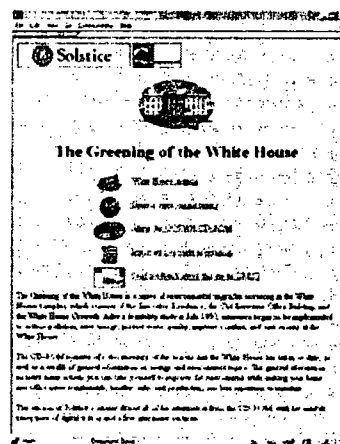
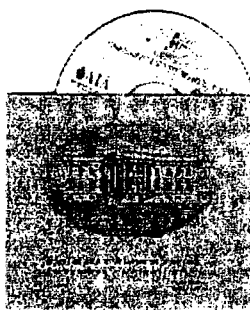
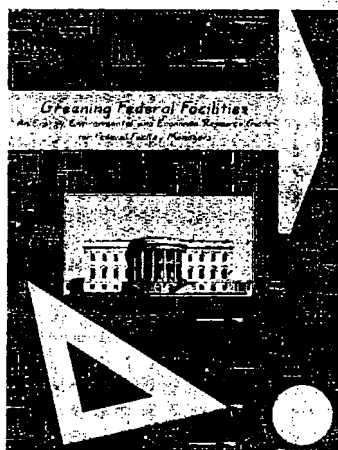
DOE Clean Cities Program	www.ccities.doe.gov
DOE Office of Transportation Technologies	www.ott.doe.gov
DOE/EPA Fuel Economy Site	www.fueleconomy.gov/feg
ORNL Transportation Technologies	www.ornl.gov/ORNL/Energy_Eff/transp.htm
American Council for an Energy-Efficient Economy - Green Guide to Cars and Trucks	www.aceee.org/greenercars/index.htm
Rocky Mountain Institute Hyper Car Center	www.hypercarcenter.org/dox/help01.html

Landscaping

DOE EERE Clearinghouse - Landscaping for Energy Efficiency	www.eren.doe.gov/erec/factsheets/landscape.pdf
DOE BTS Energy Savers - Landscaping	www.eren.doe.gov/consumerinfo/energy_savers/landscaping.html

Indoor Air Quality

FEMP Greening Federal Facilities Resource Guide - Indoor Air Quality	www.eren.doe.gov/femp/greenfed/7.0/index.htm
EPA's Indoor Air Quality Home Page	www.epa.gov/iaq/
Envirosense (non-profit offering courses in indoor air quality improvement)	www.envirosense.org
Advanced Technologies for Commercial Buildings	www.advancedbuildings.org/vent.html
EnviroCenter	www.envirocenter.com/REnviroCenterHome.htm



Greening of the White House Web Site
www.crest.org/environment/gotwh/index.html

“GREENING OF THE WHITE HOUSE” REPORT – PRESS ROLLOUT

Date of Release: December 2, 1999

Background on Report

Greening of the White House began with a POTUS Earth Day announcement in 1993. Actions were taken to improve the energy and environmental performance of the White House, including the East and West Wings and the Old Executive Office Building. Initial results were reported in 1996 – with annual energy cost and operating savings of \$150,000. This report adds another \$150,000 annually to the savings total, details greenhouse gas reductions, expands the Greening effort to Jackson Place and lists planned and recommended next steps at the entire complex.

We are preparing a three-part rollout:

1. CBS Morning Show Tour of WH with John Podesta and Bob Vila: To be taped Nov. 29; Aired Dec. 2 Rooms to be highlighted: Oval, Rose Garden, Roosevelt –separately (without John) a hallway of OEOB. Greening measures to be discussed: lights, heating, air conditioning, office equipment, water conservation measures and recycling of WH paper into compost for the garden and grounds.
2. Press Conference in Roosevelt Room to Officially Release Report with Sec. Richardson, Administrator Browner and Executives from Sears, Home Depot, Best Buy, Phillips, Whirlpool and Maytag – Later in the morning of Thursday, December 2 - Richardson releases, discusses report. Executives announce incentives (e.g., free delivery, 0% financing, discount on ENERGY STAR appliances) for consumers to purchase the kind of products installed at the White House – products that are available today and produce real operating savings over their life.
3. Story in USA Today to appear Dec. 2 – This should include full details of report, quotes from Podesta or other senior officials, photos, emphasis on monetary savings and environmental benefits, discussion of special incentives from Best Buy, Sears, and Home Depot, possibly sidebar to show how homeowners can make these improvements to their own homes. Obviously, we will work with many other print and broadcast outlets—but CBS and USA Today will get the “day-of” stories.

From: Julia M. Payne on 11/29/99 07:47:59 AM

Record Type: Record

To: Paul Bledsoe/WHCCTF/EOP@EOP, Elliot J. Diringer/CEQ/EOP@EOP

cc: Michele Ballantyne/WHO/EOP@EOP

Subject: per John Podesta

Can you please provide guidance, better than what was in the packet you sent over, on Jackson Place? John wants to know facts such as when were the townhouses built, when did they become offices, and when did the renovations begin and will we they finish? Also, can you provide guidance on the Energy Savers EO that the President recently signed?

Thanks

September 20, 1999

MEMORANDUM FOR JOHN PODESTA

FROM: ROGER BALLENTINE

RE: WHITE HOUSE ENERGY USE

The Department of Energy (DOE) recently announced that compact fluorescent light bulbs (CFLs) have been awarded the ENERGY STAR label. ENERGY STAR is a joint government-industry effort to promote the most energy efficient products. An ENERGY STAR label gives consumers assurances that they will get value for their investment. On average, each CFL saves \$61.00 over its lifetime, compared to incandescent bulbs.

The announcement by DOE prompted inquiries from both you and the President. In response I have looked into where we are on "the Greening of the White House" in general and the use of CFLs in particular.

In 1994, we installed CFLs in 95% of table lamps in the White House and OEOB. We did not alter other fixtures for historic, security or technical reasons. In the OEOB, we replaced incandescent light bulbs with CFLs in all corridor fixtures, saving more than \$20,000 per year and avoiding approximately 100 metric tons of greenhouse gas emissions. Subsequently, we upgraded table lamps in OEOB with CFLs, and also replaced fluorescent tube light fixtures with efficient T-8 tubes, electronic ballasts and reflectors.

A progress report on "The Greening of the White House" is in final editing and can be released soon. It shows that savings from energy conservation in the White House and the OEOB total \$332,000 annually.

We suspect, however, that there has been backsliding in the White House, with incandescents finding their way back into use. Compliance is very good in the corridor fixtures, particularly in OEOB. It appears, however, that a distinct minority of OEOB table lamps and other eligible fixtures continue to use CFLs. Anecdotal evidence is that maintenance personnel routinely replace light bulbs in table lamps with incandescent bulbs instead of CFLs.

With regard to the Oval Office, a state-of-the-art CFL lighting system was installed in 1989. It is not clear if it is still in use, and even if it is, there are newer, more cost-effective and more efficient systems that could be installed. We would need access to inspect this system.

As for other federal agencies, DOE is funding a 2 for 1 buy-down of CFLs to replace incandescent bulbs, implemented by the Defense Logistics Agency at DOD. DOE has recommended the use of CFLs to help agencies comply with newly signed Executive Order 13123.

I propose we take the following steps:

1. Verify continued use of CFLs in the White House and OEOP and inspect Oval Office system;
2. Prepare replacement program for all eligible fixtures in White House and OEOP not currently using CFLs;
3. Clear "Greening the White House" update report including recommended "next steps" to achieve even more cost savings (such as by accelerating the phase-in of ENERGY STAR computers and air conditioners, activation of ENERGY STAR "sleep" features for existing computers and printers, and adding improvements at Jackson Place to the White House Greening efforts);
4. Prepare White House event at which we would release the "Greening" report, announce new federal agency procurement activity and announce further White House "Greening plans", all with estimated savings.

If we go ahead, we could perhaps amplify our message with industry and public interest partners. Possible options include industry promotions of "green" products at home products stores; television and print specials (in 1993 The Washington POST ran a cover story on the White House Greening effort for their HOME section, and 40 million viewers watched a TV special on the Greening of the White House in the Southwest); announcements of industry headquarters buildings and factories "taking the pledge" to become more efficient; and a commitment by CFL manufacturers to cut bulb costs.

cc: George Frampton
Mark Lindsay
Sylvia Mathews
Sally Katzen

September 20, 1999

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RE: WHITE HOUSE ENERGY USE

The Department of Energy (DOE) recently announced that compact fluorescent light bulbs (CFLs) have been awarded the ENERGY STAR label. ENERGY STAR is a joint government-industry effort to promote the most energy efficient products in a category (such as ~~faxes, air conditioners, and light bulbs~~). An ENERGY STAR label gives consumers assurances that they will get value for their investment. On average, each CFL saves \$61.00 over its lifetime, compared to incandescent bulbs.

The announcement by DOE prompted inquiries from both you and the President. In response I have looked into where we are on "the greening of the White House" in general and the use of CFLs in particular.

In 1994, 95% of table lamps in the White House and OEOB ~~had CFLs installed~~. ^{we installed CFLs in} Other fixtures ~~for historic, security or technical reasons, continued to have incandescent bulbs~~. ^{we did not change} In the OEOB, incandescent light bulbs ~~have been replaced~~ with CFLs in all corridor fixtures, saving more than \$20,000 per year and avoiding approximately 100 metric tons of greenhouse gas emissions. ^{we replaced} We suspect, however, that there has been backsliding in the White House, with incandescents finding their way back into use. ^{savings from}

A progress report on "The Greening of the White House" is in final editing and can be released soon. It shows that energy conservation measures ~~completed since 1996~~ in the White House, East and West Wings and the OEOB ~~save \$150,000 in energy costs each year as well as avoiding emissions of 735 metric tons of greenhouse gases annually~~. The measures in place at the last report in 1996 ~~continue to save \$182,000 and 2,750 tons annually~~. The combined savings, up to now, total \$332,000 annually. The largest single annual cost savings at the White House and OEOB reflect the combined results from two lighting retrofits - the first replacing corridor and table lamp bulbs with CFLs and the second replacing the fluorescent tube light fixtures with efficient T-8 tubes, electronic ballasts and reflectors. ^{upgraded} The savings from the lighting retrofits alone total almost \$121,000 each year. Compliance is very good in the corridor fixtures, particularly in OEOB. It appears, however, that a distinct minority of OEOB table lamps and other eligible fixtures continue to use CFLs. Anecdotal evidence is that maintenance personnel routinely replace light bulbs in table lamps with incandescent bulbs instead of CFLs. ^{with CFLs}

subsequently, we replaced table lamps and also replaced

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4. Prepare White House event at which we would release the "Greening" report, announce new federal agency procurement activity (with estimated savings), and announce further White House "Greening plans", all

If we go ahead, ^{we could} ~~there are efforts underway to~~ amplify this message with industry and public interest partners. Possible options include industry promotions of "greening" products at home products stores; television and print specials (in 1993 The Washington POST ran a cover story on the White House Greening effort for their HOME section, and 40 million viewers watched a TV special on the Greening of the White House in the Southwest); industry headquarters buildings and factories "taking the pledge"; a commitment by CFL manufacturers to cut bulb costs; ~~and an organized press offensive by companies selling efficient products to residential consumers.~~

cc: George Frampton
Mark Lindsay
Sylvia Mathews
Sally Katzen

and

announcements of

BRIEF SHEET

Title: ENERGY STAR Light Bulbs – press launch, federal procurement, White House opportunities

Background: ENERGY STAR light bulbs have been added to the portfolio of products bearing the ENERGY STAR label. All ENERGY STAR bulbs will be compact fluorescent lamps (CFLs) meeting minimum lifetime, efficiency and quality specifications.

DOE worked with lighting manufacturers, utilities, and EPA to develop a specification for ENERGY STAR light bulbs. Approximately 80% of CFLs on the market will qualify for the ENERGY STAR label.

On August 12, the White House inquired at DOE about (1) status of a press event/product launch for ENERGY STAR bulbs, (2) federal facilities' procurement of ENERGY STAR light bulbs, and (3) installing ENERGY STAR light bulbs into the White House for a possible event.

Additional background material is attached.

Status: ENERGY STAR Product Launch/Press Event

- A press event is scheduled for August 17, 1999, at the National Hardware Show in Chicago, IL to launch ENERGY STAR light bulbs.
- DOE will join seven of the first ENERGY STAR lighting manufacturing partners in launching the program.
- General Electric, Philips, and Osram-Sylvania are the largest suppliers of CFLs -- all three have joined the program and will be present at the launch.

Procurement for federal facilities

- DOE's Federal Energy Management Program (FEMP) will recommend ENERGY STAR CFLs to federal procurement officials per Executive Order 13123.
- The Defense Logistics Agency is offering a limited "2-for-1" buy-down for compact fluorescent lamps for federal facilities, funded by DOE's FEMP office. FEMP and DLA have adopted the ENERGY STAR specification in the buy-down.

FROM
JEFF

- DOE will work with the General Services Administration (GSA) to identify ENERGY STAR-qualifying light bulbs in future catalogues and website product listings.

White House

- As part of the "Greening of the White House" program, 95% of all incandescent table lamp bulbs in the White House were replaced with compact fluorescent bulbs in 1994, saving 1,600 kilowatt-hours per year. The remaining bulbs were not replaced due to historic character of some fixtures, or for security reasons.
- In the Old Executive Office Building, incandescent light bulbs in corridor fixtures were replaced with compact fluorescent bulbs, saving more than \$20,000 every year and avoiding 100 metric tons of greenhouse gas emissions.

Recommendation: A press/photo opportunity could be considered in announcing that future lamp replacement bulbs in the White House will carry the ENERGY STAR symbol for energy efficiency.

Prepared by: Bill Noel, EE-40, 586-6149

DRAFT News Release
For Immediate Release
August 17, 1999

DOE Letterhead
Contact:
Mike Terwilliger, 202/586-5806

High-efficiency Lights Brighten Consumer Energy Bills **ENERGY STAR® Label Guarantees Long-Life, Savings**

Chicago, IL -- Today the U.S. Department of Energy (DOE) and the Environmental Protection Agency (EPA) announced that compact fluorescent lamps (light bulbs) will be the latest products that can qualify to bear the ENERGY STAR label. The ENERGY STAR label is the national symbol for energy efficiency, and is part of a voluntary program of the Federal government that promotes energy efficient products to American consumers.

"These lights are bright, but the consumers who use them are even brighter," said Dan Reicher, U.S. DOE Assistant Secretary for Energy Efficiency and Renewable Energy. "Each bulb saves consumers up to \$47, provides superior light, and makes life simpler by lasting five to seven years before it needs changing."

ENERGY STAR CFLs must have a rated lifetime of at least 6,000 hours, though many ENERGY STAR light bulbs are rated for 10,000 hours of use (seven years of use at 4 hours per day, every day). They render colors true, start immediately, and come in a wide range of styles, shapes and wattage values.

"These are not your parents' light bulbs," said Reicher. "ENERGY STAR lights represent the cutting edge in lamp technology and bring long life, warmth, brightness, and savings into any family's home." The screw-in design and wide variety of ENERGY STAR light bulb shapes and enables these bulbs to fit in almost any existing lamp, recessed can, or fixture and achieve the convenience of long life while securing energy savings.

The average household spends more than \$110 each year on lighting energy costs. Replacing just five incandescent bulbs with ENERGY STAR CFLs can save the average household \$30 each year. For each incandescent replaced by an ENERGY STAR CFL, the homeowner can save \$25-\$45 over the life of the bulb.

Nine lighting manufacturers have formally joined the ENERGY STAR program as Partners, and are already producing ENERGY STAR qualified CFLs. ENERGY STAR lighting is widely available from home centers, hardware stores, drug stores and grocery stores nationwide.

ENERGY STAR® has 49 utility industry partners, 135 manufacturing partners and more than 3,500 retail partners that make energy efficient products available to more than 42 million consumers in the United States. To learn more about ENERGY STAR®, its products and partners, visit the web site at www.energystar.gov, or call the ENERGY STAR hotline at 1-888-STAR-YES.

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**Statement of Mr. Mark Ginsberg
Deputy Assistant Secretary for
Building Technology, State and Community Programs
Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy
August 17, 1999**

**INTRODUCING A NEW ERA IN LIGHTING - ENERGY EFFICIENT
COMPACT FLUORESCENT LIGHT BULBS WITH THE ENERGY STAR® LABEL**

On behalf of the U.S. Department of Energy, and our ENERGY STAR partner, the U.S. Environmental Protection Agency, I am privileged today to announce a new era of light for the American household -- compact fluorescent light bulbs bearing the ENERGY STAR label.

While compact fluorescent light bulbs have been on the market for more than a decade, the light bulbs that will now bear the ENERGY STAR label are really new, and different. These are not your parents' light bulbs. ENERGY STAR lights represent the cutting edge in energy efficient lamp technology. These light bulbs bring long life, warmth, brightness, and savings into any home, school or office.

ENERGY STAR light bulbs are designed and built by this nation's largest and most reliable lighting manufacturers. Nine manufacturers have voluntarily joined the ENERGY STAR program as Partners, agreeing to manufacture and distribute these superior light bulbs. I commend their leadership, and I thank them for continuing to provide consumers with high-quality products for every lighting application.

Think back to how far we've come in lighting. Think way back. In modern life, ingenuity and invention have driven remarkable advances. Computers, cars, communication, comfort -- our parents can hardly believe how our lives are configured, and average adults marvel at what our children's lives may be like. But in lighting, we still use incandescent light bulbs for most applications -- a design that dates back to 1879. The incandescent light bulb developed by Thomas Edison has changed very little from the bulbs we still use in our homes. And that's too bad. Not because it's outmoded -- the equivalent of hitching up the old gray mare to get to work in the morning -- but because it's wasteful. That's energy we could be using to power the next wave of technology.

Better light bulbs exist. You will recognize them because, beginning in the next few months, you will see the ENERGY STAR label - the national symbol for energy efficiency -- printed right on the light bulb package in hardware stores, home fix-up stores or wherever you usually buy light bulbs. When you see these light bulbs, remember -- ENERGY STAR-qualified light bulbs can do anything conventional lighting can do inside the home or office. Except ENERGY STAR-labeled bulbs last longer, and save money.

And, they are good for the environment. Because they're super energy efficient, ENERGY STAR bulbs save electricity and reduce the amount of pollution that comes from electricity generation. Replacing just one incandescent light bulb with an ENERGY STAR bulb keeps up to 1/2 ton of carbon dioxide out of the air we breathe. If every household in the United States replaced one 60 watt incandescent lamp with a 15 watt ENERGY STAR compact fluorescent bulb, the reduction in pollution would be the same as removing 1 million cars from the road.

Saving electricity has another benefit. It reduces the demand on the electricity grid. This summer's heat wave has placed staggering demands on our electricity distribution system, resulting in blackouts in some cities. I know this was a problem right here in Chicago. By using these efficient light bulbs, consumers can do their part to reduce electricity use, keep the power flowing, promote energy efficiency, and save money at the same time. ENERGY STAR light bulbs truly allow everyone to be energy efficient and dollar conscious.

Consumers may be hesitant to try these new ENERGY STAR light bulbs because of their higher initial price. But these bulbs will save you money over just a short time. It can be tough to lay down \$10 or \$13 for an ENERGY STAR light bulb when a familiar incandescent bulb right next to it on the shelf costs less than \$2, even if you understand the financial advantages over time. And in fact, until now, sales of compact fluorescent light bulbs have made up less than 5 percent of light bulb sales nationally. To overcome sticker shock, many utilities offer rebates or subsidies for their ratepayers for the purchase of ENERGY STAR-labeled light bulbs. Once you've tried these bulbs in your home, their natural color, their nearly instant start, their silent operation, and other features will convince you — ENERGY STAR compact fluorescent bulbs are in a different class from previous generations of compact fluorescent lights.

As a test, look at the two lamps here beside me. One is lit by a traditional 60 watt incandescent; the other by an ENERGY STAR-labeled compact fluorescent light bulb. Can you tell the difference in light output? You can guess, but you may be wrong, and you'll certainly be surprised. I'll let you know which one holds the ENERGY STAR light bulb in a few minutes, but really, I've made my point. Both lights are pleasing. Both lamps show colors naturally, and are bright enough for anyone's living room. Both kinds of light bulbs work with these standard table lamps and their shades, screwing in easily to common fixtures. Only, the lamp using the ENERGY STAR bulb is using one-fourth the amount of electricity. And it could burn full-time for more than 3 years after the other lamp goes out.

Most households in this country spend nearly \$110 every year on energy costs for lighting. But that's not evenly distributed. Where are your lights used the most? Maybe the kitchen light, or an outside porch light, or the living room table lamp stay on several hours each day. If each household replaced just five of the most used lights in the house with ENERGY STAR-labeled bulbs, that household could save more than \$35 each year in energy costs. Over the lifetime of these ENERGY STAR bulbs, the household could save up to \$235 in lighting energy costs — just by replacing five light bulbs.

And, the people who enjoy ENERGY STAR light bulbs can relax and forget about them. Even if you use an ENERGY STAR-labeled light bulb four hours every day, it will last a minimum of five years before you need to change it.

The ENERGY STAR lighting program includes both fixtures and these new light bulbs. The ENERGY STAR label is also found on numerous other consumer products — refrigerators, clothes washers, air conditioners, dishwashers, windows, office equipment, and home electronics.

Through the ENERGY STAR program, the Department of Energy and the EPA hope to transform the marketplace into one in which average consumers are aware of the energy costs of any product they buy, and have efficient, affordable choices available. That's ENERGY STAR — a label that helps consumers instantly recognize products that are energy efficient, durable, reliable, and cutting edge technology.

We are proud to bring together in this room the truly "bright lights" in today's home lighting marketplace. With the help of these manufacturers, the Department of Energy is able to provide a label — the ENERGY STAR label — that shows consumers which light bulbs not only provide satisfying light for any application and brightness, but are energy efficient lights that can last for years, and save money on electric bills while they do it.

One of our colleagues at the National Electrical Manufacturers Association is prepared to say a few words now about the manufacturers who have brought these advances in lighting to the consumer. But before he speaks, let me introduce the ENERGY STAR Lighting Manufacturing Partners who are here, and thank them publicly for their contributions to consumers' lighting needs:

American Power Products
Fet Electric Co.
GE Lighting
Lights of America
MaxLite-SK America
Osram Sylvania
Philips Lighting Co.

In addition to these ENERGY STAR Manufacturing Partners, two other companies, Vadco and Sunpark Electronics, have also joined ENERGY STAR, but were unable to attend the National Hardware Show. We welcome and thank them also.



Energy Efficiency and Renewable Energy
Federal Energy Management Program

How to Buy Energy-Efficient Compact Fluorescent Light Bulbs

Why Agencies Should Buy Efficient Products

- Executive Order 13123 and FAR section 23.704 direct agencies to purchase products in the upper 25% of energy efficiency, including all models that qualify for the EPA/DOE ENERGY STAR® product labeling program.
- Agencies that use these guidelines to buy efficient products can realize substantial operating cost savings and help prevent pollution.
- As the world's largest consumer, the federal government can help "pull" the entire U.S. market towards greater energy efficiency, while saving taxpayer dollars.

Federal Supply Sources:

- Defense Logistics Agency (DLA)
Phone: (800) DLA-BULB
- General Services Administration (GSA)
Phone: (817) 978-4401

For More Information:

- DOE's Federal Energy Management Program (FEMP) Help Desk and World Wide Web site have up-to-date information on energy-efficient federal procurement, including the latest versions of these recommendations.
Phone: (800) 363-3732
<http://www.eere.doe.gov/femp/procurement>
- The EPA/DOE ENERGY STAR® program provides product listings of complying CFLs and dedicated residential CFL fixtures.
Phone: (800) 372-7827
<http://www.energystar.gov>
- DOE's emerging technology program has awarded basic ordering agreements for supplier to offer screw-based CFLs that meet or exceed these efficiency recommendations. These CFLs, sized to fit most existing fixtures, are offered at competitive prices to government and other large buyers.
Phone: (509) 372-4333
<http://www.pnl.gov/cfl>
- Lighting Research Center's Web site has valuable information covering CFLs and other lighting systems.
Phone: (518) 276-8716
<http://www.wtrc.rpi.edu>
- Lawrence Berkeley National Laboratory provided supporting analysis for this recommendation.
Phone: (510) 484-0880

Efficiency Recommendation

To Replace Incandescent Bulb rated at:	Necessary Light Output (Lumens)	Typical CFL Replacement Wattage ^a	Recommended CFL Lumens per Watt (lpw)
Bare Bulb^b			
40 watts	400 or more	11-14 watts	45 lpw or more
60 watts	800 or more	18-19 watts	80 lpw or more
75 watts	1200 or more	20-25 watts	80 lpw or more
100 watts	1750 or more	≥ 29 watts	≥ 50 lpw or more
Reflector Type Bulbs			
50 watts	680 or more	17-19 watts	35 lpw or more
60 watts	875 or more	20-21 watts	40 lpw or more
75 watts	1175 or more	≥ 22 watts	40 lpw or more

- a) Some more efficient lower wattage CFLs can produce equivalent light output to the corresponding incandescents (listed in left-hand column); to assure sufficient lighting, make sure the CFL replacement provides at least enough lumens.
- b) Covered bulbs have lower lumens per watt. Recommended low for covered lamps are as follows: ≤ 14 watts: 40 lpw; 15-19 watts: 45 lpw; 20-24 watts: 50 lpw; ≥ 25 watts: 55 lpw.

Definitions

Compact fluorescent lamps, commonly referred to as compact fluorescent light bulbs or CFLs, are 3-4 times more efficient than standard incandescent bulbs. They produce light through fluorescing phosphors instead of a heated filament.

Lumens are a measure of light output.

The federal supply sources for CFLs are the Defense Logistics Agency (DLA) and the General Services Administration (GSA). DLA sells CFLs through its *Energy Efficient Lighting* catalogue. GSA offers CFLs in Schedule 62-II, as well as through its on-line shopping network, *Advantage!* Look for products that provide the needed light output (lumens) and meet this Efficiency Recommendation.

CFLs are sold either as "integral" bulb/ballast combinations, or "modular" systems, which have one or more pin-based bulbs that may be replaced separately while re-using the ballast. When buying integral CFLs from a commercial source (retailer or distributor), select or specify models with the ENERGY STAR® label, all of

Where to Find Energy-Efficient CFLs



which meet this Recommendation. Only integral CFLs, not modular types, are included in the ENERGY STAR® labeling program.

Modular CFLs allow a separate pin-based bulb to be replaced when one burns out. The ballast and base can generally be reused for about five bulb replacements (most ballasts are rated at 50,000 hours). Select or specify modular bulb/ballast systems that meet the recommended levels (above). For a modular CFL, make sure that the bulb's lumen output is rated for the specific ballast used, and that the pin design fits the base.

Some screw-based CFLs are difficult to fit into existing fixtures designed for incandescent bulbs. However, many CFLs now on the market are only slightly larger than standard incandescent bulbs. A few CFL models can be used with conventional dimming switches.

CFLs installed in enclosed fixtures designed for incandescent bulbs may overheat; this can significantly reduce both light output and lifetime. Even under optimum conditions, light output from a CFL will decrease over its lifetime. To maintain existing light levels, select CFLs with rated lumen output (of bulb and ballast together) at least as high as the bulbs they replace.

CFLs should have a power factor (PF) above 50%, and a Color Rendering Index (CRI) above 80%. ENERGY STAR® integral CFLs and most available modular CFLs meet these criteria.

Particularly for highly used fixtures, consider replacing an existing screw-based ("incandescent") fixture with one designed exclusively for CFL use - i.e., a fixture with a hard-wired ballast that accommodates pin-based CFLs (residential CFL fixtures are also covered by an ENERGY STAR® labeling program; see "For More Information").

Buyer Tips

CFL Cost-Effectiveness Examples (CFL replacing a 60 watt/ 900 lumen incandescent bulb)

Performance	Standard Life CFL (moderate use)		Extended Life CFL (high use)	
	Incandescent Bulb Replaced	Recommended CFL (6,000 hr. life)	Incandescent Bulb Replaced	Recommended CFL (10,000 hr. life)
Input watts (and lumens/output)	60 W (15 lpw)	17 W (60 lpw)	60 W (15 lpw)	17 W (60 lpw)
Annual Energy Use	72 kWh	20 kWh	120 kWh	34 kWh
Annual Energy Cost	\$4.30	\$1.20	\$7.20	\$2.00
Lifetime Energy Cost	\$19	\$5	\$31	\$9
Lifetime Energy Cost Savings		\$14		\$22

Definition

Lifetime Energy Cost is the sum of the discounted value of annual energy costs based on average usage and an assumed CFL life of 5 years. Future electricity price trends and a discount rate of 3.1% are based on federal guidelines (effective from April, 1999 to March, 2000).

Cost-Effectiveness Assumptions

Energy use in the first example is based on a CFL life of 6,000 hours operating 1,200 hours/year. The second example uses a 10,000 hour CFL operating 2,000 hours/year. The assumed electricity price is 6¢/kWh, the federal average electricity price in the U.S.

Using the Cost-Effectiveness Table

In the first example shown above, a 17 watt CFL is cost-effective, on energy savings alone, if its purchase price is no more than \$14 above the combined price of the 6-8 incandescent bulbs replaced. The second example, for an extended-life CFL, is cost-effective if its price is no more than \$22 above the price of the 10-13 incandescents it replaces.

What if My Energy Prices or Operating Hours are Different?

To calculate Lifetime Energy Cost Savings for a different electricity price, multiply the savings in the above table by this ratio: $\left(\frac{\text{Your price in ¢/kWh}}{6.0 \text{ ¢/kWh}} \right)$. Longer operating hours will make a CFL even more cost-effective.



540 - 822 - 5080

September 15, 1999

Bill

MEMORANDUM FOR JOHN PODESTA

FROM: ROGER BALLENTINE
RE: WHITE HOUSE ENERGY USE

The Department of Energy recently announced that compact fluorescent light bulbs ("CFLs") have been awarded the "Energy Star" label. Energy Star is a joint government-industry effort to produce energy efficient products. This announcement prompted inquiries from both you and the President. In response, I have looked into where we are on the "greening of the White House" in general and the use of CFLs in particular.

An audit of the White House in the middle of 1998 found that 95% of table lamps had CFLs installed. Other fixtures, often for historic, security or technical reasons, continue to have incandescent bulbs. DOE estimates that the bulb replacements in the White House save 1,600 kilowatt-hours per year. [S????] In the OEOb, incandescent light bulbs have been replaced with CFLs in all corridor fixtures, saving more than \$20,000 per year and avoiding approximately 100 metric tons of greenhouse gas emissions. It appears, however, that a distinct minority of OEOb table lamps and other eligible fixtures are using CFLs.

As for the Oval Office, I am told that a state of the art dimming system was installed in 1989, which included CFLs. It is not clear if it is still in use, and even if it is, there are more cost-effective and efficient systems that could be installed. We need to be allowed to inspect this lighting to verify the situation.

As for other agencies, the Federal Energy Management Program is funding a two for one buy down of old bulbs in federal facilities. The Defense Logistics Agency is implementing this program. DOE has recommended the use of CFLs to federal procurement officials per Executive Order 13123.

The "Greening of the White House" report is in final editing and is due to be released soon. It will show []

I propose that we take the following steps:

1. Verify continued use of CFLs in the White House and inspect Oval Office system;

2. Prepare replacement program for all eligible fixtures in the OEOB and the NEOB;
3. Estimate additional savings from 2;
4. Prepare a White House event at which we would release the Greening report, announce the OEOB exchange program with its projected savings, perhaps announce new procurement activity with estimated savings, and perhaps ~~announce~~ other savings initiatives (such as mandatory “sleeper” switches on WH computers and plans for use of Energy Star air conditioners in OEOB).

cc: George Frampton
Mark Lindsay
Sylvia Matthews

Jonathan D. Breul
09/16/99 10:56:09 AM

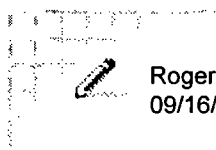
Record Type: Record

To: Sally Katzen/OMB/EOP@EOP

cc: Roger S. Ballentine/WHO/EOP@EOP, Clarence C. Crawford/OMB/EOP@EOP, Shannon
Mason/OMB/EOP@EOP, Rosemary Evans/OMB/EOP@EOP

Subject: Dan Reicher - Energy conservation crosscut

Sometime ago you asked me to speak to Dan Reicher and Roger Ballentine about (1) the possibility of a "greening" or energy conservation crosscut during Fall Reviews, and (2) getting some of the data Jack could use to urge energy conservation measures within OMB (e.g., 70% energy savings if you turn off your PC screen at night). Dan was out on leave until September 7th and traveling much of the time since. I finally reached him this morning. Not surprisingly, on the first point, he likes the idea of a energy conservation crosscut. He suggests focusing on agencies efforts to implement the President's recent EO (but probably not such efforts as alternative fuel vehicles). He would focus on whether the agencies are making (or getting private sector) investments, and getting the private sector to undertake energy savings performance contracts. He said he could help identifying the top 8-10 (or 5-6) agencies with the vast majority of Federal energy consumption. He believes a review would be good not only for furthering implementation of the President's new Order, but for political consumption, because it would be very well received by industry and environmental groups. I also spoke to Roger about this late in August. At that time he was uncertain about just what such a crosscut might entail, but anxious to hear Dan's reaction. On the second point, I reminded Dan of his presentation last Spring to the PMC, and told him of Clarence's effort to get supporting data from DOE staff. Dan promised to have Kim Kendall on his staff send a package to both Clarence and Roger Ballentine.



Roger S. Ballentine
09/16/99 11:09:26 AM

Record Type: Record

To: Jonathan D. Breul/OMB/EOP@EOP
cc: See the distribution list at the bottom of this message
Subject: Re: Dan Reicher - Energy conservation crosscut 



We ne PodBulbs.doed to move this up. Both the President and Podesta have asked me for info on WH energy use and they both want to do an event. I am preparing a memo for the COS to outline where we are and ideas for an event. I attach a first draft that is not even remotely complete, and copy Sally on the final. Please give me input asap, as I hope to submit this no later than COB monday. I am out of office tomorrow. Jonathan, I will have Jeff Seabright from the Climate Change Task Force follow up as well. Thanx.

Message Copied To:

sally katzen/omb/eop@eop
clarence c. crawford/omb/eop@eop
shannon mason/omb/eop@eop
rosemary evans/omb/eop@eop
Jefferson B. Seabright/WHCCTF/EOP@EOP

DRAFT answers to ?'s

Do Podesta Memo

1. % of WH properly lighted –

At last audit in summer of 1998, 100% compliance with appropriate fixtures. For example, there are historic fixtures without updated lighting (by agreement), chandeliers which have not been relamped because no adequate commercial product yet available.

There may be backsliding, but it was not apparent at time of audit.

Can do another quick audit.

2. Oval Office –

State of the art dimming system went into place 1989. The bulbs were CFLs. There were some problems with the system and we would need to send someone in to check if its still completely in use. It was expensive and high maintenance and there are newer, cheaper to operate, automatic systems that could be substituted immediately.

Interesting factoid – lighting level twice optimum for working. Did we do this because of photos? or is this something that should be revisited, money saving and energy efficient daylighting could be better used, especially when office not occupied.

Need OK for an LBNL person to do quick audit on the cove lighting.

3. OEOB – chandeliers not relamped here as well. Bulbs in service areas and table lamps should all be CFLs. If not, must direct through Office of Management and Administration.

4. CFLs are available to WH at ½ price through Defense Logistics Agency.

5. Corporate HQ – seeking info.

6. Greening report – in final editing – *done out soon (trigger event along w/ new director)*

7. VP residence – can be ready with action items soon, contractor within 2 months.

8. Alliance to Save Energy working on plan to amplify an event.

*- disabled computer sleepers?
- replace CFL's
- shut off computers*



**Sempra
Energy**

George P. Williams
Director, Government Affairs

Washington Center
1001 G Street N.W., Sixth Floor East
Washington, D.C. 20001-4545

Tel: 202 . 662 . 1700
Fax: 202 . 293 . 2887
Fax: 202 . 293 . 2888

August 23, 1999

Shelley Fidler
White House Climate Change Task Force
734 Jackson Place, NW
Washington, D.C. 20501

Dear Shelley:

I wish to add my personal gratitude to the statement of the Federal Performance Contracting Coalition (attached). Your early recognition of the implications of the ESPC program for the larger climate change debate was integral to shaping the successes that have been achieved to date. From my personal observation, I believe that your involvement was critical to the successful development of the OMB Directive and the Executive Order, and your hard work as acting Director of FEMP to focus that office on bottom-line results has also been a healthy and necessary change.

The ESPC program is the best example of how efficiency in government, taxpayer savings, reliance on the marketplace and environmental benefit can all go hand-in-hand. Of course, the corollary is that failure to make progress on this program would create a ready political target for opponents. So the stakes are high for this program; I sincerely hope that we will not lose the benefit of your hard won expertise, and that you will stay engaged in efforts to assure its success for the remainder of the Administration.

Thank you again, and best of luck in your new duties.

Sincerely,

cc: ✓ Roger Ballantine
Michael Marvin
Dan Reicher



Federal Performance Contracting Coalition

August 13, 1999

Roger Ballantine
Special Assistant to the President
For Legislative Affairs
112 East Wing
The White House
Washington, DC 20500

Dear Roger:

On behalf of the Federal Performance Contracting Coalition, I would like to thank you for your leadership in helping to stave off efforts to weaken the Administration's recent Executive Order to encourage energy efficiency measures in federal facilities.

We share your belief that Executive Order 13123 will maintain a focus on site-based measurement of energy savings, while recognizing the value of source-based and lifestyle cost analyses (as required by existing federal statute). Further, the Order consolidates, simplifies, and slightly expands the goals and objectives of a host of executive orders issued over the past two decades.

It has been a pleasure working with you and your staff on this issue. It has been especially helpful over the past months working with Shelley Fidler on this and other key issues. She has performed a valuable role as the conduit between the Clinton Administration and the business community working on energy savings performance contracts. Her expertise was essential in keeping EO 13123 moving through the labyrinthine process that key policy statements must undergo.

Again, thanks for your work on this. We will continue working to remove the Cochran compromise language during conference, and I'm looking forward to continuing to work with you.

With best wishes,

Michael L. Marvin
Federal Performance Contracting Coalition

Cc: FPCC Members

Duke Solutions

HEC

Honeywell

Johnson Controls

Sempra Energy Services

Viron Energy Services

York International

Tomlin

55670

~~Bob~~ Brewster - OMB 7

(works for Sally) (or Clarence Crawford)

- Get wth every use #'s from
Reider
- ~~Get~~ Get #'s on wth.

Proposed Senate Report Language for FY2000 VA-HUD bill:

At the end of the Climate Change language in the report, add:

To the extent future funding requests may be submitted which would increase funding for climate change activities prior to Senate consideration of the Kyoto Protocol (whether under the auspices of the Climate Change Technology Initiative or any other initiative), the Administration must do a better job of explaining the components of the programs, their anticipated goals and objectives, the justification for any funding increases, a discussion of how success will be measured, and a clear definition of how these programs are justified by goals and objectives independent of implementation of the Kyoto Protocol. The conferees expect these items to be included as part of future budget submissions for all affected agencies.

With regard to these submissions, the Committee expects all affected agencies to comply fully with the letter and spirit of the Government Performance and Results Act of 1993(GPRA).

At the direction of the Senate, EPA earlier this year prepared such a report. This report was issued more than two months late, after a one-month delay was provided. EPA also failed to meet the Senate's requirements substantively. In its July 14, 1999 report to the Senate(B-283052) the General Accounting Office confirmed that the EPA report was not comprehensive, provided little information at the program level, lacked justification for funding increases, lacked individual program justification and failed to document the basis for assessing the impact of other EPA programs on the reported programs. The Committee reiterates its directive that all affected agencies submit these items to the Committee as part of all future budget submissions.

Taking into account the observations made in the GAO report, the Committee directs EPA's climate change report to include a detailed plan for implementing the President's proposals for climate change activities related to the Kyoto Protocol. The report shall include: Performance goals for each initiative and each program for the reduction of greenhouse gases that have objective quantifiable and measurable targets; detailed information about each program and all initiatives; descriptions of the contribution of each program to the expected results of each initiative; justifications for on-going programs at fiscal year 2000 funding levels; documentation of the anticipated benefits from continued funding at fiscal year 2000 funding for each program; justifications for proposed funding increases for individual climate change programs for fiscal year 2001; a description of procedures to verify and validate reported performance; and documentation of the legal authority for each program including an explanation of whether the program is mandatory or discretionary. The plan should provide substantial, verifiable evidence on the effectiveness of implementing the President's proposal in facilitating compliance with any binding greenhouse gas emissions reduction commitments, regardless of whether they are labeled as such.

The GAO is directed to prepare a report that evaluates the Agency's completed plan in relation to GPRA and these stipulated requirements and submit its report to the Appropriations Committee within 60 days after receipt of the Agency's plan.

8-17-99

THE WHITE HOUSE
WASHINGTON

'99 AUG 13 PM 7:22

August 13, 1999

Copied
Ballentine
Podesta

MEMORANDUM FOR THE PRESIDENT

FROM: ROGER BALLENTINE

RE: OFFICE OF ENVIRONMENTAL INITIATIVES WEEKLY

Climate Change

Press

Your issuance of an Executive Order on bioenergy and bioproducts was covered by major news outlets, including CNN, the New York Times ("Clinton to Seek Using Farm Products in Lieu of Fossil Fuel"); the Washington Post ("Clinton Forms Council To Push Use of Waste") (wire copy); the Wall Street Journal ("Clinton Executive Order Promotes Use of Biomass Energy to Aid Environment"); and USA Today ("Clinton Pushes For Cleaner Fuel"). In a related story, the AP reported on BC International's plans to build a biorefinery close to Sacramento that will make ethanol. ("Cutting-edge California plant will use rice waste to fuel cars," 8/11). The CEO of BC International, Steven Gatto, was on our bioenergy roundtable.

Initiatives

We are looking very closely at further ways that the federal government can demonstrate leadership in reducing greenhouse gas emissions. I am working on a proposed Executive Order that would build on your earlier orders to make the federal government cleaner and more efficient – this time focusing on transportation. We are looking at ways to increase the use of alternative fuels, to use more efficient and hybrid vehicles, and generally to reduce fossil fuel consumption.

On a related note, DOE will announce on Tuesday that it is awarding the Energy Star label to compact fluorescent light bulbs. By virtue of your recent Executive Order, this will further accelerate the use of these bulbs by the federal government. In addition, the Federal Energy Management Program will fund a two for one buy down of old light bulbs in federal facilities. We expect considerable reductions in emissions over time. In fact, DOE estimates that the White House complex alone is already saving \$20,000 per year and reducing annual greenhouse gas emissions by 100 MMTCE because of the use of these light bulbs.

What to do with
properly lighted – we might order
to do a study tour of what's also available
since we have measured us – on light bulbs etc? – then we should target
major corp HQ – are there to go

8-16-99

THE WHITE HOUSE
WASHINGTON

August 13, 1999

MR. PRESIDENT:

Attached is Secretary Richardson's memo on power outages that he mentioned to you at the last Cabinet meeting. Your advisors asked DOE to submit this revised version of an August 5 memo on the same subject.

Richardson believes that more needs to be done to alleviate the public's fears about electric supply reliability during heat waves and proposes that you (1) issue a directive to DOE to develop an Administration strategy for short-term alleviation of power outages, before the long-term benefits of electricity restructuring area realized; (2) implement emergency measures to reduce energy consumption when needed by local utilities (in addition to your recent EO on reducing overall energy consumption) and form an interagency task force; and (3) call on Congress to increase funding for energy efficiency.

OMB urges caution with respect to Richardson's recommendation to issue a directive (item 1, above) because it could harm the Administration's electricity restructuring efforts (i.e., Congress could conclude that you believe reduced reliability is tied to restructuring and that you are second-guessing your own electricity restructuring plan). OMB supports, however, Richardson's proposal to develop emergency energy consumption-reducing measures.

David Goodfriend

copied
Sperling
Reed
Marshall
Ballentine
Podesta

Gray/Bruce
Showered at least 10
Mr. Richardson
light sun out
We look
New Mexico
Proceed by
(2)



The Secretary of Energy

Washington, DC 20585

August 13, 1999

*Guar/Brown
1 Util. this - not
Guar/Brown's fear
well founded*

MEMORANDUM FOR THE PRESIDENT

FROM:

BILL RICHARDSON

BR

SUBJECT:

Proposed Action Plan to Address Power Outages

99 AUG 13 AM 11:47

The heat wave that gripped the eastern two-thirds of the Nation during July put enormous strains on many electric utility systems. Utilities cut-off power to industrial customers, reduced voltage and made urgent appeals to their customers to reduce their electricity consumption. While major system-wide outages were narrowly avoided, some utilities were forced to impose rolling blackouts. In addition, the stress on distribution cables and transformers caused power outages in a number of cities and localities.

On July 19, 1999, I announced a Department of Energy initiative designed to reduce the prospects for future weather-related power outages. However, more needs to be done to alleviate the public's fears about the reliability of their electricity supply when the thermostat rises. Your leadership in the following endeavors would be helpful.

- **Presidential Directive** – We expect heat-related power outages to continue to be a problem in the short-term. Electricity consumption continues to set records while supply has remained stagnant. Although the situation should improve when Congress and the States enact electric restructuring legislation to establish the rules of the road which are necessary to attract new capital investment, changes in the way we generate, transmit and consume electricity are needed to alleviate this situation now. You should direct the Department of Energy to develop an Administration strategy to address these changes.



Printed on recycled paper

- **Leading by Example** – The Federal Government, which is the largest electricity consumer in the country, is making progress in reducing our consumption. Your recent Executive Order directing agencies to further reduce energy use will have a substantial beneficial impact. However, we do not have a formal agency-wide process for undertaking emergency measures to reduce electricity consumption in Federal buildings and facilities when utilities make urgent appeals for customers to cut back on usage. You should direct each Agency to implement emergency measures when conditions warrant and form an interagency task force led by the Department of Energy and the General Services Administration to develop a comprehensive plan so that we can lead by example.
- **Funding for Existing Programs** – Through the Administration's climate change initiative and other programs, we are engaged in a variety of activities designed to improve efficiency in the ways we generate, transmit and consume electricity in a manner that helps to grow the economy and protect the environment. Unfortunately, Congress has failed to fund these programs at the levels you have requested. You should call on Congress to increase funding for them as a means of reducing the burden on our power supply system.

General Information

Our goal is to provide EOP customers with cost-effective office supplies. We serve our customers from the Remote Delivery Site at the Anacostia Naval Station, and our customers should have the following delivery expectations:

- Orders received by 10:00 a.m. will be delivered by close of the business day.
- Orders received after 10:00 a.m. will be delivered the next business day.

You may reach us at 5-5285 on business days between the hours of 9:00 a.m. and 5:00 p.m. Our fax number is 5-4562.

Fax Order Process

Orders are placed by recording the stock number and description found in the catalog on a fax order form. In order to process your requests quickly and efficiently, all information (delivery information, stock numbers, and item description) must be written clearly and accurately on the Requisition for Supplies form. The Requisition for Supply form should be faxed to supply at 5-4562.

Please let us know if you do not understand the description of an item in our catalog; we will review and improve the wording of the description. Please forward this information via e-mail to the SUPPLY account.

Interns and volunteers must request supplies in the name of a permanent staff member. Each office's authorized supply card holder must review each order and sign as the approving official (interns cannot sign for supply purchases). Should you lose or misplace your office's supply card containing information (agency supply account number and name of authorized card holder) necessary to complete supply order forms, please contact us and we'll coordinate the issuance of a replacement card with your accounts authorized official.

The Requisition for Supplies form may be photocopied as needed.

Proactive Supply Planning

Since we no longer maintain on-site stores within the EOP complex, it is not possible to provide items at a moment's notice. Therefore, we recommend that EOP offices review their supply needs periodically. To avoid any adverse impact on your operation if you should run out of a particular critical item (such as printer or fax cartridge), we recommend you keep a spare in your supply cabinet. You should immediately place a reorder once you've inserted your spare.

Supply Policies

We periodically update our product line to reflect changing needs of our customers. Please let us know your recommendations for new products. Please keep us apprised of changes in your office's equipment purchases or intentions to excess or dispose of equipment, i.e. copiers, facsimile and/or laser printers. To ensure Supply maintains the appropriate quantities of products in demand as well as those which should be reduced or discontinued, it is critical that agencies notify us of adverse usage changes.

In order to manage our inventory effectively, we have standardized the items we carry. If a specific item you desire is not included in the catalog, we hope that you will find another item (substitute) which will serve your needs.

Agencies are charged for the cost of their supply purchases. However, if you feel we have made a mistake on a supply receipt, we'll work with you to make the appropriate correction.

We carry supply items which are commonly used in at least two EOP offices; we don't carry items which are used only by one office in the EOP. Therefore, if your office is the only one in the EOP with a certain copier model, your office should proceed to process its own orders for the toner and developer cartridges (we can help you determine your needs).

Copier Paper Deliveries

Orders for copier paper must be placed on a separate order (separate from other standard office supply orders) form. Since copier paper cartons are too heavy to incorporate with the interoffice mail runs, we have scheduled the following bulk delivery days for copier paper distribution:

OEOB: Tuesdays and Thursdays

NEOB: Tuesdays and Thursdays

The OA mail service currently oversees copier paper maintained in the East and West Wings of the White House. We will continue to schedule copier paper deliveries to other EOP buildings.

Environmentally Friendly Supplies

In keeping with the administration's environmental goals, we offer environmentally-friendly products. In particular, we promote the usage of recycled toner cartridges and recycled copier paper.

Used fax and printer toner cartridges should be returned for recycling. Upon replacement of a used toner cartridge, we request that you simply put the old cartridge in the protective bag and carton, and mark the following wording in large lettering; "RETURN FOR RECYCLING" on the outside top of the carton. Mail staff will pick up the returns in the interoffice mail for delivery to supply.

Customer Service

Please call us with any questions about supply policies or procedures. We'll work with you and your agency's administrative staff to find the best way to serve your needs.

We are especially interested in hearing recommendations from our customers. Should you ever become dissatisfied about any aspects of our operation, we want to know about it.

Returns

A Return Form is provided in this booklet and you are encouraged to photocopy it as needed. This form is required when returning defective items or merchandise received incorrectly. Please provide information completely, legibly, and accurately, including attaching a copy of your original sales invoice. Place the form inside the carton and mark the carton "RETURN TO SUPPLY/RETURN FORM ENCLOSED." Proceed with return through the interoffice mail system.

Billing and Sales Invoice Discrepancies

If you should receive a questionable monthly supply billing or sales invoice, please contact the supply supervisor at 5-5285 or the Inventory Management Officer at 5-5274 for resolution.

ITEM NO.	DESCRIPTION	PRICE	UNIT CODE
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Konica Supplies

L000978	KONICA 6190 TONER 947614	\$46.54	EA
L000979	KONICA 6190 STAPLES 946762	10.80	BX
L000980	KONICA 6190 DEVELOPER 947611	\$129.00	EA

Labels

5774368	LABEL, FILE, FOLDER, BLUE.	\$.55	PK
5774369	LABEL, FILE FOLDER, GREEN.	\$.60	PK
5774371	LABEL, FILE FOLDER, RED.	\$.56	PK
5774376	LABEL, FILE FOLDER, WHITE	\$.60	PK
5774372	LABEL, FILE FOLDER, YELLOW	\$.60	PK
9820062	LABEL, BLUE, 3.5"x1 1/8"	\$.98	PK
9820064	LABEL, RED ADDRESS 3.5"x1 1/8" (248/PKG)	\$.98	PK
9820066	LABELS, ADDRESS, 1"x3.5", WHITE	\$.85	PK
0822661	LABEL, CONTINUOUS ADDRESS 15/16"x3.5"	\$7.64	BX
0822662	LABEL, CONTINUOUS ADDRESS 17/16"x4"	\$17.85	BX
L000626	LABELS, BLANK INSERT FOR HANGING FILE FOLDER	\$.25	PK
L000116	LABELS, BLANK INSERTABLE, 43.5" CLEAR TAB	\$1.50	PK
L000198	LABELS, LASER PRINTER, AVERY #5197 5.25 DISK.	\$9.20	BX
L000196	LABELS, LASER PRINTER, AVERY 5160/3330.	\$7.13	BX
L000758	LABELS, LASER PRINTER, AVERY 5161/3331 1"x4"	\$7.13	BX
→ L000197	LABELS, LASER PRINTER, AVERY 5162/3332.	\$7.13	BX
L000503	LABELS, LASER PRINTER, AVERY 5366 2/3 x 3 7/16	\$13.42	BX
L000066	LABELS, XEROX 24-UP (3R4471).	\$12.95	BX
L000067	LABELS, XEROX 33-UP (3R4469).	\$12.95	BX
L000065	LABELS, XEROX 8-UP (3R4472)	\$13.90	BX
L000627	LASER PRINTER, AVERY #5196 3.5 DISK	\$9.26	BX
2852828	LABEL HOLDER, DESK TRAY	\$.59	EA
L000185	DOTS, BLUE.	\$3.70	BX
L000186	DOTS, GREEN.	\$3.50	BX
L000187	DOTS, RED	\$3.40	BX
L000188	DOTS, YELLOW.	\$3.50	BX
L000588	LABEL, LASER, MINI 2180 AVERY	\$6.10	BX
L000589	LABEL, LASER, MINI 2181 AVERY	\$6.10	BX

Light Bulbs

L000148	LIGHT BULB, 3 WAY (50/100/150)	\$1.52	EA
L000150	LIGHT BULB, 60 WATT	\$.49	EA
L000151	LIGHT BULB, 75 WATT	\$.49	EA

Mailing Accessories

L000158	MAILING TUBE, 24" LENGTH	\$1.30	EA
2900340	SHIPPING BAG, SIZE 0	\$.05	EA
4986619	SHIPPING BAG, SIZE 000	\$.05	EA
2900343	SHIPPING BAG, SIZE 2	\$.16	EA
2811168	SHIPPING BAG, SIZE 4	\$.19	EA
2811436	SHIPPING BAG, SIZE 5	\$.22	EA

David W. Rejeski 09/21/99 09:37:26 AM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP

cc:

Subject: Re: new version 



Roger PodBulbs4.doc

I have made a few edits to the memo, especially to the 3rd and 4th paragraphs.

The issue with the table lamps is more optics than substantive (a reporter peers under the lamp shade, sees a normal bulb, and writes a piece on the Un-Greening of the White House). Of the total savings due to lighting retrofits (\$130,000) annually, the table lamps make up far less than 10%.

A lot of what we have accomplished is due to technical changes (new electronic ballasts, new reflectors, etc) which is not affected by human behavior (or misbehavior).

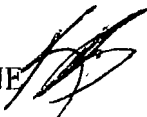
I'll be around this afternoon if you want to talk.

Dave

THE WHITE HOUSE
WASHINGTON

September 22, 1999

MEMORANDUM FOR JOHN PODESTA

FROM: ROGER BALLENTINE 

RE: WHITE HOUSE ENERGY USE

The Department of Energy (DOE) recently announced that compact fluorescent light bulbs (CFLs) have been awarded the ENERGY STAR label. ENERGY STAR is a joint government-industry effort to promote the most energy efficient products. An ENERGY STAR label gives consumers assurances that they will get value for their investment. On average, each CFL saves \$61.00 over its lifetime, compared to incandescent bulbs.

The announcement by DOE prompted inquiries from both you and the President. In response I have looked into where we are on "the Greening of the White House" in general and the use of CFLs in particular.

Since we initiated the Greening project in 1993, significant improvements have been made to the lighting systems in the White House and OEOB. These include installing CFL's in 95% of table lamps in the White House and OEOB, upgrading the façade lighting for the White House, and replacing existing fluorescent fixtures with efficient T-8 tubes, electronic ballasts and reflectors. Cumulatively, these lighting measures have resulted in annual savings of over \$130,000 and avoidance of almost 700 metric tons of greenhouse gases. ✓

A progress report on "The Greening of the White House" is in final editing and can be released soon. It shows that all greening measures completed in the White House and the OEOB since 1993 have saved approximately \$1.5 million (averaging \$170,000 annually) and eliminated over 18,000 metric tons of greenhouse gases.

Much of what we have accomplished will continue to produce savings far into the future. We suspect, however, that there has been backsliding on the use of CFL's in table lamps, with incandescents finding their way back into use. Anecdotal evidence is that maintenance personnel routinely replace light bulbs in table lamps with incandescent bulbs instead of CFLs. This needs to be verified and corrected.

→ Roger —
Let's get
your work plan
done + get
report out.
Thanks
→ CC Mark
L20001

With regard to the Oval Office, a state-of-the-art CFL lighting system was installed in 1989. It is not clear if it is still in use. More importantly, there are newer, more cost-effective systems that could be installed. We need access to inspect this system and upgrade it, if possible.

As for other federal agencies, DOE is funding a 2 for 1 buy-down of CFLs to replace incandescent bulbs, implemented by the Defense Logistics Agency at DOD. DOE has recommended the use of CFLs to help agencies comply with newly signed Executive Order 13123.

I propose we take the following steps:

1. Verify continued use of CFLs in the White House and OEOP and inspect Oval Office system;
2. Prepare replacement program for all eligible fixtures in White House and OEOP not currently using CFLs;
3. Clear "Greening the White House" update report including recommended "next steps" to achieve even more cost savings (such as by accelerating the phase-in of ENERGY STAR computers and air conditioners, activation of ENERGY STAR "sleep" features for existing computers and printers, and adding improvements at Jackson Place to the White House Greening efforts);
4. Prepare White House event at which we would release the "Greening" report, announce new federal agency procurement activity and announce further White House "Greening plans", all with estimated savings.

If we go ahead, we should try to amplify our message with industry and public interest partners. Possible options include industry promotions of "green" products at home products stores; television and print specials (in 1993 The Washington POST ran a cover story on the White House Greening effort for their HOME section, and 40 million viewers watched a TV special on the Greening of the White House in the Southwest); announcements of industry headquarters buildings and factories "taking the pledge" to become more efficient; and a commitment by CFL manufacturers to cut bulb costs.

cc: Maria Echaveste
George Frampton
Mark Lindsay
Sylvia Mathews
Sally Katzen

8-11-99

*Green
all the way
as well as*

DEPARTMENT OF TRANSPORTATION

- **Appalachian Summit:** From August 12-13, as part of your New Markets Initiative, Secretary Slater will address the Appalachian Summit. DOT will explore economic development and transportation needs facing the region in concert with issues addressing special housing, labor, agriculture and rural development.
- **Airport and Transit Improvement Grants:** On July 30, Vice President Gore and Secretary Slater announced the award of grants and FTA funds totaling more than \$83.3 million for airport and transit improvements in IA, VA, UT, NY, MD, and IL.

*Copied
Sperling
Ballantine
Podesta
Marshall*

New Chicago Air Service: On July 27, DOT reallocated takeoff and landing rights at Chicago's O'Hare Airport to provide new regional jet service for Baton Rouge, LA; Huntsville and Mobile, AL; and Charleston, SC. DOT also expects to award three exemptions for service to O'Hare from Charleston, SC.

AR Liability Insurance for State Boat Registration: On July 30, the AR legislature passed legislation that requires owners of motorboats with more than 50 horsepower and personal watercraft to have liability insurance. AR tied this requirement to boat registration, which means the owner must show proof of liability insurance in order for the state to register the vessel. Based on a legal opinion from the Coast Guard, a state cannot make insurance a condition for registering a boat.

DEPARTMENT OF ENERGY

- **Nigeria:** From August 13-15, Secretary Richardson will travel to Nigeria for meetings with newly-elected President Obasanjo, and members of his cabinet involved in energy, economic, and environmental issues. Secretary Richardson is also scheduled to visit oil facilities in the Niger Delta region of the country owned jointly by the Nigerian National Petroleum Company and the U.S. firms Chevron and Mobil. Secretary Albright has identified Nigeria as one of four priority countries for U.S. assistance to support the transition to democratic rule.

*Ballantine
from the
these are all
Federal Executive*

ENERGY STAR Compact Fluorescent Lamps: On August 17, at the National Hardware Show in Chicago, IL, DOE will announce that qualifying compact fluorescent lamps (CFLs) will be the latest products to carry the ENERGY STAR label. Each ENERGY STAR CFL that replaces an incandescent bulb will save consumers up to \$45, provide superior light, and last five to seven years before it needs changing. The ENERGY STAR program currently has 49 utility partners, 135 manufacturing partners, and more than 3,500 retail partners that make energy efficient products available to more than 42 million people.

Podesta

*We could
do a good report on the
putting into WH - PR*

*Michele
see me
on this
John*

DEPARTMENT OF TRANSPORTATION

*See 5
all other things*

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Podesta

Richardson Cabinet Meeting Report, Aug. 31 - August 6 page 6

*See good meeting on the
policy with...*

*Michele
see us
on this
John*

8-16-99

THE WHITE HOUSE
WASHINGTON

August 13, 1999

MR. PRESIDENT:

Attached is Secretary Richardson's memo on power outages that he mentioned to you at the last Cabinet meeting. Your advisors asked DOE to submit this revised version of an August 5 memo on the same subject.

Richardson believes that more needs to be done to alleviate the public's fears about electric supply reliability during heat waves and proposes that you (1) issue a directive to DOE to develop an Administration strategy for short-term alleviation of power outages, before the long-term benefits of electricity restructuring area realized; (2) implement emergency measures to reduce energy consumption when needed by local utilities (in addition to your recent EO on reducing overall energy consumption) and form an interagency task force; and (3) call on Congress to increase funding for energy efficiency.

OMB urges caution with respect to Richardson's recommendation to issue a directive (item 1, above) because it could harm the Administration's electricity restructuring efforts (i.e., Congress could conclude that you believe reduced reliability is tied to restructuring and that you are second-guessing your own electricity restructuring plan). OMB supports, however, Richardson's proposal to develop emergency energy consumption-reducing measures.

David Goodfriend

Gene/Bruce

Should at least do
(2) prob. should do (1) --
not sure OMB's worries are
right -- pls look
into, make
rec -- meanwhile
proceed w/
(2)

Copied

Sperling

Read

Marshall

Ballentine

Podesta

Handwriting

puzzles solved

Gene/Bruce
Should at least do
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not sure OMB's worries are
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into, make
rec -- meanwhile
proceed w/
(2)

08/18/99 THU 04:57 FAX
08/19/99 THU 04:57 FAX

8-17-99

THE WHITE HOUSE
WASHINGTON

99 AUG 13 PM 7:22

Copies:
Ballentine
Radecki

August 13, 1999

MEMORANDUM FOR THE PRESIDENT

FROM:

ROGER BALLENTINE

RE:

OFFICE OF ENVIRONMENTAL INITIATIVES WEEKLY

Climate Change

Press

Your issuance of an Executive Order on bioenergy and bioproducts was covered by major news outlets, including CNN, the New York Times ("Clinton to Seek Using Farm Products in Lieu of Fossil Fuel"); the Washington Post ("Clinton Forms Council To Push Use of Waste") (wire copy); the Wall Street Journal ("Clinton Executive Order Promotes Use of Biomass Energy to Aid Environment"); and USA Today ("Clinton Pushes For Cleaner Fuel"). In a related story, the AP reported on BC International's plans to build a biorefinery close to Sacramento that will make ethanol. ("Cutting-edge California plant will use rice waste to fuel cars," 8/11). The CEO of BC International, Steven Gatto, was on our bioenergy roundtable.

Initiatives

We are looking very closely at further ways that the federal government can demonstrate leadership in reducing greenhouse gas that would build on your earlier orders efficient - this time focusing on transp alternative fuels, to use more efficient consumption.

On a related note, DOE will an label to compact fluorescent light bulb further accelerate the use of these bulb

Energy Management Program will fund a two for one buy down of old light bulbs in federal facilities. We expect considerable reductions in emissions over time. In fact, DOE estimates that the White House complex alone is already saving \$20,000 per year and reducing annual greenhouse gas emissions by 100 MMTCE because of the use of these light bulbs.

What % of WH is properly lighted -- we might ought to do a media tour of WH -- also make sure we have maximized use -- are lights in Oval OK? -- Then we should target major corp HQ -- ask them to do

What % of WH is properly lighted -- we might ought to do a media tour of WH -- also make sure we have maximized use -- are lights in Oval OK? -- Then we should target major corp HQ -- ask them to do

11/7/1999 (rev.)

SECTION _____. DISCRETIONARY SPENDING CATEGORIES.

(a) ESTABLISHMENT OF SEPARATE CATEGORIES. - Section 251(c) of the Balanced Budget and Emergency Deficit Control Act of 1985, as amended, is further amended as follows:

(1) FY 2000. - - In paragraph (4), strike "and" at the end of subparagraph (C) and add the following new subparagraph at the end:

"(E) for the LWCF category: \$506,313,000 in new budget authority and \$255,457,000 in outlays;".

(2) FY 2001. - - In paragraph (5), strike 'and' at the end of subparagraph (B) and add the following new subparagraph at the end:

"(D) for the LWCF category: \$700,000,000 in new budget authority and \$511,565,000 in outlays;".

(3) FY 2002. - - In paragraph (6), strike 'and' at the end of subparagraph (B) and add the following new subparagraph at the end:

"(D) for the LWCF category: \$800,000,000 in new budget authority and \$689,341,000 in outlays;".

(4) FY 2003. - - In paragraph (7), strike 'and' at the end of subparagraph (A) and add the following new subparagraph at the end:

"(C) for the LWCF category: \$900,000,000 in new budget authority and \$825,490,000 in outlays;".

(b) OFFSETTING ADJUSTMENT IN DISCRETIONARY SPENDING LIMITS. - -

(1) Adjustment of Discretionary Category for FY 2000.- - The discretionary spending limit set forth in section 251(c)(4)(A) of the Balanced Budget and Emergency Deficit Control Act of 1985, as adjusted in conformance with section 251(b) of that Act, is reduced by \$506,313,000 in new budget authority and \$255,457,000 in outlays.

(2) Adjustment of Discretionary Category for FY 2001. - - The discretionary spending limit set forth in section 251(c)(5)(A) of the Balanced Budget and Emergency Deficit Control Act of 1985, as adjusted in conformance with section 251(b) of that Act, is reduced by \$ 700,000,000 in new budget authority and \$511,565,000 in outlays.

(3) Adjustment of Discretionary Category for FY 2002. - - The discretionary spending limit set forth in section 251(c)(6)(A) of the Balanced Budget and Emergency Deficit Control Act of 1985, as adjusted in conformance with section 251(b) of that Act, is reduced by \$800,000,000 in new budget authority and \$689,341,000 in outlays.

(c) DEFINITION OF THE LWCF CATEGORY.- - Section 250(c)(4) of the Balanced Budget and Emergency Deficit Control Act of 1985, as amended, is further amended by adding at the end the following new subparagraph:

“(E) The term ‘LWCF category’ refers to new budget authority and outlays on budget authority in the LWCF (Land and Water Conservation Fund) category in the following accounts:

14-5033-0-2-302 Bureau of Land Management Land Acquisition,
14-5020-0-2-303 Fish and Wildlife Service Land Acquisition,

14-5035-0-2-303 National Park Service Land Acquisition and State Assistance,
14-1031-0-1-303 National Park Service Urban Park and Recreation Fund
12-9923-0-2-300 Forest Service Land Acquisition, and
the Forest Legacy Program in 12-1105-0-1-302 Forest Service State and
Private Forestry account;
and financed from receipts in the LWCF established pursuant to the Land and
Water Conservation Fund Act of 1965 as amended (16 U.S.C. 4601-4 through
11);”.

(d) ADJUSTMENTS TO THE LWCF CATEGORY.- -Section 251(b)(1)
of the Balanced Budget and Emergency Deficit Control Act of 1985, as amended, is
further amended by the following new language at the end thereof:

“(F) Adjustments for technical outlay reestimates.- -

“When the President submits the budget under 31 USC 1105 for fiscal years
2001, 2002, and 2003, OMB shall calculate and the budget shall include for the
budget year and each outyear an adjustment to outlays for the LWCF category
equal to--

(i) the outlays for that category calculated assuming budget
authority consistent with the amount for the LWCF budget authority
category set forth in Section 251(c) as adjusted, using current technical
assumptions, minus

(ii) the outlays for that category set forth in Section 251(c).

OMB shall consult with the Committees on the Budget prior to making the estimates required by this paragraph."

8-11-99

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Ballantine
Podesta
Marshall

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Podesta

Cabinet Weekly Report, July 31 - August 6 page 6

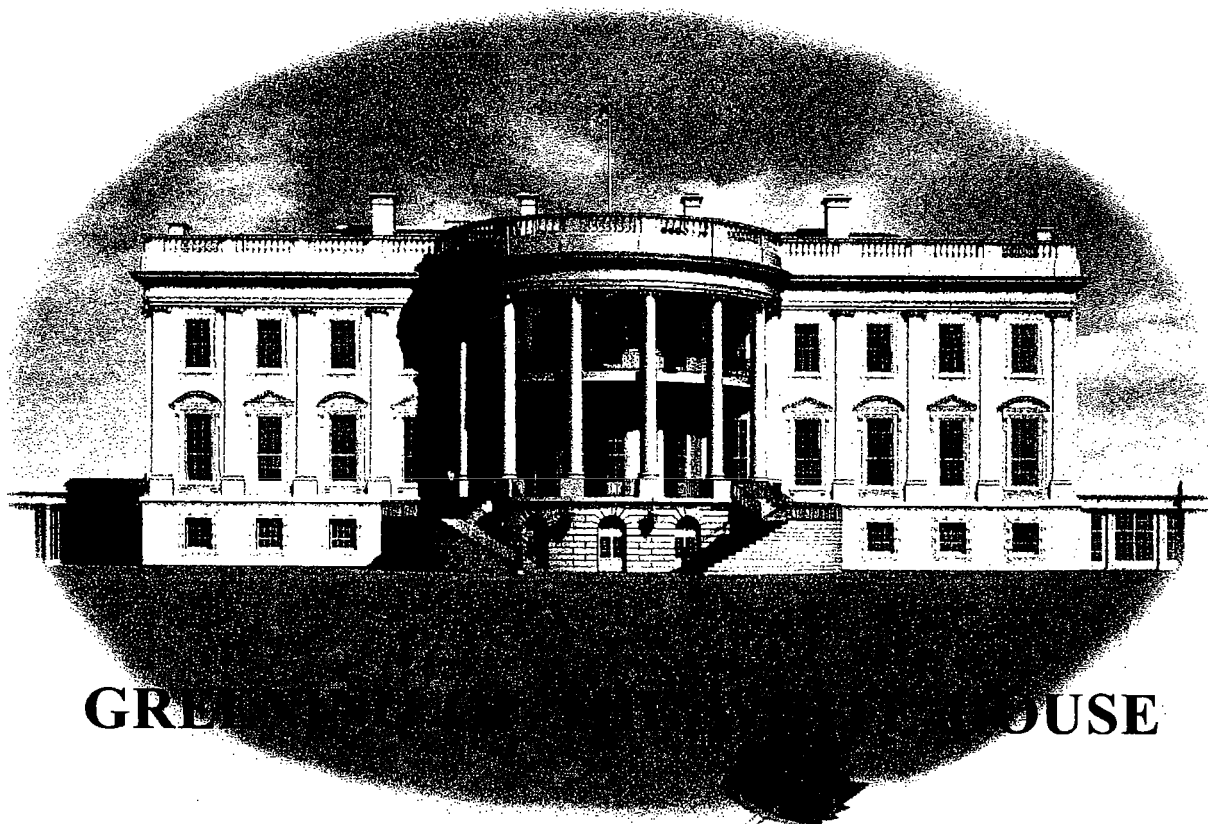
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putting into WH - BK

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NOT FOR PUBLIC RELEASE



GREENING OF THE WHITE HOUSE

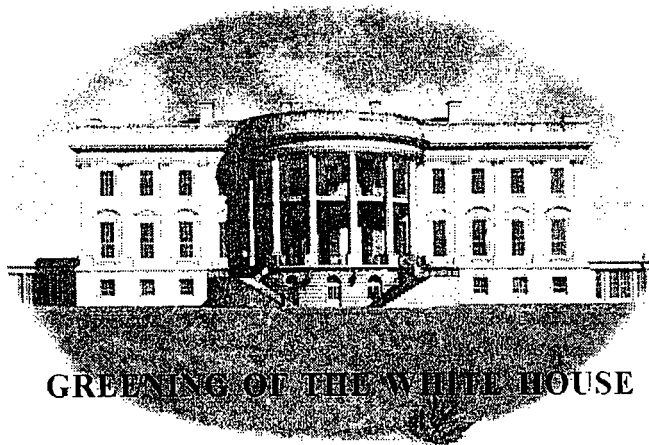
ROGER.

1 LATEST GREENING
REPORT. NEED TO
TALK ABOUT
REVERSE POSSIBILITIES.

DAVE REJESKY

 **Six
Year
Report**

June 1999



We're going to identify what it takes to make the White House a model for efficiency and waste reduction, and then we're going to get the job done. I want to make the White House a model for other Federal agencies, for State and local governments, for business, and for families in their homes. Before I ask you to do the best you can in your house, I ought to make sure I'm doing the best I can in my house.

President Clinton

April 21, 1993

Acknowledgments

This report is the result of a one-year effort that brought together more than two dozen people from both within and outside the Federal Government. The report builds on a process begun in 1993 designed to tap the best thinking on energy conservation and waste reduction and apply that knowledge to the White House complex.

Special thanks go to John Archibald, Anne Sprunt Crawley, and Dean McCauley of the Federal Energy Management Program at the Department of Energy, all of whom provided insight and guidance throughout the Greening Initiative. Andy Walker of the Department of Energy's National Renewable Energy Laboratory (NREL) and NREL intern Lori Mitchell helped coordinate the energy audit of Jackson Place. Also involved with the Jackson Place audit was the Environmental Protection Agency's (EPA) Indoor Air Quality Team, lead by Bob Thompson and including Bryan Ligman, Gene Fisher, Garvin Heath, Greg Brunner, and Susan Womble.

Dana Arnold of the Office of the Federal Environmental Executive provided support on waste reduction and recycling issues.

Shelley Fidler of the White House Climate Change Task Force and David Rejeski, EPA agency representative to the Council on Environmental Quality, provided overall project management.

Bill Browning of the Rocky Mountain Institute helped pull together the environmental history of the White House complex. Paul Jutton of the Office of Administration (Executive Office of the President) provided graphics for the report, and Chris Tremper of McNeil Technologies, Inc., oversaw the report's final production.

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The Greening of the White House . . .

An Introduction

The White House, which recently celebrated its 200th birthday, has a long tradition of demonstrating technological innovation. In keeping with that tradition, President Clinton announced the Greening of the White House Initiative on Earth Day 1993. The initiative improves the energy and environmental performance of the White House complex by identifying opportunities to reduce waste, lower energy use, and make an appropriate use of renewable resources, all while improving indoor air quality and building comfort.

This report on President Clinton's legacy of greening at the White House summarizes progress made to date and gives an overview of new opportunities identified during the past year. It also includes an environmental history of the White House and a short tour of the buildings that make up the White House complex. Over the past five years, this initiative has involved hundreds of dedicated people from both within and outside government. A description of how they worked together to develop and implement the Greening Plan is also included in this report.

Many of the steps identified during the first two years of the Greening Initiative have been implemented. The Second Annual Report, issued in March 1996, documented savings of \$182,000 per year in energy costs, significant reductions in solid waste, and the elimination of 2,750 tons of greenhouse gases. White House Greening measures completed since 1996 are saving an additional \$150,000 each year and avoiding 735 metric tons of greenhouse gases annually. Cumulative savings from the new measures total 12.2 billion Btu and 1,125 metric tons of carbon emissions avoided.

The Greening Plan can decrease White House energy and water consumption by 50 percent or more. It also supports President Clinton's leadership role in protecting the environment. The Greening of the White House project creates an environmentally sustainable White House and a world-class environmental showcase.

The White House has been described as the house of the people. In that sense, this work is not just about the White House, it is about your house. Many of the steps identified and implemented in this report make good economic and environmental sense for many Americans. Hopefully this report will provide you with the ideas and inspiration to make your home or office more energy efficient, environmentally sound, and comfortable.

White House Greening measures completed since 1993 have saved approximately \$1.5 million (averaging \$170,000 annually) and eliminated about 18,700 metric tons of greenhouse gases.



The Greening Plan can cut White House resource consumption by 50 percent or more.

What are the White House "Greening Measures"

These short descriptions identify what steps the Greening Team have taken in the past and are currently considering to reduce energy and waste in the White House complex. In the coming pages, a "tour" is given of each building in the complex, including a short history and more details on the following measures.

These symbols
will help you quickly
identify what measures
were implemented.



Building Envelope: A significant amount of energy is lost through the roof, windows, and walls of buildings, so those areas were analyzed for options to increase efficiency.



Lighting: Energy-saving light bulbs were installed wherever possible, and steps were taken to ensure lights are turned off in rooms that are not in use. Maximizing the use of natural light was a priority, because it's free and more visually pleasing.



Heating, Ventilation, and Air Conditioning (HVAC): Measures were sought to reduce the amount of energy used to heat and cool the buildings while simultaneously increasing occupant comfort. Improving indoor air quality and reducing the use of paint with volatile organic compounds are also major goals.



Plug Loads: Energy-saving office equipment was installed, and refrigerators and coolers were replaced with more energy-efficient models.



Waste: After analyzing the waste being generated, a comprehensive recycling program began for aluminum, glass, paper, newsprint, batteries, fluorescent lamps, paint solvents, and laser printer cartridges. Organic yard waste is recycled at an off-site composting facility.



Vehicles: Many leased vehicles accept cleaner-burning alternative fuels, and the White House is participating in a pilot program to test electric vehicles.



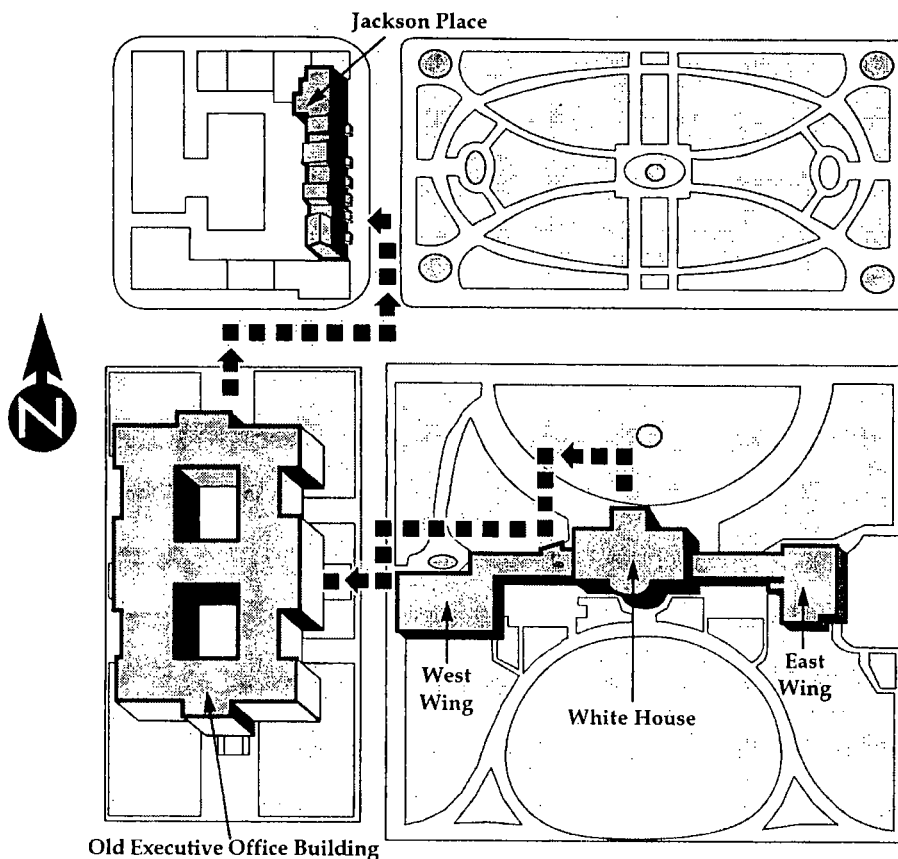
Landscaping: Methods to reduce unnecessary water and pesticide use and increase organic fertilizers on the grounds of the complex were analyzed.

Take the Greening of the White House Tour

You are invited to take a tour of the White House complex to learn more about the historic buildings and take a closer look at the energy and waste reduction measures that make up the Greening of the White House Initiative.

As you visit the various buildings, the Greening measures will be discussed in greater detail and you will learn what has been accomplished and what is planned for the future. Keep in mind that much of what was done used existing technologies that are now applicable to a wide range of buildings, including your own home or office.

The tour begins in the White House, proceeds to the Old Executive Office Building, and then to the townhouses on Jackson Place.



The multibuilding
White House complex
encompasses about
800,000 square feet
of space.

The White House

Martin Van Buren, the first American-born President, installed the first central heating system in the White House.

Besides being a home to the President and his family, the White House includes office space, a museum, ceremonial spaces used for visits and special events with dignitaries, a restaurant, and an 18-acre botanical garden. The White House is composed of three main sections: the Executive Residence, the East Wing, and the West Wing. The First Family lives on the second and third floors of the Executive Residence, which also contains space for guests. The ground floor is open to the public and is visited by more than a million people annually. From the central heating system in the mid 1800s to the plumbing, gas lighting, elevators, air conditioning, solar panels, and the first generation compact fluorescent lamps added during the Bush Administration, the White House frequently has been a showcase for innovations.

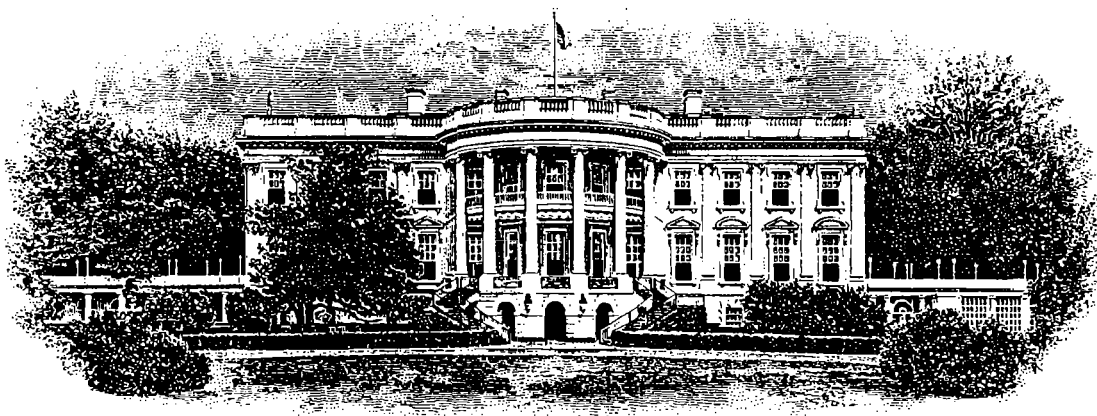
James Hoban, an Irishman, designed and began building the Executive Residence in 1792. George Washington laid the cornerstone of the building, but John Adams was the first President to occupy the building, in 1800. The White House is oriented on an east-west axis, allowing for maximum use of the sun for lighting and heating. The building was lit by sunlight during the day, with candles and lard-oil lamps used at night. Gas lighting was added in 1848, and wiring for electrical lighting soon followed after Thomas Edison perfected the light bulb. Today sunlight still provides light for most of the day.

"Hell itself couldn't heat that corner."

— President Andrew Jackson, on the problematic heating of the White House.

Despite the ample sunlight and numerous fireplaces, heating remained a problem for a long time. A coal-fired furnace to heat the dining room was installed for President Adams, but when the White House was destroyed by the British in the War of 1812, the furnace was not replaced. Later, frustrated by the inadequate heating, President Andrew Jackson remarked, "Hell itself couldn't heat that corner." President Martin Van Buren had the first central heating system installed. The air, heated by burning coal, rose through flues and chambers into many of the rooms. The White House was one of the first houses in the country

to have running water when plumbing was installed in the 1830s. In 1853, during Franklin Pierce's presidency, the heating system was changed to circulate heated water in pipes. This improved indoor air quality and burned less coal. Eventually the system was switched to



steam. In the 1970s, during the Carter Administration, solar panels were installed to heat the water for the Navy Mess, but the panels didn't function as well as hoped, so President Reagan had them removed.

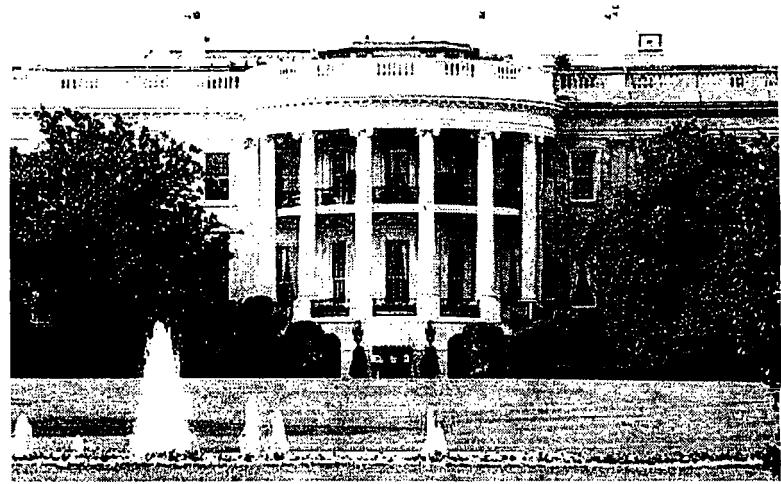
In the summer, the building's position on the edge of a hill, combined with large windows and high ceilings, maximized the cooling power of breezes. The first attempt at central air conditioning was in 1909 with a system in which fans blew air across ice bins placed in the attic. This system did not work, but during the Truman presidency an air conditioning system was installed that is still in use, with new controls and chillers recently added.

The President and his closest staff work in the West Wing, which contains the Oval Office, meeting spaces, White House media office, and the Navy Dining Mess. The oldest portion of the West Wing was built originally as a stable during the presidency of Thomas Jefferson. At the beginning of the 20th century, the extensive conservatories on the site were demolished to make way for office space. The West Wing was expanded again in the 1930s.

The East Wing was intended to be a museum, but when construction began in 1941, the outbreak of World War II forced most of the space to be used for other purposes. Today, the East Wing contains mostly office space, including the First Lady's, and a theater. Tour visitors enter the White House through the East Wing and walk down a corridor looking out into the Jacqueline Kennedy Garden before entering the ground floor of the Executive Residence.

The landscaping and use of the White House grounds have changed often over the last two centuries. Past activities included livestock grazing and military drills. Some former Presidents planted trees from their home States on the grounds, many of which did not survive in Washington's climate. The National Park Service and the General Services Administration, which are responsible for maintaining the grounds and buildings, now plant only species that are native to Washington and give preference to organic practices whenever possible.

The current size and configuration of the grounds were arrived at around the beginning of this century. Today's many uses include treaty events, celebrations, and the traditional Easter Egg Roll. Television crews use a space just to the north of the West Wing to film segments of their White House news stories. So many events occur on the South Lawn that the sod in this area must be replaced several times a year. In addition to the well-known Rose and Jacqueline Kennedy Gardens, the grounds include a tennis court, a swimming pool, a running track made from recycled rubber, and the Grandchildren's Garden.



7,000 hard-boiled eggs
were used in the 1999
Easter Egg Roll.

White House Greening Activities

Completed



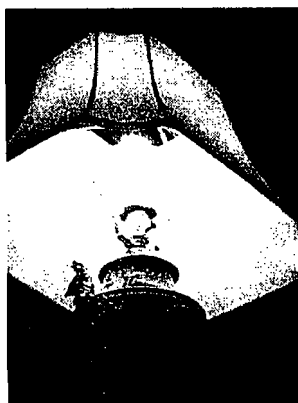
- The roof of the White House was replaced to improve the thermal integrity of the building shell.



- Incandescent table lamp bulbs were replaced with compact fluorescent bulbs where possible in 1994, saving 1,600 kilowatt-hours per year. Only 5 percent of the bulbs weren't replaced due to the historic character of the fixtures and security concerns.
- Exterior flood lighting was replaced with energy-efficient halogen lighting in 1994. The halogen spotlights are controlled by timers that turn off the lights after 11 p.m., reducing energy use for exterior lighting by 60 percent.
- Halogen lights were installed in the coolers for the flower shop and kitchen in 1998.
- In 1995 (East Wing) and 1997 (West Wing), T-12 fluorescent tube lamps were replaced with more efficient T-8 fixtures and electronic ballasts.



- In 1994, a chlorofluorocarbon (CFC) management system was put in place.
- A preventive maintenance program for kitchen freezer CFC leaks was instituted in 1994.
- Chiller CFC recycling/recovery/reclamation machines meet all applicable regulations. All CFC technicians were certified by the Environmental Protection Agency.



Using compact fluorescent bulbs instead of incandescent light bulbs saves \$22,000 each year throughout the White House complex.

- Installation of a new HVAC system was completed in January 1999. The chillers were replaced with high-efficiency units that don't use CFCs. This project is expected to save 400,000 kilowatt-hours of electricity, 24,000 gallons of water, and \$32,000 per year.
- New insulation is being installed on all pipes as part of a larger asbestos abatement program begun in 1998.
- Ninety percent of the steam traps have been replaced to prevent steam loss.
- The no-smoking policy continues throughout the White House.
- A new Park Service paint shop was completed in 1995 to improve indoor air quality, and a more efficient paint sprayer was installed in January 1999.



- The old coolers and refrigerators in the kitchen and flower shop of the Executive Residence have been replaced with more efficient units.
- The first high-efficiency (Golden Carrot) refrigerator was installed in 1994. At that time, the model exceeded industry standards for energy efficiency by 30 percent.
- Since September 1995, 99 percent of the computers, printers, copiers, and fax machines purchased have been efficient Energy Star models. These units consume 50 to 60 percent less energy than comparable models.



- Due to security requirements, most documents are shredded into fibers too short for traditional recycling. Since July 1998, this material has been sent to an off-site composting facility where it is mixed with yard trimmings to make a compost product called LEAFGRO. LEAFGRO, in turn, is used as compost on White House grounds.
- An ongoing project began in 1993 to educate staff and set internal policy to reduce paper consumption, limit the use of disposables, conserve office supplies, and eliminate unnecessary items.

Improvements to the HVAC system save more than \$30,000 per year.



Recycling

Energy Star office equipment has cut energy consumption for those devices by 50 to 60 percent.



- The White House has a contract with DaimlerChrysler to supply 50 percent of its fleet with alternative-fuel vehicles. Currently, these are flexible-fuel ethanol vehicles.
- In August 1998, the White House participated in a pilot program sponsored by the Potomac Electric Power Company and the Department of Energy to test Ford's electric 1998 Ranger pickup truck.

Adjusting and replacing
sprinkler heads saved
15,000 gallons of water
in one year.



- Pesticide use has been reduced 80 percent by eliminating blanket sprays and improving pest management.
- In 1994, sprinkler heads were adjusted and/or replaced and watering was switched to the early morning, saving 15,000 gallons in one year.
- Since 1995, native plants have been planted in place of nonnative species.



Composting

Recommended/Planned



- The Solarium and Greenhouse are being redesigned to include energy-efficient glazings.
- Replace the existing electric swimming pool heaters with a solar water heater or natural gas-fired heater, saving about \$1,120 per year, and implement conservation measures such as covering the pool when it's not in use.



- The Park Service is awaiting funding to rehabilitate the visitors entrance building near the East Wing. Recommendations to upgrade the fluorescent lighting from T-12 bulbs to T-8 bulbs and electronic ballasts will be incorporated into the project.
- Install photovoltaic-powered lighting for the Pennsylvania Avenue Park, and incorporate PV arrays into visitor kiosks to showcase the technology. Photovoltaics could provide enough energy to power the 40-watt bulbs in each kiosk.
- Automatic controls will be used to reduce the energy use of lighting and take advantage of natural daylight in the East Wing visitors entrance building.
- Replace incandescent light bulbs in the paint shop with fluorescent triple phosphor bulbs for improved color rendition.



- Work with the EPA to establish a collection system to recycle nickel-cadmium batteries.

A solar water heater for the swimming pool could save more than \$1,000 per year.

The Old Executive Office Building

The Old Executive Office Building is the largest granite building in the world.

Located next to the White House, the Old Executive Office Building (OEOB) occupies a unique place in Washington's architectural history. The building's flamboyant French Second Empire design stood in stark contrast to its Greek Revival neighbors. When completed after 17 years of construction in 1888, the OEOB was the largest office building in Washington with 4½-foot-thick granite walls, 16-foot ceilings, 2 miles of black and white marble tile corridors, and more than 550 offices in 600,000 square feet of space. The building has two large internal courtyards and was originally designed to use daylight and natural ventilation. In 1969, the OEOB was designated a National Historical Landmark, and in 1972 it was placed on the National Register of Historic Places.

President Taft allowed the family cow, Pauline, to graze on the south lawn of the OEOB.

The building was designed soon after the discovery of carbon dioxide, leading to the development of an intricate ventilation system. Air channels were built throughout the walls, allowing fresh air to enter rooms through slots under the windows. At each corner, stained glass domes top open stairwells. Hot air would rise into the domes and exhaust through vents into glazed skylit spaces, creating negative pressure that pulled air through the rest of the building.



The ventilation system was gradually disabled over the years. Today's cooling system consists of 782 window air conditioners, 100 package units, and three chillers. An exterior renovation during the Reagan Administration restored the skylights to their original function.

Originally designed to house the State, Navy, and War Departments, it today contains the Vice President's Office and more than 25 agencies within the Executive Office of the President. The building also contains the historic Indian Treaty Room, two libraries, a small gymnasium, a two-lane bowling alley, a paint shop, and a furniture repair shop.

Old Executive Office Building

Greening Activities

Completed

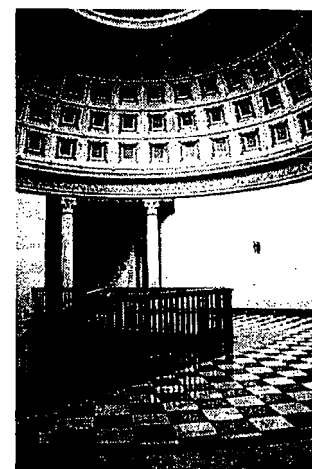


- Ninety-eight percent of the windows were replaced with energy-efficient double-paned units. The remaining 2 percent are not double-paned because of historic considerations but have a low-emissivity film to block heat from the sun.



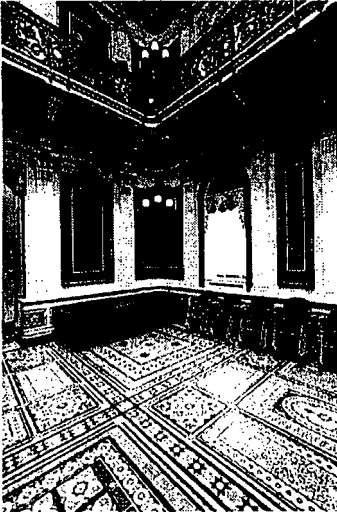
- Incandescent light bulbs in corridor fixtures were replaced with energy-efficient compact fluorescents, saving more than \$20,000 each year and avoiding 100 metric tons of greenhouse gases.
- More than 90 percent of all overhead lighting has been upgraded with energy-efficient T-8 fluorescent tubes and electronic ballasts. Security concerns have prevented replacing the remaining 10 percent. This project cut lighting energy use by almost 70 percent and paid for itself in three years.
- Motion detectors were installed in the bathrooms, copy rooms, and conference rooms to shut off lights automatically when rooms are unoccupied, saving about \$6,000 per year.
- In 1994, the mercury vapor lighting in the Indian Treaty Room was replaced with more efficient metal halide lights, which use 35 percent less energy.
- Most table lamp bulbs were replaced with compact fluorescent bulbs by January 1994. Only 2 percent were not replaced, due to security reasons.
- In 1995, the historic skylights were rehabilitated, which increased daylighting and restored the original historical appearance.
- Outdoor lighting was programmed in 1998 to turn off after 11 p.m., reducing energy consumption by 60 percent.

The building's first light bulb was installed in 1893.



OEOP skylit stairwell

The lighting upgrades in the OEOP have reduced the building's total energy load by more than 12 percent.



Metal halide lighting improved lighting levels in the Indian Treaty Room by 35 percent at no additional energy cost.

New air conditioners save more than \$4,500 in electricity costs per year.

- Eighty-five percent of the window air conditioning units have been replaced with more efficient models meeting the Department of Energy's energy efficiency recommendations (top 25 percent in efficiency for product category) and EPA's Energy Star requirements. This ongoing retrofit is saving more than \$4,500 in electricity costs per year.
- Timers have been installed on a large number of window air conditioner units to turn them off between 10 p.m. and 5 a.m.
- New R-19 fiberglass insulation was installed on steam pipes as part of an asbestos abatement program.
- A preventive maintenance program for ozone-depleting CFCs from kitchen freezer leaks was instituted in 1994.
- Chiller CFC recycling/recovery/reclamation machines met regulations in 1994. All CFC technicians were EPA-certified by 1994.
- In 1994, the chiller system was modified to recirculate cooling water instead of wasting it.
- The no-smoking policy within the White House complex continues, improving indoor air quality.
- Begun in 1995, 60 percent of the rooms have been painted with paint low in volatile organic compounds. The remaining rooms are painted with oil-based paints due to historic considerations.



- Since 1995, 99 percent of the computers, printers, copiers, and fax machines purchased have been efficient Energy Star models. These units consume 50 to 60 percent less energy.
- An Energy Star-compliant vending machine was installed in the snack bar. This appliance is similar to the White House's "Golden Carrot" refrigerator and is in the top 25 percent for efficiency compared with similar equipment.



- An ongoing project began in 1993 to educate staff and set internal policy to reduce paper consumption, limit the use of disposable products, conserve office supplies, and eliminate unnecessary items.
- In 1994, an agreement was completed to ensure that all hazardous waste is handled in accordance with internal procedures that comply with Resource Conservation and Recovery Act regulations.
- All hazardous waste was consolidated in an OEOB storage cabinet in 1993.
- Hazardous waste is inspected weekly, and has undergone a chemical inventory. Polychlorinated biphenyl (PCB) records were consolidated in 1993.
- Since 1994, staff working near PCB-contaminated transformers wear protective clothing, and transformers are periodically drained and filled with non-PCB fluid.



- The GSA reduced fertilizer consumption by one-third by using mulching mowers and increasing the use of compost.
- Pesticide use has been reduced 80 percent by eliminating blanket sprays and improving pest management.
- Seasonal flowerbeds, which have high maintenance costs, were replaced in 1998 with perennials and shrubs.
- Water conservation devices were installed in restrooms, kitchens, and other areas in 1994. Combined with adjusting and replacing sprinkler heads and watering the landscape in the morning, 15,000 fewer gallons of water were used in 1995.

Pesticides have been reduced by
80 percent.

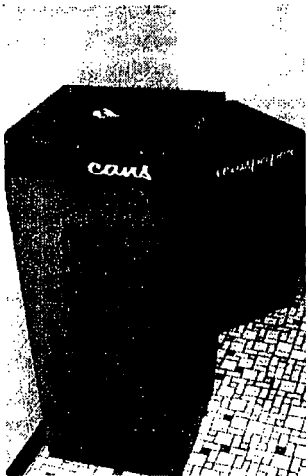
Recommended/Planned



- Certify the OEOP as an EPA/DOE Energy Star building, signifying excellence in energy performance. This benchmark recognizes the top 25 percent energy-efficient commercial buildings.



- More efficient chillers are being designed, with a scheduled installation date of July 1999.
- Install more window air conditioning unit timers as budget allows.
- Upgrade the document shredder to improve air quality. The current shredder creates a large amount of dust when operating.



Recycling



- Improve the labeling system of the building's recycling containers.
- Work with the EPA to establish a collection system to recycle nickel-cadmium batteries.

Jackson Place

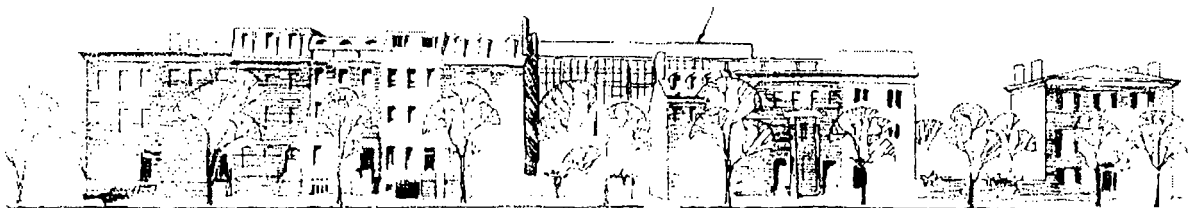
The Jackson Place townhouses are located along the west side of Lafayette Park north of the White House. The tract of land was originally known as "Jamaica," and records show John Pierce first owned it in 1685. The Federal Government purchased the land in 1792 as part of the new District of Columbia.

By 1803, the land had been designated as a public area, known first as President's Square or the Common and, after 1825, as Lafayette Square. Gravel carriageways were laid out along the west and east sides of the square, and by 1824 an old ferry road along the north side of the square had become H Street. Both Charles Bulfinch, a famous architect of government buildings who also finished the Capitol Building, and Andrew Jackson drew plans for improving the grounds in Lafayette Square. In 1858, the carriageways were officially named Jackson Place and Madison Place. During the 19th century, the land gradually turned from a neglected common to an attractive urban park. The neighborhood remained essentially residential from the 1820s until the early 20th century, when several row houses were adapted to small offices and others were replaced with larger structures for offices.

During the Eisenhower Administration, plans to demolish the existing structures and construct new Federal office buildings on the square ignited community opposition.

For the past 30 years, the townhouses on Jackson Place have provided space for White House offices and special projects related to the Executive Office of the President. Presently, Jackson Place is home to the White House Council on Environmental Quality, the White House Climate Change Task Force, the Millennium Program, the Office of National AIDS Policy, the White House Historical Society, and a conference center. In 1998, the buildings were added to the Greening of the White House Initiative and underwent extensive audits to identify opportunities to reduce energy use and waste as well as improve indoor air quality.

First Lady Jacqueline Kennedy helped save Jackson Place from being demolished, which was a milestone in changing Federal policy toward the buildings' preservation.



*1960 sketch by Grosvenor
Chapman
of Jackson Place.*

Jackson Place

Greening Activities

A Department of Energy
audit revealed the
potential to save
\$135,000 per year.



*Jackson Place, ca. 1920.
By Theodor Horydczak.*

Although the Jackson Place buildings did not join the Greening Initiative until 1998, several projects have taken place since 1993 through general greening policies affecting the entire White House complex. For example, since September 1995, virtually all office equipment purchased meet Energy Star standards. And in 1993, as part of an ongoing project, the staff was mandated to reduce resource consumption and waste generation. A Department of Energy audit was one of the first steps of the Jackson Place greening process, and the audit discovered potential annual energy savings of \$135,000. The General Services Administration is funding a comprehensive engineering and architectural study of Jackson Place to explore more carefully the options presented in the DOE audit.

Recommended/Planned



- Replace all windows with double-glazed windows meeting the appearance standards of historical preservation.
- Install weather stripping to reduce air infiltration. Reducing heat loss and gain could save \$13,000 per year.



- Finish converting T-12 fluorescent tubes to more efficient T-8 fixtures and electronic ballasts.
- Replace incandescent bulbs in table and desk lamps with compact fluorescent bulbs.

- Install motion sensors in areas with sporadic activity and maintain constant light levels in rooms with dimmable lighting systems. These measures, taking into account the reduced heat gain during winter, would produce net savings of \$3,000 per year.



Ceiling fans could help
save more than
\$2,000 per year.

- Install ceiling fans as a near-term solution to destratify the air in the high-ceiling rooms. Thermostats could then be set lower, saving \$2,300 per year.
- Correct problems with makeup air systems to improve air quality, comfort, and energy efficiency.
- A feasibility study is under way to investigate installing high-pressure HVAC lines, which will resolve heating and cooling issues on upper floors while preserving the historical character of the rooms. Energy savings from this new technology are estimated to be around 30 percent.



- Improve the labeling system of the building's recycling containers.
- Work with the EPA to establish a collection system to recycle nickel-cadmium batteries.

The Bottom Line – Energy Efficiency Measures in Place



Building Envelope

Replace Executive Residence roof with lead-coated copper roof installed over rigid board thermal insulation

4,500 kWh
(15 million Btu)

\$520

1

Replace 98% of windows in OEOB with double-paned units and low-emissivity (low-E) film. Remaining 2% use low-E film only.

470 million Btu

\$8,000

11



Lighting

Replace incandescent bulbs in table lamps and corridor lighting with compact fluorescent bulbs (White House, OEOB)

350,000 kWh
(1.2 billion Btu)

\$22,815

100

Replace exterior facade lighting with halogen fixtures (White House)

36,000 kWh
(123 million Btu)

\$2,160

10

Retrofit fluorescent fixtures in service areas using T-8 bulbs, electronic ballasts, and controls; halogen lighting in coolers (White House)

111,000 kWh
(379 million Btu)

\$7,759

35

Replace 23 300-watt incandescent bulbs in paint shop with fluorescent triple phosphors (White House)

14,400 kWh
(49 million Btu)

\$1,000

4

Replace T-12 bulbs with T-8 tubes, electronic ballasts, and reflectors (East and West Wings, OEOB)

1,634,644 kWh
(5,577 million Btu)

\$98,078

515

Retrofit mercury vapor with metal halide lights in Indian Treaty Room (OEOB)

35% more light

\$0

0

Install motion sensors in the restrooms, copy rooms, and conference rooms (OEOB)

100,000 kWh
(341 million Btu)

\$6,054

32



HVAC

Install new HVAC system in the White House using HCF-134 (non-CFC) coolant

400,000 kWh
(1.4 billion Btu)

\$32,000

Carbon
Emissions
Avoided
(Tons)

116

Install R-19 insulation on all exposed steam lines and replace steam traps on an ongoing basis. (East and West Wing, OEOB)

Steam line improvement measures are on-going.

Upgrade 208V window unit air conditioners beyond 9.5 energy efficiency ratio level. Install timers on all window air conditioning units to turn off from 10 p.m. to 5 a.m. (OEOB)

70,550 kWh
(241 million Btu)

\$4,621

22

Plug Loads



Install superefficient "Golden Carrot" refrigerator in the Executive Residence

2,316 kWh
(8 million Btu)

\$175

1

Install more efficient coolers in kitchen and flower shop in the Executive Residence

Initiate policy to purchase only Energy Star office equipment (East and West Wings, OEOB)

Reduce office equipment energy consumption 50-60%.

Total Bottom Line

9.8 billion Btu

\$183,182

845

NOTE: Engineering estimates used for savings calculation for some measures.

Environmental Bottom Line

Some of the measures taken in the course of the Greening of the White House cannot be quantified in terms of energy savings or reduced carbon emissions. However, the following activities have had a beneficial impact on the environment or will help popularize new environmentally friendly technologies.



Waste

All organic yard waste is recycled at an off-site composting facility.

The complex's recycling program includes aluminum, glass, paper, batteries, cardboard, newspaper, plastic, construction materials, fluorescent lamps, paint solvents, and laser printer toner cartridges.

Shredded paper is recycled into LEAFGRO soil complement for use in landscaping.



Vehicles

Fifty percent of the leased vehicles accept alternative fuels.

The complex participates in Potomac Electric Power Company's pilot program to test electric vehicles.



Landscape

Seasonal flowerbeds were replaced with perennials and shrubs.

Fertilizer use was reduced by one-third.

Pesticide use was reduced by 80 percent.

An emphasis is placed on native plant species.

Appendix

Dedication to the Greening Process

The work performed as part of the Greening of the White House is based on a 1993 comprehensive energy and environmental audit by an intergovernmental team. The audit process included detailed reviews of building records and utility billings, research on building histories, and investigations of site conditions.

The energy audit team, led by the Department of Energy, included the Lawrence Berkeley National Laboratory; the National Renewable Energy Laboratory; and the Rocky Mountain Institute, which served as a technical advisor and as the liaison with the American Institute of Architects. This team gathered information on energy and water use, then the analyzed the data to identify cost-effective, innovative techniques to save money and resources.

The environmental audit team, led by the Environmental Protection Agency, included the General Services Administration, the District of Columbia's Regulatory Office, and the Institute for Environmental Auditing. This team examined the overall environmental performance of the complex and its compliance with various environmental acts and regulations, including the Resource Conservation and Recovery Act (RCRA) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), among others. The White House was brought into full compliance with those regulations during the course of the greening improvements.

Audit information was used in a subsequent Feasibility Study that was sponsored by the American Institute of Architects (AIA) in July 1993. The Corporate Conservation Council of the National Wildlife Federation provided partial funding for the study. The AIA organized a design charrette composed of more than 90 expert staff members from the AIA, the Rocky Mountain Institute, and the AIA National Committee on the Environment. They produced a model design process and expert recommendations, leading to an integrated approach to improve the White House's energy efficiency, performance, and environmental responsiveness. The recommendations emphasized cost-effectiveness and solutions using "state-of-the-shelf" (commercially available) technologies.

All of the early actions that could be accomplished easily and quickly, that had little or no implementation cost, and that were required for regulatory compliance, have been completed. One example is the "Golden Carrot" refrigerator in the Executive Residence. "Golden

A *charrette* is an intensive design workshop with a set deadline, forcing participants to work quickly, creatively, and across disciplines.



Participants in the Greening of the White House charrette.

Carrot" refers to the design competition that resulted in the commercial production of a superefficient appliance designed to use 25 to 50 percent less energy than standard models and using no chlorofluorocarbons (CFCs).

Long-term initiatives focus on goals rather than specific actions, ensuring that the greening measures become permanent. Operations, maintenance, and procurement practices are a few areas in which change can occur through increasing environmental awareness. For example, using paint with low or no volatile organic compounds was an issue that could be implemented quickly and

integrated with future procurement practices. One long-term goal is to develop an education process that will increase the management staff's understanding of their decisions' implications.

The intergovernmental team encourages you to replicate the projects discussed in this report in your own governmental, commercial, or private buildings. Already, a number of corporations have undertaken greening efforts inspired by the Greening of the White House. In the public sector, the DOE's Federal Energy Management Program (FEMP), in association with other organizations, extends the greening process to other Federal sites. To help get the message out, FEMP and AIA developed an interactive CD-ROM explaining project lessons and technologies. FEMP also has a Greening of Federal Facilities Resource Guide for Federal energy managers that will help reduce energy consumption and costs, improve the working environment, and reduce the environmental impacts of their building. A Greening of the White House Web site went on-line in 1995, and Houston Lighting and Power Company produced a videotape documentary. Communicating the project's lessons and transferring this knowledge to the public is crucial to its long-term success.