

Greening the White House

Executive Mansion as Symbol of Sustainability

Over the last thirty years, presidents from Jimmy Carter to George W. Bush have introduced an array of environmentally progressive technologies and strategies to the White House (and have, at least once, eliminated them). These modifications were made for reasons both ethical and political—motivations that shifted over time and responded to changes in American societal attitudes toward green building. These changing postures reveal how the White House is used by both to reflect public policy and to provide an example of steps that could be taken to increase the sustainability of the average home or office.

Introduction: The Managed Image

Were the White House's original architect, James Hoban (1762–1831), able to see the building today, it would seem at once both familiar and alien. This is unsurprising for a building that is over two hundred years old. Yet, many of us would have a similar reaction were we permitted to enter the grounds and closely examine what must be one of the most well-known buildings in the world. This is partly by design, for the White House is a building whose image is carefully managed in order to emphasize its continuity over time—an effort that is entirely appropriate in a democracy, where, as has been noted, the permanence of our public buildings in general and the White House in particular often stands in for national ritual.¹

Whether we see its likeness on the back of a \$20 bill or on the oval emblem that hangs behind a parade of press secretaries or view the building itself from the two common vantage points of the Ellipse and Lafayette Park, we see a building that has been framed, either by cropping of its image or by careful landscape design, to emphasize the historic mansion itself. This framing yields an image of the White House that, aside from a few modifications such as the additions of the third floor (1927) and the Truman balcony (1947), appears

from the exterior largely as Hoban designed it (Figure 1).

What is masked by this effort to frame perceptions of the building is the fact that it has throughout its lifetime been nearly constantly changed and updated. In this regard, the White House has been incredibly resilient. The mansion has gracefully accepted two significant additions in the form of the east and west wings, as well as countless minor changes. The complex has survived two major fires (the mansion at the hands of the British in 1814 and the west wing in 1929), a renovation that gutted the interior to insert a steel structure in the building from 1948 to 1952, plans to have it demolished, and the attentions of a long list of architects and designers from Hoban himself to Thomas Jefferson (1743–1826), Benjamin Henry Latrobe (1764–1820), Charles McKim (1847–1909), and Louis Comfort Tiffany (1848–1933).

Perhaps most relevant to the focus of this article, the White House has also absorbed a long stream of technologies such as indoor running water in the 1830s, gas lighting in 1848, electric lighting in 1891, air conditioning in 1933, and office computers beginning about 1978 and continuing through the 1980s.² While never the first

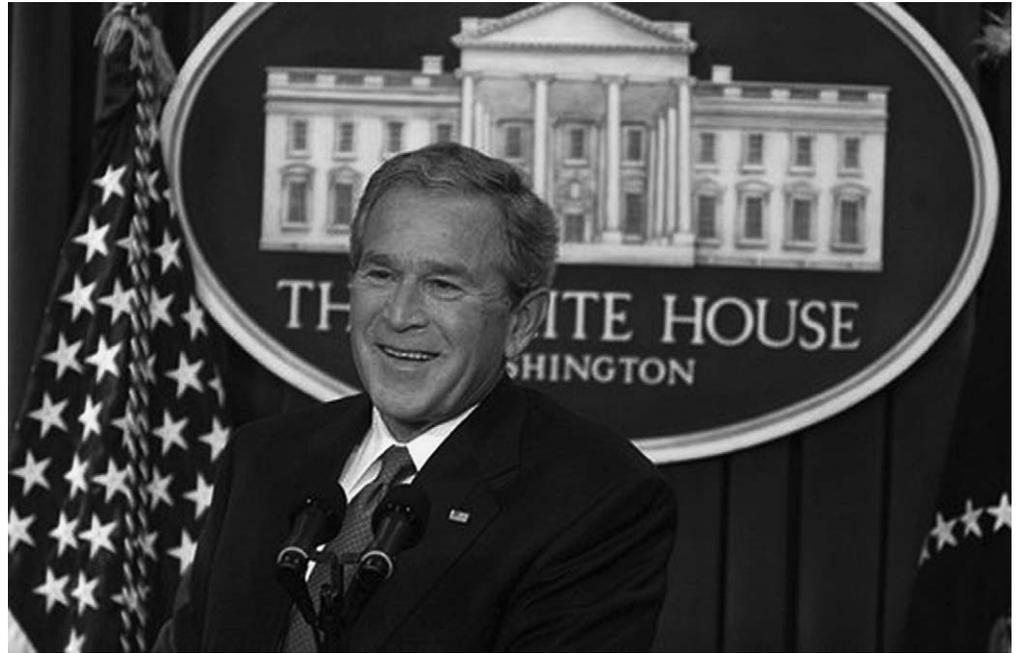
building to adopt any of these technologies, there has been an ongoing effort to keep the president's home and office well-appointed, comfortable, and efficient. To accomplish this, a careful balance is struck, with an eye toward maintaining and enhancing the prestige of the building and its occupants while not seeming too extravagant in the eyes of the general citizenry. Because of this, adoption of a technology by the White House has often been a harbinger—a signal that said technology has moved beyond the realm of the merely experimental and is entering into common usage. (One could even argue that the modern infusion of gear related to the security of the president and the provision of his ability to monitor and conduct military operations worldwide have their civilian counterparts in home and business security systems, safe rooms, teleconferencing suites, encrypted e-mails, and webcams.) The managed image of the White House obscures the fact that it is a thoroughly contemporary building with a certain dynamism in its relation to technology—a dynamism that is directly tied to public sentiment about the appropriateness of the technology itself. This has been particularly true with respect to the White House's adoption of green technologies and strategies for increased sustainability.

Carter—The Moral Equivalent of War

In the summer of 1986, workers ascended to the roof of the west wing of the White House and began dismantling and removing an array of solar hot water panels.³ The panels were not malfunctioning.⁴ In fact, after being stored as government surplus, they would go on to produce hot water for the cafeteria at Unity College in Maine from 1992 until 2004.⁵ The panels had been installed only seven years earlier, during Jimmy Carter’s administration. At the time, they had been heralded with a rooftop dedication ceremony, covered widely in the press, at which the president himself presented the array to scores of invited dignitaries⁶ (Figure 2).

When considering these events in hindsight, it is easy to portray President Reagan as the image-obsessed actor turned chief executive undoing the sensible efforts of Carter, the former nuclear physicist—and there is some truth embedded in this view. Much has been written about Reagan’s masterful control of image and symbol for political ends. Undoubtedly, for the Reagan administration the panels had a strong association with what they saw as the ineffective efforts of their predecessors—a symbol of American weakness. Reagan had resoundingly defeated Carter’s Vice President, Walter Mondale, in the 1984 election by striking a tone of optimism and overtly contrasting the ability of his first administration to this perceived ineptitude of the Carter years. His famous “Morning in America” political advertisement asked, “Why would we ever want to return to where we were less than four short years ago?”⁷ Yet, while having a symbolic dimension, the removal of the solar panels also acknowledged a political and popular reality. After years of sharply rising oil prices beginning with the Arab oil embargo in 1973, spurred by the Iranian Revolution in 1979, and peaking with the Iran Iraq War in 1981, there had been a precipitous decline in prices coinciding with the removal of price and allocation controls. By 1986, while still roughly double the cost of

1. The managed image of the White House—the historic mansion sans wings. President Bush at a press conference Thursday, January 26, 2006. (White House photo by Kimberlee Hewitt from www.whitehouse.gov.)



2. President Carter gestures to the White House solar panels shortly after speaking at the dedication ceremony. (Courtesy of Jimmy Carter Library.)

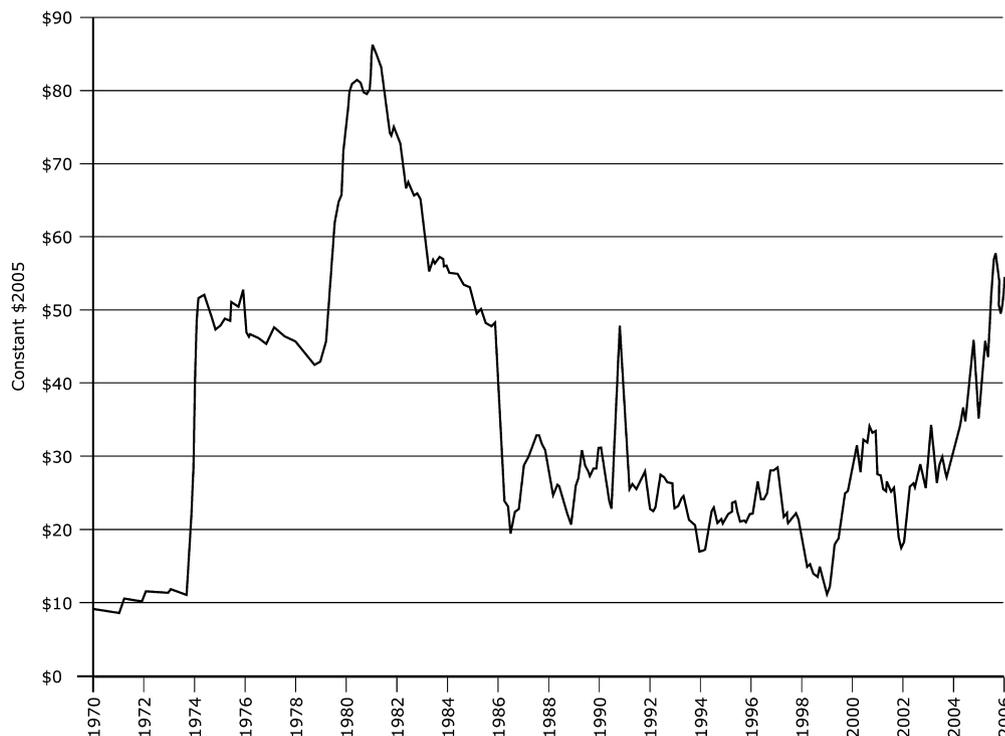


3. Redrawn by author from graph "Major Events and Real World Oil Prices, 1970–2005," U.S. Department of Energy, Energy Information Administration.

preembargo prices in constant dollars, oil cost a fraction of what it had at the beginning of the first Reagan term just over five years previous⁸ (Figure 3). In this way, Reagan's actions were more of a response to a series of events than a catalytic action meant to trigger them. America had turned its attention away from the promise of solar power simply because it could afford to.

This reality could not have been further removed from the one that faced President Carter during his administration. In an address to the nation just weeks into his term, Carter called the effort needed to confront the country's energy issues "the moral equivalent of war."⁹ Indeed, during his term much of the administration's efforts would be focused toward energy-related issues including the crafting of a comprehensive energy policy and the creation of the Department of Energy. The aforementioned oil prices and occasional supply shortages assured that Carter had the ear of the public when he made several televised speeches to the nation on the topic of energy. The first of these came less than two weeks after his inauguration when he appeared wearing a cardigan sweater to deliver a "fireside chat" on February 2, 1977. Interestingly, President Carter's cardigan points to his own use of symbolism in the saga of the White House solar panels. In his speech that evening, he asked citizens to sacrifice, "by keeping our thermostats . . . at 65 degrees in the daytime and 55 degrees at night."¹⁰ His sweater and his use of the word "our" signaled to viewers that the White House would not be exempt from these sacrifices but would rather lead the way, a gesture of solidarity befitting his "wartime" rhetoric. In this way, Carter co-opted the White House as a prop in his campaign to increase the energy efficiency of the nation's buildings—a process that would ultimately see him install a wood burning stove in the

Real World Oil Prices, 1970–2005 (adjusted by CPI for all Urban Consumers, 2005)



residence, leave holiday decorations unlit, and culminate with the solar panels themselves.¹¹

This is not to say that Carter's policies were purely symbolic and without substance. From the very beginning, his administration had taken a rather comprehensive approach to the nation's energy woes—recognizing the need to address both issues of supply and demand/conservation. As symbolized by the changes to the White House (and exemplified by orders to restrict the thermostats and turn off the hot water in some government buildings), the administration also understood from very early on that energy use in buildings was a substantial portion of the overall energy picture and therefore an area worthy of

significant research and effort. His administration would eventually call for U.S. buildings to derive 20 percent of their power from renewable energy sources by the year 2000.¹² One need only to consider that the Board of Directors of the American Institute of Architects (AIA) only last December adopted position statements urging a 50-percent reduction in the use of fossil fuels to operate new buildings by 2010 and a 100-percent reduction by 2030 to see how forward-thinking this was.¹³

Yet, it is important to remember that both Carter's policies and his changes to the White House were also products of their time. These stances were energy-focused and lacked consideration of many issues such as cradle-to-cradle

material cycles, water efficiency, and indoor air quality that are taken for granted today as being important parts of a green building strategy. For the White House, such changes would have to wait for both further evolution of the green building movement and greater popular acceptance of its methods. Even the AIA position papers mentioned above, while sharing some of Carter's goals, have as their motivation something inconceivable to the popular imagination of the 1970s—the curbing of global climate change. While a stated principle of Carter's energy policy efforts was that "we must protect the environment," he sought development of the coal industry alongside a call for "the use of solar energy in more than 2 ½ million houses."¹⁴ With a predictable and affordable energy supply (and not sustainability) as a goal, such strategies are not mutually exclusive.

Such straightforward thinking about solving the nation's energy problems also impacted the design of the solar panel array. The result of a feasibility study that considered eight candidate locations for solar panels including the roof of the west wing, the east wing, the historic mansion, and the south lawn, the array was rack mounted on the roof of the west wing just north of the oval office and immediately adjacent to an outdoor terrace where significant receptions are held (Figure 4). While one of the guidelines of the feasibility study was to "ensure solar system compatibility with existing architectural and historical context," only on the historic residence was there consideration of any significant integration of the panels into the architecture.¹⁵ In its ultimate location, the array was visible from Pennsylvania Avenue.¹⁶ In this way, the solar panels were closely related to the solar architecture of the day where design considerations were often trumped by a desire to optimize the solar geometries yielding buildings that had more of an engineering than an architectural sensibility. One might argue that their removal was justified in light of the government's curatorial responsibility toward such a significant

4. Model photograph from the White House Solar Feasibility Study showing solar panels on the historic mansion, east and west wings, and the south lawn. (Courtesy of Jimmy Carter Library.)



cultural resource as the White House and one wonders at what point the energy saved/produced by visible green design strategies and/or the symbolic example they set for other buildings outweigh a building's cultural importance. This will be a question for the historic preservation and green building communities to grapple with for years to come, not only in relation to the White House but also with buildings of lesser prominence.

With the Carter solar panels, this question was moot. They were removed seemingly without the benefit of this debate. The federal incentives urging homeowners to utilize both active and passive solar design to which they were meant to draw attention were never implemented.¹⁷ Carter's metaphorical call to arms asking the country to address an energy

problem "that we will not be able to solve in the next few years, and [is] likely to get progressively worse through the rest of this century" would come to seem like hyperbole.¹⁸ The waning sense of national urgency meant that it would be several administrations before another effort to green the White House. A shifting of the public mood and enhanced popular understanding of environmental issues would be required.

Clinton and Gore—Earth in the Balance

Like Carter, the next president to significantly address the energy efficiency of the White House did not wait long to announce the efforts of his administration.¹⁹ On Earth Day, April 21, 1993, just three months into his service, President Bill Clinton, in a wide-ranging speech at the National Botanical

Gardens, laid out the environmental goals of his administration. Near the end of his comments and after outlining such efforts as a national biological survey, an army program to clean up chemical weapons sites, and an executive order setting a voluntary standard for all federal facilities to reduce toxic emissions, Clinton went on to say:

For as long as I live and work in the White House, I want Americans to see it not only as a symbol of clean government, but also a clean environment. That's why I'm announcing an energy and environmental audit of the White House. We're going to identify what it takes to make the White House a model for efficiency and waste reduction . . . 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.²⁰

Here, as with Carter's thermostat, the White House is used not as an example of cutting-edge technology in this environmental initiative but is rather linked directly to other American homes and offices. The promise is that the White House will show the way to greener architecture by using technologies and strategies that are practical for and accessible to the general citizenry. In the course of the effort, such technologies would come to be dubbed as "state-of-the-shelf."²¹

However, it is important to note, in contrast to Carter's rhetoric, that Clinton's vision encompasses not only energy but also explicitly environmental concerns. His speech that day overtly mentioned climate change and biodiversity as issues of international importance. This expanded scope of concern would impact not only the Clinton administration's policy proposals but also its efforts to green the White House. Yet, again, these initiatives were as much about responding to the popular

climate as they were about shaping it. Five years previous, the United Nations had issued what popularly came to be known as either the Brundtland Report or "Our Common Future" which stressed the interconnectedness of global environmental and economic issues, urged a multilateral approach to solving these issues, and gave us our most widely referenced definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The rise of such a nuanced and inclusive vision of environmental concerns was a milestone in popular understanding. Acceptance of a more comprehensive view of environmental stewardship in which energy was interwoven with a host of other concerns was growing and with it an openness toward a broader view of green building.

With the president that day was Vice President Al Gore who just over a year previous had published his book *Earth in the Balance: Ecology and the Human Spirit* and with it had become one of the country's foremost political voices on environmental issues.²² The book, which called for a "global Marshall plan" to address ecological problems, reflected the emerging, more holistic view of the environment. It found a receptive audience and became a bestseller. Days before commencing her term as the national president of the AIA, Susan Maxman pointed to (then Vice President-Elect) Gore's inclusion on the ticket as a reason for hope among the growing number of proponents of the integrated approach of what had by then come to be known as green design.²³ (The theme of the institute's national convention that year would be "Design for a Sustainable Future.") In fact, the Clinton administration would go on to embrace this new notion of responsible design, construction, and maintenance of buildings with efforts ranging from a livable communities initiative to a project for the first time officially entitled the "Greening of the White House" (Figure 5).

5. Logo from the Clinton-era greening effort. It is interesting to note not only the literally green tint of the printing and the image of the leaf, both suggesting an environmental and not a strictly energy focus, but also the implication of both wings of the building perhaps nodding to the comprehensiveness of the project. U.S. Department of Energy, Federal Energy Management Program, *Greening of the White House: Six Year Report* (November 1999).



After Carter's program of solarization, one of the most striking aspects of the Clinton administration's White House program is that there is hardly any mention of solar energy. The project's six-year report only lists two small solar installations—both under the heading of "recommended/planned"—neither intended to be on any part of the White House proper. These were a proposal to replace the existing electric water heaters at the swimming pool with either solar hot water or a natural gas heater and a rather meek plan to power, for demonstration purposes, some outdoor lighting and the 40-W bulbs in the visitor information kiosks by means of a small photovoltaic array.²⁴

Instead, what the project lacks in depth on the issue of solar energy it makes up for in breadth, aiming for comprehensiveness and integrated thinking. This is apparent both in the project's physical scope and the scope of its inquiry. It considers the entire White House complex including the Executive Mansion with attendant wings, the grounds thereof, the Old Executive Office Building across the street, and the townhouses at Jackson

Place across from Lafayette Park which now host various functions related to the Executive Office of the President. The project was just as ambitious in the scope of its strategic considerations, addressing issues including the effectiveness of building envelopes, the effectiveness and quality of lighting (with a premium placed on the use of natural daylighting), indoor air quality, reducing and closing the loop on waste streams, and the efficiency of the White House vehicle fleet. Encompassing a wide range of participants from both public and private organizations, the “greening team” followed an interdisciplinary charrette-based approach still common in green design circles today and addressed an array of issues familiar to anyone who has worked with the LEED™ rating system.²⁵

Harking back to Clinton’s Earth Day speech and somewhat to the rhetoric of the Carter administration, in the “Greening of the White House: Six Year Report” the design team emphasizes the transferability of their work, bluntly stating, “The intergovernmental team encourages you to replicate the projects discussed in this report in your own governmental, commercial, or private buildings.”²⁶ Unlike the Carter solar panels, which were judged by the administration’s own study to be “economically marginal,” the Clinton efforts focused largely on measures that were easily accomplished and provided direct and ongoing cost savings and environmental benefit.²⁷ To emphasize this point, the report totals not only the environmental impact of the implemented strategies (in terms of annual energy savings and carbon emissions avoided) but also their economic impact (in terms of annual cost savings). (This accounting of the project is perhaps a nod to John Elkington’s 1989 concept of the triple bottom line, though it does not overtly address social capital.)²⁸ The emphasis on economic benefit may help explain the absence of direct solar technologies from the project. It did, however, lead to a long list of changes including improved insulation and windows, more

energy efficient lighting and appliances, and composting of yard waste. It would seem that such strategies are much more easily emulated by the average citizen than the installation of a solar array. This careful attention to economics coupled with the fact that there are hardly any overtly visible manifestations of the work (and changing social attitudes) has meant that, unlike Carter’s efforts, there has not been an attempt by the ensuing administration to undo the work of the commission.

Bush—America is Addicted to Oil

Solar energy is back at the White House without the attendant fanfare that accompanied the Carter installation. In late August of 2002, both solar hot water and, for the first time, photovoltaic panels were installed on the White House grounds. (Some of the hot water panels are used to heat the swimming pool as per the recommendations of the Clinton-era “Greening” panel.) Despite President George W. Bush’s warning that “America is addicted to oil, which is often imported from unstable parts of the world,” this reintroduction of solar technology seems to have not been prompted by the administration but rather undertaken as part of the standard maintenance and upgrade cycle of the National Parks Service (NPS), which shares authority for the White House grounds.²⁹ Though John Howard, the Federal Environmental Executive, points to the reinstallation of solar technology at the White House as “yet another example of President Bush’s personal stewardship commitment,”³⁰ Lisa Guernsey of the *Los Angeles Times* has noted that “the announcement that solar technology had been installed at the White House came not from the government but from the solar industry, and only after the equipment had been in place for four months.”³¹ This silence on the part of the administration would seem to confirm the Parks Service leadership on the project. As stated by NPS architect James Doherty, “[w]e call it ‘silent stewardship’ . . . We have always sought to stay in the

background and not compete with what the White House does.”³²

With so much attention (both positive and negative) having been paid to Carter’s solar installation and the seeming avoidance of renewable power options in the otherwise ambitious Clinton greening effort, it is interesting to consider how these solar technologies could have so quietly been reintroduced, no matter at whose direction. One factor is certainly that the panels are not on any part of the White House proper. Rather, they are all on ancillary buildings. Other factors are more directly related to advances in the technology itself and the growing acceptance of the technology spurred by those advances. First, with the panels of today being considerably less expensive and more efficient and reliable than those of the 1970s, there is much less room for detractors to be critical of them as a poor investment of public funds. Undoubtedly, it is just such affordability and effectiveness that made them a viable option for what would otherwise have been typical roofing replacement cycles. The second notable advancement is aesthetic. The new installations are comprised of building-integrated panel systems allowing for their nearly seamless incorporation into the existing architecture—a far cry from Carter’s rack-mounted system and important for the inclusion of active solar technologies into historic and culturally significant architecture.

Despite not being leveraged symbolically to address larger issues, the new solar panels signal a significant advancement in the penetration of these technologies into common usage. What twenty-three years prior had taken complex study and political calculation and merited coverage on the nightly news has now been accomplished by enlightened public servants in the normal course of their job duties. In some ways, the White House has transitioned in those years from a leader to a follower on this issue, demonstrating its position at the tipping point of public opinion with respect to new technologies. With the struggle over solar

technology at the White House seemingly complete not with a bang but with a whimper and with no apparent opposition to the more significant but less heralded Clinton changes, one wonders what will be the next advancement in the acceptance of green design signaled by the barometer of the White House and how long it will be before it appears.

Conclusion—Public Buildings/public Policy

Otto von Bismarck once called politics the art of the possible. As has been demonstrated, this adage is quite true with respect to the introduction of green technologies to the White House. These efforts are a product of democracy, where a government's actions can never get too far ahead of public opinion nor lag too far behind it. Yet, public buildings, with their triple requirement for stewardship of public funds, cultural resources, and natural resources, seem to present an ideal opportunity for demonstrating leadership in sustainable design—leadership that is grounded in the possibilities of contemporary technology and answerable to the common sense of the electorate. In this regard, the White House should be seen as the acme of public buildings, occupying the same political landscape but possessing two additional advantages when exercising this leadership—the ability to appeal to the prestige of the presidency and the ability to extend the reach of these actions through public policy. The Carter administration pursued a marked increase in federal funding for the support of renewable energy at the same time it developed its plan for an array of solar panels on the White House. Coincident to the Reagan administration's removal of the panels was a steep decrease in such funding. While solar technologies were quietly being reintroduced to the White House grounds, the George W. Bush administration called for nearly the same \$2,000 tax credit for the use of such technologies suggested by the Carter administration. (The size of the credit had unfortunately not been adjusted for inflation.) This combination of

symbolic potency and official policy is powerful and provides the possibility for the White House to occupy a key position in the future development of sustainable design.

However, in order for it to realize this potential and effectively convey the promise of a more sustainable future, it will be necessary for the White House to be freed, at least in some ways, from the political calculations that have so closely tied it to public attitudes. Not an easy task, considering that this link between political action and public sentiment springs so directly from our culture and form of government and, in other guises, serves us well. Yet, it seems that if the White House is to assume any significant leadership role on these issues, a break between these two forces is necessary.

As has been noted, the White House has been purposefully linked to the idea of the typical American home in at least two ways—as an exemplar of what is possible and as a cautious forerunner limited by a desire to avoid ostentation. With regard to sustainable design, if the White House is going to become the former, it will ultimately not be able to remain the latter. This is because the gap between what has been demonstrated at the White House and what a well-intentioned homeowner can accomplish is growing rapidly. There is perhaps no better (or surprising) example of this gap than George W. Bush's own vacation home in Crawford, Texas. Designed by architect David Heymann, the house uses climate-appropriate passive response strategies, geothermal heating, and treats gray and black water to tertiary standards for irrigation.³³ If this gap is to be overcome and the White House is to become a touchstone of sustainable design, it seems a strategy akin to Franklin Roosevelt's fireside chats (or Jimmy Carter's cardigan-clad addresses) is appropriate. With Roosevelt, the symbolic power of the White House was harnessed in service of pressing but unrelated issues. With sustainability, the White House has the possibility of being both megaphone and message.

Acknowledgment

The author would like to acknowledge the staff of the Jimmy Carter Library for their assistance researching the portions of this article related to the administration of President Carter.

Notes

1. For an examination of this particular symbolic role of the White House, see Daniel J. Boorstin, "Roles of the President's House," in Frank Freidel and William Pencak, eds., *The White House: The First Two Hundred Years* (Boston: Northeastern University Press, 1994), pp. 3–15.
2. For the most complete account of the history of the White House, including the parade of technical innovation see, William Seale, *The President's House: A History* (Washington, DC: White House Historical Association, 1986). The one instance where the White House was a leader in the development of residential architectural technology involved inventor R.S. Jennings, Prof. Simon Newcomb of the Navy Department, and John Wesley Powell of the geological survey. Working in concert in the summer of 1881, they developed a forced air system to cool the room where President Garfield lay dying from an assassin's bullet (Seale, pp. 523–525). This system was capable of modulating both the temperature and the humidity twenty-five years before Willis Carrier's patent for dew point control. However, it was abandoned after the death of the president.
3. Roger Mudd, *NBC Evening News* (August 22, 1986).
4. While the Clinton administration's six-year report on greening the White House claims that "the panels didn't function as well as hoped. So, President Reagan had them removed," considering their subsequent service at Unity College, this seems like a bipartisan presidential nicety rather than a complete assessment of the situation. U.S. Department of Energy, Federal Energy Management Program, *Greening of the White House: Six Year Report* (November 1999), p. 11.
5. Associated Press, "Maine College to Auction off Former White House Solar Panels," October 28, 2004.
6. Walter Cronkite, *CBS Evening News* (June 20, 1979). The official list of invitees for the ceremony included the Honorable Albert Gore, Jr. Dedication event invitation list. ("Solar Hot Water Heating—West Wing 1 [CF, O/A 494] [2]" folder, Box 81, Hugh A. Carter's Files, Jimmy Carter Library).
7. To view the "Morning in America" advertisement, see CNN's Political Ad Archive, <http://www.cnn.com/ALLPOLITICS/1996/candidates/ad.archive/>.
8. U.S. Department of Energy, Energy Information Administration, *Annual Oil Market Chronology* (May 2006). Available at www.eia.doe.gov/emeu/cabs/AOMC/overview.html (accessed 15 June 2006).
9. Jimmy Carter, *Keeping Faith: Memoirs of a President* (Fayetteville: University of Arkansas Press, 1995), p. 96.
10. Jimmy Carter, "Report to the American People on Energy," February 2, 1977, <http://millercenter.virginia.edu/scripps/diglibrary/prezspeeches/carter/> (accessed 7 June 2006).
11. By using a fireside chat for this purpose, Carter was following in well-established footsteps. In Edwin Yoder's estimation, Franklin D.

Roosevelt's fireside chats signaled the first time that "the physical White House clearly became associated with a presidential political agenda." See Edwin M. Yoder, Jr., "Using the White House to Further Political Agendas," in Frank Freidel and William Pencak, eds., *The White House: The First Two Hundred Years* (Boston: Northeastern University Press, 1994), pp. 155–169.

12. Press Briefing by James Schlesinger and Stuart Eizenstat, June 20, 1979 ("Solar Hot Water Heating—West Wing 3 [CF, O/A 494] [1]" folder, Box 81, Hugh A. Carter's Files, Jimmy Carter Library).

13. American Institute of Architects, press release of April 21, 2006, and "High Performance Building Position Statements" (2005).

14. Jimmy Carter, "Address to the Nation on Energy," April 18, 1977, <http://millercenter.virginia.edu/scripps/diglibrary/prezspeches/carter/> (accessed 7 June 2006).

15. Feasibility Study on Solarization of the White House, Volume 1, July 27, 1977 ("Solar Hot Water Heating—West Wing 1 [CF, O/A 494] [2]" folder, Box 81, Hugh A. Carter's Files, Jimmy Carter Library).

16. Fact Sheet, The White House Solar System ("Solar Hot Water Heating—West Wing 1 [CF, O/A 494] [2]" folder, Box 81, Hugh A. Carter's Files, Jimmy Carter Library).

17. Earlier in the day that the solar panels were dedicated, the administration made a call for a \$2,000 tax credit toward the construction of new homes incorporating either active or passive solar design as well as a \$100,000 million per year "solar bank" to help finance such construction. Press Briefing by Schlesinger and Eizenstat.

18. Carter, "Address to the Nation on Energy."

19. Though there does not seem to have been much interest in increasing the energy efficiency of the White House between the Carter and the Clinton administrations, the administration of George H.W. Bush is said to have introduced the "first generation compact fluorescent lamps." U.S. Department of Energy, Federal Energy Management Program, *Greening of the White House*, p. 10.

20. Bill Clinton, "Remarks by the President in Earth Day Speech," <http://clinton6.nara.gov/1993/04/1993-04-21-presidents-remarks-in-earth-day-speech.html> (April 21, 1993).

21. U.S. Department of Energy, Federal Energy Management Program, *Greening of the White House*, p. 30.

22. In his remarks that day, Clinton acknowledged that one of the reasons he had asked Gore to join the ticket was "that he knew more about the subject of the environment than I did and I thought I had something to

learn from him." Clinton, "Remarks by the President in Earth Day Speech."

23. Cara Greenberg, "A Tree Grows In Architecture: 'Green' 'Design,'" *New York Times* (December 3, 1992), Section C, p. 1.

24. U.S. Department of Energy, Federal Energy Management Program, *Greening of the White House*, p. 15.

25. *Ibid.*, pp. 30–31.

26. *Ibid.*, p. 31.

27. Feasibility Study on Solarization of the White House.

28. See John Elkington, *Cannibals with Forks: The Triple Bottom Line of 21st Century Business* (Gabriola, BC: New Society Publishers, 1998).

29. George W. Bush, "State of the Union Address," January 31, 2006, <http://www.whitehouse.gov/news/releases/2006/01/20060131-10.html> (accessed 13 June 2006).

30. Mark C. Fitzgerald, "Solar at the White House," *Solar Today* (May/June 2003), p. 4.

31. Lisa Guernsey, "How it Works: From a White House Roof, Solar Power Proclaims Gains," *Los Angeles Times* (February 27, 2003), Section G, p. 8.

32. Fitzgerald, "Solar at the White House," p. 3.

33. Andrew Blum, "George W. Bush Builds His Dream House," *The New Yorker* (July 24, 2000), p. 27.