

INTRODUCTION

When people talk about technology today, smartphones, social media, and self-driving cars come to mind, but technology does not need to be electronic or even modern. At its simplest, technology is defined as the application of scientific knowledge for a practical purpose. From the beginning of its construction in 1792 through the present day, White House occupants and staff have continually sought innovative technologies to improve living and working conditions inside the Executive Mansion. These enhancements ranged from running water in 1833, to electricity in 1891, and finally to email in 1992. Learn how the White House has adopted new technologies over the last two centuries.

CONTEXTUAL ESSAY

When initial construction began in 1792, workers used an innovative technology to cut the stone for the White House walls. The stone was sawed to produce two smaller stones, each with a smooth face (**Image 1**). Following the building's completion, early presidents incorporated advancements to its interior. Thomas Jefferson added two water closets on the Second Floor, and James Madison installed a gravity-based heating system in 1809. Unfortunately, these early improvements were destroyed when the British burned the White House in 1814.

After the Executive Mansion's reconstruction, a project that lasted more than three years, nineteenth-century presidents enhanced the building with other early versions of modern day comforts and conveniences. In the 1820s, John Quincy Adams brought pumped water to the White House Grounds to use for his gardens (**Image 2**). In 1833, piped running water was installed inside the house for drinking purposes



Image 2

and to fill fire protection reservoirs. Two decades later, President Franklin Pierce built the first permanent private bath in 1853.

Along with plumbing, improvements to the heating and cooling of the rooms were also sought for the White House. President Martin Van Buren hired a live-in fireman to manage the boilers for a new furnace installed in 1840, and James K. Polk expanded this system to include rooms on the Second Floor. Heating at the Executive Mansion continued to improve as new advancements developed over the next one hundred years (**Image 3**). Hoping to provide relief from the sweltering Washington summer heat, the White House tested experimental cooling systems under Presidents Ulysses Grant and James Garfield in the 1870s and early 1880s, but neither system was effective long-term. In the early twentieth century, William Howard Taft tried an early version of air conditioning with little success and added a sleeping porch on the roof of the White House for the comfort of his family (**Image 4**). Finally, in 1929, the West Wing became the first area of the Executive Mansion to receive central-air conditioning from the Carrier Engineering Company. Franklin D. Roosevelt further expanded central-air into the main house by installing it on the Second Floor in 1933. Modern air conditioning would not fully cool the White House and its wings until after the 1948-1952 Truman Renovation.

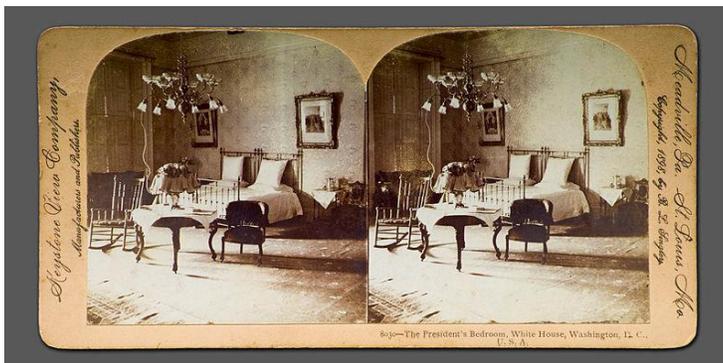


Image 5

Aside from heating and cooling, the White House needed better lighting for its spacious rooms. In 1848, James K. Polk replaced many candles by outfitting the chandeliers and wall fixtures to use gas. The Edison Company first wired the Executive Mansion for electricity in 1891 (**Image 5**). In these first years, President

William Henry Harrison and his wife Caroline would not touch the switches for fear of being

electrocuted. During extensive renovations in 1902, Theodore Roosevelt brought in new wiring for the lights. The White House continued to utilize this technology and its related inventions by adding electric vacuums in 1922 and an electric refrigerator in 1926.

In addition to finding ways to improve comfort, the White House sought advancements for communication. By the mid-nineteenth century, the telegraph emerged as a popular and efficient form of communication over long distances. While Abraham Lincoln frequently used the device at the War Department next door to the White House, it was Andrew Johnson who became the first president to designate a telegraph room inside the Executive Mansion in 1866. The first telephone was installed at the White House in 1879 during the Rutherford B. Hayes administration, but few others in Washington had this technology, so Hayes rarely used it. As the telephone gained popularity during the twentieth century, it was used regularly for presidential communication as well as special calls. **Image 6**). Woodrow Wilson participated in the first transcontinental telephone call from New York to San Francisco in 1915, and Richard Nixon spoke with the first astronauts to land on the moon from the Oval Office phone in 1969 (**Image 7**).



Image 6

Other important communication technologies for the White House came with the rise of radio, film, and then television. In 1922, President Warren Harding installed the White House's first radio set in his study. Three years later, Calvin Coolidge's inauguration was the first to be broadcast by radio, but Franklin D. Roosevelt would become the president most associated with this technology because of his frequent talks with the public, known as Fireside Chats (**Image 8**). The advent of cinema gave

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the public unprecedented access to the White House beginning in the 1920s (**Image 9**). President Roosevelt installed the White House movie theater in 1942 and took a special interest in newsreels of the battles fought in Europe and Asia during World War II. In the years after Roosevelt, television emerged as the new medium, providing both audio and visual coverage of the president. Harry Truman gave the first televised speech from the White House in 1947 and would later invite television crews to accompany him on a tour of the renovated White House in 1952. Eisenhower and Kennedy utilized television for news conferences, establishing this technology as the preferred means of presidential communication into the twenty-first century (**Image 10**).

Along with installing the first telephone, the Hayes administration improved written communication with the arrival of the White House's first typewriter in 1880. Soon after, the typewriter began to be used frequently for presidential letters and staff correspondence. Nearly a century later, President Jimmy Carter introduced computers to the West Wing offices (**Image 11**). Initially, staff used these machines for basic data entry, but during Ronald Reagan's administration word processing features were added. Email then was introduced to the Executive Mansion in 1992, and during the administration of Bill Clinton, the White House debuted its first website in 1994.

In the twenty-first century, the White House has continued to adopt new technologies. Cell phones and social media have become important tools for communication for the president and staff. The White House created its first Twitter account in 2009 during the administration of Barack Obama. The introduction of innovative technologies has improved conditions at the White House and advanced the scope and reach of the presidency. As new inventions emerge in the United States and around the world, comfort, convenience, and communication at the Executive Mansion will continue to evolve.

IMAGES

Click on web link to access online and for larger viewing

Source	Title	Date	Created By	Courtesy Of	Thumbnail	Web Link
1	Stonemason Mark	Unknown	Erik Kvalsvik	White House Collection/ White House Historical Association		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Rooms/439.tif.info
2	Watercolor of the White House's South Grounds	1827	Unknown	Huntington Library		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Views/1315.tif.info
3	Work on the installation of a new heating plant at the White House was started today	1923	Unknown	Library of Congress		https://www.loc.gov/item/200271237/
4	Sleeping Porch prior to Solarium	1920	Unknown	Library of Congress		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Rooms/9911.tif.info
5	President's Bedroom	1885-1890	B. L. Lingley	White House Historical Association		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Rooms/8093.tif.info
6	Taft at the Phone	Ca. 1908	Unknown	Library of Congress		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Presidents/William%20H%20Taft/1164.tif.info

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7	Moon Landing Phone	Ca. 1969	Unknown	Richard Nixon Presidential Library and Museum/NAR A		https://catalog.archives.gov/id/6922346
8	Franklin Roosevelt Broadcasting a Fireside Chat	1938	Harris & Ewing	National Archives and Records Administration		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Presidents/Franklin%20D%20Roosevelt/1649.tif.info
9	Sound Movie Trucks at the Front Door of the White House	1929	Herbert E. French	Library of Congress		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Views/2672.tif.info
10	President Dwight D. Eisenhower Before Announcing Reelection Campaign	1956	Abbie Rowe	National Archives and Records Administration		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Presidents/Dwight%20D%20Eisenhower/5090.tif.info
11	President Jimmy Carter Observes Operation of a Proposed Computer System	1978	Unknown	Jimmy Carter Presidential Library and Museum/NARA		https://library.whitehousehistory.org/fotoweb/archives/5017-Digital%20Library/Main%20Index/Presidents/Jimmy%20Carter/8270.tif.info



ADDITIONAL RESOURCES

- ELA/STEM Resource: History and Technology at the White House. [Learn more here.](#)
- Resource: The White House Historical Association Digital Library. [Explore here.](#)
- Timeline: White House Technology Timeline from the White House Historical Association. [View here.](#)
- Collection: “Intrepid Innovation” from the White House Historical Association. [Click here.](#)
- Collection: “By Land, By Sea, By Air” from the White House Historical Association. [Click here.](#)
- Gallery: “Technology and the White House” from the White House Historical Association. [View here.](#)
- Article: “The White House Usher on the Role of Television” from the White House Historical Association. [Read here.](#)
- Article: “Motor Cars Come to the White House” by Hillary Mannion for the White House Historical Association. [Read here.](#)
- Article: “Keeping Cool in the White House” by Joel D. Treese for the White House Historical Association. [Read here.](#)
- Podcast: “The 1600 Sessions: The President’s Helicopter” from the White House Historical Association. [Listen here.](#)
- Video: Journalist Sid Davis Visits JFK’s Air Force One. [Click here.](#)



SUGGESTED ACTIVITIES

- *Anywhere Activity: Create a White House Brochure:* Explore the [ELA/STEM Resource: History and Technology at the White House](#) and use your research from that, the contextual essay, and other resources on the prior page to highlight a particular technological innovation in the White House. View the associated *Anywhere Activity: Create a White House Brochure* to design a flashy and informative brochure about your chosen technology.
- The story of technology at the White House continues as innovative ideas emerge. Write a persuasive essay on what recent technology you would like to see added to the White House and provide reasons why the government should fund this improvement.
 - Optional extension: Investigate actual costs of adding their technology and provide a budget along with the essay.
- Rank the White House technologies or innovations covered in the Contextual Essay or in your own research. Explain why you have ranked the technologies as such and note how each one has improved the White House, assisted the presidency, or bettered the country as a whole.
- Think about President Benjamin Harrison and the installation of electric lights in the White House in 1891. Imagine a bold new technology like electric lighting and what your feelings about it might be if you lived in the 1890s. Would you touch the light switches? Why or why not?
 - Follow up discussion: Are there any technologies today that you are nervous about trying, like self-driving cars or “wearable” tech?