



The White House Visitor Center: A Case Study in Inclusive Exhibition Design

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Every design decision can make the user experience better or worse.

Museums of all kinds are increasingly aware of the diversity within their audiences and are trying to be more responsive to visitors' varied needs and interests. As exhibitions are transitioning from the more traditional "presenter of objects" to being "a site for experiences"¹ and adding different forms of technology to achieve those ends, Universal Design becomes more critical.

Since the development of the Seven Principles of Universal Design in 1997, the term "Universal Design" has been defined and redefined in different ways. In general, though, Universal Design "takes into account the needs of all users (including both ends and the middle of any ability dimension)."² Therefore, Universal Design focuses on the diversity of people, their abilities, and the impact of these considerations on design decisions. Every design decision can make the user experience better or worse. Informed decision-making to incorporate a Universal Design approach at the concept stage of exhibition design is required in order to allow a greater variety of people to have access and successful experiences. Otherwise, it can become prohibitively expensive to make changes later on.³

The White House Visitor Center renovation and new exhibition is a case study in shifting from accessible design to Universal Design. While the emphasis is on the diverse needs of people with disabilities, the examples presented are inclusive of and benefit all visitors.

White House Visitor Center—History and Renovation

The White House Visitor Center was

established in 1995 in Malcolm Baldrige Hall in the U.S. Commerce Department Building. Its main purpose was to distribute timed-entry White House tour tickets and provide a very modest exhibition space. After the September 11, 2001 terrorist attacks, tour tickets—for reasons of security—could only be obtained through members of the U.S. Congress or foreign embassies. No longer the starting point for those going on reserved tours of the White House, the function of the visitor center needed to be redefined.

In a public-private venture between the National Park Service (NPS) and the White House Historical Association (WHHA), the White House Visitor Center underwent a \$12.5 million renovation between 2012 and 2014. The NPS and WHHA wanted the new exhibition in the White House Visitor Center not only to be accessible, but also to be an example of Universal Design.

The goal was to provide visitors who go on the White House tour a complementary experience. For those who don't have the opportunity to tour the White House, a visit to the White House Visitor Center provides a stand-alone educational experience that features a variety of opportunities for individuals, children and adults, and families to explore the rich history of the White House and President's Park, which comprises the park land and gardens surrounding the White House.

The exhibition presents insights into White House architecture, furnishings, and First Family life as well as the social, ceremonial, and work functions of the

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building. Tactile experiences, audio description, and open captioning all accommodate the needs of a wide range of visitors. Interactives throughout the space, both high tech and low tech, are designed to engage the visitor in exploring the interior spaces of the White House, and audio describes its historical facts for those who need or want them.

Exhibition Design Team

The exhibition design team consisted of architects, exhibition designers, fabricators, content experts, curators, audiovisual producers, and reviewers with disabilities. In addition, we at the National Center on Accessibility (NCA) served as the accessibility consultant on the team. NCA was invited to be the accessibility consultant because we link the preferences and needs of people with disabilities to those of practitioners designing facilities and planning programs. For more than 20 years, we have consulted with federal, state and local agencies on existing facilities through accessibility assessments; reviewed plans for new and altered construction; and conducted exhibition design reviews for accessibility and Universal Design during all phases of exhibition development.

We were initially brought in to review the final Schematic Design II and final Design Development II documents to ensure minimum physical standards were being met for such things as reach ranges, knee and toe clearances, table/counter heights, accessible routes through the space, and operable parts manipulation. In addition, we were asked to provide an overall impression of the quality of visitor experience for visitors with sensory and

mobility impairments relative to content, layout, and flow. We engaged with the exhibit designers and architects to identify new elements to add to the exhibition design that would give visitors with disabilities equal or equivalent experiences.

NCA worked closely in concert with the fabricators, content experts, AV producers and people with disabilities to review prototypes of tactile elements to ensure the sizes were adequate to provide the detail needed for understanding. In addition, we reviewed audio description scripts for clarity, and typography for readability. The reviews by—and collaborative dialogue with—persons with disabilities were in many ways most critical to producing exhibit elements that would be usable by a range of abilities. This integrated approach was critical in creating an outcome that was inclusive, that went beyond minimum standards and guidelines, and that incorporated Universal Design in significant ways.

Universal Design Considerations

The exhibition features stories of the White House to illuminate its many roles as a home, an office, a stage and ceremonial place, a museum, and a park (the surrounding grounds and gardens). The initial plans we reviewed accommodated people with mobility impairments and provided high- and low-tech interactive opportunities to engage audiences of all ages. We recommended the addition of tactile floor plans and maps to provide orientation to the visitor center layout, the location of the White House within President's Park, and locations of iconic places within and around the White House. These floor

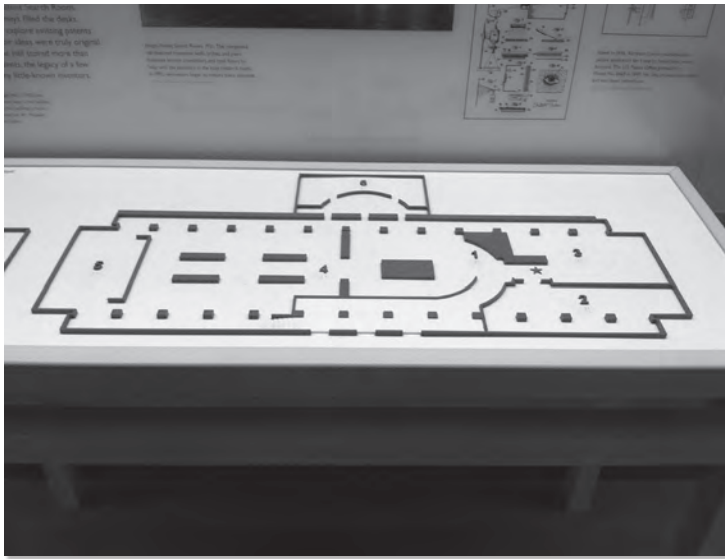


Fig. 1. Raised-line floor plan of Baldrige Hall providing orientation to the entire White House Visitor Center. Courtesy of the National Center on Accessibility

plans and maps benefit all visitors and specifically benefit those who are blind or have low vision. Audio description complements all tactile, visual, and audio-visual experiences throughout the exhibition. We wanted to ensure that visitors who are deaf or have hearing loss have access to audio content through assistive listening devices and open captioning at all audio stations and in the 14-minute film *The White House: Reflections from Within*.

Orientation to the Exhibition. At a staffed information desk in the visitor center, visitors can obtain publications, ask questions, and pick up assistive listening and audio description devices. The delivery system for both assistive listening and audio description is the Durateq device. The Durateq provides access to both assistive listening and audio description in a single device, is proximity activated and menu driven, and allows users to choose from multiple levels of information. The audio description tour provides effective prompting to assist visitors in using the Durateq device and in making selections as they navigate the space. A suggested order of visiting exhibits in the introductory gallery is provided before they take a virtual tour in computer interactive form. The intent is to give the user who is blind concrete opportunities to understand a big picture of the White House's location and architecture before they move on to the virtual tour.

A raised-line floor plan of Baldrige Hall with braille labels is positioned to serve as a starting point to the exhibition. The map provides both a visual and tactile orientation to the visitor center layout (fig. 1).

Introductory Gallery. The centerpiece of the introductory gallery is a 16-foot architectural model of the White House on an elevated platform. Angled exhibit panels with text and graphic information and eight touchscreen computer monitors surround the model. The computer monitors offer a virtual 3D model of the White House, its structural evolution through time, and a virtual tour of the White House interior and its grounds.

The team designed additional exhibit elements to complement the virtual model and tour and provide a more inclusive experience. On the north and south exhibit panels surrounding the 16-foot model, a tactile two-foot, 3D massing model provides a top-view silhouette of the White House so that visitors can understand the general size and shape and the relationship of the Executive Mansion to the East and West Wings. The virtual tour of the White House includes maps of the floors and locations of the rooms that visitors can elect to tour. Visually impaired visitors can find tactile floor plans with braille labels in pullout drawers under each monitor. People who are blind or who cannot physically operate touchscreens can use a keypad mounted next to each monitor. The designers programmed audio description into the computer program with operational prompts for navigating within the virtual environment (fig. 2). The original plan

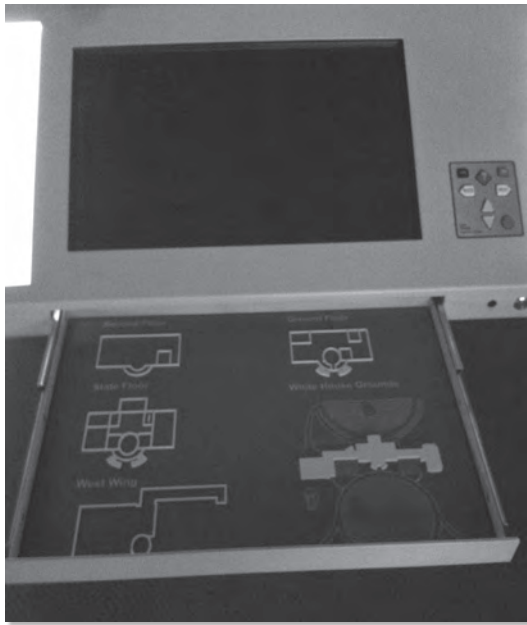


Fig. 2. Under each of the eight computer monitors, a pullout drawer with raised-line floor plans of the interior rooms and map of the exterior grounds provide complementary tactile feedback to the virtual computer tour. An EZ Access keypad is provided to navigate the computer virtual tour for those who cannot operate touchscreens. Courtesy of the National Center on Accessibility



Fig. 3. Views of multiple models of the White House. In the foreground is a six-foot tactile model; in the middle view is a two-foot top-view silhouette of the White House; and in the background, a 16-foot model of the White House atop a platform surrounded by angled exhibit panels with computer monitors. Courtesy of the National Center on Accessibility

was to provide a keypad and tactile floor plans for only one monitor on both the north and south sides of the exhibit. To provide greater access, we recommended that each of the eight monitors be fitted with a keypad for navigation and a drawer with tactile floor plans—which was incorporated into the final exhibit.

The computer interactive allows visitors who can use a touchscreen a 360-degree view of interior rooms of the White House and the grounds by swiping the screen. The original design of the virtual tour did not include an alternative navigation method. For those who must navigate the program via the keypad (which was added), the views are presented in quarter turns and up and down views, accessed by directional keys in order to accommodate the audio description.

A six-foot tactile model of the White House is positioned parallel to the larger model and computer interactive to afford visitors an opportunity to explore the architectural features of the White House close up and in a tactile way (fig. 3).

While the introductory gallery introduces President’s Park—and many of the

stories in the other exhibits refer to events that have occurred in it—there was no central map of the area in the original plan. Thus, we recommended a tactile map of President’s Park to give all visitors an understanding of where the White House and 12 iconic features (such as monuments, Lafayette Square, the Ellipse, and the National Christmas Tree) are located within the park. Visitors can approach the map on three sides. Wheelchair users, persons of short stature, or people who are blind can thus access all areas of the map (fig. 4).

Tactile models of statues in Lafayette Square, sculpted in slightly less than full round, were added to complement the photos of each statue in a low-tech interactive that identifies the historical figure on which each monument is based. The models provide visitors who are blind greater information on the design of the monument.

The White House as Home. “The White House as Home” provides glimpses into daily life in the White House for First Families. The flipbooks of historic photographs are audio described and have large tabs to help children and individuals

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Endnotes:

¹H. S. Hein, "Beyond Learning: Exploring Visitors' Perception of the Value and Benefits of Museum Experiences," *Curator* 51 (2000): 33-54.

²"Universal Design...What It Is and What It Isn't," Trace Center, accessed August 28, 2015, http://trace.wisc.edu/docs/whats_ud/whats_ud.htm.

³"Inclusive Design Toolkit," University of Cambridge, accessed June 9, 2015, <http://www.inclusivedesigntoolkit.com/betterdesign2/>.

⁴"Resolute Desk," The White House Museum, accessed September 4, 2015, <http://www.whitehousemuseum.org/furnishings/resolute-desk.htm>.

⁵"What is Universal Design," Center for Inclusive Design and Environmental Access, accessed June 9, 2015, <http://udeworld.com/>.

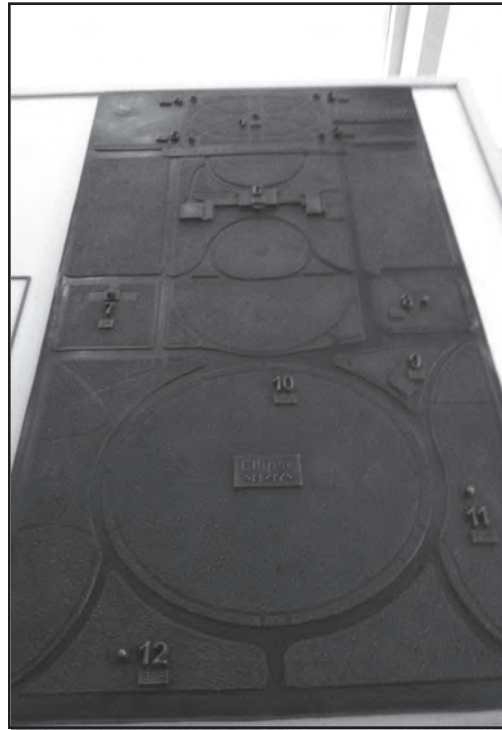


Fig. 4. A tactile map of President's Park orients visitors to the location of the White House as well as to 11 additional, iconic features within the park. Courtesy of the National Center on Accessibility

with fine motor difficulties turn the pages. A hands-on quiz displays plates of simulated foods that were presidential favorites and asks which president especially liked which food. Swinging the plate counterclockwise reveals the answer. After we reviewed the plate interactive design—which required movement in a specific direction—we recommended that large knobs be added to the plates to assist visitors in moving them, along with a directional arrow to indicate the required direction. This made it easier for visitors in general to understand and use.

The White House as Office. A raised-line map of the West Wing, the operational office of the president, provides a visual and tactile connection to its various spaces—the Oval Office, the West Colonnade, the Press Room, and the Rose Garden. Designers on the team also created replicas of one ornate end of the Cabinet Room table as well as the presidential seal on the kneehole panel of the *Resolute* desk in the Oval Office. The *Resolute* desk is the President's desk; it was made from the timbers of the British ship the HMS *Resolute* and given as a gift

by Queen Victoria to President Rutherford B. Hayes in 1880.⁴

The White House as Stage and Ceremony.

The White House serves as a national ceremonial stage. The distinctive State Rooms are places of formal entertaining, ceremonies, and private functions. The team designers incorporated raised-line floor plans including the State Rooms in the pullout drawers under the computer monitors, and also created a larger, more detailed tactile floor plan to accompany the State Rooms exhibit panel (fig. 5). Replicas of décor from select rooms are also displayed, and a tactile map of the White House grounds complements the interactive flip panels that provide graphic and text messages on eight select areas on the grounds. The flip panels have large tabs to help those with limited dexterity open them.

Takeaways

Universal Design emphasizes understanding user diversity and making design decisions that include as many people as possible.⁵ Planning for inclusion in the concept phase ensures that adequate resources are allocated. We identified several key elements in the process:

- Ensure that all visitors, regardless of their level of ability, are oriented to the exhibition space and to physical locations referenced in exhibit messages.
- Incorporate multiple modes of presenting and receiving information (visual, tactile, audio) when conveying interpretation.
- Use audio description as a

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complement to visual and tactile experiences—but not as the sole tool for access.

- Create meaningful tactile experiences that advance the interpretive story.
- Employ audio stations, where possible, with monitors for open captioning instead of printed transcripts.
- Envision how individuals who have difficulties with fine motor coordination might use elements. For example, for any panels or flipbooks that require turning, use large tabs for ease of use or large knobs or loop handles for moving drawers or manipulatives.

Lastly, engagement with people with disabilities during the project phases was critical to ensure that we were providing meaningful and inclusive experiences. ✨

We learned many lessons from this project. It is critical to make design decisions that include the full range of visitor abilities in the concept stages of design and to budget for multiple ways of presenting information. While we found no resistance to including additional elements or redesigning elements to make the exhibition inclusive of a greater range of visitors, it did require more time and costs to incorporate them. We also realized, more fully than ever, the importance of communication. Due to contracting relationships (who reports to whom), the exhibit design process often results in silos of operation. Creating clear and open lines of communication between each group throughout the process can help avoid misinterpretations, or getting too far along in the process before issues are addressed. Often we were the common denominator between each “silo” and helped to bridge gaps in communication.



Fig. 5. This exhibit panel describes the distinctive State Rooms where official entertaining, ceremonies, and private functions take place. The display includes a raised-line floor plan of the first floor identifying the different State Rooms as well as tactile replicas of décor. Courtesy of the National Center on Accessibility