

Case Studies on Universal Design

Case 4/Principle Four

Perceptible Information

Designing for the Senses at The Lighthouse

The Lighthouse, Inc.
111 E. 59th Street
New York, NY 10022

A Living Laboratory of Accessibility

“We must have a building that demonstrates what we advocate. The importance of light, of signage, all of the kinds of issues we stress, we are going to be living with, day in and day out...This will be a living laboratory,” said Dr. Barbara Silverstone, executive director of The Lighthouse, Inc., which had been known as The Lighthouse for the Blind since its creation in 1906. In 1990, both its name and its headquarters underwent fundamental changes.

Background

The Lighthouse had occupied its headquarters in Manhattan since 1906. In the past, people who were blind had engaged in self-segregated activities at the Lighthouse. By the 1970s, the philosophy had begun to shift toward greater integration in the community.

In 1990, when The Lighthouse set out to modernize and expand its headquarters in Manhattan, a conscious effort was made to create a structure that would reflect the philosophy of function as independently as possible in the mainstream.

Case 4/Principle Four

Perceptible Information

This meant designing a model environment without creating an “accessibility oasis” that would teach little of how to cope with barriers in the community.

The mixed-use building housed a performing arts and conference center, a child development center, a music school, and a library, as well as clinics, labs, training facilities, and administrative offices. These spaces needed to be designed with consideration for people with a wide variety of visual abilities, including people who were partially sighted or blind.

The Graphic Design Challenge

The Lighthouse’s building graphics were designed by Roger Whitehouse, a New York City graphic design consultant. Whitehouse wrote a white paper in 1993 for the Society for Environmental Graphic Design (SEGD) on the Americans with Disabilities Act signage requirements.

In his paper, Whitehouse pointed out conflicts between tenets of graphic legibility and ADA requirements. For example, the ADA required all-capital lettering for tactile signage, while it was known that combined capitals and lowercase lettering provided a more distinctive visual pattern through the variety of letter heights and shapes. Caps with lowercase also took less space, allowing use of a larger type size in a given space if used in preference to all caps.

Accessible

40-point caps with lower case are more readable than 30-point caps...

ACCESSIBLE

Case 4/Principle Four *Perceptible Information*

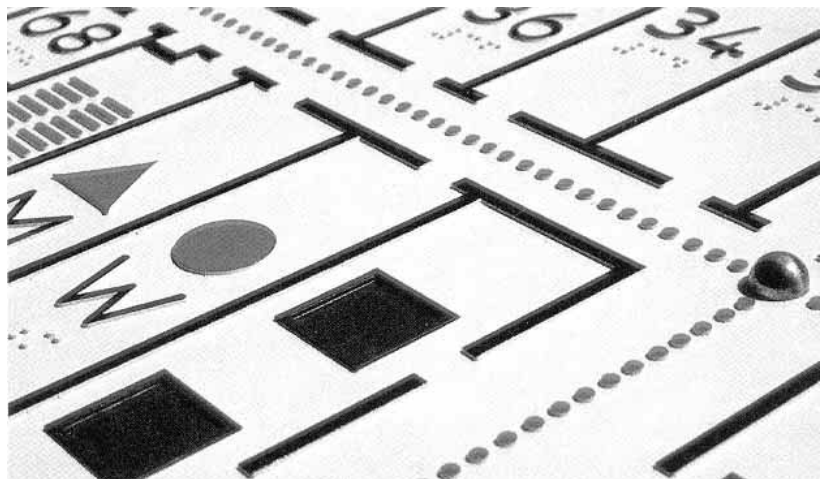
Whitehouse further pointed out SEGD's interpretation of those ADA graphic requirements which might be unclear to graphic designers attempting to comply with this law. Specific acceptable uses of Braille, type styles and width-to-height ratios, as well as clarification of acceptable locations, finishes, contrasts, and illumination of signage were presented in the white paper.

Wayfinding at The Lighthouse

Signage and maps were designed to meet the requirements of the ADA and be usable by people with a variety of visual as well as physical and cognitive abilities. Whitehouse addressed the caps only vs. caps with lowercase dilemma with redundant lettering.

Room information was presented in white-on-black caps with lowercase lettering, in addition to tactile all-caps lettering and Grade 2 Braille. Talking signs were also incorporated into the room signage as another redundant system.

Visual and tactile maps with specially designed symbols were located throughout the building. Layout was kept consistent among the floors to facilitate location of rest rooms, fire exits, and elevators.



Whitehouse's tactile map with Braille, symbols, and raised "Haptic" lettering

Case 4/Principle Four

Perceptible Information

On these maps, Whitehouse’s own “Haptic” typeface was used, which incorporated generous spacing for tactile reading, a slash inside the zero to prevent confusion with the letter O, and an open-top numeral 4 to avoid confusion with the letter A.

The Architecture

At the Lighthouse, Mitchell/Giurgola Architects combined the principle of integration with an understanding of the navigational skills of people who are visually impaired. Before implementation, plans were reviewed by Lighthouse researchers, staff, and people with visual impairments.

To increase visibility, contrast needed to be increased. But rather than simply increasing the overall illumination within the building and with it, risk of glare, contrasts of color were used to delineate borders, doorways, railings, and level changes. Interestingly, doors and door frames to engineering spaces were “painted out”; painted the same color as the walls, to avoid confusion with accessible areas. This simple and effective strategy for simplifying the environment aided wayfinding for people with cognitive as well as sensory limitations (Cohen, 1993).

Contrasts between carpeted and tiled floors separated work and public spaces. Traditional lighting fixtures were adapted by H.M. Brandston & Partners to avoid glare and sudden changes in brightness, which made it difficult to adapt for some people who are visually impaired.

The needs of people with disabilities other than visual impairments were also considered in the design of building features. For example, the auditorium incorporated a variety of seating options for wheelchair users as well as an infrared system for assistive listening and for descriptive audio for people with limited vision.

Originally both the “up” and “down” lights in the elevator lobbies were identical circles, one above the other. It was pointed out that people with severe visual

Case 4/Principle Four *Perceptible Information*

impairments might not perceive the unlighted circle, but only a single, ambiguous light. If the individual also had cognitive limitations, the problem would be compounded. Therefore, the indicator circles were changed to triangles, so that the lighted indicator would also show direction, making it necessary only to see the lighted indicator.

A Universal Design Laboratory

Reopened on June 20, 1994, the Lighthouse's headquarters offered people of all abilities an opportunity to experience and give feedback on the concept of increasing independence through a more universal approach to wayfinding and graphic design. Lighthouse staff took advantage of every opportunity for feedback from visitors to the building, whether they were nondisabled, visually-impaired, or cognitively or physically impaired. What they learned about signage, symbology, typefaces, and wayfinding became invaluable to graphic designers learning to deal with these issues not only in architectural graphics, but also in graphic user interfaces and other areas of graphic design. Upon completion of the project, Steven Goldberg of Mitchell/Giurgola Architects observed, "I don't think any of us who worked on the project will ever look on architecture the same way again."

References

- Cohen, U. & Day, K. (1993). *Contemporary environments for people with dementia*. Baltimore, MD: The Johns Hopkins University Press.
- Rumble, J. (1993, April). Lighting the way. *Metropolis*, 71-75.
- Schwartzkopf, E. (1994, November). Beyond the ADA. *Sign Business*, 40-52.
- Slatin, P. (1994, June 19). The Lighthouse gets bright, airy new headquarters. *The New York Times*.