



When the Americans with Disabilities Act, or ADA, was signed into law by President Bush in July 1990, it was hailed by many as the most decisive human rights legislation since the Civil Rights Acts of the 1960s. Intended to redress the physical barriers in the built environment, the ADA mandated the means by which spaces could be made accessible to the some 43 million Americans with disabilities, including sight, hearing, speech, and mobility impairments. As a broader measure, it also ensures access for the rest of us who at some time or another may experience trouble negotiating the physical world—whether because of age, temporary illness, a broken limb, or simply a child in a stroller. Most of all, it suggested that the design of the places in which we live and work be inclusive rather than exclusive.

For all the kudos the ADA received from social critics, however, many architects and designers were less enthusiastic and sanguine about the effects such legislation would have on their practices. Indeed, sitting on a panel judging entries for PRINT's Environmental Graphics Casebook in the summer of 1993, I was startled by the number of entrants who apparently struggled to complete their submissions before ADA guidelines were implemented; there was a sense of urgency and the sense most of all that this was legislation intended to stifle the design process rather than a step toward a more socially responsible and inclusive approach to design.

The prevalence of this attitude was disappointing, and it prompted me to search out those designers who *were* responding to the mandates of the ADA as a set of creative challenges. In doing so, I found that nearly all designers initially greeted the ADA with everything from irritation to outright hostility. But what I also found was a significant number who then went beyond these negative reactions to cope by developing their own research-oriented projects.

"At first I groaned about more mindless legislation," architect and designer Roger Whitehouse relates. "But then I decided to find out more about it." Whitehouse wrote a white paper for the Society of Environmental Graphic Designers interpreting the often confusing bureaucratic jargon of ADA mandates for other designers. In the process, he went through "a religious experience. My consciousness was raised. I began to be aware of how much designers have really failed to consider users' needs—not just the needs of the disabled, but all of our needs. And I have since become interested in Universal Design."

His firm, Whitehouse & Company, was subsequently retained to design a wayfinding system for the Lighthouse, then undergoing a complete renovation. Located in New York City, the Lighthouse is an organization that works with blind and visually impaired people in an effort to train them for jobs and integrate them better into society. Its multifunction headquarters accommodate classrooms, a library, clin-

# DESIGNING *for*

By Akiko Busch

*It's been over four years since passage of the Americans with Disabilities Act, addressing access to the built environment, and designers, at first skeptical, have come to terms with it—even to improving on the legislation's fuzzy guidelines.*



ics, administrative offices, vision testing rooms, and an auditorium.

"This was an unknown area," Whitehouse recalls. "The common wisdom was missing. And so we did our own research." His team worked with users with different disabilities who all had very different requirements. People who were blind from birth, for example, and who had no concept of written letterforms, read Braille easily and had high sensitivity in their fingertips. People whose visual impairments came later in life were less adept at Braille but were familiar with letterforms and could more easily read tactile letters.

Whitehouse then designed a three-tiered signage system—tactile letters, Braille, and a voice message. For the tactile lettering, he tested both Helvetica Bold and Times Roman. The thick letterforms of the former were difficult to read, while the serifs of the latter were confusing. After five stages of design and testing, he designed a new typeface with thin, sans-serif geometric letterforms that were uniformly easier to read.

Braille signage was put on a ledge installed at a 45-degree angle—easier for the fingerpads to read than signage parallel to the wall. Under the ledge, an LED transmitter could be activated by the user's own remote control. An advantage of the talking sign, Whitehouse explains, is that the entire interior space can be scanned for the location of the sign, thereby allowing the user to become oriented. White-

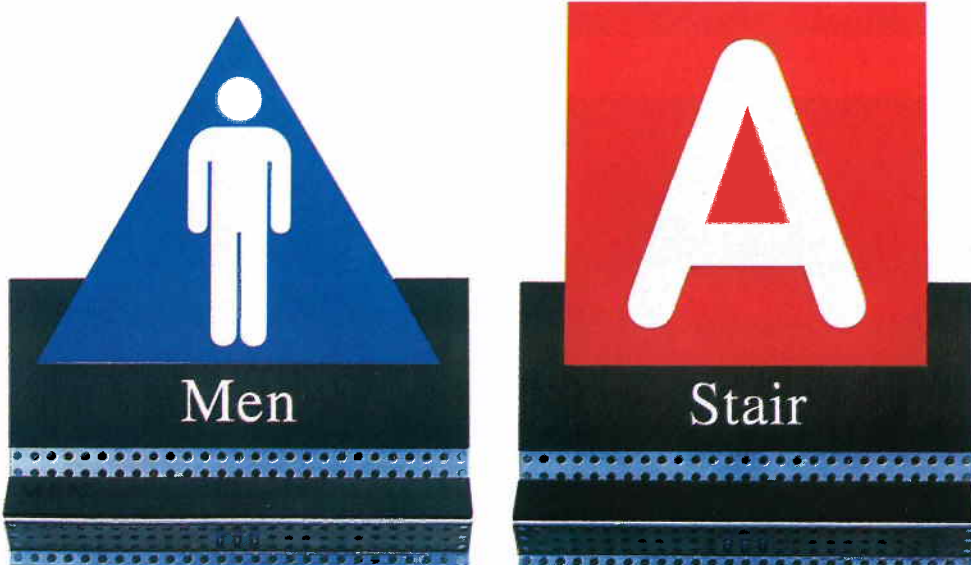
house also installed tactile floor maps at a standard location on each floor, using steel ball bearings to indicate "you are here" to the user.

As a proponent of Universal Design, Whitehouse nevertheless questions the "one size fits all" philosophy. "Sometimes it does," he says. "And sometimes you have to do it two different ways. My own definition of Universal Design is that we need to use our resources to meet the needs of the widest range of users." Despite the volume of his firm's research, Whitehouse remains pragmatic about its applications. "I'd be surprised if what we have done is the way it should be," he admits. "It's something we need to continue to monitor. I don't know if in five years we'll throw out all the tactile signs for talking ones. Or if the talking signs will be driving us all mad."

Virginia Gehshan at Cloud and Gehshan Associates in Philadelphia puts a similar high value on research, but questions the research that went into ADA guidelines. "I have mixed emotions about it," she says. "I'm not sure it was well researched. And even with the best of intentions, it's hard to legislate a social issue." Her firm's signage program for the Pennsylvania Convention Center in Philadelphia indeed depended upon independent research.

Work on the convention center began in 1988. And two years later, after the ADA was signed, much of it had to be reconsidered. Because the designers felt the requirements for signage for people with disabili-

# DISABILITY



1. Roger Whitehouse, Whitehouse & Company, New York City, part of wayfinding system for the Lighthouse, an organization that works with the blind and visually impaired.

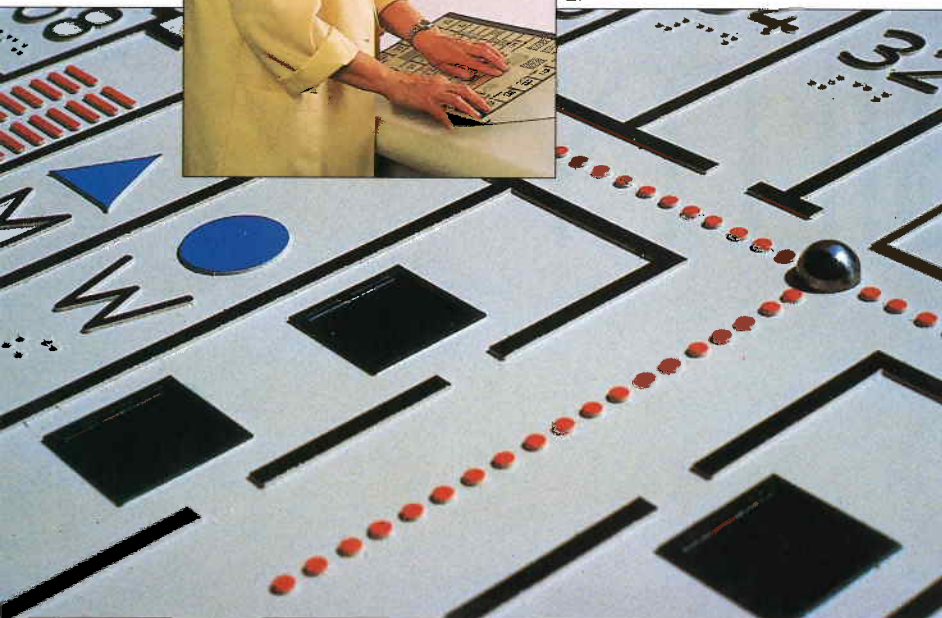
ties was so hazy—put together largely by well-intentioned bureaucrats rather than users—they organized their own committee representing different disabilities. As Gehshan says, “We were interested in looking at what real people said.”

The program that resulted was a modular system—three-part door plaques, for example, that can accommodate room numbers for the sighted, Braille identification, and tactile letters. More important, in certain instances, input from the user committee resulted in elements of signage that the designers themselves had not considered. For example, committee members pointed out the inconvenience and loss of dignity of entering restrooms with unfamiliar layouts. The designers ultimately implemented the committee’s suggestions to install a tactile map outside the restroom to indicate its floorplan.

Gehshan suggests that the often ineffective ADA guidelines demand such independent research. The ADA mandates, for example, that overhead directional signs have 3"-high letters. This was not a problem for interior spaces on the vast scale of the convention center. Yet complying with such a mandate could be a problem for a small hospital with low ceilings and the need to direct visitors to ten destinations. “In cases like this,” says Gehshan, “people are getting rid of the overhead signage altogether because they *can’t* comply. They’re just using wall-mounted signs, which in the end may not be terribly effective.”



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**2, 3.** Roger Whitehouse, tactile floor map with ball bearings indicating the user’s location.

**4.** Robert Probst, Firehouse Design Team, Cincinnati, interior directional signage with tactile lettering that is part of a wayfinding program designed for Sinclair Community College in Dayton, OH.

**5, 6.** Richard Poulin, Richard Poulin Design Group, New York City, part of graphics program for Sony Music Entertainment headquarters. The dark inset panels of the modular sign system contain Braille messages; tactile lettering is positioned below the Braille in Fig. 6.

**7, 8.** Coco Raynes, Coco Raynes/Graphics, Boston. The Raynes Rail is an award-winning handrail system that offers both Braille and audio messages.

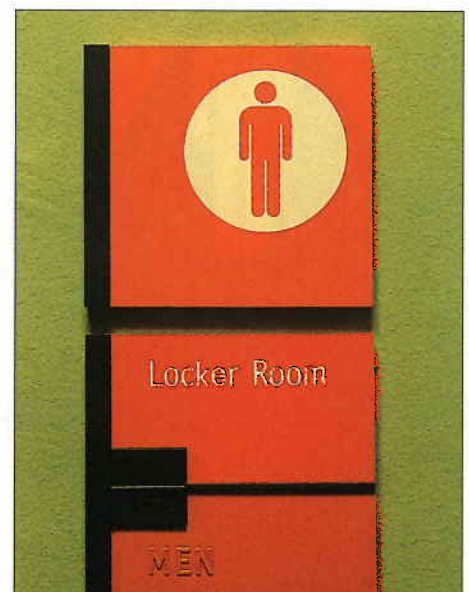
**9.** Roger Whitehouse’s tactile letterforms were completed after five stages of design and testing.



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Richard Poulin of Richard Poulin Design Group in New York City concurs on the need for research. He suggests that one of the problems with the ADA is that government agencies failed to look to the advice or experience of graphic design professionals. The profession tends to be perceived as "cosmetic," he says. "It's perceived as art rather than as public information." Poulin nevertheless tempers his complaint by stating, "Still, one reason we're faced with the ADA is because not enough designers have taken professional or social responsibility."

On the up side, Poulin also suggests that the ADA guidelines to graphic designers are open to wide interpretation because graphic design offers greater leniency than, say, architecture. "There are subtleties, nuances to typography for instance, that are more interpretive than the kinds of decisions you make in architecture," he observes. "But this, of course, is also what makes it so frustrating. It's a double-edged sword."

Poulin's graphics program for the Sony Music Entertainment headquarters in New York's City Center reflects some of these subtleties. "I want to do what works," he says. "My approach has always been that bigger and brighter doesn't always mean it will solve the problem." While the program followed guidelines in type style, size, contrast, placement, and legibility, Poulin specified *Officina* typeface, finding its even letterstroke clear, readable, and expressive of a contemporary sen-

sibility suitable to the client. The dark inset panels of the modular sign system contain the Braille signage while the tactile lettering has been positioned below.

Robert Probst of Firehouse Design Team in Cincinnati relied on a similar modular system for a wayfinding program his firm designed for Sinclair Community College in Dayton, Ohio. The comprehensive program for the some 20 buildings of the campus includes everything from highway signs to classroom identification, and implementation has only just begun. Early on, however, it became clear that a modular grid system would be the key to the tactile lettering of interior directional signage. Working with ASI Sign Manufacturers, Probst determined that photopolymer plaques would provide the most precise, crisp letterforms for tactile units. Frutiger 55 was used for words and messages, while the slightly more decorative Clarendon was adopted for building numbers.

Any discussion of signage for people with disabilities would be incomplete without mention of the Raynes Rail, which was awarded the 1994 Industrial Design Excellence Award. Designed by Coco Raynes of Coco Raynes/Graphics in Boston, it is a handrail system that offers both Braille and audio messages, allowing visually impaired people to guide themselves independently through corridors and open spaces. The polymer Braille inserts are fitted into easily changeable car-



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ridges, which are then installed inside the railing, where users can readily find them. Battery-operated, push-button audio units with applications for multilingual messages are located along the rail as well. The handrail can be manufactured in a variety of wood or metal profiles for indoor use, or in galvanized steel for outdoor use. Finally, it costs only 10 per cent more than a standard handrail.

When the system was tested and installed at the Massachusetts Eye and Ear Infirmary, its expense was offset by the fact that existing signage was *not* modified. Says Joseph Castellana, then vice-president of development and planning at the hospital, "Shortly after the Raynes rail was installed, the hospital was scheduled for its accreditation visit, during which the commission looks at not just the clinical aspects but at the entire facility. We showed them how we were using the rail and said, 'This is our compliance.' We just took a leap of faith; it makes more sense than the ADA. It met the spirit of the ADA, not the letter." The commission apparently agreed, accrediting the hospital with commendation, a status awarded to only a small percentage of hospitals and healthcare facilities.

Coco Raynes, who conceived the handrail some 20 years ago, suggests that the ADA is nevertheless a gesture that may steer designers in the right direction. "It provides parameters, guidelines," she says. "But there are still too many gaps. It's a starting point, not a solution."

In searching out the creative response to any set of new conditions, one invariably looks to the work of design students. It comes as no surprise, then, to find an inventive signage program designed by Brendan Murphy, a design student earning a master's degree at the University of Cincinnati. As the recipient of an education foundation grant from SEGD, Murphy reconsidered access symbols, addressing the often negative imagery in the signage that is currently used. His symbols for sight-, hearing-, speech-, and mobility-impaired persons are intended to be more empowering.

Murphy has modified the wheelchair symbol, for example, to suggest activity and movement. The position of the user's body, in the angle of the torso and the pushing position of the arm, suggests strong forward motion. Says Murphy, "I have attempted to portray an active, independent person, in sharp contrast to the former symbol, which has been described as dependent, rigid, and helpless."

Similarly, Murphy has adapted the universal "okay" hand gesture as a symbol of access for the hearing- and speech-impaired. As he explains, "The use of sign language as a common form of communication for speech- and hearing-impaired people and for people in general—such as at the stock exchange, race track, or baseball diamond—makes the hand sign both appropriate and positive. Likewise, the open-door symbol that represents a barrier-free environment is a



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welcoming image that we can all relate to.”

Murphy's symbols of access, shown at SEGD's 1994 annual meeting in Seattle, generated genuine interest and enthusiasm among members. Sarah Spear, executive director of SEGD, says that the organization is already informally encouraging the use of Murphy's symbols. While not officially endorsing them—a move that could bring liability claims—Spear suggests that these signs are more positive than those currently employed and that organizations that feel comfortable using them might go ahead and do so. (As a matter of note: SEGD is offering its own professional services to members. A regular column in the organization's quarterly newsletter gives ADA updates. SEGD also offers members an ADA hotline to help answer questions. Finally, it puts members who are finding creative ways to deal with the ADA in touch with each other.)

While professional services such as these are surely invaluable to designers looking to be inventive with ADA mandates, designers can also look farther afield. Indeed, some especially inventive work for people with disabilities has come not through considering the specifics of ADA guidelines, but through more wide-ranging investigations. Consider the Scented Garden at the Missouri Botanical Garden in St. Louis that was intended especially for people with visual impairments. Originally designed in the mid-'70s, the garden encourages the appreciation

of nature through all the senses. The raised beds of the sensory garden highlight the fragrances of mint leaves, magnolia blossoms, and pineapple sage, and the textures of lamb's ears and parsley. Trees, shrubs, flowers, and herbs all can be appreciated through touch and smell; elsewhere in the garden, wind chimes can be heard. Braille signs identify plants, though this information is not required for visitors to enjoy the sheer pleasure provided elsewhere in the garden.

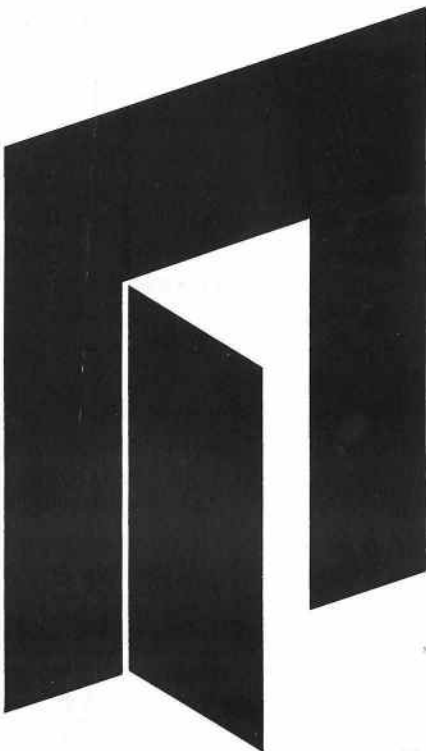
While applications of lamb's ears and mint may seem to hold out limited possibilities to graphic designers, the scented garden does raise an important point. And that's about pleasure. ADA compliance is not just a matter of meeting the letter of the law, but of interpreting its spirit with a sense of generosity and pleasure. One out of every five Americans needs help walking, seeing, hearing, using stairs, lifting objects, or simply getting around; that's a substantial percentage, and at one time or another it is sure to include all of us. So whether a solution is in sensuous tactile lettering or in easy-to-hear audio messages, it is important for designers faced with ADA compliance to remember that at the heart of this legislation is a social movement committed to the idea that the built environment can give us—all of us—not only accommodation and comfort but delight.

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*Akiko Busch is a contributing editor to Metropolis magazine.*

**10.** Scented Garden at Missouri Botanical Garden in St. Louis is intended especially for people with visual impairments.

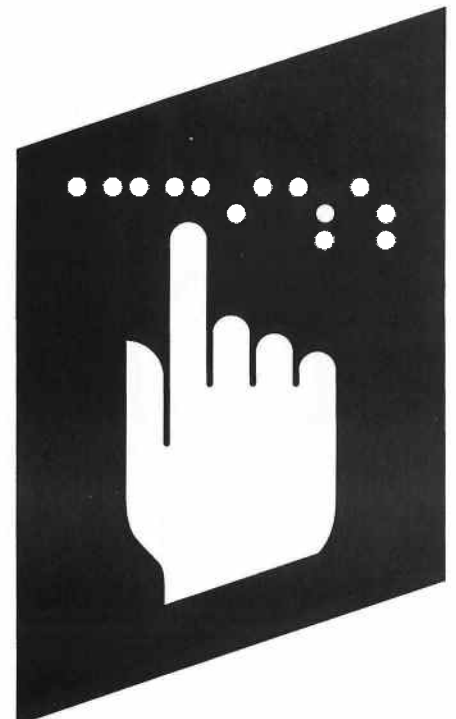
**11-14.** Brendan Murphy was a graduate design student at the University of Cincinnati when he reconceived access symbols, addressing the often negative imagery in the signage currently used. Shown are mobility access development (Fig. 11), universal access (Fig. 12), communication access (Fig. 13), and sight access (Fig. 14).



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